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Health Coverage of Low-Income Citizen and Noncitizen Wage Earners: Sources and Disparities

Ninez A. Ponce · Susan D. Cochran · Vickie M. Mays · Jenny Chia · E. Richard Brown

Abstract The health coverage of low-income workers represents an area of continuing disparities in the United States system of health insurance. Using the 2001 California Health Interview Survey, we estimate the effect of low-income wage earners' citizenship and gender on the odds of obtaining primary employment-based health insurance (EBHI), dependent EBHI, public program coverage, and coverage from any source. We find that noncitizen men and women who comprise 40% of California's low-income workforce, share the disadvantage of much lower rates of insurance coverage, compared to naturalized and U.S.-born citizens. However, poor coverage rates of noncitizen men, regardless of permanent residency status, result from the cumulative disadvantage in obtaining dependent EBHI and public insurance. If public policies designed to provide a health care safety net fail to address the health care coverage needs of low-wage noncitizens, health disparities will continue to increase in this group that contributes essentially to the U.S. economy.

Keywords Health insurance · Health disparities · Immigrants · Latinos · Gender · Citizenship

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Introduction

The health coverage of low-income workers represents an area of continuing disparities in the United States system of health insurance [1–4]. Despite state innovations in expanding coverage principally for children [5], nationally, workers with incomes below poverty experience low coverage rates from their jobs (31% in 2001), compared to workers with family incomes four times the poverty level (over 75% in 2001) [6].

The US economy's demands for a low-wage workforce disproportionately draw from the noncitizen population [7–10]. Analysis of the Census 2000 Public Use Microdata Sample demonstrates that without the arrival of new immigrants in the 1990s, employment would have declined by a third in of all job categories nationwide [11]. This suggests the essential contribution of noncitizen workers in the US economy, yet employment-based health insurance (EBHI) coverage rates are generally lower for this group: in 2002, 84.5% of citizens in the US had EBHI compared to only 66.1% of noncitizens [7].

Lower EBHI coverage rates among noncitizens may result from several factors. Sectors in the labor market that employ undocumented immigrant wage earners may be

less likely to offer benefits in the absence of legal labor protections. For new legal immigrants, limited English proficiency can impede access to government programs and jobs that offer EBHI. Lack of coverage for undocumented and limited English proficient employees may also be attributable to the returns of their human capital: since the 1980s, there has been a consistent increase in the migration of less-skilled immigrant cohorts with lower levels of educational attainment [12]. Many of these immigrants work primarily in temporary or seasonal jobs or in the informal service sector where health benefits are rare. Additionally, noncitizens are typically left out of safety net coverage alternatives to EBHI. The Personal Responsibility and Work Opportunity and Reconciliation Act (PRWORA) of 1996 and related immigration reforms in the same year effectively excluded most noncitizens from federally funded Medicaid eligibility as well as other federally funded public benefit programs [13].

The adverse consequences of being uninsured on health have been well established [14–16]. Among immigrants, lack of health insurance has been linked to lower rates of utilization and access to preventive health services [17, 18]. Though many noncitizens immigrate to the US while they are young and healthy, as they continue to work and grow older in the US, the likelihood of morbidity that requires treatment, the need for preventive screening services, and even emergency health care from hazardous work situations grows.

In addition to citizenship status, gender may also serve to increase the chasm of health coverage disparities. While men regardless of their citizenship status are more likely to participate in the labor force and are expected to have higher rates of primary EBHI than women, there are reasons to think this may not be the case. Although women are less likely to obtain primary employment-based health insurance, men do not benefit to the same extent as women from dependent EBHI coverage [19]. Moreover, a principal driver of the gender divide in health insurance coverage among the poor is Medicaid, the federal-state health insurance program. Although the PRWORA and related immigration reforms have excluded most noncitizens from federally funded Medicaid eligibility, several states with large immigrant populations, including California and New York, cover pregnant women without regard to citizenship or immigration status through state-funded related programs. The result is when EBHI is not offered or is unaffordable for low income workers, pregnant noncitizen women in a few large immigrant-receiving states still have a public insurance safety net that unfortunately does not provide any benefits for men or to non-pregnant women.

Private and public coverage policy exclusions based on citizenship and gender may therefore contribute to widening health insurance disparities. No study that we are aware of has explored the combined impact of citizenship status and gender on coverage. In this study, we determine whether and to what extent citizenship status and gender confers differential effects in obtaining health coverage among low-income workers. We focus on California, a state with one of the highest uninsured rates among low-income workers [9], and where noncitizens comprise 40% or approximately 1.55 million of the state's low-income (less than 200% federal poverty level) workforce [8].

Methods

Source of the Data

We analyzed the 2001 California Health Interview Survey (CHIS 2001). The CHIS 2001 is a complex, multi-stage population-based survey of over 55,000 households in California [20]. Within each household, one adult was randomly selected for a telephone interview conducted in one of 7 languages: English, Spanish, Cantonese, Mandarin, Vietnamese, Korean and Khmer [21]. In 67% of households contacted and with an eligible respondent, an interview of a randomly selected adult in the household was successfully completed [22]. We used the CHIS 2001 source random-digit dial sample, which requires special permission for use through the secure data center of the UCLA Center for Health Policy Research (the Center). IRB approval, as well as permission from the Center, was received to conduct this study.

Study Participants

The CHIS 2001 interviewed approximately 44,000 adults, ages 18 through 64 years. To focus our analysis on low-income employees who might be eligible for employer-based insurance, we restricted our sample to non-elderly adult respondents who reported working for wages in some capacity, other than self-employment, at the time of the survey interview. Of these, 6,745 reported family incomes less than 200% of federal poverty level guidelines [23].

Study Measures

Citizenship and Gender Status

We explored our research question on the potential health coverage disadvantage conferred by citizenship and gender status by constructing eight citizenship-gender groupings: noncitizen non-permanent resident men, noncitizen non-permanent resident women, noncitizen permanent resident

men, noncitizen permanent resident women, naturalized citizen men, naturalized citizen women, US-born citizen men, and US-born citizen women.

Health Insurance Status

Health coverage was assessed through four measures of health insurance at the time of interview: (1) primary employment-based health insurance (EBHI), in which the employee enrolls in his or her employer's health plan; (2) dependent EBHI, which is obtained through another family member's work; (3) public program coverage, obtained from government sources such as Medicaid, Children's Health Insurance Program, CHAMPUS/VA, and/or Medicare; (4) any coverage, if they reported coverage from any source (primary EBHI, dependent EBHI and public) including privately-purchased health insurance from the individual market.

Demographics, Employment and Health Status

For covariates, we selected relevant individual characteristics (age, years of education, ethnicity, race, family income, family composition), indicators of labor market participation (main occupation, hours worked per week), location of residence (rural/urban dwelling), and self-rated health status that have been shown to be associated with health insurance coverage [1, 24–26]. We did not include firm size as over 20% of these values were missing. Classification for race/ethnicity used the UCLA Center for Health Policy Research's approach where multi-race and Latino respondents are asked to specify the ethnic/racial group with which they most identify. Responses were then used for deterministic assignment. This method treats ''Latinos'' as a mutually exclusive race category [27].

Statistical Analyses

Data were analyzed using statistical packages STATA 9.0 (College Station, TX). We used the jackknife technique to adjust standard errors to reflect estimated design effects, and used weights to adjust sample characteristics to match those of the 2000 California population [28]. Four separate weighted logit regressions were used to estimate the effect of citizenship-gender on the odds of having: (1) primary EBHI, (2) dependent EBHI, (3) public program coverage, and (4) coverage from any source, controlling for demographic and employment characteristics, and self-rated health status (Eq. 1). Because workers who are already covered by primary EBHI are unlikely to choose dependent EBHI and are ineligible for Medicaid coverage, each model's sample reflects only the eligible subjects. Thus, to model the likelihood of obtaining dependent EBHI, the sample ($n = 4,194$) excluded individuals who already secured primary EBHI. Similarly, the estimation sample for public program coverage ($n = 3,596$) excluded individuals with primary or dependent EBHI coverage. Models for primary EBHI and coverage from any source included the entire sample ($n = 6,475$).

$$
\begin{aligned}
Y^* = \ &\beta_0 + \beta_1 (\text{noncitizen non-permanent resident and male}) \\
&+ \beta_2 (\text{noncitizen non-permanent resident and female}) \\
&+ \beta_3 (\text{noncitizen permanent resident and male}) \\
&+ \beta_4 (\text{noncitizen permanent resident and female}) \\
&+ \beta_5 (\text{naturalized citizen and male}) \\
&+ \beta_6 (\text{naturalized citizen and female}) \\
&+ \beta_7 (\text{U.S.-born citizen and male}) +
\end{aligned}
$$

$$\tag{1}$$

In the logit model in Eq. 1, Y^* represents the log of the odds of obtaining a source of coverage. Based on this specification, we estimated four separate logit models with dichotomous (1=yes and 0 = no) dependent variables: (1) primary EBHI, (2) dependent EBHI, (3) public program, or (4) coverage from any source. β_0 is the constant, β_1 through β_7 are the parameters on each citizenship gender group as compared to US-born citizen women, and $\Sigma \beta_n$ denotes the set of parameters associated with all other control variables, and μ is the error term. To compare the probability of coverage across citizenship-gender groups, we converted the beta parameters from Eq. 1 into odds ratios. US-born women served as the referent group because they are the predominant beneficiaries of nonelderly/nondisabled adult public program coverage and they possess the highest rate of dependent insurance in the population.

We first conducted bivariate logit models to determine the unadjusted effect of each citizenship-gender attribute on the likelihood of coverage. We then estimated multivariate models that adjusted for possible confounding known to be associated with citizenship, gender and health insurance coverage including, race and ethnicity, age, level of education, family income, family composition, self-rated health status and rural/urban dwelling. We also included occupation and hours worked per week to adjust for variations in coverage attributable to employment characteristics. Both unadjusted odds-ratios (OR) and adjusted odds-ratios (Adj. ORs) with 95% confidence intervals (CI) are reported. Further, using the adjusted Wald test, we tested whether the estimates for noncitizen men differ from each of the citizenship-gender groups in addition to the referent, US-born women. All statistical significance was evaluated using 0.05 level two-sided tests where appropriate.

Table 1 Characteristics of California wage earners by citizenship status and gender, ages 18–64 years, family income <200% FPL, 2001

	Noncitizen				Naturalized citizen		US-born citizen	
	Non-permanent resident		Permanent resident					
	Men (n = 592) (%)	Women (n = 362) (%)	Men (n = 562) (%)	Women (n = 542) (%)	Men (n = 433) (%)	Women (n = 501) (%)	Men (n = 1294) (%)	Women (n = 2189) (%)
Race/ethnicity								
White	2.4	1.5	4.2	4.8	8.6	13.1	55.5	53.9
Latino	91.8	94.4	79.8	75.6	64.1	55.5	26.3	21.9
Asian	3.6	2.1	10.5	15.5	22.9	28.4	4.3	3.6
Black/African American	0.4	0.1	1.4	1.2	0.7	0.7	9.0	15.9
Amer. Indian/Alaska native	0.5	NA	NA	NA	0.1	NA	1.0	0.8
Native Hawaiian/Pac. Islander	NA	NA	0.5	0.3	0.3	NA	0.3	0.7
Other race/multiracial	1.2	1.9	3.6	2.6	3.4	2.3	3.5	3.1
Age, in years								
18–24	27.3	20.3	19.2	17.6	12.3	11.9	37.3	35.3
25–34	49.5	37.4	25.8	27.0	22.1	21.4	28.6	21.8
35–44	16.9	32.4	34.5	31.7	38.4	29.7	20.8	22.4
45–54	4.8	8.4	16.0	17.1	18.3	25.7	9.4	13.6
55–64	1.4	1.5	4.5	6.6	8.9	11.3	3.9	6.9
Education								
Less than high school	60.4	63.7	58.6	50.9	39.5	34.4	15.6	9.6
High school	23.1	19.7	25.6	27.8	32.8	29.9	43.1	40.6
Some college	10.1	11.8	10.2	15.2	16.5	23.9	30.4	38.7
College degree or more	6.4	4.9	5.6	6.0	11.2	11.7	10.9	11.2
Family income, % FPL[a]								
0–99% FPL	51.3	61.5	36.4	45.4	31.9	32.1	26.5	33.8
100–199% FPL	48.7	38.5	63.6	54.6	68.1	67.9	73.5	66.2
Family composition								
Single adult	43.6	22.3	28.2	24.9	21.8	31.2	53.8	44.0
Married, no minor children	7.1	3.8	11.2	12.0	16.3	16.4	8.5	8.0
Single with minor children	3.8	22.8	4.9	23.0	2.9	17.7	5.8	25.3
Married with minor children	45.5	51.1	55.8	40.0	59.1	34.7	31.9	22.7
Urbanicity								
Urban	62.5	66.6	51.2	59.1	58.2	57.6	41.8	39.3
Smaller city near urban area	14.9	12.0	18.6	15.7	13.3	11.6	19.7	22.9
Suburban	13.2	13.1	16.4	11.5	19.4	23.9	21.1	22.8
Small town	3.6	3.9	5.2	4.5	3.3	3.1	9.6	8.9
Rural	5.8	4.4	8.7	9.2	5.8	3.8	7.8	6.1
Main occupation								
Professional/Exec./Manager	3.0	1.7	4.4	6.1	8.3	10.1	12.1	15.9
Manufact./Tech./Transport.	39.5	21.9	37.4	21.4	38.2	15.8	31.5	7.8
Sales	4.8	9.5	4.7	11.2	7.7	10.5	9.6	16.0
Administrative support	4.1	2.8	6.6	12.2	4.8	19.6	10.8	30.5
Other services	32.6	52.0	26.9	38.6	28.6	38.4	28.5	27.2

Table 1 continued

	Noncitizen				Naturalized citizen		US-born citizen	
	Non-permanent resident		Permanent resident					
	Men (n = 592) (%)	Women (n = 362) (%)	Men (n = 562) (%)	Women (n = 542) (%)	Men (n = 433) (%)	Women (n = 501) (%)	Men (n = 1294) (%)	Women (n = 2189) (%)
Farming/Forestry/Fishing	13.5	5.4	15.7	7.2	7.9	1.0	2.8	0.8
Military	NA	NA	NA	NA	NA	0.1	NA	NA
Unemployed[b]	2.4	6.7	4.3	3.3	4.4	4.5	4.8	1.9
Hours worked per week								
<20 h	2.0	9.3	4.6	8.2	4.5	8.7	6.4	14.4
20–34 h	7.7	20.6	6.7	19.6	10.4	20.3	20.2	30.2
35 or more hours	90.3	70.2	88.7	72.1	85.1	71.0	73.4	55.4

Source: 2001 CHIS

Note: Columns sum to 100% within categories except for rounding error. Weighted proportions shown. Self-employed individuals excluded

[a] Federal poverty level

[b] Respondents who reported unemployment at time of interview but who had worked for wages in the past week were included in the analysis

Results

Sample Characteristics

Among low-income Californians, US citizenship status is associated with different demographic profiles (Table 1). Noncitizen men and women, regardless of permanent residency status, are predominantly Latino and are less educated compared to naturalized citizens and US-born citizen employees. Both noncitizen men and women are less likely to hold professional, executive, and managerial positions that commonly include health benefits. As a group, they tend to earn less, but work more hours than any other citizenship group. Within the noncitizen groups there are notable gender differences. Approximately 30% of noncitizen women have dependent minor children, compared to only 13% for noncitizen men (aggregated data not shown). Noncitizen non-permanent resident women have the highest rate of poverty among the citizenship-gender groups. One in two noncitizen non-permanent resident women work in the service industry, the highest proportion across groups.

Coverage Rates by Source and by Citizenship-Gender

Noncitizen men and noncitizen non-permanent resident women have the lowest rates of health insurance coverage (37%–57%) among wage earning adults when compared to US-born women (80%), US-born men (71%), naturalized citizen women (74%), naturalized citizen men (73%), and noncitizen permanent resident women (67%) (Table 2).

Noncitizen men and women post very low coverage rates from each of the EBHI sources compared to naturalized and US-born citizen wage earners. In these unadjusted proportions, there are fewer differences by citizenship in public program coverage, although as expected, the gender differences are considerable. Across all groups, the health insurance advantage of female over male workers is driven both by higher proportions of dependent coverage and greater public program eligibility, with US-born women having the highest rates for both.

Unadjusted Effects of Citizenship Status and Gender on Coverage

Results from bivariate logit models suggest that noncitizen men have the lowest odds of obtaining dependent EBHI and public program coverage compared to US-born women, the referent (Table 3). For these two health insurance sources, noncitizen men also have significantly lower odds of coverage compared to noncitizen women, as well as each of the other citizenship-gender groups. However, noncitizen men's odds of obtaining primary EBHI is significantly greater than noncitizen women, and is statistically comparable to the odds faced by US-born women. But noncitizen non-permanent resident men's comparative advantage in primary EBHI is not enough to offset their position as having the poorest prospects in obtaining dependent and public coverage. Consequently, the likelihood of being insured from any source is very low for this group (OR 0.16; CI 0.12, 0.20). Noncitizen non-permanent resident women also post comparable poor odds of coverage.

Table 2 Health insurance coverage rates, California wage earners, ages 18–64 years, family income <200% FPL, by citizenship status and gender, 2001

	United States citizenship status							
	Noncitizen				Naturalized citizen		US-born citizen	
	Non-permanent resident		Permanent resident					
Coverage source	Men	Women	Men	Women	Men	Women	Men	Women
Primary job-based	25.3% (0.208, 0.298)	13.3% (0.091, 0.176)	39.7% (0.347, 0.446)	34.4% (0.292, 0.396)	50.9% (0.452, 0.567)	41.3% (0.357, 0.469)	43.8% (0.399, 0.477)	35.5% (0.326, 0.384)
Dependent job-based	2.0% (0.007, 0.034)	6.5% (0.036, 0.095)	3.3% (0.015, 0.052)	9.3% (0.064, 0.123)	7.6% (0.043, 0.109)	13.8% (0.088, 0.188)	9.5% (0.071, 0.119)	17.9% (0.152, 0.206)
Public program	12.1% (0.087, 0.155)	18.1% (0.128, 0.235)	17.3% (0.133, 0.213)	23.7% (0.188, 0.286)	17.1% (0.127, 0.215)	20.9% (0.164, 0.255)	15.1% (0.121, 0.181)	24.7% (0.219, 0.274)
Any health insurance	37.5% (0.325, 0.425)	37.2% (0.310, 0.435)	57.2% (0.520, 0.624)	66.8% (0.619, 0.717)	72.9% (0.679, 0.778)	73.2% (0.682, 0.783)	70.6% (0.669, 0.744)	79.4% (0.769, 0.820)

Source: 2001 CHIS

Weighted rates shown. Self-employed individuals excluded

Adjusted Effects of Citizenship Status and Gender on Coverage

Point estimates are generally higher, and statistical significance remains robust for models that adjust for the effects of demographic confounding and employment characteristics (Table 3). Higher point estimates for citizenship-gender attributes suggest that some of the effects that significantly depress coverage—poverty, lower educational attainment, sales, service or farming jobs, fewer hours worked per week, and being a younger worker, may indeed be intertwined with the worker's gender and citizenship status. However, the estimates do not dramatically change after adjustment with other covariates most likely because the heterogeneity in human capital (income and education) and employment characteristics across this low-income sample is less than in the overall CHIS 2001 adult sample (Data not shown).

Whereas US-born and naturalized citizen men, compared to US-born women, have a 39%–54% increased odds of being covered through their own employment, noncitizen men have lower, or statistically similar odds with US-born women. Noncitizen permanent resident men do not share the male gender advantage that the other citizenship groups have in obtaining primary EBHI.

Although noncitizen women have lower odds of receiving dependent coverage compared to US-born women, their chances of obtaining dependent coverage are significantly higher than that of noncitizen men. Thus, in a population-based low-income sample, US-born women have higher odds of receiving dependent coverage as noncitizen women—even though there are more noncitizen female workers who are married (53% compared to 30%). US-born women have much higher odds of being covered as dependents in their family member's plans than noncitizen men, exhibiting the combined protective effect of gender and US citizenship. But citizenship also confers an independent effect. US-born citizen men are much better off than noncitizen men in securing dependent coverage, despite higher proportions of noncitizen men who are married (59% vs. 40%).

As could be predicted, public program coverage, principally Medicaid, favors US-born women in our study. Noncitizen women are less likely than US-born women to be covered by public programs. Naturalization and permanent residency status confer the benefits of eligibility for public programs, as reflected in the higher likelihood of public program coverage for naturalized citizen women compared to noncitizen non-permanent resident women; naturalized women's public program coverage is statistically similar to that of US-born women. Although the odds for public program coverage are lower for noncitizen men compared to noncitizen women, there

Table 3 Citizenship status and gender effects on obtaining health insurance by source of coverage, California wage earners, ages 18–64 years, family income <200% FPL, 2001

Citizenship status and gender	Primary job-based OR (95% CI)	Adj. OR (95% CI)	Dependent job-based OR (95% CI)	Adj. OR (95% CI)	Public program OR (95% CI)	Adj. OR (95% CI)	Any health insurance OR (95% CI)	Adj. OR (95% CI)
Noncitizen not permanent resident								
Men	0.61[abcdefg] (0.47, 0.80)	0.64[abcdefg] (0.45, 0.92)	0.07[bcdefg] (0.04, 0.15)	0.09[bcdefg] (0.04, 0.20)	0.16[abcdefg] (0.10, 0.25)	0.22[acdefg] (0.13, 0.38)	0.16[acdefg] (0.12, 0.20)	0.22[acdefg] (0.16, 0.32)
Women	0.28 (0.19, 0.41)	0.32 (0.20, 0.52)	0.21 (0.13, 0.36)	0.30 (0.16, 0.57)	0.31 (0.20, 0.48)	0.26 (0.15, 0.45)	0.15 (0.11, 0.21)	0.20 (0.13, 0.29)
Noncitizen permanent resident								
Men	1.19[abd] (0.94, 1.52)	1.03[abd] (0.74, 1.44)	0.15[cdefg] (0.08, 0.28)	0.17[cdefg] (0.09, 0.34)	0.35[aceg] (0.24, 0.51)	0.47[aceg] (0.28, 0.78)	0.35[abcdefg] (0.27, 0.45)	0.43[abcdefg] (0.30, 0.62)
Women	0.95 (0.73, 1.24)	1.03 (0.73, 1.47)	0.43 (0.29, 0.65)	0.64 (0.37, 1.09)	0.74 (0.51, 1.07)	0.66 (0.40, 1.09)	0.52 (0.40, 0.68)	0.65 (0.46, 0.93)
Naturalized citizen								
Men	1.88 (1.45, 2.45)	1.54 (1.09, 2.20)	0.48 (0.28, 0.81)	0.51 (0.26, 0.99)	0.49 (0.32, 0.75)	0.54 (0.32, 0.92)	0.70 (0.52, 0.94)	0.77 (0.53, 1.12)
Women	1.28 (0.98, 1.66)	1.17 (0.85, 1.62)	0.80 (0.50, 1.29)	1.04 (0.60, 1.81)	0.68 (0.45, 1.01)	0.79 (0.47, 1.33)	0.71 (0.52, 0.96)	0.82 (0.57, 1.17)
US-born citizen								
Men	1.42 (1.16, 1.73)	1.39 (1.09, 1.77)	0.53 (0.37, 0.76)	0.43 (0.29, 0.65)	0.39 (0.27, 0.55)	0.64 (0.42, 0.96)	0.62 (0.49, 0.79)	0.73 (0.57, 0.95)
Women	1	1	1	1	1	1	1	1

Source: 2001 CHIS

* Adjusted ORs were estimated in models that included variables in Table 1

[a] Estimate for noncitizen nonpermanent resident men significantly differs from noncitizen permanent resident men

[b] Estimate significantly differs from noncitizen non-permanent resident women

[c] Estimate significantly differs from noncitizen permanent resident women

[d] Estimate significantly differs from naturalized citizen men

[e] Estimate significantly differs from naturalized citizen women

[f] Estimate significantly differs from US-born citizen men

[g] Estimate significantly differs from US-born citizen women

is no significant gender effect within the noncitizen non-permanent resident group.

On net, compared to US-born women, noncitizens, whether male or female, are less likely to have any type of health insurance coverage. Averaging over permanent residency status, noncitizen men have a 3-fold likelihood and noncitizen women over a 2-fold likelihood to be uninsured when compared to US-born women. Adjusted Wald-tests confirm that noncitizen non-permanent resident men's and women's odds of obtaining any coverage are significantly lower than each of the other citizenship-gender groups.

Discussion

This study finds that among California's low-income workers, noncitizen men constitute the most vulnerable group in their lack of dependent and public health insurance coverage. Our findings confirm past studies that noncitizens face considerable disparity in their access to coverage regardless of their gender [4, 10, 25]. Our study, however, illuminates the impact that public and private policies have as a function of citizenship status combined with gender. Although low-income employees in general have difficulty in obtaining health insurance coverage because of the lack of such benefits in the types of jobs they get, noncitizen permanent resident women are more likely to obtain dependent EBHI coverage than noncitizen men. However, among noncitizen women, non-permanent resident women's access to primary EBHI, dependent EBHI, and public coverage is severely disadvantaged compared to US-born and naturalized women even after adjusting for confounding characteristics.

Noncitizen men and noncitizen women share the disadvantage of much lower rates of both primary and dependent EBHI, compared to naturalized and US-born citizens. Coverage rates are lowest for both noncitizen men and women who are not permanent residents. But the effect of gender in obtaining coverage is also important. Although noncitizen men have a similar or higher rate of primary EBHI than noncitizen women, noncitizen men have lower rates of dependent coverage and public program coverage. The cumulative citizenship effect of these disadvantages results in noncitizen men having the lowest odds of obtaining coverage from any source of health insurance—just one-third the odds of the most advantaged group, US-born women.

Our findings in California are relevant to other states. Comprehensive policies with the goal of covering all low-income employees have been considered and implemented in states such as Massachusetts, Minnesota and Washington using the Medicaid and SCHIP programs [29], although

these states have relatively low numbers of noncitizens. As increasing numbers of noncitizen immigrants settle throughout the United States, more states face a significant problem in the long term in regards to the financing of health coverage for low-income noncitizens and their families. Although some federal waivers allow for state flexibility in covering adults, including nonparents, states that opt to cover new legal immigrants, such as California, must do so without federal assistance. In California, this could be costly given that 40% of California's low-income workforce is noncitizen. However, in carefully examining the issue of costs, a national study found that health care expenditures of immigrants were actually 55% lower than those of US-born persons [30]. Lower costs incurred by immigrants may be attributed to lower utilization rates due to being uninsured or underinsured. Thus, there is policy concern that once immigrants gain coverage, utilization and expenditures would rise due to the ''moral hazard'' effect of having insurance. However, the national study's findings remained robust even after adjustment for health insurance status: among insured immigrants, per capita total expenditures were still 52% lower than insured US-born persons [30]. This suggests that policies that extend coverage to immigrants may not disproportionately burden the health care system. And, given the linkage of health insurance to better access to health services and chronic disease management [1, 15–17], insuring noncitizen workers may result in health benefits and cost savings in the long run.

Despite state flexibility in expanding health insurance programs, state innovations in covering all low-income workers are fundamentally affected by federal immigration policies. Nationally, the immigrant debate has focused on undocumented immigrant issues. Two polar opposite options have been considered by the US federal government: (1) earned legalization, with the most prominent example being Bush administration's guest worker proposal, and (2) federal criminalization as manifested by HR 4437, the Border Protection, Antiterrorism, and Illegal Immigration Control Act, passed by the House in December 2005 [31]. Criminalization would curtail all social sector efforts, including health care, which would benefit undocumented immigrants and their families. Earned legalization, in contrast, could legitimize the hiring practices of employers who rely on an undocumented workforce, with the prospect that such workers will receive the same protections that labor laws require for US workers [32]. Earned legalization thus offers a viable opportunity for states to develop and generate financing for health coverage programs to cover all low-income workers, regardless of citizenship and documentation status.

Several study limitations are worth noting. One limitation of CHIS 2001 is that because adult health insurance

coverage was determined only for the sample adult that was randomly selected within a household, we could not determine if the married worker with primary EBHI also covered their dependent spouse under their plan. Consequently, our model may not adequately describe the pathways to dependent coverage. In addition, the noncitizen sample was comprised of permanent residents and non-permanent residents. Because we could not distinguish students and workers with temporary visas from undocumented immigrants, we aggregated the various noncitizen non-permanent resident into one category. We expect that the citizenship disparities we found would be greater for undocumented immigrants. Finally, by the very nature of a telephone survey, low income households lacking phone service would be systematically excluded from our sample, and thus those that participated in the study may not be representative of the low-income population of workers, although a non-telephone adjustment was included in the weighting [33]. Despite the limitations typical in many surveys, CHIS 2001 offers a large sample of noncitizens, multiple language administration to ensure inclusion of limited-English proficient immigrant workers, and a comprehensive set of health insurance, employment and demographic questions to facilitate a careful examination of the citizenship, gender and health coverage issues. The similarity of our results to other published studies provides confidence in the findings and in its implications.

Conclusion

Our findings underscore the very great disadvantage in health insurance coverage that accompanies noncitizen and gender status. Generic policies to expand coverage which are bound to federal legal residency and family composition requirements are therefore not enough to reduce the ranks of uninsured workers, chiefly, noncitizen male and noncitizen non-permanent resident female workers [5]. State innovators that aim to reduce coverage disparities among the low-income workforce must also engage in the overarching policy dialogue on the legalization and naturalization of noncitizen workers.

If federal policies that legalize employer contracts with undocumented temporary employees are adopted, then employment-based health benefits should be considered as part of the social contract. With legal status, temporary workers could be made eligible for federally supported Medicaid, as many were prior the 1996 PRWORA. At a minimum, as states formulate policies to extend health insurance coverage to low-income workers, the needs of noncitizen male workers should not be overlooked. If policies are formulated that fail to address this large and growing noncitizen group, then the coverage disparity for workers with low incomes, men in particular, will persist.

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