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The Work/Health Insurance Nexus: A Weak Link for Mexican-origin Men*

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Abstract

Objectives—The employment based health insurance system of the United States means that those individuals who are disadvantaged in the labor market are also disadvantaged in terms of health insurance coverage. The Mexican-origin population has historically been disadvantaged in both domains. We examine the extent to which low rates of health insurance coverage among Mexican-origin adult male workers are the result of overrepresentation in the types of employment in which coverage is low for everyone.

Methods—We use logistic regression models to analyze data from 80,827 employed Mexican-origin, African American, and non-Hispanic white men in the 2004 and 2006 Current Population Surveys.

Results—The results suggest that although such overrepresentation contributes to low rates of coverage among Mexican-origin workers, even within employment sectors, industries, and occupations Mexican-origin workers are less likely to have coverage than non-Hispanic whites or African Americans.

Conclusions—These results make it clear that the health insurance vulnerabilit y of the Mexican-origin population reflects multiple barriers to coverage in addition to those related to employment.

In 2007 nearly forty-six million U.S. residents, or over 15 percent of the population, had no health insurance coverage, and many more had only episodic or inadequate coverage (DeNavas-Walt, Proctor, and Smith, 2008). The failure of our health care financing system to cover everyone has serious implications for the health of the most vulnerable among us, who consist disproportionately of minority group members, the poor, and children (Quadagno, 2005). The large number of uninsured has far-reaching negative implications for individuals, families, and entire communities (Institute of Medicine, 2001; Pagán and Pauly,

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2006). In this paper we investigate the role of employment in explaining the lack of health insurance coverage among employed Mexican-origin adult males, and compare their patterns of employment-based coverage to those of African-American and non-Hispanic white adult males. The comparison is intended to identify unique health insurance coverage vulnerabilities of Mexican-origin workers and is motivated by several considerations. In addition to having the lowest rates of health insurance coverage of any racial or ethnic group, the Mexican-origin population is the largest Hispanic subgroup and has persistently been the most likely to be uninsured (Fronstin, Goldberg, and Robins, 1997). Although recent migration has dispersed this population to states in which there were very few Hispanics just two decades ago, for the most part it is concentrated in specific labor markets and sectors where health insurance coverage is limited. In addition, the Mexican-origin population has an immigration experience that is distinct from that of other Hispanic groups such as Puerto Ricans, who are U. S. citizens by birth, and Cubans, who arrived as political refugees.

We confine the analysis to men since women's labor force experiences are fundamentally different than those of men and require separate analyses that include issues related to child care and other gender-based factors (see Harrington Meyer and Pavalko, 1996). As part of the analysis we describe the employment characteristics of Mexican-origin workers and identify the ways in which these characteristics might affect health coverage. We draw upon the literature on health insurance coverage among Hispanics even though much of it does not differentiate among specific subgroups. We justify this choice because much relevant work does not differentiate among subgroups and the fact that Mexican-origin individuals comprise the majority of Hispanics. Statistics for the Hispanic population as a whole are heavily influenced by the Mexican-origin component. In what follows we refer to "Hispanic" when the findings we discuss pertain to the combined subcategories. We use the term "Mexican-origin" to refer to the group of citizens and non-citizens with Mexican roots.

The Mexican-origin population has particularly low rates of coverage at all ages (American College of Physicians, 2000; Amey, Seccombe, and Duncan, 1995; Angel and Angel, 2007; Santos and Seitz, 2000; Treviño et al., 1991; Valdez et al., 1993). In 2006 while 18 percent of non-Hispanic blacks and 13 percent of non-Hispanic whites under 65 were uninsured, fully 39 percent of Mexican-origin individuals had no coverage (Adams, Lucas, and Barnes, 2008). Data from the Current Population Survey also show that the Mexican-origin population has the lowest rate of health insurance coverage among Hispanics (Angel, Angel, and Lein, 2008).

Many potential explanations for these low rates of coverage have been suggested. These include a large number of non-citizens who do not have access to coverage (Angel and Angel, 2007), low access among recent immigrants (Bastida, Brown, and Pagán, 2007), language and cultural barriers (Brown et al., 2000), bureaucratic barriers (Lein and Schexnayder, 2007; Mechanic et al., 2005; Reschovsky, Hadley, and Nichols, 2007), and employment in jobs in which coverage is not offered or offered only at premiums that poor working families cannot afford (Angel and Angel, 1996; DeNavas-Walt, Proctor, and Smith, 2007; Schur and Feldman, 2001). In this paper we focus specifically on the labor force explanations and examine the extent to which low rates of coverage among Mexican-origin workers reflect the characteristics of the employment sectors, industries, and occupations in which they are employed, in addition to family and personal characteristics. The focus on occupations is motivated by the fact that minority Americans, including the Mexican-origin population, are more likely than majority Americans to be employed in occupations that do not offer health insurance coverage (Angel and Angel, 2007; Hall, Collins, and Glied, 1999).

Determinants of Low Levels of Coverage among Mexican-origin Workers

The logic of our analysis is fairly simple: If low rates of health insurance coverage among Mexican-origin male workers are the result of their concentration in employment sectors, industries, and occupations with generally low coverage for everyone, controlling for these characteristics should substantially diminish racial and ethnic differences in coverage. That is to say that within sectors, industries, and occupations Mexican origin workers should have similar rates of coverage as non-Hispanic white or African-American workers. Conversely, if differentials persist even within sectors, industries, and occupations then other factors must be operating to depress Mexican-origin coverage. These might include the fact that Mexican-origin workers are for some reason less likely to "take up" or opt into group plans. Perhaps given the higher fertility of the Mexican-origin population their larger families make employer sponsored plans too expensive for families to afford (Angel, Lein, and Henrici, 2006). More children place strains on family budgets that may lead a parent to choose not to pay the premium. It is also possible that within occupations Mexican-origin workers disproportionately work in small firms that are less likely to offer coverage.

Hispanics are more likely than non-Hispanic whites to be employed in agriculture, production, construction, farming, forestry, fishing, and retail trade, industries in which health benefits are less likely to be offered (Hall et al., 1999; Monheit and Vistnes, 2000; Therrien and Ramirez, 2001). Although Hispanics made up only 12 percent of the labor force in 2000, they represented 40 percent of agricultural workers (Kochhar, 2005). This overrepresentation in low-wage and low-benefit occupations reflects an under representation in high-wage, high-benefit occupations. In 2000 only 16 percent of Hispanics were employed in professional occupations compared to 34 percent of non-Hispanic white and 42 percent of Asian workers (Kochhar, 2005). From 1990 to 2000, the proportion of Hispanic men in executive, management, and professional occupations declined by close to two percent whereas the proportion of non-Hispanic white men in these professions increased by a similar amount (Kochhar, 2005).

In order to gain some insight into the role of employment characteristics in explaining low rates of coverage among Hispanics generally and Mexican-origin adult males in particular, we begin with a general overview of the characteristics of firms, occupations, and employees that influence the likelihood that a worker will be covered and relate these to the characteristics of the Mexican-origin population. In 2005, while 72 percent of full-time workers participated in employer-sponsored health plans, only 13 percent of part-time, part-year workers had employer-sponsored coverage (U.S. Government Accountability Office, 2007). Among unemployed workers the prohibitive cost of private coverage results in extremely low levels of coverage (Fronstin, 2005). Firm size also stands out as a major predictor of the availability of group coverage. In general, smaller firms are less likely to offer coverage than larger firms. In 2007, only 59 percent of small firms (3 to 199 employees) offered coverage; the smallest firms (3-9 employees) were the least likely to offer health benefits (Kaiser Family Foundation, 2007). Conversely, almost 100 percent of large firms (200 or more workers) offered some coverage.

Yet even within similar sized firms Hispanics have lower rates of coverage than workers from other racial and ethnic groups (Santos and Seitz, 2000). Hispanics who work for employers with less than 25 employees are less likely to be offered coverage than non-Hispanic whites in similar sized firms (Monheit and Vistnes, 2000). One study based on data for 1997 found that in firms with fewer than one hundred employees, 47 percent of African Americans and 63 percent of non-Hispanic whites had coverage, while only 38 percent of Hispanics were covered (Hall et al., 1999). Union membership also affects the likelihood of coverage. Non-unionized firms are less likely to offer coverage than unionized firms (Kaiser

Family Foundation, 2006). Between 1987 and 1996 decreases in labor union membership among Hispanic males (24.1 to 12.8 percent) contributed to a further drop in their rate of health insurance coverage (Monheit and Vistnes, 2000).

The literature, then, clearly documents serious health insurance coverage disadvantages among Hispanics based on their employment characteristics. Given the fact that Mexican-origin individuals comprise the largest fraction of the Hispanic population, the data clearly reflect their health care vulnerability. Unfortunately, the situation is likely to get worse since many small employers are dropping their group plans (DeNavas-Walt et al., 2007; Fronstin, 2005; Kaiser Family Foundation, 2006; U.S. Government Accountability Office, 2007). These trends, including decreasing union membership and employment in small firms that do not offer coverage, mean that in the future basic health care access among Hispanic male workers and their families, and especially those of Mexican-origin, may decrease.

Data and Methods

Sample

In the following analyses we examine rates of insurance coverage among employed Mexican-origin, African American, and non-Hispanic white males between 18 and 64 years of age. As explained above, our objective is to determine the extent to which differential rates of coverage reflect labor market concentration in low coverage employment. We employ the combined 2004 and 2006 March Current Population Surveys (CPS), also referred to as the Annual Social and Economic (ASEC) Supplements. The CPS collects monthly demographic and employment information from a nationally representative sample of the civilian, non-institutionalized population at least 15 years of age (U.S. Census Bureau, 2006). It uses a rolling sample design so that roughly three-fourths of the households are repeated in consecutive months, and roughly one-half of the households are repeated in the same month of consecutive years (U.S. Census Bureau, 2002).

Every March, the sample and the survey instrument are expanded as part of the ASEC. This extended sample consists of approximately 99,000 households and includes oversamples of certain population groups, including Hispanics. In addition, the ASEC collects information on work experience, income, non-cash benefits such as health insurance, and migration. The ASEC is particularly useful for our purposes because it includes a large sample of Mexican-origin workers. Although other datasets, such as the 2005 Medical Expenditure Panel Survey (MEPS), provide similar information on health insurance and employment characteristics, the sample sizes of Mexican-origin workers are inadequate for our purposes.

We use the combined samples from the 2004 and 2006 ASEC in order to obtain sufficient sample sizes of Mexican-origin and African-American respondents. Because consecutive years of the March ASEC contain roughly one-half of the same households, combining alternate years ensures that all 421,803 individuals in the combined 2004 and 2006 sample are unique (Sakamoto, Woo, and Yap, 2006; U.S. Census Bureau, 2002). Given our focus on Mexican-origin male workers in the civilian labor force, we exclude women, other Hispanics and races, persons who are in the Armed Forces, the unemployed, and individuals voluntarily not in the labor force (e.g., full-time students). These selection criteria result in a final sample of 80,827 non-Hispanic white, African American, and Mexican-origin men who were employed at the time of survey and at some point during the previous calendar year.

Measures

Our key dependent variable consists of a dichotomy indicating whether the respondent had health insurance from an employer or union at any time during the previous calendar year.

For the vast majority of this working age sample their health insurance coverage was through their employment or union, although some men reported coverage from other sources. For those employed men who reported that they had no employment-based health insurance coverage we do not know whether coverage was not offered by the employer or whether the respondent chose not to accept it. To minimize the impact of the latter possibility on our analysis, we control for whether these men had health insurance as a dependent during the previous calendar year.

Independent Variables

We examine several demographic characteristics and employment factors that are theoretically related to employment-based health insurance coverage. The employment variables refer to the previous calendar year, the same time frame as for the health insurance question. We dichotomize the usual number of hours the respondent worked weekly during the previous year, *employment hours*, into fulltime and part-time (the reference category). We define fulltime as thirty-five hours or more per week. We also control for *employment sector* (self-employed; public; private as the reference). This variable is particularly important because it captures information on government employment, as well as reflecting union membership and firm size. Public sector workers are approximately five times more likely than private sector workers (36.2 percent versus 7.4 percent, respectively) to report union membership (Bureau of Labor Statistics, 2007). They are also more likely than those in the private sector or the self-employed to work in large firms (author calculations the using CPS available on request). In order to minimize collinearity we do not include firm size or union membership in our multivariate analyses, although we do provide information about firm size distributions for illustrative purposes. Further, union membership is asked of only 25 percent of the employed CPS sample, and it refers to employment at the time of survey.

In addition to employment sector, the CPS classifies the job the respondent held for the longest period during the preceding calendar year according to a standardized list of industries and occupations. The CPS provides these classifications at various levels of aggregation. We chose the most aggregated format which consists of 14 industries and 23 occupations. Without the armed forces we have 13 industries and 22 occupations for our analysis. We then collapse industry into four groups (manufacturing; services; construction and agriculture; professional as the reference) to be fairly consistent with the literature (e.g., Harrington Meyer and Pavalko, 1996) and because industry is not the main focus of the present analysis. Finally, we select management occupations as the reference group for the 22 occupations.

We also include several relevant demographic variables including *age* (18-35 as the reference; 36-47; or 48-64 years), *education* (less than high school; high school graduate as the reference; some college; or college degree or higher), *marital status* (married; divorced, widowed or separated; or never married as the reference), *family size* (the respondent plus spouse and unmarried children under 18 if relevant), *citizenship status* (non-citizen as the reference), and a family *income-to-poverty* ratio (<1.00 as the reference; 1.00 to 1.99; 2.00 to 2.99; 3.00 to 3.99; or 4.00 and higher). We chose this measure of income because it captures income from the previous calendar year for both adults within married couples. Finally, we include an indicator of whether the respondent had health insurance as a dependent during the previous calendar year.

Results

Table 1 presents the employment and demographic characteristics, as well as health insurance status, of our sample. These characteristics are weighted using the March sample

weights. Using a 99 percent confidence level for the following comparisons (tests not shown), we find that employed Mexican-origin men are as likely to work fulltime (94%) as non-Hispanic white men (93%), and more likely to work fulltime than African-American men (91%). Employed Mexican-origin men (6%) are less likely than either non-Hispanic white (12%) or African-American men (17%) to be employed in the public sector, and they are as likely as African-American men to be self-employed (7% and 6%, respectively). In terms of industry, Mexican-origin men (21%) are less likely than either non-Hispanic white (35%) or African-American males (38%) to be employed in the professional industry, while they are more likely to be employed in construction and agriculture industries (29% versus 16% for non-Hispanic white and 9% for African American). Within specific occupations, Mexican-origin males are concentrated in construction and extraction, production, transportation and materials moving, food service, and building and grounds cleaning jobs.

Turning to demographic characteristics, Table 1 reveals that Mexican-origin men are more likely to have very low levels of education, are less likely to be U.S. citizens, and are more likely to live below the family income-to-poverty threshold than the other two groups of men. These employment factors combined with demographic characteristics highlight multiple barriers to employment-related health insurance coverage among employed Mexican-origin men.

For reasons explained earlier, we do not include firm size in the multivariate analysis. However, we show firm size distributions in Table 1 for illustrative purposes. Table 1 reveals a small difference between the percent of non-Hispanic white and Mexican-origin men employed in very small firms (23.1 percent versus 24.6 percent, respectively). This small difference is in sharp contrast to the major racial/ethnic group differences in firm size often reported in the literature. This disparity most likely reflects two factors. First, the literature typically reports differences in firm size distributions among wage earners excluding the self-employed. The self-employed are a sizable population, and a comprehensive picture of the relationship between employment and health insurance necessitates their inclusion as we have done here. Second, the type of employment within the smallest firms likely contributes to the differences in coverage associated with firm size. For example, Table 2 reveals that within very small firms, Mexican-origin men are likely to be employed in benefit-poor occupations such as construction or building/grounds cleaning and maintenance, whereas non-Hispanic white men are more likely to be employed in benefit-rich occupations such as management and sales. These intergroup occupational differences between non-Hispanic white and Mexican-origin workers suggest that distributional differences in firm size may be an overly simplistic explanation for low rates of health insurance for Mexican-origin men. Instead, large race/ethnic differences in the type of employment within small firm sizes may be more important.

Table 3 presents health insurance coverage rates within selected occupations. These occupations contain the ten greatest and three smallest coverage disparities between non-Hispanic white and Mexican-origin men, among occupations with at least 50 men in each race/ethnic group taken from the complete list of occupations in the CPS. The one exception is the police and sheriff's patrol officers occupation, which includes 49 Mexican-origin men. The first three columns present coverage rates for non-Hispanic white, Mexican-origin, and African American male workers, and the last two columns present the difference between Mexican-origin and non-Hispanic white, and Mexican-origin and African American, rates respectively. The table shows that within a select group of occupations Mexican-origin males are less likely than either non-Hispanic whites or African-Americans to have employment-based coverage. The only occupation in which Mexican-origin males are at an advantage in comparison to non-Hispanic white males is in the police and sheriff's patrol

category, although this difference is not statistically significant. In general, then, even within occupations the Mexican-origin health insurance disadvantage persists.

Of course this list of occupations represents only a small sample of the total list of occupations in the CPS and is presented only for illustrative purposes. A more complete list is presented in the appendices with percent differences in coverage between ethnic groups. Appendix A presents differences in health insurance coverage by occupations for Mexican-origin and non-Hispanic white men. Appendix B presents the same comparisons in health insurance but compares Mexican-origin with African-American men. Unfortunately, even this more refined list of occupations includes a great deal of heterogeneity that might account for differences in the probability of health insurance coverage among the three groups of men. As we mentioned in the introduction, small firms are less likely than larger firms to offer coverage. If within any particular occupation Mexican-origin men are more likely to be employed in the smaller and more marginal firms, their rates of coverage within a particular occupation may be lower. The picture that is emerging though suggests that the Mexican-origin disadvantage may result both from a lower likelihood of being employed in occupations, industries, and employment sectors that are more likely to offer health insurance, combined with a lower likelihood of coverage within similar occupations.

Multivariate Analyses

Table 4 presents the results of five logistic regression models in which we control for successive groups of predictors to determine the extent to which each contributes to the lower level of coverage among Mexican-origin workers revealed in Table 1. We should note that the results are not weighted, in part, because survey design information is not available in the CPS dataset, and design effects for post-estimation adjustment of standard errors from the CPS are not available for the Mexican-origin population. Furthermore, the multivariate analyses are unweighted because this is generally preferred when the weights are largely or entirely a function of the predictors (Winship and Radbill, 1994).

Model 1, the baseline model, controls only for race and Mexican-origin and once again reveals the substantial zero-order health insurance disadvantage among Mexican-origin workers. In this model, compared to non-Hispanic white male workers the odds of having employer/union health insurance are 87 percent for African-American working males, and 37 percent for Mexican-origin working males.

In Model 2, which introduces the occupations, the odds of coverage increase somewhat for African-American men and even more so for Mexican-origin men. Professionals, office and administrative support, and production occupations are associated with higher odds of coverage than the management occupations (the reference category), while most other occupations are associated with lower odds. Farming, fishing, and forestry, as well as construction and extraction in which Mexican-origin workers are disproportionately employed have very low odds of coverage. This model suggests, then, that the low general rate of coverage among Mexican-origin male workers is to some extent a reflection of their disproportionate representation in occupations with low overall coverage rates.

Model 3 introduces the remaining employment characteristics which include industry, work hours, and employment sector. The model indicates that men in the professional industries have much greater odds of coverage than those in the construction and agriculture industries, in which a large proportion of Mexican-origin men are employed. In this model, fulltime and public sector employment greatly increase the odds of coverage. Self-employed individuals are far less likely than private sector workers to have coverage. Again, the model suggests that the distribution of African-American and Mexican-origin men in terms of

hours worked and public sector employment represent health insurance vulnerabilities for each group, respectively.

Model 4 adds the demographic characteristics. This block of variables corroborates the descriptive findings and clearly reflects the elevated risk associated with low levels of education and a family income below poverty. It also illustrates clear health insurance benefits associated with marriage, including terminated marriage, older age, U.S. citizenship, and higher family income. The gap in the odds of coverage between non-Hispanic white men and Mexican-origin men is considerably reduced, indicating that individual-level demographic factors represent a clear health insurance risk for Mexican-origin male workers.

Finally, model 5 incorporates information on whether the respondent had health insurance as a dependent during the previous calendar year. The odds of health insurance among African-American men are no longer significantly different from those of non-Hispanic white men. In contrast, the odds of coverage for Mexican-origin men reduced from 0.82 to 0.73, suggesting that spousal coverage is an additional source of disadvantage among Mexican-origin men.

In Table 4 we also display the incremental contribution of each group of predictors using a likelihood ratio chi-square statistic (DeMaris, 1995). These results confirm that each successive group of predictors significantly improves the model fit, and that model 5 provides the best fit to the data. In separate analyses, shown at the bottom of Table 4, we also evaluate the contribution of each predictor group in the final model using a likelihood ratio test of the change in the deviance (−2LL) when the predictor group is removed from that model (DeMaris, 1995). The results of these diagnostic tests indicate that both demographic and employment characteristics significantly contribute to the final model, with the group of employment variables providing a somewhat larger reduction in the deviance (10,290) than the group of demographic variables (6,579), net of other predictors. Furthermore, non-occupation employment variables contribute more to the final model than occupation. These findings suggests that in addition to demographic characteristics, the concentration of Mexican-origin men in the construction and agriculture industries combined with their lower likelihood of being employed in the public sector contribute to their health insurance disadvantage, although they exhibit significantly lower odds of coverage than non-Hispanic white men even after controlling for these characteristics.

Summary and Conclusion

These data, as well as most other data, show that the Mexican-origin population faces an extremely high risk of lacking health insurance. Our analysis was motivated by the possibility that the explanation for the health insurance deficit in the Mexican-origin population at large reflects the concentration of Mexican-origin workers in sectors, industries, and occupations with generally low levels of coverage. The results of our descriptive and multivariate analyses suggest that these employment characteristics contribute to the explanation of low rates of coverage among Mexican-origin male workers, but it is not the sole explanation. As the detailed descriptive statistics in the Appendices reveal, even within occupations Mexican-origin male workers have far lower rates of coverage than either non-Hispanic white or African-American male workers. Other employment characteristics, including fulltime versus part-time employment and public sector employment, and individual demographic characteristics continue to have an impact. The answer to the question as to why the Mexican-origin population is at such high risk of lacking health insurance is more complicated then than a simple occupational concentration

explanation would suggest and our analysis raises other questions concerning the sources of the health insurance risk faced by this population.

The results are intriguing, though, and suggest that an occupational distribution explanation may yet hold in explaining more of the difference in coverage between Mexican-origin workers and others. Even with the large CPS sample it is impossible to examine the effects of such factors as specific occupation on the probability of health insurance coverage. Of necessity our twenty-two occupations are quite broad and include many different specific jobs. It is quite likely that within these occupations Mexican-origin workers are in the least attractive jobs in terms of benefits. In addition, as we mentioned earlier, it is likely that Mexican-origin workers, especially those who lack citizenship and who have very low levels of education, are employed in very small firms within certain occupations. To completely vet this potential explanation would require 88 interaction terms between occupations and firm sizes in the multivariate analysis. This is not feasible even with the large CPS sample size. Although we did not analyze these interactions, the disparate occupational distributions within the smaller firm sizes illustrated in Table 2 suggest that this explanation is reasonable. Taken together with our other findings, these results indicate that the occupational distribution within the smaller firm sizes is particularly disadvantageous for Mexican-origin men. Although Mexican-origin men are not significantly more likely to work within very small firms compared to non-Hispanic whites, when they do they are more likely to be employed in low-benefit occupations than non-Hispanic whites, and this occupation disadvantage attenuates with increasing firm size. Of course, as we mentioned earlier, we do not know whether the worker was offered coverage and chose not to pay for it. For Mexican-origin workers with large families the cost of coverage for a group plan that even a sponsored group plan requires may be too high.

The occupational sources of the risk of not having insurance operate at multiple levels. Mexican-origin workers, and especially non-citizens, are less likely than non-Hispanic whites to be in government jobs or in professional occupations in which coverage rates are higher. Excluded from these good jobs that offer benefits as part of the compensation package they find themselves having to look for work in sectors in which coverage is not offered. Even when coverage is offered, the employee contribution may be too high for individuals with limited incomes. Fully understanding the role of occupation on the risk of lacking insurance requires new data with richer information on employment history, the availability and cost of insurance for the individual and their spouse, and additional worker characteristics.

Our study clearly has other limitations. Since we focus on male workers we neglect the situation of a large fraction of the population. Nonetheless, given the employment basis of coverage in the U.S. it is important to understand how the tie between employment and insurance coverage works for Mexican-origin workers. The most vulnerable individuals in our current system are adults with no disabilities. The health insurance vulnerabilities of adult women are also serious. For adults who are unemployed or in jobs that do not offer coverage there are few options other than charity or the emergency room for serious illness. These are ineffective means of dealing with the chronic conditions that the poor and minorities are most likely to suffer. Policy solutions or health care reforms that do not deal adequately with the problems of uninsured workers are likely to be ineffective in guaranteeing the optimal health of the population. Given the fact that the U.S. is the only developed nation without universal health insurance coverage, understanding the unique vulnerabilities of specific groups is crucial if we are to design health care policy to address the needs of the most vulnerable workers and their families.

APPENDIX A

APPENDIX A

Percent of Employed Non-Hispanic White and Mexican-Origin Men with Health Insurance from their Employer or Union by Occupation[a]

Longest Occupation Last Year (CPS Categories)	Non-Hispanic White (%)	N	Mexican Origin (%)	N	Difference (%)
Inspectors, Testers, Sorters, Samplers, Weighers (8740)	71.8	401	27.0	81	−44.8**
Packaging and Filling Machine Operators (8800)	82.9	65	47.3	58	−35.6**
Electricians (6350)	68.5	783	34.1	90	−34.4**
Packers and Packagers (9640)	58.9	53	28.0	59	−30.9**
Pipelayers, Plumbers, Pipefitters, Steamfitters (6440)	60.5	599	33.2	90	−27.2**
Janitors and Building Cleaners (4220)	65.5	772	39.0	269	−26.5**
Automotive Service Technicians and Mechanics (7200)	49.3	856	24.4	142	−24.9**
Roofers (6510)	38.0	135	13.4	113	−24.5**
Production Workers (8960)	77.6	478	53.1	153	−24.5**
Metal and Plastic Workers (8220)	86.4	201	62.2	84	−24.2**
Miscellaneous Assemblers and Fabricators (7750)	68.0	526	43.9	112	−24.0**
Grounds Maintenance Workers (4250)	39.5	463	17.1	453	−22.4**
Industrial Truck and Tractor Operators (9600)	73.3	284	53.0	134	−20.3**
Dishwashers (4140)	36.5	69	16.6	88	−20.0**
Shipping, Receiving, Traffic Clerks (5610)	76.0	287	56.5	83	−19.5**
Driver/sales Workers and Truck Drivers (9130)	59.6	2720	40.8	411	−18.8**
Customer Service Representatives (5240)	69.3	393	51.1	58	−18.2**
Brickmasons, Blockmasons, Stonemasons (6220)	34.3	150	16.6	86	−17.7**
Laborers and Freight, Stock, and Material Movers (9620)	60.8	925	43.7	267	−17.1**
Sales Representatives, Wholesale and Manufacturing (4850)	58.1	1520	41.4	157	−16.7**
Construction Laborers (6260)	37.5	676	21.2	534	−16.3**
Weldering, Soldering and Brazing Workers (8140)	71.1	473	55.1	109	−16.1**
Food Service Managers (0310)	54.6	393	39.0	70	−15.6*
Cashiers (4720)	36.9	259	22.6	90	−14.3*
Carpenters (6230)	32.5	1560	18.4	419	−14.0**
Managers, All Others (0430)	69.5	2410	55.6	120	−13.9**
Painters, Construction ,Maintenance (6420)	25.2	388	11.5	185	−13.7**
Stock Clerks and Order Fillers (5620)	57.2	457	44.8	110	−12.5*
First-line Supervisors in Production and Operations (7700)	84.6	744	72.2	90	−12.4**
Miscellaneous Agricultural Workers (6050)	33.2	308	21.9	341	−11.3**
Carpet, Floor, and Tile Installers and Finishers (6240)	23.3	179	12.2	89	−11.1*
Helpers, Construction Trades (6600)	27.9	51	17.8	52	−10.2
Waiters and Waitresses (4110)	28.8	224	19.1	77	−9.7
First-line Supervisors in Construction and Extraction (6200)	53.9	1047	44.5	116	−9.4
First-line Supervisors in Retail Sales (4700)	64.5	2003	56.0	175	−8.5*
First-line Supervisors in Non-Retail Sales (4710)	68.1	1048	60.0	74	−8.1
Maintenance and Repair Workers (7340)	75.7	322	68.0	50	−7.7

Longest Occupation Last Year (CPS Categories)	Non-Hispanic White (%)	N	Mexican Origin (%)	N	Difference (%)
Drywall Installers, Ceiling Tile Installers and Tapers (6330)	24.6	146	17.0	146	−7.5
Food Preparation Workers (4030)	24.8	100	18.8	80	−5.9
Cleaners of Vehicles and Equipment (9610)	43.6	133	39.3	80	−4.3
Cooks (4020)	21.8	413	17.5	396	−4.3
Dining/Cafeteria Attenders, Bartender Helpers (4130)	24.6	52	21.3	63	−3.3
Construction Managers (0220)	54.3	898	51.2	50	−3.1
Sales Representatives in Services or Other (4840)	76.2	1170	74.9	60	−1.3
Butchers, Meat/Poultry/Fish Processing Workers (7810)	59.7	125	59.7	138	0.0
List contains this percent of all employed males 18-64 (%)		*42.7*		*68.9*	

* $p \leq 0.05$

** $p \leq 0.01$.

[a] Table includes occupations with at least 50 non-Hispanic White and 50 Mexican-Origin males.

Source: 2004 and 2006 Annual Social and Economic Supplements, *Current Population Survey*.

APPENDIX B

APPENDIX B

Percent of Employed African-American and Mexican-Origin Men with Health Insurance from their Employer or Union by Occupation[a]

Longest Occupation Last Year (CPS Categories)	African American (%)	N	Mexican Origin (%)	N	Difference (%)
Electricians (6350)	67.8	80	34.1	90	−33.7**
Miscellaneous Assemblers and Fabricators (7750)	73.2	99	43.9	112	−29.3**
Automotive Service Technicians and Mechanics (7200)	50.1	56	24.4	142	−25.6**
Janitors and Building Cleaners (4220)	60.2	284	39.0	269	−21.3**
Cooks (4020)	35.1	139	17.5	396	−17.6**
Grounds Maintenance Workers (4250)	34.2	72	17.1	453	−17.2**
Carpenters (6230)	32.4	86	18.4	419	−13.9**
Driver/sales Workers and Truck Drivers (9130)	54.5	490	40.8	411	−13.7**
Managers, All Other Types (0430)	68.5	131	55.6	120	−12.9*
Production Workers (8960)	65.8	118	53.1	153	−12.7**
Customer Service Representatives (5240)	63.3	66	51.1	58	−12.2
Laborers and Freight, Stock and Material Movers (9620)	55.0	241	43.7	267	−11.3**
First-line Supervisors in Production and Operations (7700)	83.3	72	72.2	90	−11.0
First-line Supervisors in Retail Sales (4700)	65.4	131	56.0	175	−9.4
Sales Representatives, Wholesale & Manufacturing (4850)	50.8	146	41.4	157	−9.3
Stock Clerks and Order Fillers (5620)	50.2	125	44.8	110	−5.4
Industrial Truck and Tractor Operators (9600)	58.3	114	53.0	134	−5.3
Construction Laborers (6260)	24.9	107	21.2	534	−3.7
Shipping, Receiving and Traffic Clerks (5610)	53.3	61	56.5	83	3.2
List contains this percent of all employed males 18-64 (%)		*36.0*		*42.9*	

*$p < 0.05$

**$p \leq 0.01$.

[a] Table includes occupations with at least 50 African-American and 50 Mexican Origin males.

Source: 2004 and 2006 Annual Social and Economic Supplements, *Current Population Survey*.

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TABLE 1

Employment and Demographic Characteristics of Employed Men by Race and Mexican Origin

Characteristic	Non-Hispanic White	Mexican-Origin	African American	χ^2 or F-test[a]
Employment Hours (%)				51**
Fulltime[b]	93.3	93.9	91.1	
Employment Sector (%)				1486**
Private	72.7	87.2	76.9	
Public	12.4	6.1	17.0	
Self-employed	14.9	6.8	6.1	
Industry (%)				1669**
Professional	35.4	20.6	37.6	
Manufacturing	16.5	15.6	15.7	
Services	32.4	34.9	37.7	
Construction and agriculture	15.8	28.9	9.0	
Occupation (%)				8042**
Management	15.2	4.5	6.3	
Business and financial operations	4.1	1.1	2.8	
Computer and mathematical sciences	3.3	0.8	2.4	
Architecture and engineering	3.7	0.7	1.9	
Life, physical, and social sciences	1.2	0.2	0.7	
Community and social service	1.1	0.5	2.1	
Legal	1.3	0.2	0.5	
Education, training and library	3.3	1.1	2.5	
Arts, design, entertainment, sports, media	2.0	1.0	1.7	
Healthcare practitioner and technical	2.6	0.7	2.0	
Healthcare support	0.3	0.3	1.1	
Public safety, protective service	3.0	1.8	5.6	
Food preparation and serving	2.4	8.6	4.8	
Building and grounds cleaning, maintenance	2.7	9.0	6.1	
Personal care and service	0.9	0.8	2.3	
Sales	11.9	6.5	6.9	
Office and administrative support	5.6	5.5	9.6	
Farming, fishing and forestry	0.7	3.7	0.6	
Construction and extraction	10.7	23.1	7.7	
Installation, maintenance and repair	7.3	6.0	5.2	
Production	8.5	13.1	10.9	
Transportation and material moving	8.5	11.2	16.5	
Firm Size (%)				1148**
Less than 10 employees	23.1	24.6	13.8	
10 – 24	9.4	15.7	7.4	

Characteristic	Non-Hispanic White	Mexican-Origin	African American	χ^2 or F-test[a]
25 – 99	13.2	17.5	12.8	
100 or more	54.3	42.3	66.0	
Firm Size Excluding Self-Employed (%)				1247**
Less than 10 employees	12.1	19.9	8.9	
10 – 24	9.7	16.5	7.5	
25 – 99	14.8	18.5	13.5	
100 or more	63.4	45.1	70.1	
Age (mean)	41.7	35.4	39.6	1250**
Education (%)				14647**
Less than high school	6.1	45.5	10.4	
High school degree	31.4	30.6	40.2	
Some college or associates degree	27.6	16.5	28.7	
Bachelors degree or higher	34.9	7.3	20.7	
Marital Status (%)				1763**
Married	65.7	59.5	47.9	
Divorced, separated, widowed	11.7	7.8	14.9	
Never married	22.5	32.7	37.2	
Family Size (mean)	2.4	2.7	2.1	420**
U.S. Citizen (%)	97.8	48.1	93.5	26260**
Families Below Poverty Threshold (%)	2.7	12.1	5.4	1994**
Had Health Insurance from Own Employer (%)	66.2	39.6	60.8	2150**
Had Health Insurance as a Dependent (%)	18.4	9.1	15.7	568**
Had No Form of Health Insurance (%)	13.9	48.0	22.5	6447**
N	63,834	9,729	7,264	

*$p \leq 0.05$

**$p \leq 0.01$.

[a]Significant differences across race/ethnic groups based on F-tests for age and family size, and χ^2 tests for all other variables.

[b]Fulltime defined as 35 or more hours per week.

Source: 2004 and 2006 Annual Social and Economic Supplements, *Current Population Survey*.

TABLE 2

Occupations and Employment Sectors Within Firm Sizes by Race and Mexican Origin

Firm Size (employees)	**Non-Hispanic White**		**Mexican-Origin**		**African-American**	
Small (<10)	*Occupation*	%	*Occupation*	%	*Occupation*	%
	Construction	20.4	Construction	33.5	Construction	19.4
	Management	19.1	Building/grounds	13.3	Transportation	16.1
	Sales	13.5	Production	7.9	Management	10.1
	Install/maint	7.4	Install/maint	7.7	Sales	9.8
	Other	39.6	Other	37.6	Other	44.6
	Total	*100.0*	*Total*	*100.0*	*Total*	*100.0*
	Sector	%	*Sector*	%	*Sector*	%
	Private	43.7	Private	75.1	Private	59.2
	Public	0.7	Public	0.4	Public	1.4
	Self-employed	55.6	Self-employed	24.5	Self-employed	39.4
	Total	*100.0*	*Total*	*100.0*	*Total*	*100.0*
Medium (10 to 99)	*Occupation*	%	*Occupation*	%	*Occupation*	%
	Management	15.2	Construction	29.7	Transportation	20.0
	Construction	13.6	Production	14.4	Construction	11.0
	Sales	13.2	Transportation	11.5	Production	10.4
	Production	9.7	Food serve/prep	10.5	Office/admin	8.0
	Other	48.3	Other	33.9	Other	50.6
	Total	*100.0*	*Total*	*100.0*	*Total*	*100.0*
	Sector	%	*Sector*	%	*Sector*	%
	Private	87.7	Private	97.2	Private	94.0
	Public	4.6	Public	1.1	Public	3.5
	Self-employed	7.7	Self-employed	1.7	Self-employed	2.5
	Total	*100.0*	*Total*	*100.0*	*Total*	*100.0*
Large (100 plus)	*Occupation*	%	*Occupation*	%	*Occupation*	%
	Management	13.6	Production	15.3	Transportation	15.6
	Sales	10.6	Transportation	13.3	Production	12.2

Firm Size (employees)	Non-Hispanic White		Mexican-Origin		African-American	
	Production	9.6	Construction	11.8	Office/admin	11.5
	Transportation	9.1	Office/admin	9.0	Public safety	6.9
	Other	57.1	Other	50.6	Other	53.8
	Total	*100.0*	*Total*	*100.0*	*Total*	*100.0*
	Sector	%	*Sector*	%	*Sector*	%
	Private	78.8	Private	86.3	Private	75.4
	Public	20.6	Public	13.2	Public	24.4
	Self-employed	0.6	Self-employed	0.4	Self-employed	0.2
	Total	*100.0*	*Total*	*100.0*	*Total*	*100.0*
N	63,834		9,729		7,264	

Source: 2004 and 2006 Annual Social and Economic Supplements, *Current Population Survey*

TABLE 3

Occupational Differences in Having Own Employer/Union Health Insurance by Race and Mexican Origin

Occupation	(A) Non-Hispanic White	(B) Mexican-Origin	(C) African American	(B)-(A) Difference	(B)-(C) Difference
Inspectors, testers, sorters, samplers	71.8	27.0	75.6 [a]	−44.8**	−48.6**
Packaging, filling machine operators	82.9	47.3	68.9 [a]	−35.6**	−21.6*
Electricians	68.5	34.1	67.8	−34.4**	−33.7**
Packers and packagers	58.9	28.0	52.7 [a]	−30.9**	−24.7*
Pipelayers, plumbers, pipefitters	60.5	33.2	60.5 [a]	−27.2**	−27.3**
Janitors and building cleaners	65.5	39.0	60.2	−26.5**	−21.3**
Automotive service technicians	49.3	24.4	50.1	−24.9**	−25.6**
Roofers	38.0	13.4	15.7 [a]	−24.5**	−2.3
Production workers	77.6	53.1	65.8	−24.5**	−12.7*
Metal and plastic workers	86.4	62.2	87.2 [a]	−24.2**	−25.1**
…					
Construction managers	54.3	51.2	23.1 [a]	−3.1	+28.1*
Sales representatives in services	76.2	74.9	47.5 [a]	−1.3	+27.4**
Butchers, meat/poultry/fish workers	59.7	59.7	49.2 [a]	0	+10.4
Police and sheriff's patrol officers[b]	92.4	94.6 [a,b]	86.5	+2.2	+8.2
List contains this % of all employed males 18-64	11.1	14.8	12.0	---	---

* p ≤ 0.05

** p≤ 0.01.

[a] Cell size is less than 50. All other cells contain a minimum of 50 persons.

[b] Although below the threshold (N=49), we show the police and sheriff's patrol category because Mexican-origin males are slightly more likely than non-Hispanic white males to report coverage.

Source: 2004 and 2006 Annual Social and Economic Supplements, *Current Population Survey*.

TABLE 4

Odds Ratios for Having Health Insurance from Own Employer/Union (N=80,827)

Risk Factors[a]	**(1) Base**	**(2) Occupation**	**(3) Other employment**	**(4) Demo-graphics**	**(5) Full**
Race/Ethnicity (Non-Hispanic White)					
African American	0.87**	0.91**	0.78**	0.93**	0.97
Mexican Origin	0.37**	0.48**	0.42**	0.82**	0.73**
Occupation (Management)					
Architecture and engineering		2.51**	1.26**	1.19**	1.21**
Healthcare practitioner and technical		1.24**	1.16*	1.06	1.05
Computer and mathematical sciences		1.77**	1.01	1.01	1.00
Life, physical, and social sciences		1.84**	0.96	0.95	0.98
Office and administrative support		1.14**	0.67**	0.88**	0.98
Legal		1.05	0.99	0.85**	0.95
Installation, maintenance and repair		0.95	0.64**	0.84**	0.88**
Production		1.26**	0.56**	0.83**	0.88**
Public safety, protective service		2.21**	0.65**	0.83**	0.91
Business and financial operations		1.17**	0.87**	0.83**	0.90
Sales		0.75**	0.67**	0.77**	0.82**
Education, training and library		1.91**	0.71**	0.73**	0.88
Transportation and material moving		0.71**	0.51**	0.72**	0.73**
Arts, design, entertainment, sports, media		0.61**	0.60**	0.67**	0.69**
Healthcare support		0.60**	0.42**	0.64**	0.72*
Construction and extraction		0.40**	0.45**	0.64**	0.63**
Community and social service		1.10	0.58**	0.59**	0.64**
Building and grounds cleaning, maintenance		0.49**	0.33**	0.58**	0.64**
Personal care and service		0.36**	0.38**	0.52**	0.55**
Farming, fishing and forestry		0.24**	0.25**	0.43**	0.41**

Risk Factors[a]	(1) Base	(2) Occupation	(3) Other employment	(4) Demo-graphics	(5) Full
Food preparation and serving		0.24**	0.20**	0.38**	0.41**
Industry (Professional)					
Manufacturing			1.66**	1.71**	1.81**
Services			0.87**	0.94**	0.96
Construction and agriculture			0.60**	0.69**	0.72**
Fulltime Employment (Part-time)			5.02**	3.96**	3.32**
Employment Sector (Private)					
Public			2.84**	2.41**	2.42**
Self-employed			0.20**	0.18**	0.16**
Education (High School)					
Less than high school				0.71**	0.67**
Some college or associates degree				1.19**	1.22**
Bachelors or higher				1.48**	1.45**
Marital Status (Never Married)					
Married				1.13**	1.66**
Divorced, separated, widowed				1.50**	1.29**
Age (18-35 years)					
36 – 47 years				1.29**	1.30**
48 – 64 years				1.42**	1.42**
U.S. Citizen (Not a Citizen)				1.69**	1.94**
Family Size				1.08**	1.13**
Family Income to Poverty Ratio (<1.00)					
1.00 to 1.99				1.95**	2.10**
2.00 to 2.99				3.32**	4.32**
3.00 to 3.99				4.10**	6.40**
4.00 or greater				4.23**	8.37**

Risk Factors[a]	(1) Base	(2) Occupation	(3) Other employment	(4) Demo-graphics	(5) Full
Had Health Insurance as a Dependent					0.07**
$-2LL_i$	104652	99597	89026	85493	72364
$-2LL_i-(-2LL_i-1)$[b]	2084**	5055**	10571**	3533**	13129**
Pseudo R-Square [c]	0.02	0.07	0.17	0.20	0.32
Akaike Information Criterion	104660	99647	89088	85581	72454

Increase in $-2LL_5$ if model 5 excludes the:	
Occupation variable	*472* **
Non-occupation employment variables	*7,832* **
All employment variables	*10,290* **
Demographic variables	*6,579* **

* $p \leq 0.05$

** $p \leq 0.01$.

[a] Reference group in parentheses.

[b] Significance indicates improvement over the previous model.

[c] Pseudo R-square estimated with the formula $[-2LL_0-(-2LL_i)] / [-2LL_0]$, using the log likelihood from the intercept only model ($-2LL_0 = 106736$) for all estimates.

Source: 2004 and 2006 Annual Social and Economic Supplements, *Current Population Survey*.