CHEAPER BY THE IMMIGRANT: WOULD COVERING NEW IMMIGRANTS FROM MEXICO LOWER HEALTH COSTS AND HEALTH PREMIUMS?

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Background

A key plank of the new health care law is the expansion of Medicaid coverage. Projections suggest that 50% of the people acquiring health insurance under health reform will do so through Medicaid expansion.(1) However, the one group that has been left out of the expansion is recent undocumented immigrants, including unauthorized immigrants who have lived in the U.S. for over five years, estimated to number 11.2 million (or 3.7% of the population and 5.2% of the workforce) in 2010.(2) Given that not having insurance coverage creates barriers to timely access of care, which potentially averts expensive care in the long term, it is possible that this gap in extended coverage represents a missed opportunity from both a fiscal efficiency and collective morality perspective.

Hispanics are a key immigrant subgroup excluded from certain provisions in the new health legislation.(3) Among Hispanics, Mexican-origin migrant adults who are neither citizens nor legal permanent residents are the least likely to have coverage (4-6). They are also less likely than the native born to have access to a regular health care provider, partly because of the high cost of such care and partly due to the lack of coverage.(5,8) Having continuous insurance coverage is associated with lower morbidity and mortality and could curb disparities in health care.(1, 9-11) Other studies have shown that having coverage is one of many factors predictive of favorable health outcomes.(12) However, the causality of the relationship between health insurance status and health outcomes are often called into question.(13)

A lesser-known benefit of expanding health coverage to new immigrants is the potential to lower health premiums in the exchange markets. Immigrants tend to be healthy relative to native-born citizens, and this is true of Mexican-origin immigrants.(14) Therefore, excluding immigrants means those currently enrolled pay higher health premiums than they otherwise would because those enrolled are less healthy then immigrants. The Oregon experiment showed that even enrollees who are low users of health care benefit from improved mental health outcomes because of lower financial worries.(15)

With the passing of the Patient Protection and Affordable Care Act of 2010 (PPACA), insurance coverage disparities for the general population should be greatly reduced through expansion of the

Medicaid program, requirements that employers provide workers with coverage or face penalties, and the individual mandate that all U.S. citizens be covered. Additionally, coverage for most legal non-citizen residents will improve with the expansion of Medicaid to cover all individuals under 133 percent of the federal poverty level (FPL). Moreover, while the five-year wait period created by PRWORA will still apply, legal non-citizen residents will be able to buy insurance through the exchanges created by PPACA and will be eligible to receive tax credits based on their income relative to FPL.(16)

Even so, this still leaves out 6.5 million undocumented immigrants from Mexico, representing the vast majority (58%) of the total population in 2011.(2) In this paper we characterize this group based on the best available survey data from two sources and examine the potential long-run costs and benefits of providing coverage to them.

Immigration, Coverage and Health

The Demographics of Mexican Migrants

The majority of immigrants from Mexico come to the U.S. for work.(17) Those who migrate from Mexico have significantly lower levels of educational attainment than non-Mexican immigrants. 63 percent of adult male Mexican immigrants to the U.S. had not completed high school in 2000 compared to 17 percent of non-Mexican immigrants and 8.7 percent of native-born males.(18) Furthermore, while other immigrants typically acquire wage parity over time with assimilation to U.S. culture, this pattern does not hold for Mexican-origin immigrants largely due to lower levels of education.(18) These persistent disparities in education and income may have direct and indirect long-term negative impacts on health.

Mexican migrants are more likely to be male with 41 percent under the age of 40.(19) An increasing portion are undocumented. During the period of 1993 to 1997, less than half of Mexican migrants lacked documentation; this grew to 75 percent between 2001 and 2004.(19) They are also increasingly apt to become permanent residents of the U.S. This has resulted in the average length of stay increasing from 5.5 to 11.2 months.(19)

As mentioned earlier, less acculturated individuals who have recently migrated to the U.S. from Mexico tend to be healthier than their U.S.-born Mexican counterparts, *ceteris paribus*. This is because those who migrate need to be of healthy stock to survive without cultural and familial support, leading many to theorize that the health required to migrate increases with distance of immigration.(20) However, health worsens the longer individuals remain in the U.S. This worsening health has been shown to occur over as little as a decade, but research shows that their health continues to decline through the third generation.(21-23)

Health and Illness Behavior

Studies provide two compelling explanations for this initial health advantage and subsequent decline. The first, the healthy migrant hypothesis, maintains that, because migrating to a new country where one might have little social and economic support is risky and arduous, one needs to be relatively healthy. Those who are not, remain home in Mexico. The second, known as the acculturation hypothesis, states that individuals migrating from Mexico bring better health habits (e.g., better nutrition, lower rates of smoking, less alcohol consumption) with them, and that these positive health habits erode with time spent in the U.S.(24-31)

Additionally, due partly to lack of health insurance coverage, Mexican immigrants have low levels of health care utilization in the United States irrespective of documentation status and of how utilization is measured.(4, 30) Two-thirds of those who have been in the U.S. for less than 10 years do not have health insurance compared to 45 percent of long-stay (over 10 years) Mexican immigrants, 22.5 percent of U.S.-born Mexican-Americans, and 12.3 percent of U.S.-born non-Hispanic whites.(19) Other barriers to accessing needed care in the U.S. include lack of personal resources to self-pay for care, lack of time to seek care, inadequate transportation and mobility services, use of "traditional" medicine, low levels of knowledge about Medicaid rights (for immigrants with legal status) which varies by state, and perceptions of discrimination and poor care when one does seek care, low supply of Spanish-speaking health care professionals and cultural barriers.(4,16, 32-39)

Furthermore, some evidence shows that Mexican migrants substitute Mexican health services for health care in the U.S., especially those residing along the U.S.-Mexico border.(20, 40) Mexican immigrants can avoid the cultural barriers and pay markedly lower costs by delaying care until they return home. This may have a negative impact on the perceived need for health insurance in the U.S.(41)

Adverse Selection

In this study we are particularly interested in the effect of insurance coverage on health. Multiple studies have shown that having health coverage reduces morbidity and mortality by reducing barriers to health care access.(1,9,11) However, this evidence is mixed with some studies showing that coverage leads to overutilization of care at some levels ("moral hazard") without improving health outcomes.(12,15) Additionally, "adverse selection" mediates the relationship between health and insurance coverage; specifically, those who sicker or who have a greater likelihood of needing health care services are more likely to purchase health insurance than those who are/do not.(10, 42-44) The presence of adverse selection and moral hazard can make it paradoxically appear that insurance leads to worse health.(12, 43) Mexican immigrants are particularly susceptible to adverse selection spirals because they are relatively healthy and also especially price sensitive due to their low incomes.

Self-Reported Health

Many studies on Hispanic /Latino samples that utilize health as a construct measure it through one item that asks respondents to rate their health as being excellent, good, fair or poor (sometimes "very good" is included as an option).(25, 45-46) While this scale has been shown to be a valid measure of actual health status in English-speaking populations, the problem is that, when it is translated to Spanish the "fair" option "*regular*" which means "normal" just as it does in English; thus, perceived health is inaccurately measured alongside Anglos.(31, 47-48)

Methodology

We use data from the Mexican Migrant Project (MMP) for our analysis. Since 1987, Princeton University and the University of Guadalajara in Mexico have conducted the Mexican Migrant Project (MMP) and data are available through 2011. Sampling is based on a random selection of communities in Mexico from which households are randomly sampled for structured interviews on an annual basis. The dataset includes 19 of 31 states in Mexico and communities selected are both urban and rural and not necessarily known for high rates of out-migration. The MPP includes data on age, self-rated health (poor, regular, good, excellent), health insurance coverage, and information about whether the person is working and in what industry. It also has information about work history and patterns of return to Mexico as well as citizenship and green card status. Finally, it has information on social support received by immigrant groups from Mexico in their community.

Interviewers gather information about community members currently residing in the United States. Interviews are conducted in both the U.S. and Mexico. Prior research confirms that the survey design process and data are valid and reliable.(49)

The health questions we utilize were first asked on the 2007 survey and our analyses are based on data from the cohort interviewed between 2007 and 2011. All the interviews from which our data are drawn took place in Mexico. Women make up a small portion of the sample (5%) and are therefore omitted from the analysis. The MMP is a cross-sectional dataset, but it contains retrospective questions about the lifetime work history and border crossings and, as such, can be structured as a longitudinal panel data set. We used the retrospective questions to build individual profiles of work, immigration, health insurance status and self-reported health history.

Our specification is as follows: $y_i = a + B_j x_{ji} + \Theta_j h_{ji} + \Gamma_{ji} + e_{i.}$

The subscript *i* indicates the individual. Our outcome variable (y_i) is change in self-reported health between first arrival in the U.S. and time of interview. The respondents were asked to rate their overall health as Poor (0), Fair (1), Good (3) or Excellent (4). Possible values of the outcome variable are 0 or 1. The value 0 refers to self-rated health improving or staying the same; 1 means that it declined over time. The intercept is *a*, alpha. βx_i are demographic and initial health characteristics of the individual including

(a) age at interview, (b) self-rated health prior to U.S. migration, (c) monthly income (in dollars) at last migration, and (d) years of education. Θh_{ji} are work history by industry sector (agricultural or professional sectors), and portion of time spent in the U.S. since first migration (possible values range from 0 to 1). Γ_{ji} include health utilization and insurance access (a) a dummy variable for having been to a doctor or hospital while in the U.S. (1 if Yes), and (b) a dummy variable for having used private insurance to pay a medical bill while in the U.S. (1 = Yes, 0 = no and/or did not have a health-related bill while in the U.S.). Lastly, we included a trend variable for year of survey. We excluded individuals missing data for any of the outcome or predictor variables. For monthly income, we replaced missing values with the average income value (the equilibrium market wage) matching the occupation category in which the individual was employed.

We estimate four logistic regression models to assess the influence of time spent in the U.S. on changes in self-rated health in a marginalized immigrant population. We controlled for age, and whether he had spent 10 cumulative years in the U.S. We also controlled for experience in the professional and agricultural sectors, the two biggest in our sample. We controlled for years of education and income, which is standard,(50,51) and region of origin from within Mexico. The first model incorporates all of the predictor variables except for age at time of interview; the second model incorporates age. Our third and fourth models exclude our health care utilization dummy variable in order to test the significance of this interaction term. Because age is inextricably linked with the predictor variables, we exclude it in the first and third models to reveal the substantive importance of the other covariates.

Finally, we estimate the relative annual costs of providing health insurance to individuals in this population using data from the household component (HC-129) file of the 2009 Medical Expenditure Panel Survey (MEPS). MEPS is a nationally representative survey of the U.S. civilian non-institutionalized population sponsored by the Agency for Healthcare Research and Quality and the National Center for Health Statistics. The analyses excluded respondents who (a) were institutionalized, non-civilian or residing outside the U.S. during a portion of the year surveyed, (b) were under the age of

18 for some or all of the year, (c) women, (d) were not eligible to complete the SAQ, (e) who did not complete the SAQ in 2009, (f) those who did not provide their self-rated health at the last question period, (g) individuals eligible for expanded Medicaid (<=133% FPL), and (h) individuals who, if employed, worked for firms with more than 200 employees in order to arrive at a final sample of individuals who would be eligible and likely to purchase health insurance through the insurance exchanges either directly or under a small-group employer policy (final n=6,003).

We estimated total annual health care expenditures using the following model:

$$log(expend) = \alpha + \beta_1 srhealth + \beta_2 mexican + \beta_3 less10yr + \beta_4 age + \beta_5 log(educ) + \beta_6 uninsured + \beta_7 povcat.$$

We used average values of the predictor variables to estimate average annual total health care expenditures for the MMP sample, and then estimated average insurance costs by multiplying the predicted expenditures by 1.15 (i.e. the maximum medical loss ratio allowed by PPACA). We then compared this to the predicted average insurance costs for our Mexican migrant sample at two time points, at first migration to the U.S. and at time of interview based on average values of our predictor variables at those two time points.

Results

Table 1 provides descriptive statistics. The first column, labeled "Combined", provides the statistics for the sample. In general, the sample is middle aged at the time of the survey, but arrived to the U.S. during their mid-twenties. Even though the difference between the average age at survey and the average age at arrival is 20 years, the cumulative years in the U.S. is less than one-third of this, indicating numerous episodes of work in Mexico. The sample is dominated by immigrants from Central and Southern Mexico. Very few are legal residents or U.S. citizens at the time of survey, and the cumulative years of schooling is low.

/Insert Table 1/

In accordance with the healthy migrant hypothesis, Table 1 shows that the health of the sample is quite good. No one reported poor health at the time of the arrival in the U.S., and approximately two-

thirds did not report a decline in health over their time since first arriving in the U.S. (403 of 648). Only 36.4 percent used health service in the U.S., which is quite low for being here an **average** of six years. 38.1 percent of those who used medical services in the U.S. paid for a health service in the U.S. with insurance. Members of the sample may have used health care services in Mexico, and may have substituted access in Mexico for health insurance in the U.S. Finally, they may have been very healthy and not needed medical care.

Columns two and three show differences in migrant characteristics between the group with unchanged or improved health and the group that experienced health decline between first migration to the U.S. and time of interview. Specifically, those with no health declines were on average 12 years younger, had almost two more years of education, had $125 more income per month, and spent fewer years in the U.S. (5.13 vs. 7.84). Moreover, those with no health declines were more likely to be from either the Northern or Southern region of Mexico, not have legal status in the U.S., and not to have used health care services while in the United States compared to those reporting health declines.

Table 2 shows that as the region of origin increases from the U.S. border, the probability of using U.S. medical services decreases. The relationship is statistically significant (p=.002). Using Brown's argument, this implies that those from the Southern region may be healthier and in less need of care in comparison to those from other regions.(20)

/Insert Table 2/

Table 3 reports the results from the four logistic regression models. In each model, we are predicting the likelihood of decline in health by any amount from initial pre-migration level. Most men were in good or excellent health, and only 10.2 percent declined more than one category during the time in the U.S. (data not shown).

/Insert Table 3/

In the first set of models a one-unit increase in health prior to U.S. migration increases the odds of a decline in health by 4.55 when age is excluded from the model. Including age does not reduce the odds greatly. Other significant variables are monthly income (measured in hundreds of dollars, so $1,400 /

month is 1.4), years of education, health care utilization while in the United States, and being from Central Mexico. Each $100 increase in monthly income lowers the odds of health declining by .97; similarly an additional year of education lowers the odds of decline by .89. U.S. health care utilization and being from Central Mexico increase the odds of health declining by 1.83 and 4.45, respectively.

When the age variable is added to the first model (model 2), the income and education variables lose their statistical significance – although years of education remains borderline significant with a p-value of .065. Age itself is a significant predictor; specifically, each additional year of age at interview increases the odds of health declining by 1.05.

One of our main hypotheses is that insurance protects against health decline. Our variable, 'Used insurance (public or private) to pay a U.S. medical bill' (1=yes, 0=no), is not significant. Recall that this variable can be thought of as an interaction term between 'Used U.S. medical services' (1=yes, 0=no), and having insurance to pay for part or all of it. In other words, we do not have data on whether a person has insurance, independent of using health care in the U.S. Using health services in the U.S. is positively associated with health decline, partly because people use health services when their health declines (reverse causality) and that people learn of chronic illnesses.

Models 3 and 4 removed the U.S. health care utilization dummy variable from Models 1 and 2, respectively. We did so to examine our interaction term, paid for health care in the U.S. with insurance, alone. The results did not change much. While the odds ratios for the insurance variable increased, they did not become significant at the .05 level. For the model that includes the age variable, the p-value of the insurance variable is 0.064. This could indicate that those using health care are doing so when they suffer a health decline, or that they learn of chronic illnesses during the visit.

Table 4 shows our insurance cost estimate. Column 1 shows that the health status of those joining the exchange in 2014 (who are currently uninsured) is good, and that their costs are quite low. This is exactly what adverse selection would predict. On the other hand, the MMP sample reports slightly worse health status prior to immigrating to the U.S., probably due to the cultural reasons listed earlier. However,

the predicted costs are even lower. Whether having insurance protects health is a tricky question, but whether covering those in the MMP sample in inexpensive is not.

/Insert Table 4/

Discussion

The major findings of this study provide important information about the key group left out of recent healthcare reform: recent immigrants, undocumented immigrants, and migrant workers, all from Mexico. Our research demonstrates that positive selection does occur in immigration. Specifically, members of the sample were healthier upon arrival than Mexican Americans of their age residing in the U.S. However, their health declined at a faster rate, on average, than their native-born counterparts in the U.S., so that, at time of interview, they report worse health than their counterparts in the U.S.

Although we cannot say insurance is protective against health decline, our cost estimate data, demonstrate that covering Mexican immigrants is inexpensive. Their inclusion in the exchanges could be a potential asset because average health costs decline if they are included. Rather than a burden under the PPACA, including immigrants from Mexico could ease premium costs for the working non-immigrant poor.

We find that exposure to agriculture increases the risk of poor health, but this appears to be a function of age, at least partially, as its statistical significance is reduced when age is added to the model. It is possible that older Mexican migrants are more likely to have worked in agriculture than their younger counterparts. The literature supports this.(19) Certainly, those who have spent more time in the U.S. will have accumulated more time working in specific industries. Age, in fact, appears to explain most of the duration of residence effects we modeled. However, it also, independently, explains a portion of declines in health.(52)

Place of residence also matters. The data reveal that individuals who migrate from the Northern region of Mexico are younger, have fewer years of work experience in the U.S., and are more likely to have visited a doctor or be admitted to a hospital while in the U.S. than those from the Central and

Southern regions. We should also note that while going to a doctor or hospital and having private insurance appear in our analysis to be a positive predictor of greater declines in health, it may be an artifact of adverse selection (i.e., those who are already sick are more likely to go to the doctor and purchase insurance).

As in previous studies, our data clearly show that Mexican men who migrate for work tend to be younger and healthier upon arrival to the United States than men who remain in Mexico.(20, 53, 54) For an exception to the healthy migrant hypothesis see Rubalcava et al., 2008.(55) Even so, the tenuous nature of the "Hispanic paradox" emerges in our results; the health advantage among male immigrants observed initially erodes with time spent in the U.S. Although it is conceivable that access to health services may improve with increased time of residence, individuals of Mexican-origin encounter numerous structural barriers (e.g., education and work) to obtaining U.S. health insurance, which in turn makes it difficult to obtain high quality health care.(6) Although policy makers do not yet fully understand the reasons for the low rates of health insurance coverage among people of Mexican-origin in the United States, some aspects of the problem are clear. Mexican-American men are overrepresented in low wage jobs that do not offer health insurance, and even if they do so, the premium an employee must pay makes coverage an unrealistic luxury.(56)

This is an important piece of new evidence that has serious implications for undocumented and non-citizen Mexicans, who are more likely than the native-born to be uninsured. Legal and undocumented Mexican-origin migrants living in the United States are expected to become the largest segment of the population without health coverage.(8) This means that they are more likely to do without preventive care services and to seek care only when their health is already seriously compromised, often in emergency rooms, where services are subsidized. Those who remain in the U.S. for many years may develop serious chronic health problems that will eventually cost more than it would have cost to provide health insurance coverage earlier in the life course.

With this in mind, we offer a number of policy recommendations that would help to justify the expansion of health insurance options to Mexican immigrants in the United States. First, it stands to

reason that including the undocumented population in an insurance pool could help to reduce the average medical cost, e.g., premiums of all individuals in the insurance exchanges.(57) The vast majority of this sample consists of circular or seasonal male migrants who first migrated to the U.S. before turning age forty, a period of the life course requiring less high intensity medical care.(58,59) Beginning in 2014, the insurance exchanges will allow all lawfully present noncitizens to purchase insurance through an exchange and will also provide individuals and employers a tax credit toward their premium costs and a subsidy for their cost-sharing.

Second, in light of the fact that many undocumented workers pay federal taxes it stands to reason that they should have the health benefits that all American workers will receive under the ACA in 2014. Human rights advocates will argue in favor of this latter point as the immigrant debate takes shape in 2013. They contend that the decision of Congress to prohibit undocumented immigrants and legal documents from any coverage is purely political and excluding them undermines the goals of the Administration's health care law.(60,61) The introduction of the Health Equity and Accountability Act of 2012 (P.L. 112-S. 2474), a bill introduced by Daniel Inouye (now deceased) and Barbara Boxer to expand health insurance options for minority individuals and immigrants, would remove barriers to unsubsidized purchase of private coverage in the insurance exchanges and Medicaid in certain states.(62) Micro-simulation models by RAND indicate that health coverage could be expanded to about 5.4 million uninsured Hispanics by 2016 through either the insurance exchanges or Medicaid eligibility.(63)

A third possibility is to develop state-level proposals for bi-national health insurance that would cover both U.S. and Mexican legal residents along the border.(41) Health care costs in Mexico are markedly lower than those in the United States, and this allows for a greater number of affordable cross-border insurance products.(64) This expanded coverage would require an increase in funding for the Medicaid program under the ACA. With cooperation a provision of subsidies for the exchange could be mutually shared between the two nations.(65) This idea has already attracted the interest of some policymakers. In Texas, for example, the state legislature passed a bill in 2011 to study the issue. State-funded researchers evaluated the health and medical care problems along the Rio Grande Valley and

assessed the viability of a Texas-funded insurance program for residents on both sides of the border. The study concluded that numerous barriers exist toward accomplishing the goal. Despite the failed effort, it is clear that extending coverage to Mexican-origin immigrants merits attention when weighing the long-term benefits against the short-term cost savings.(66) Additional studies should fill a critical gap in the literature by estimating the costs of covering uninsured Mexican-origin immigrants. Again, this is a critical moment to consider this issue in light of recent proposals for immigration reform.(67) Providing a pathway to earn U.S. citizenship would not only strengthen the American health care system but it would ensure the full integration of many immigrants into U.S. society.(68)

Finally we should note two limitations of the MMP data set arising from how the data are gathered. It is not clear how the insurance coverage status of those who have not visited a doctor or hospital during their time in the U.S. affects individual health status. Second, the entire sample used in this analysis were interviewed in Mexico meaning that our findings cannot be broadly generalized to undocumented immigrants residing currently in the U.S. Future research should replicate and extent these results by examining the relationship between insurance coverage and migrant health by disentangling the effect of place-of-residence in Mexico, frequency of border crossings, and employment to determine if they increase access to health care when returning home.

In conclusion, this research uncovers vital information about a politically sensitive topic, providing a new perspective on the debate about the costs and benefits of extending health insurance coverage to a group with significant social and economic ties to the U.S. This is especially important as the world becomes more connected, where we could expect to see more people working overseas away from their native country, where access to health insurance resides. Our study also raises critical questions about the portability of health insurance, not just between employers, but between the United States and Mexico.

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Tables

Table 1. Descriptive Statistics by Change in Reported Health Status & Total[*]

	Combined (n=648)	**No Change or Improved Health** (n=403)	**Decline in Health** (n=245)	**Significance of Between Group Differences** (p-value)
Reported Health Prior to U.S. Migration				
Fair	3.4%	81.8%	18.2%	
Good	73.3%	69.5%	30.5%	<.001
Excellent	23.3%	36.4%	63.6%	
Age, current	46.5 (14.6)	41.9 (12.2)	53.9 (15.0)	<.001
Age at first migration	26.4 (9.5)	26.1 (8.7)	26.9 (10.6)	.37
Cumulative Years in U.S.	6.2 (8.1)	5.1 (5.8)	7.8 (10.5)	<.001
Months in U.S. agricultural sector	19.7 (52.1)	13.4 (37.4)	30.2 (68.7)	<.001
Months in U.S. professional sector	25.4 (58.0)	22.0 (50.5)	30.9 (68.2)	.08
Visited a doctor while in the U.S.	28.4%	23.3%	36.3%	.001
Visited a hospital while in the U.S.	29.0%	24.1%	37.1%	.001
Used U.S. health insurance (public or private) to pay a medical bill	13.9%	10.9%	18.8%	.005
Years of education	7.0 (4.2)	7.6 (3.7)	5.8 (4.2)	<.001
Monthly income ($ hundreds)	14.8 (8.9)	15.3 (8.4)	14.1 (9.6)	.095
Legal U.S. resident	12.5%	8.4%	19.2%	<.001
U.S. citizen	1.9%	0.7%	3.7%	.007
Mexican Region of Origin				
Northern	10.7%	85.5%	14.5%	<.001
Central	68.8%	55.4%	44.6%	
Southern	20.5%	72.9%	27.1%	
Year of Interview				<.001

2007	37.0%	53.3%	46.7%
2008	23.6%	54.3%	45.8%
2009	18.4%	71.4%	28.6%
2010	14.5%	77.7%	22.3%
2011	6.5%	81.0%	19.0%

[*] *Mean (SD) except where noted.*

Table 2. Use of U.S. Medical Services by Region of Origin

	Used U.S. Medical Service	No Service Use
Northern Region	78.3%	21.7%
Central Region	64.4%	35.6%
Southern Region	53.4%	46.6%

Table 3. Logistic Regression of Changes in Respondents' Reported Health: Odds Ratios

	Model 1: Excludes Age Variable	Model 2: Includes Age Variable	Model 3: Excludes Age & U.S. HC Utilization Variables	Model 4: Excludes U.S. HC Utilization Variable
Health Prior to U.S. Migration	4.55***	4.31***	4.55***	4.36***
Age	n/a	1.05***	n/a	1.05***
Has spent 10 or more years, cumulative, in the U.S. (1=yes)	.55	.51 *(p=.052)*	.61	.58
Months spent working in the U.S. agricultural sector	1.00	1.00	1.01*	1.00
Months spent working in the U.S. professional sector	1.00	1.00	1.00	1.00
Monthly income ($ hundreds)	.97*	.99	.97*	.99
Years of education	.89***	.953 *(p=.065)*	.89***	.95 *(p=.054)*
Used U.S. medical services	1.83**	2.15**	*n/a*	*n/a*
Used insurance (public or private) to pay a U.S. medical bill	1.12	1.08	1.64	1.72 *(p=.064)*
Central Mexico region of origin	4.45***	4.43***	4.16***	4.02**
Southern Mexico region of origin	2.08	2.01	2.13	2.07
Trend variable: year surveyed	.87	.95	.85	.92

**p<.05, ** p<.01, ***p<=.001*

Table 4. AVERAGE PER PERSON ANNUAL INSURANCE COST CALCULATIONS

Variable	**MEPS Sample**	**MMP, Before Migration**	**MMP, Current**
Self-Rated Health	3.44	3.2	2.74
Of Mexico origin	.15	1	1
< 10 Yrs in U.S.	.05	1	.81
Age	46.2	26.4	46.5
Log(Yrs of Educ)[a]	2.59	1.90	1.90
Uninsured (in U.S.)	.21	1	.86
Poverty Category[b]	4.19	1.99	2.70
Monthly income		*$1,083*	*$1,483*
Annualized income		*$13,000*	*$17,796*
Predicted log(hexp+1)	5.43	.150	2.40
Predicted health expenditures	$227	$0	$10
Predicted average pp annual insurance cost	**$260**	**$0.19**	**$11.48**

[a]*Assumes all education occurred prior to first U.S. migration.*

[b]*Take monthly wage (at first migration or last migration, as appropriate, see following row), annualize it and convert to poverty category based on single-person household FPL ($11,170).*