UNINSURED MIGRANTS: ACCESS TO HEALTHCARE AMONG MEXICAN RETURN MIGRANTS

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ABSTRACT

Joshua Thomas Wassink: Uninsured Migrants: Access to Healthcare among Mexican Return
Migrants
(Under the direction of Jacqueline Hagan)

Numerous academic studies and policy reports indicate that Mexican return migrants are underinsured relative to their non-migrant counterparts. However, insufficient consideration has been given to Mexican return migrants' access to healthcare since the creation of *Seguro Popular*, a universal insurance program implemented in 2003. This study analyzes data from the 2010 Mexican Census, to assess the association between a recent migration experience and the odds of having health insurance coverage. Subsequently, longitudinal data from the Mexican Family Life Survey (MxFLS) is used to test whether migrant selection on uninsurance accounts for observed disparities in coverage among men following return. Results reveal that working-age returnees are 23% and 16% less likely to be insured (for women and men respectively). This study highlights a need for greater attention to factors that affect the reintegration and access to key resources, such as healthcare, among Mexican return migrants.

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International migrants constitute a vulnerable population. Separated from family and community, and often working in dangerous occupations and targeted by discrimination, immigrants face significant mental and physical health risks. Not surprisingly, scholars and policymakers have devoted vast resources to understanding and addressing the health needs of migrant living abroad (Abraído-Lanza et al. 1999; Hummer et al. 2007; Lara et al. 2005; Palloni & Arias 2004; Parrado & Morgan 2008; Turner et al. 2006; Van Hook & Balistreri 2007). And yet, migration is not a one-way street. Every year, millions of people voluntarily return home to reunite with families or invest accumulated savings in microenterprises (Callea 1986; Dustmann 2003; Dustmann & Kirchkamp 2002; Ruiz-Tagle & Wong 2009). Many others are forcibly detained and repatriated for immigration violations (Amuedo-Dorantes et al. 2013; Hagan et al. 2011; Ruben et al. 2009). In recent years, driven by economic decline and rising interior enforcement, return migration to Mexico grown dramatically. An estimated 1.4 million Mexicans returned between 2005 and 2010, double the rate seen a decade earlier (Passel et al. 2012). Estimates from the 2010 Mexican Census suggest that nearly half of recent returns resulted from deportation (Masferrer & Roberts 2012). Little is known about non-economic aspects of reintegration among Mexican return migrants. As the returnee population expands, new research is needed to investigate return migrants' access to institutional resources such as health insurance coverage.

For many Mexicans, the health consequences of migration persist following return. Two recent studies document elevated risk of obesity, smoking, Post-Traumatic Stress Disorder, and depression among Mexican return migrants relative to non-migrants (Familiar et al. 2011; Ullmann et al. 2011). Recently, investigators have begun to consider returnees' access to a critical safety net, health insurance (Aguila & Zissimopoulos 2013; Polsky et al. 2006). Thus far, however, these investigations have been limited in scope and relied on cross-sectional data. In this paper, I compare health insurance coverage between Mexican non-migrants and return migrants drawing on nationally representative data from the 2010 Mexican Census. I also employ longitudinal data from the Mexican Family Life Survey to assess whether potential differences in coverage between return and non-migrants are robust when migrant selection on pre-migration insurance coverage is taken into account (Villarreal & Blanchard 2013). These analyses provide important insight into the ways that migration affects access to key institutional resources such as healthcare, especially as international research increasingly points to limited access among return migrant populations (Ruben et al. 2009)

Of further importance, this paper offers the first national level investigation of Mexican return migrants' health coverage to account for Mexico's universal health care program, *Seguro Popular de Salud* (Popular health insurance, henceforth *Seguro Popular*). *Seguro Popular* was implemented in 2003 to provide access to healthcare to more than 50% of Mexicans who lacked coverage through Mexico's employment based social security program, *Seguro Social* (Knaul & Frenk 2005). Despite the fact that some estimates suggest *Seguro Popular* now insures upwards of fifty million Mexicans (Knaul et al. 2012), analyses of health insurance coverage among return migrants conducted as recently as 2013 (Aguila & Zissimopoulos 2013) continue to rely on data collected prior to *Seguro Popular's* implementation. Thus, reliable estimates of return

migrants' coverage under *Seguro Popular* are unavailable. This paper explores overall health coverage among returnees, their program choices, and how migration affected returnees' odds of becoming insured during the initial rollout of *Seguro Popular*.

Four central questions guide this investigation: 1) Do overall coverage and program type differ between return and non-migrants? 2) Do sociodemographic factors such as position in the occupational structure and community context explain differences in coverage and program type? 3) Does the association between migration and insurance coverage differ by gender? And 4) Do pre-migration differences in coverage explain post-return disparities in uninsurance?

LITERATURE REVIEW

MIGRATION, WELL-BEING, AND HEALTH INSURANCE

Analysis of health and well-being among Mexican immigrants in the United States demonstrates multiple ways in which international migration can deleteriously impact health. Research finds that Mexican immigrants' general tendency to live in unsafe areas (Cantwell et al. 1998) and work in dangerous occupations (Orrenius & Zavodny 2009) increases exposure to associated risk factors. Additionally, exposure to new, less healthy cultural and dietary practices may increase the prevalence of obesity and related health conditions (Barcenas et al. 2007). Beyond the effects of migration on Mexicans' physical health, studies indicate that family separation (Hovey & Magaña 2000), the experience of discrimination (Caplan 2007), fear of deportation because of undocumented status (Arbona et al. 2010), and potential hazards experienced during detention and/or return (International Organization for Migration 2009) often

deleteriously affect migrants mental well -being while abroad.[1] These myriad risks appear to

impact not just actual, but also perceived health among Mexican immigrants. (Goldman et al.

2014) find that after only a few years in the United States, migration increases the odds of

reporting poor self-rated health among Mexican immigrants. Two recent investigations

conducted in Mexico find that the physical and mental consequences of international migration

persist following return, resulting in increased risks of obesity, smoking, heart disease, post-

traumatic stress disorder, anxiety, and depression among Mexican returnees (Familiar et al.

2011; Ullmann et al. 2011). As scholars uncover the challenges faced by homeward bound

individuals and families, "facilitating access to health services upon *return* remains a critical

gap" (Davies et al. 2011).

　　To address the lack of insurance among former migrants, many governments receiving

large numbers of returnees have initiated programs that extend health coverage to nationals

working abroad and offer assistance following return. One approach is to create international

social security agreements. These agreements permit documented migrant workers to transfer

Social Security participation and benefits across international borders without making dual

payments (Butcher & Erdos 1988). Social Security agreements are especially important to

migrants who move back and forth regularly as they facilitate joint determination of payments

and eligibility for services between the host and home country (Avato et al. 2010); they also

enable unauthorized migrants to remain insured through origin country institutions.

Between 1979 and 2014, the United States entered into twenty-five such agreements. Despite

high flows of labor from developed to developing states, however, these agreements primarily

facilitate the transfer of coverage between the United States, Canada and Europe, while omitting

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[1] In a *PLoS Medicine* special series on migration and health, Davies et al. (2011) review health-related challenges associated with the return journey.

the majority of Latin American nations, notably Mexico. A glimmer of hope emerged for

Mexican immigrants in the United States in 2004, when a U.S.-Mexico Social Security

agreement was drafted. But that proposal has yet to be considered by the U.S. Congress, given

the current political climate surrounding immigration (Aguila et al. 2013).

In 2007, having failed to achieve binational cooperation, the Mexican Institute of Health

implemented *Salud Migrante*, which allows Mexican immigrants living and working in the

United States to remain affiliated with their Mexican insurer (Bustamante et al. 2012). Although

Salud Migrante allows Mexican immigrants in the United States to return to Mexico for medical

treatment, potential demand among Mexican immigrants in the United States remains low

(González-Block et al. 2014). This is largely due to Mexican immigrants' reticence to re-cross

the frontier in the context of heightened U.S. border enforcement (Massey et al. 2002). Prior

research also suggests that few return migrants affiliated with U.S. insurance programs while

abroad (Aguila & Zissimopoulos 2013). Given the limited number of Mexican immigrants who

affiliate with U.S. or cross-national insurance programs, I focus on return migrants' coverage

within Mexico's domestic insurance programs.

Since 1943, *Seguro Social* and similar state run insurance programs have insured workers

in formally registered Mexican businesses, public employees, and members of the military.[2]

However, a majority of Mexican laborers work informally, outside *Seguro Social*'s sphere of

protection. Therefore, in 2003, the Mexican government created *Seguro Popular* because,

according to then Secretary of Health, Julio Frenk, "more than half of Mexican households

lack[ed] health insurance" (Knaul & Frenk 2005). Today, family workers, agricultural laborers,

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[2] The Instituto de Seguridad de los Trabajadores del Estado (State Employees' Social Security
Institute) covers state employees; Petróleos Mexicanos (Mexican Petroleum) covers individuals
who work in the state owned oil and gas company, and the Mexican army and navy provide
insurance to members of the armed forces.

small business owners, independent artisans or traders, and laborers in informal Mexican firms without employment-based coverage through *Seguro Social* can voluntarily affiliate with *Seguro Popular*. Those who participate make financial contributions, which are matched by the state and federal governments. Families in the four poorest income deciles are exempt from financial contributions. Some estimates suggest that as of 2012, *Seguro Popular* had enrolled upwards of fifty-million individuals, with disproportionate affiliation among rural and indigenous Mexicans, two populations with long histories of emigration to the United States (Knaul et al. 2012). And yet, researchers have not yet considered the effect of *Seguro Popular* on coverage among return migrants.

Previous investigations of health insurance coverage in Mexico find that coverage is substantially lower among return migrants. Results are limited, however, by reliance on the first two waves of the Mexican Health and Aging Study (MHAS),[3] which only include individuals 50-years and older at Wave 1 and were conducted in 2001 and 2003, thus not accounting for the implementation of *Seguro Popular* (Aguila & Zissimopoulos 2010 2013; Pagán et al. 2007; Polsky et al. 2006). Aguila and Zissimopoulos (2013) find that migration reduces the odds of coverage under *Seguro Social* and predisposes respondents toward private insurance. Similarly, in an analysis of health coverage and detection of chronic diseases among older Mexicans, Pagán and colleagues find that a prior migration experience reduces the odds of affiliation with *Seguro Social* by nearly 50% (2007: Table III). Because *Seguro Popular* now insures close to half of all Mexicans, these findings are not particularly informative regarding the

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[3] The MHAS is a panel study developed to assess health and aging among older Mexicans. Wave 3, conducted in 2012, now allows scholars to investigate the effect of *Seguro Popular* on coverage and care utilization among older Mexican return migrants (Parker & Wong, 2014).

overall association between migration and coverage in Mexico.[4] Further, as of 2009, 50% of

Mexican return migrants were between 15 and 29; only 3.8% were 60 years or older, suggesting

that the MHAS does not provide a representative portrayal of Mexican return migrants (INEGI

2011).

A FRAMEWORK TO PREDICT INSURANCE COVERAGE AMONG RETURN MIGRANTS

To guide my analysis, I propose a conceptual framework (Figure 1), which illustrates the

relationships and mechanisms that I will explore. Specific relationships are labeled H1, H2, H3,

and H4 to indicate the corresponding hypotheses, which are discussed below.

Because *Seguro Social* still provides insurance to a majority of insured Mexicans (Knaul et

al. 2012), any analysis of health insurance coverage must begin with a consideration of

sociodemographic factors, including occupational status, marital status, income, education, age,

and race/ethnic minority status that may directly affect access to coverage through employment-

based *Seguro Social* or government employment, a spouse's policy. Community context is also

essential because it structures the access to alternative insurance programs. Mexican firms are

legally required to provide regular employees with insurance coverage through *Seguro Social*.

Thus, formal employment offers the most direct path to health coverage. It must be noted,

however, that employment status is not a perfect predictor of access to *Seguro Social,* many

Mexican workers, especially those in smaller firms, do not receive employment-based health

coverage. These employees lack *Seguro Social,* they are considered illegal or informal (Arias et

al. 2010; Levy 2008). However, because self-employed workers, business owners, and family

employees rarely receive insurance through *Seguro Social,* research consistently shows that

[4] Note, the authors mentioned are not attempting to provide comprehensive reviews of return
migration and health insurance in Mexico.

regular employment is a good predictor of occupational formality, and thus access to *Seguro Social* (Arias et al. 2010; Bargain & Kwenda 2011; Levy 2008).

Because many individuals are insured through a spouse's policy, marital status is also an important sociodemographic characteristic to consider.

Income is italicized to reflect its uncertain enabling effect. Intuitively, income represents an important indicator of access because health coverage often includes monthly or yearly fee membership fee. If this were the case, income would be expected to play an important role in predicting health coverage outcomes. However, Mexican households in the bottom 40% of earners are permitted to affiliate with *Seguro Popular* without payment. Not surprisingly, research conducted following the implementation of *Seguro Popular* relative to prior studies finds a substantially reduced effect of income on the odds of coverage (Danese-dlSantos et al. 2011). Thus, although income does enable access to private insurance policies, the presence of *Seguro Popular* may have diminished its significance as an overall predictor of coverage.

Education, age, and indigenous status are also important factors to include in the model. Educational attainment is an important predictor of both occupational status and wages (Jütting, Parlevliet, & Xenogiani, 2008; Levy, 2008). Similarly, access to healthcare generally increases with age, as individuals become increasingly stable economically (Tamez-González, Valle-Arcos, Eibenschutz-Hartman, & Méndez-Ramírez, 2006). A considerable body of research suggests that indigenous Mexicans face social and financial disadvantages (Psacharopoulos & Patrinos 1994; Ramirez 2006). Indigenous characteristics also partially predict discrimination due to darker skin color (Campos-Vazquez 2014; Perreira and Telles 2014; Villarreal 2010). Thus, indigenous status may also structure individuals' access to healthcare.

Community context also structures Mexicans' access to healthcare. Historically rural Mexican communities have tended to be highly economically informal, and as a result, their populations have lacked access to health insurance through *Seguro Social*. Thus, although recent reports suggest dramatic increases in coverage in rural areas due to the implementation of *Seguro Popular* (Knaul et al. 2012), rural communities may still experience lower rates of coverage than urban areas where a substantial proportion of the population has long been insured through *Seguro Social*. Additionally, Molina and Palauelos (2014) find that historical distrust of institutional support in low-income communities limits utilization of newly available resources such as *Seguro Popular*.

These sociodemographic and contextual characteristics are of particular importance when considering migrants. Historically, the largest streams of Mexican emigrants to the United States have stemmed from rural and economically informal communities (Fussell 2004; Fussell & Massey 2004; Massey et al. 1987; Massey et al. 1999; Massey & Espinosa 1997). Additionally, research suggests that migration may discourage educational attainment, which could also limit access to health coverage (Halpern-Manners 2011; Kandel & Massey, 2002). Further, (Reyes 1997) shows that migrants from rural Mexican communities are the most likely to return home from the United States Mexican return migrants' disproportionate representation in rural communities with largely informal economies suggests that prior migration experience will reduce their access to *Seguro Social*. However, because *Seguro Popular* specifically targets rural and informal populations (King et al. 2009; Knaul & Frenk 2005), returnees' affiliation with *Seguro Popular* may be comparable to or even greater than enrollment among Mexican non-migrants. These factors lead to the first two hypotheses (H1 and H2 in Figure 1).

Hypothesis 1: A greater proportion of return migrants will be uninsured than non-migrants and return migrants will tend toward Seguro Popular relative to Seguro Social

Hypothesis 2: Sociodemographic characteristics and community contextual factors that predict migration will explain differences in health coverage and program type.

GENDER AND MIGRATION

Substantial research suggests that the effects of a prior return migration will differ by sex. A number of studies, both ethnographic (Hagan 1998; Hondagneu-Sotelo 1994) and quantitative (Curran and Rivero-Fuentes 2003) indicate that highly gendered migrant networks connect Mexico to the United States. Both Hagan (1998) and Curran and Rivero-Fuentes (2003) find that the odds of an individual migration increase in relation to the number of contacts of the same gender in the place of destination. Within migrant flows, male migrants are much more likely to leave established families behind, while women tend to travel to the U.S. either as young singles or to re-unite with their husbands (Cerrutti and Massey 2001; Hondagneu-Sotelo 1994). This trend has continued even as women account for an increasing proportion of Mexican migrants to the U.S. (Cerrutti and Gaudio 2010). Male return migrants may face reduced challenges to reintegration because they are more likely to return to family members with knowledge of institutional changes such as the implementation of *Seguro Popular*. Additionally, female Mexicans tend to remain in the U.S. longer than men (Ruiz-Tagle and Wong 2009), which is expected to increase the readjustment period (Cassarino 2004). Thus, I posit hypothesis 3 (H3 in Figure 1):

H3: A prior migration experience will have a stronger negative association with the odds

of coverage among women than among men.

MIGRANT SELECTION AND HEALTH COVERAGE

Because prior research on health coverage among return migrants has been conducted with cross-sectional data (Aguila & Zissimopoulos 2013; Polsky et al. 2006) it is plausible that the association between migration health coverage indicates migrant selection on uninsurance, rather than an effect of migration on health coverage. In other words, cross sectional models are generally vulnerable to reverse causation. Indeed, there is substantial evidence that the sociodemographic and contextual factors that enable access to health coverage also foment migration from Mexico to the United States, potentially predicting both migration and uninsurance following return. The New Economics of Labor Migration (NELM), an economic framework that is central to understanding Mexican emigration to the United States (Massey et al. 1999), posits that emigration from poor to rich countries is a function of inefficient capital markets and unstable/risky employment (Stark 1991; Stark & Bloom 1985).[5] In a recent study, (Villarreal & Blanchard 2013) analyze the effect of occupational informality on the odds of migration from Mexico to the United States. Because Mexican firms are legally required to provide their employees with insurance coverage through *Seguro Social* (Arias et al. 2010; Levy 2008), Villarreal and Blanchard operationalize informality as lack of employment-based coverage. Villarreal and Blanchard (2013) find a positive effect of informality (lack of *Seguro Social*) on the odds of emigration, thereby demonstrating that Mexican migrants negatively

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[5] Many previous investigations find support for the NELM hypothesis as a promoter of Mexican emigration to the United States using community-level measures of informality (Durand, Kandel, Parrado, & Massey, 1996; Fussell & Massey, 2004; Hamilton & Villarreal, 2011; Massey & Espinosa, 1997).

select on health coverage under *Seguro Social*. Their findings suggest that the differences in coverage between return migrants and non-migrants observed by Aguila and Zissimopoulos (2013) and others may be a product of pre-migration selection processes, rather than migration itself. Thus I propose hypothesis 4 (H4 in Figure 1):

Hypothesis 4: Lack of health coverage among return migrants results from emigrant selection on uninsurance—Mexican migration to the United States is predicted by uninsurance.

HEALTH MATTERS

In a more immediate sense, migration may affect returnees' perceived need for care, and in turn, their demand for health insurance by increasing perceived health need. Perceived health need generally increases demand for health insurance as individuals become increasingly aware of its potential returns (Koç 2004). Multiple studies identify worse outcomes among Mexican returnees relative to non-migrants on a variety of physical and mental health indicators (Familiar et al. 2011; Ullmann et al. 2011), suggesting that migration does in fact increase health need. Interestingly, however, increasing measured health need among returnees does not appear to result in increasing perceived (self-rated) health. Both recent studies that compared self-rated health between Mexican return and non-migrants found no statistically significant differences (Goldman et al. 2014; Ullmann et al. 2011). Thus, there is little reason to expect substantially different perceived health need among returnees relative to non-migrants. That said, given some evidence of positive health selection among Mexicans migrating to the United States (Rubalcava et al. 2008; Ullmann et al. 2011), it is possible that self-rated health declines during migration,

resulting in the comparable perceived health need observed by Goldman et al. (2014) following

return.

DATA AND METHODS

ANALYTIC SAMPLES AND METHODOLOGY

The 2010 Mexican Census is used to compare coverage between return migrants and non-migrants. The long-form questionnaire included in Mexico's 10% decennial census, the Census of Population and Housing, contains a stratified random sample of 2.9 million households (nearly 12 million individuals) designed and administered by INEGI. With over 100,000 respondents who indicated recent migration experience in the United States, the Mexican Census is an ideal source with which to identify differences between return migrants and the general Mexican population. Because this study is interested in the role of employment and informality, I restrict the analysis to working-age respondents between 15 and 60 years old. After deleting roughly 4% of observations due to missing data, the CPV analytic sample contains 6.7 million observations (3,172,303 men and 3,541,827 women). Despite its advantages for comparison, the cross-sectional design of the Mexican Census prevents analysis of selection bias among emigrants. Additionally, it does not include a measure of perceived health.

Thus, I used the Mexican Family Life Survey (MxFLS) to test hypothesis 4 and to account for changes in perceived health need. The MxFLS, which also uses a stratified design developed by the INEGI, is a multithematic survey first administered to a sample of 8,400 households in 150 communities in 2002 (Rubalcava & Teruel 2006). With detailed questions concerning migration history, demographic characteristics, socioeconomic status, and health the MxFLS is uniquely suited to advance the study of Mexican return migrants. Importantly, the recently

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conducted (2009-2012) third wave creates a longitudinal sample within which respondents can be observed before and after migration. At Wave 1, the MxFLS contained 17,330 respondents between 15 and 60 years of age. Of these, 10,734 were interviewed again at Wave 3 and are included on the longitudinal survey weight. Finally, 334 respondents were deleted due to missing data on independent variables, resulting in an analytic sample of 10,400 respondents (4,067 men and 6,333 women), including 180 migrants (71 women and 109 men).

DEPENDENT VARIABLES

Three dichotomous outcomes are tested within a logistic regression framework. Models employing the Mexican Census estimate coverage status (insured=1; uninsured=0) and coverage choice (*Seguro Social*=1; *Seguro Popular*=0). The second outcome excludes respondents not affiliated with either *Seguro Social* or *Seguro Popular*. The outcome variable in the MxFLS analyses indicates insurance status at Wave 3 (1=insured; 0=uninsured). The MxFLS regressions are distinct from the census analysis because an additional variable is included to control for Wave 1 health coverage. Thus, the analysis of the MxFLS assesses the association between migration and health coverage net of pre-migration coverage status.

INDEPENDENT VARIABLES

The key independent variable distinguishes between return and non-migrants. Each respondent to the 2010 Mexican Census provided country of residence as of June 2005 (five years prior to the census). Thus, respondents who returned from the United States between June, 2005 and June, 2010 can be identified as those living in the United States in 2005 (Masferrer & Roberts 2012; Quintero 2011). In this way, returnees were identified as those

living in the U.S. in 2005. Given that time since return is a key indicator of social and economic

reintegration (Cassarino 2004; Gmelch 1986), the inclusion of only relatively recent returnees

may exaggerate an observed negative association between migration and health insurance

coverage. However, this does provides the advantage of highlighting potential challenges

experienced by Mexican returnees in the midst of reintegration.

In contrast, the MxFLS includes detailed questions concerning migration timing and year

of return. Because the primary purpose of incorporating data from the MxFLS into this study is

to assess whether migrant selection explains differences in health coverage upon return, from

these measures I constructed a dichotomous variable that marks those who migrated to the

United States after 2002 (Wave 1) and returned to Mexico prior to their Wave 3 interview (2009-

2012). Because all of the migrations occurred during a relatively tight window I do not control

for migration duration or time since return. All other independent variables, except change in

perceived health, were created identically between the two surveys.[6]

Sociodemographic characteristics: All models adjust for occupational status, marital status,

income, education, age, and indigenous status. As discussed earlier, in Mexico employment can

provide direct access to coverage through employment-based *Seguro Social*. Contemporary

analysis of Mexico's informal sector suggests that, although a majority of workers in all

categories lack *Seguro Social*, those who are regularly employed are significantly more likely to

work in formal sector businesses, which would by definition provide health benefits (Arias et al.

2010; Bargain & Kwenda 2011; Levy 2008). To account for the effect of occupational status I

create a measure of regular employment. In both surveys, economically active respondents

select from the following occupational statuses: employee, laborer or peon, assistant, employer,

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[6] Because the MxFLS is used to assess whether selection on uninsurance causes observed
disparities in uninsurance, independent variables are observed at Wave 1.

self-employed without employees, unpaid family worker. Responses were recoded into four categories: regular employee (employee), irregular laborer (agricultural workers, laborers, self-employed without employees, unpaid family workers, and assistants), business owners (self-employed with employees), and outside the workforce.[7] These categories are consistent with research on informal employment in Mexico (Levy 2008).

I include marital status as: single/never married, married, and divorced/separated/widowed. Because many Mexican homes rely on a single breadwinner, income is measured at the family level. I group results into quartiles ranging from the poorest to the wealthiest. Education measures the highest level of schooling completed (primary or less, secondary and/or technical training, post-secondary). Age is included as a continuous variable in years.[8] Following (Villarreal 2014), I classify indigenous respondents as those who self-identify as part of an indigenous or ethnic group.

Community context: to account for the effect of community context on access to healthcare, I include two additional measures. First, to adjust for rural/urban differences, a four-category variable separates community population size into the following increments: less than 2,500, 2,500 to 14,999, 15,000 to 99,999, and 100,000 or more. Second, to control for community socioeconomic status, I averaged household income at the municipal level, and then included the natural log of community income as a control variable.

Perceived health need: The Mexican Census does not contain measures of perceived need, thus I test Hypothesis 4 with the MxFLS only. Prior research finds that as self-rated health

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[7] Results (not shown) were consistent when business owners with employees were classified as irregular laborers.

[8] Models were substantively consistent across a range of continuous and categorical representations of education and age (not shown).

declines demand for healthcare increases (Miilunpalo, Vuori, Oja, Pasanen, & Urponen 1997).

Thus, I employ self-rated health to measure changes in perceived health need and corresponding

demand for care. At each wave, MxFLS respondents describe their current health as: very good,

good, regular, bad, or very bad. I created a dummy variable that indicates whether a

respondent's self-rated health declined from Wave1 to Wave 3.

ANALYTIC STRATEGY

The analyses are presented in two stages. In the first stage I present cross-sectional results

based on the Mexican Census. Initially, descriptive results are presented by gender and migrant

status. Then I use a step-wise approach, first showing the bivariate association between

migration and healthcare and program choice, and then incorporating the sociodemographic and

contextual factors, to assess the first two hypotheses. In order to assess Hypothesis 3, I conduct

all analyses of the Mexican Census separately by gender.[9] In the second stage, I use the data

from the MxFLS to assess hypothesis 4. Prior to estimating regression models, I evaluate sample

characteristics of the MxFLS relative to the Mexican Census. Based on these analyses, I do not

use the female MxFLS sample. See discussion below. Within the male MxFLS sample I

replicated the Mexican Census analyses, regressing on the odds of being insured at Wave 3

(2009-2012) on prior migration experience, sociodemographic characteristics, and community

context. To account for reverse causality stemming from migrant selection on uninsurance, I

include the variable that measures Wave I (pre-migration) health coverage status. Thus, the

regressions estimated on the MxFLS allow me to observe the effect of migration on heath

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[9] In models estimated on the full Mexican Census sample, interaction terms between gender and
migrant status were statistically significant (p<0.001) and the direction and magnitude of the
interaction term female*migrant is consistent with the results from the separate analyses
(available upon request).

coverage net of migrant selection on uninsurance. In the final regression estimated on the

MxFLS, I incorporate the control for increasing perceived health need. All models were

estimated in STATA 13 using logistic regression. Tables present weighted log odds and standard

errors. Stata's survey commands were used to account for both surveys' complex designs.

RESULTS

CROSS-SECTIONAL ANALYSIS WITH THE MEXICAN CENSUS

Because previous studies have focused on specific aspects of health coverage among

return migrants, such as affiliation with *Seguro Social* among elderly returnees (Aguila &

Zissimopoulos 2013; Polsky et al. 2006) or differences in utilization of private healthcare

between return and non-migrants (González-Block & Sierra-de la Vega 2011), I begin with a

consideration of differences in insurance coverage, as well as other key variables, by migrant

status and gender—presented in Table 1. Then, in Tables 2 and 3, I present results from logistic

regression models, which identify the effect of prior migration experience on the log odds of

being insured and on the log odds of affiliation with *Seguro Social* relative to *Seguro Popular*,

net of economic and predisposing factors. Although these results do not confirm a causal

relationship, the 2010 Mexican Census provides highly reliable estimates of the association

between recent migration experience and health insurance coverage.

As of 2010, in stark contrast to non-migrants, over half of migrants recently returned to

Mexico from the United States described their current health insurance situation as "uninsured"

(55% among women and 53% among men). In other words, relative to non-migrants, Mexican

return migrants experience severely limited access to healthcare. Considering program-specific

affiliation, the gap between returnees and non-migrants is concentrated in *Seguro Social*, as well

as insurance through government employment. The disparity in employment based coverage suggests, as proposed in Hypothesis 1, migrants' rural community contexts and informal employment contribute to the gap in coverage.

The central question regarding migrants' well-being and reintegration thus becomes: does *Seguro Popular* account for the disparity in coverage? Although returnees and non-migrants affiliate with *Seguro Popular* at similar levels, the universal program does not come close to ameliorating the aggregate disparity in insurance coverage. As of 2010, return migrants remain severely underinsured.

These findings are consistent with prior research on the rural and informal origins of Mexican migration to the United States (Fussell & Massey 2004; Villarreal & Blanchard 2013) and lend credence to the assertion that disparities in employment-based insurance coverage stem from factors that directly determine access to *Seguro Social*. There are minimal differences in the proportion married, suggesting that spousal affiliation does not contribute to the gap in coverage. Additionally, although migrants are less likely to earn in the top income quartile, they are also less likely to reside at the bottom, suggesting that income disparities are also a non-factor. Differences in age, education, and indigenous status, while significant, are substantively negligible.

Table 2 displays results from cross-sectional logistic regression models among men, which estimate the odds of being insured and the odds of being affiliated with *Seguro Social* relative to *Seguro Popular*. Model 1 reaffirms the descriptive analysis, indicating that prior migration is indeed associated with a substantial reduction in the odds of being insured and that migration also reduces enrollment in *Seguro Social* relative to *Seguro Popular*. These results support hypothesis 1.

Model 2 introduces the sociodemographic and contextual factors expected to explain the gap in coverage between return and non-migrants. As anticipated, formal employment strongly and significantly increases the odds of being insured, while informal work reduces the odds of being insured by nearly half (exp(-0.69)=0.53). The effect of employment status on program type is even stronger, with regular employment more than doubling the odds of selecting *Seguro Social* over *Seguro Popular* (exp(0.796=2.22). Marital status is also strongly associated with health coverage, though less so for program type. As expected, wages do not strongly associate with health coverage; although those in the highest income bracket do experience a modest increase in their odds of being insured. Income is an important predictor of program type. Education is strongly and significantly associated with both coverage and program type in the expected direction. Interestingly, neither age nor indigenous status are important predictors of coverage. These results may be indicative of the success of *Seguro Popular* at reaching underserved populations.

The effects of community context, however, are less clear. Indicative of *Seguro Popular's* focus on rural communities (King et al. 2009; Knaul et al. 2012), community population is actually inversely associated with the odds of coverage. This may, however, be due to the inclusion of community income in the model, with is strongly and positively associated with both overall coverage and program type. Overall, although there are a few surprising results, the predictors included in Model 2 are largely in line with expectations derived from prior research as well as information on the changing healthcare infrastructure in Mexico.

Turning to the focal relationships, Model 2 reveals partial support for Hypothesis 2 among men. The association between prior migration experience and program choice falls significantly. However, the change in the effect of migration on insurance status is minimal and

non-significant. Sociodemographic characteristics and community context fail to explain the association between migration and health insurance coverage. Thus, I reject the explanation that differences in employment, community context and other sociodemographic factors explains the disparity in health coverage between working-age Mexican return migrant men and similar non-migrant men.

Table 3 replicates the logistic regression models among women. Model 1 reveals that working-age women with recent migration experience have 61% (1-exp(-0.933)=0.606) lower odds of being insured than non-migrant women. As suggested by Hypothesis 3, the association between migration and insurance coverage is substantially larger among women than among men. In contrast, among women the bivariate association between migration and program type is significantly smaller. Differently from the men, however, the inclusion of sociodemographic and contextual factors in Model 2 only explains a modest amount of the association between migration and program type among working-age women. Additionally, the inclusion of these controls actually increases the migration coefficient in the Model predicting insurance status. Therefore, I reject Hypothesis 2 among women. Clearly, more than sociodemographic and community factors are at work. Referring back to Table 1, note that despite the dramatic disparity in insurance coverage, differences in key sociodemographic characteristics are generally smaller among women than men. Underinsurance among women with prior migration experience appears to occur not as a result of differences in sociodemographic and community characteristics, but rather, despite similarities on these measures.

Tables 2 and 3 lend considerable support to Hypothesis 3. Based on the cross-sectional analysis of census data, prior migration experience is associated with a significantly larger reduction in the odds of being insured among women than among men. This disparity suggests

that gendered migration experiences may directly affect health coverage upon return.

Alternatively (or additionally) disparities could be driven by gendered processes of reintegration.

Research among return migrants in Asia, Africa, and the Middle East finds that women may

experience lower levels of economic, social, and psychological embeddedness than men upon

their return (Ruben et al. 2009). A recent analysis of return migration and labor market

trajectories reveals distinct patterns of labor market discrimination and social isolation, which

often push women return migrants into informal work and subsistence self-employment (Hagan

et al. 2015). New research is needed to better understand how gender impacts Mexican return

migrants access to important resources such as healthcare.

TESTS OF EMIGRANT SELECTION AND COVERAGE STATUS

To this point, the question of migrant selection remains unaddressed. To investigate

potential issues of selection, I now turn to my analyses of the MxFLS. Table 4 displays

descriptive characteristics of the MxFLS sample. It mirrors Table 1. Using Table 4, I assess the

validity of the MxFLS sample as an auxiliary to the Mexican Census. The most important

contrast is between insurance status in the Census and health coverage at Wave 3 of the MxFLS.

I also present sample means and proportions of sociodemographic and contextual characteristics

by migrant status and gender.

Looking first among men, observe that the breakdown by migrant status is generally

consistent between the Mexican Census (Table 1) and the MxFLS (Table 4). The disparity in

health coverage is actually somewhat larger in the MxFLS (21 percentage points). However, in

each sample, the proportion uninsured is significantly higher among return migrants. Also note, there was a substantial gap in health coverage between migrants and non-migrants in health coverage at Wave 1. However, growth in coverage has been stronger among non-migrants relative to migrants. These results suggest that migrant selection on insurance does contribute to the gap in health coverage observed in the Mexican Census data. Other contrasts between working age Mexican return and non-migrant men are generally consistent between the census and the MxFLS. Migrants are more likely to work informally, tend to earn lower wages, have less education, and live in more rural areas. This brief comparison suggests that the analysis of health coverage at Wave 3 of the MxFLS offers a valid complement to the Mexican Census results already reported.

In contrast to the male sample, the female migrants in the MxFLS do not provide an ideal complement to the Mexican Census. Indeed, women return migrants are actually less likely to be uninsured than non-migrants at both Wave 1 and Wave 3 of the MxFLS. Further, a greater proportion of return migrant women are enrolled in *Seguro Social*. This comparison directly contradicts the breakdown observed in the Mexican Census. The surprising results may be due to the nature of the MxFLS variable, which only observes relatively short-term migrations—those occurring between Wave 1 (2003) and Wave 3 (2009). Mexican women tend to migrate to the U.S. for longer than men, and generally migrate without intentions to return. By contrast, target migration is relatively common among Mexican men, who frequently migrate to the U.S. to accumulate financial or human capital, with definite plans to return. As a result, sampling only short to medium length migrations may bias the female migrant sample more so than the male sample. Looking further down Table 4, female although female migrants are less likely to be formally employed, they are also overrepresented in the highest income bracket and more

likely to live in urban communities with over 100,000 inhabitants than their non-migrant

counterparts. Given these inconsistencies, I only present regressions of health coverage net of

pre-migration insurance status for the male MxFLS sample.[10]

Table 5 presents the results from logistic regression models in which the odds of being

insured are regressed on a recent migration experience. Model 1 presents the bivariate

association, which, as expected based on the descriptive statistics (Table 4), is stronger than, but

consistent with the bivariate association derived from the Mexican Census (Table 2, Model 1).

Model 2 introduces the measure of Wave 1 health coverage, which is used to account for pre-

migration selection. When pre-migration coverage is included, the association between

migration and coverage attenuates somewhat, but remains large and robust. Indeed, per the

MxFLS, migration, net of pre-migration coverage, is associated with a 51% (1-exp(-0.705)=0.51)

reduction in the odds of having health insurance coverage at Wave 3. Thus, the bivariate

association remains robust when adjusted for potential selection on uninsurance.

In Model 3 I incorporate all of the sociodemographic and contextual characteristics

included in the analyses of the Mexican Census. Because these analyses are concerned with

migrant selection and reverse causation, all covariates are measured at Wave 1; results are

substantively consistent when covariates are measured at Wave 3 (available upon request). The

inclusion of these characteristics further attenuates the focal relationship (p<0.094). Thus,

migrant selection on sociodemographic characteristics such as occupational position and

community context (Fussell & Massey 2004; Villarreal & Blanchard 2013) substantially explains

the observed disparity in health coverage observed between working-age male migrants and non-

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[10] Regression models were estimated among women. The effect of migration on health coverage
is small and non-significant in models with and without variable measuring Wave 1 health
coverage (available upon request).

migrants. At the same time, a recent migration experience is still associated with a 45% decline

in the odds of having healthcare (1-exp(-0.585)=0.45), an association consistent with that

observed in the Mexican Census (Table 2, Model 2).[11] The migrant coefficient in Table 5 reveals

a consistent negative association between migration and the odds of having healthcare, even

when pre-migration health coverage is accounted for. Given the consistency between the

MxFLS and the census, I am inclined to attribute the marginal significance to the small number

of migrants in the sample. Therefore, I reject Hypothesis 4. Analysis of the association between

migration and healthcare, net of pre-migration status indicates that the association observed in

the Mexican Census is not a result of reverse causation. Among working age Mexican men,

migration appears to associate with the odds of being insured, independently of the association

between uninsurance and the odds of migration.[12]

CONCLUSION

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[11] The inclusion of increasing perceived need has a non-significant effect on the odds of
becoming insured and only marginally affects the focal relationship. The relationship remains
the same when a variety of measured and self-reported indicators of health, including heart
disease, hypertension, and diabetes, are introduced into the model. I do not address perceived
need further.

[12] To further address the issue of selection, I estimated a first difference model on the odds of
changing from uninsured (Wave 1) to insured (Wave 3)—those with insurance at Wave 1 were
excluded from these models (See Allison (2009) on the application of fixed effects models to
dichotomous outcome variables with two waves of data). In the difference model, because pre-
migration job characteristics are the same at Wave 1 and Wave 3 (Wave 3 pre-migration
characteristics are also measured at Wave 1), these factors drop out of the model, leaving only
the effect of migration (see Liker, Augustyniak, and Duncan (1985) and Wooldridge (2002)). I
include pre-migration characteristics at both waves because I am concerned more with selection
on pre-migration characteristics that may jointly predict migration and insurance status than I am
with changes in these characteristics across time, which might be driven by migration—
explaining the mechanisms that link migration to health coverage exceed the scope and data
constraints of this paper. These analyses revealed a negative association (p<0.05) between
migration and the odds of becoming insured at Wave 3, which supports my decision to reject
Hypothesis 4 (available upon request).

Migration is a risky proposition. For many Mexicans, migration to the United States offers an avenue to economic mobility. However, northern migration also exposes migrants to a variety of health risks. Recent research indicates that Mexican return migrants fare worse than similar non-migrants on important indicators of mental and physical health (Familiar et al. 2011; Ullmann et al. 2011). Thus, as Mexican returnees reintegrate and seek to mobilize accumulated human and financial capital in their origin communities, healthcare represents a vital safety net. However, little is known about Mexican return migrants' access to healthcare, especially in the context of a growing public healthcare option, *Seguro Popular*. Also, to date research on return migration and healthcare has been cross-sectional, leaving open the possibility that observed association between migration and health coverage is created by migrant selection on uninsurance (Villarreal & Blanchard 2013).

Drawing on nationally representative data from the 2010 Mexican Census, this paper demonstrates that despite substantial affiliation with *Seguro Popular*, recently returned working-age migrants in Mexico are roughly 20 percentage points less likely than non-migrants to have health insurance. Of further significance, results indicate that the negative association between a recent migration experience and the odds of having health coverage is significantly stronger among women than men, suggesting that gendered aspects of Mexican migration may create greater barriers to re-entry among women than men. Disaggregating respondents by program affiliation reveals that disparate coverage through formal employment and government work accounts for the gap in coverage between migrants and non-migrants. Although sociodemographic and contextual factors significantly explain male returnees' tendencies toward *Seguro Popular* over *Seguro Social,* they do not explain the strong negative association between prior migration experience and lack of insurance coverage. Among women, these factors do not

meaningfully contribute to differences in program type or overall coverage. These results indicate that migration may be more directly associated with health coverage. Recently returned migrants may lack the social and institutional capital to explore and enroll in available coverage programs.

A plausible alternative explanation for the gap in coverage, however, is that migration does not cause uninsurance, but rather than uninsurance causes migration. Villarreal and Blanchard's (2013) findings suggest that previous studies (Aguila & Zissimopoulos 2013; Polsky et al. 2006) may have spuriously identified a negative effect association between migration and health coverage. To address this possibility, I replicated the Mexican Census analyses among men, using data from the Mexican Family Life Survey (Table 5). The longitudinal design of the MxFLS allowed me to incorporate a control for pre-migration insurance status, which adjusted for potential selection on uninsurance. The regressions estimated on the MxFLS sample indicate that, at least among working-age men, selection on uninsurance does not account for the negative association between migration and healthcare observed in the census.

More broadly, this study reveals the need for new data and new analytic techniques to better understand the process of reintegration following return. Although the Mexican Census, and other large datasets such as the Mexican National Survey of Population Dynamics (INEGI 2011) allow scholars to measure how factors such as healthcare, education, work status, and family structure are associated with prior migration experience, they offer only limited opportunity to explain these associations. Migration is a complex process and U.S. immigrants are selected on a variety of factors. Similarly, reintegration is not an instantaneous process, and returnees are also a select group. Mexican return migrants presumably require time to develop social connections, identify institutional resources, and re-enter local labor markets. To develop

causally ordered theoretical mechanisms and more satisfactorily inform policymakers, survey collection and data analysis must increasingly endeavor to situate the process of reintegration within the context of individuals' pre-migration experiences and early life contexts (Hagan et al. 2014; Hagan et al. 2015).

Mexican return migrants constitute a large population (Passel et al. 2012) and an important source of entrepreneurship and innovation in Mexico (Durand, Kandel, Parrado, & Massey 1996; Hagan et al. 2014, 2015; Woodruff & Zenteno 2007) and elsewhere around the world (Cassarino 2008; Dustmann & Kirchkamp 2002; Ilahi 1999; McCormick & Wahba 2001; Mesnard & Ravallion 2006). This study suggests that many working-age Mexican return migrants lack access to healthcare through insurance coverage. Similar findings have been reported among return migrant populations in the Middle East, Africa, and Asia (Ruben et al. 2009). Identifying and addressing the factors that enable and impede returnees' access to institutional resources such as healthcare represents an important step towards ensuring former migrants' stability and realizing the benefits of their migration experiences in terms of economic and community development.

Fig. 1
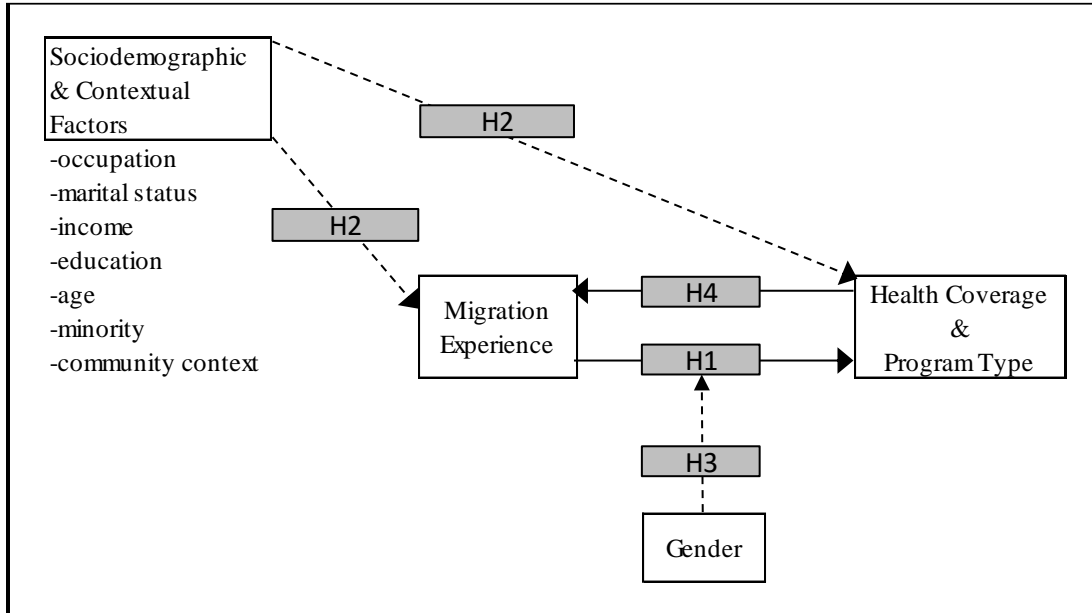Conceptual Framework

Table 1 Weighted descriptive statistics from the Mexican Census by migrant status and gender

	Male			Female		
	Non-mig	Mig		Non-mig	Mig	
Insurance Status (percentages)						
Uninsured	36.6	52.8	*	32.5	55.3	*
Social Security	32.5	17.2	*	32.0	16.8	*
Seguro Popular	19.2	24.0	*	23.0	20.1	*
Through government work	7.0	1.7	*	8.1	1.9	*
Private	2.8	2.6	*	2.5	3.9	*
Other	1.8	1.7	*	1.8	2.1	*
Sociodemographic Characteristics						
Employment status (percentages)						
Not in workforce	23.7	21.2	*	61.4	66.9	*
Informal	29.5	40.4	*	11.9	13.7	*
Formal salaried	44.4	35.5	*	25.9	18.2	*
Employer/Manager	2.4	3.0	*	0.8	1.3	*
Marital Status (percentages)						
Married/cohabitating	42.6	44.0	*	42.7	43.4	*
Single never married	40.6	31.3	*	40.7	30.6	*
widowed, divorced, separated	16.8	24.7	*	16.7	26.0	*
Wage quartiles (percentages)						
First quartile	11.6	19.3	*	14.8	26.5	*
Second quartile	14.7	17.1	*	15.6	13.6	*
Third quartile	27.0	27.2	*	26.3	22.1	*
Fourth quartile	46.7	36.4	*	43.3	37.8	*
Highest level of education (percentages)						
Primary or less	28.6	36.7	*	31.9	25.8	*
Secondary and/or technical training	54.6	57.0	*	53.2	62.1	*
Post-secondary	16.9	6.3	*	14.9	12.1	*
Age (mean)	33.6	33.9	*	33.9	32.5	*
Identifies as indigenous (percentage)	14.4	14.3	*	14.6	10.0	*
Community Context						
Community size (percentages)						
Fewer than 2,500	21.5	37.3	*	21.5	26.6	*
2,500 to 14,999	13.7	18.5	*	13.9	16.8	*
15,000 to 99,999	14.7	15.2	*	14.9	16.8	*
100,000 or more	50.0	29.0	*	49.7	39.9	*
Natural log of community income (mean)	8.7	8.6	*	8.7	8.7	*
Observations	3,092,074	73,184		3,508,856	24,747	

* Difference between migrants and non-migrants is statistically significant at $p<0.05$

[a] Data come from the 2010 Mexican Census. Means and percentages are weighted and all standard errors are adjusted for sampling design.

Table 2 Log odds of being insured and of affiliation with Seguro Social relative to Seguro Popular (men)

	Model 1		Model 2	
	Insured vs. uninsured	*Social vs. Popular*	Insured vs. uninsured	*Social vs. Popular*
Migrant	-0.658***	-0.951***	-0.600***	-0.419***
	(0.016)	(0.026)	(0.017)	(0.032)
Sociodemographic characteristics				
Occupational formality (ref: not in workforce)				
Informally employed worker			-0.633***	-0.935***
			(0.009)	(0.017)
Formally employed worker			0.411***	0.796***
			(0.010)	(0.016)
Employer			-0.808***	-0.635***
			(0.024)	(0.046)
Marital status (ref: married/cohabitating)				
Single, never married			-0.747***	0.252***
			(0.010)	(0.016)
Divorced, separated, widowed			-0.553***	-0.482***
			(0.009)	(0.015)
Income quartiles (ref: lowest quartile)				
Second income quartile			-0.021	-0.295***
			(0.014)	(0.024)
Third income quartile			0.013	0.296***
			(0.013)	(0.022)
Fourth (highest) income quartile			0.202***	0.925***
			(0.014)	(0.021)
Education (ref: primary or less)				
Secondary and /or technical training			0.306***	0.814***
			-0.008	-0.012
Post-secondary			0.593***	2.029***
			(0.013)	(0.020)
Age			0.000	0.028***
			(0.000)	(0.001)
Identifies as indigenous			-0.019	-0.115***
			(0.014)	(0.023)
Community Context				
Community population (ref: less than 2,500)				
2,500 to 14,999 inhabitants			-0.259***	0.380***
			(0.017)	(0.025)
15,000 to 99,999 inhabitants			-0.318***	0.853***
			(0.017)	(0.025)
100,000 or more inhabitants			-0.303***	1.662***
			(0.019)	(0.027)
Natural log of community income			0.318***	0.105***
			(0.017)	(0.029)
Constant	0.546***	0.715***	-1.877***	-3.312***
	(0.005)	(0.009)	(0.143)	(0.251)
Observations	3,165,258	1,783,292	3,165,258	1,783,292

*** $p<0.001$, ** $p<0.01$, * $p<0.05$

[a] Data for these models come from the 2010 Mexican Census. All models are weighted and all standard errors are adjusted for sampling design.

Table 3 Log odds of being insured and of affiliation with Seguro Social relative to Seguro Popular (women)

	Model 1		Model 2	
	Insured vs. uninsured	*Social vs. Popular*	Insured vs. uninsured	*Social vs. Popular*
Migrant	-0.933***	-0.618***	-0.940***	-0.517***
	(0.027)	(0.047)	(0.029)	(0.059)
Sociodemographic characteristics				
Occupational formality (ref: not in workforce)				
Informally employed worker			-0.405***	-0.480***
			(0.009)	(0.015)
Formally employed worker			0.552***	0.855***
			(0.009)	(0.011)
Employer			-0.550***	-0.200***
			(0.031)	(0.050)
Marital status (ref: married/cohabitating)				
Single, never married			-0.534***	-0.174***
			(0.007)	(0.009)
Divorced, separated, widowed			-0.487***	-0.934***
			(0.009)	(0.016)
Income quartiles (ref: lowest quartile)				
Second income quartile			-0.036**	-0.368***
			(0.012)	(0.016)
Third income quartile			0.068***	0.308***
			(0.011)	(0.015)
Fourth (highest) income quartile			0.227***	0.956***
			(0.012)	(0.016)
Education (ref: primary or less)				
Secondary and /or technical training			0.337***	0.792***
			(0.008)	(0.010)
Post-secondary			0.538***	2.011***
			(0.013)	(0.020)
Age			0.011***	0.029***
			(0.000)	(0.000)
Identifies as indigenous			-0.054***	-0.177***
			(0.013)	(0.019)
Community Context				
Community population (ref: less than 2,500)				
2,500 to 14,999 inhabitants			-0.166***	0.511***
			(0.017)	(0.024)
15,000 to 99,999 inhabitants			-0.185***	1.051***
			(0.018)	(0.024)
100,000 or more inhabitants			-0.183***	1.866***
			(0.018)	(0.026)
Natural log of community income			0.348***	0.166***
			(0.016)	(0.027)
Constant	0.728***	0.541***	-2.627***	-3.954***
	(0.005)	(0.008)	(0.139)	(0.229)
Observations	3,533,603	2,166,628	3,533,603	2,166,628

*** $p<0.001$, ** $p<0.01$, * $p<0.05$, † $p<0.1$

[a] Data for these models come from the 2010 Mexican Census. All models are weighted and all standard errors are adjusted for sampling design.

Table 4 Weighted descriptive statistics from the MxFLS (full sample) sample by

	Male			Female		
	Non-mig	Mig		Non-mig	Mig	
Wave 3 Insurance Status (percentages)						
Uninsured	40%	61%	*	36%	33%	
Social Security	34%	19%	*	32%	39%	
Seguro Popular	15%	19%		21%	18%	
Through government work	9%	0%		10%	7%	
Private	1%	0%		1%	2%	
Other	1%	0%		1%	0%	
Uninsured at Wave 1	55%	72%	*	56%	52%	
Sociodemographic Characteristics						
Employment status (percentages)						
Not in workforce	14%	22%	*	63%	66%	
Informal	32%	42%		14%	21%	
Formal salaried	51%	33%	*	21%	12%	*
Employer/Manager	3%	3%		2%	1%	
Marital Status (percentages)						
Married/cohabitating	26%	46%	*	21%	31%	
Single never married	66%	47%	*	65%	52%	
widowed, divorced, separated	8%	7%		15%	17%	
Wage quartiles (percentages)						
First quartile	26%	28%		35%	46%	
Second quartile	17%	23%		18%	11%	
Third quartile	27%	21%		23%	6%	*
Fourth quartile	31%	28%		25%	37%	
Highest level of education (percentages)						
Primary or less	41%	39%		50%	46%	
Secondary	36%	43%		28%	38%	
Post-secondary	23%	17%		21%	15%	
Age (mean)	36	30	*	43	42	
Identifies as indigenous (mean)	15%	7%	*	14%	13%	
Community Context						
Community size (percentages)						
Fewer than 2,500	26%	40%	*	26%	23%	
2,500 to 14,999	15%	17%		15%	10%	
15,000 to 99,999	14%	8%	*	13%	10%	
100,000 or more	45%	35%		46%	57%	
Natural log of community income (mean)	8	8		8	8	
Self-rated health worsened between waves	16%	18%		16%	17%	
Observations	3,958	109		6,262	71	

* Difference between migrants and non-migrants is statistically significant at p<0.05

[a] Data come from the Mexican Family Life Survey. Means and percentages are
weighted and all standard errors are adjusted for sampling design.

Table 5 Log odds of being insured at Wave 3 of the MxFLS (N=4,067)

	Model 1	Model 2	Model 3	Model 4
Migrant	-0.864**	-0.705*	-0.585+	-0.584+
	(0.275)	(0.314)	(0.349)	(0.352)
Insured at Wave 1		1.296***	1.054***	1.056***
		(0.157)	(0.144)	(0.144)
Sociodemographic characteristics				
Occupational formality (ref: not in workforce)				
Informally employed worker			-0.587*	-0.596**
			(0.229)	(0.225)
Formally employed worker			-0.133	-0.141
			(0.250)	(0.246)
Employer			-1.117***	-1.119***
			(0.334)	(0.330)
Marital status (ref: married/cohabiting)				
Single, never married			-0.736***	-0.737***
			(0.198)	(0.201)
Divorced, separated, widowed			-0.181	-0.188
			(0.270)	(0.272)
Income quartiles (ref: lowest quartile)				
Second income quartile			0.130	0.139
			(0.161)	(0.162)
Third income quartile			0.105	0.102
			(0.154)	(0.154)
Fourth (highest) income quartile			0.0633	0.0637
			(0.164)	(0.164)
Education (ref: primary or less)				
Secondary and /or technical training			0.198	0.190
			(0.166)	(0.169)
Post-secondary			0.851***	0.847***
			(0.205)	(0.205)
Age			0.0145*	0.0142*
			(0.006)	(0.007)
Identifies as indigenous			-0.155	-0.155
			(0.220)	(0.220)
Community context				
Community population (ref: less than 2,500)				
2,500 to 14,999 inhabitants			-0.402*	-0.402*
			(0.159)	(0.158)
15,000 to 99,999 inhabitants			(0.20)	(0.20)
			(0.282)	(0.282)
100,000 or more inhabitants			-0.490**	-0.494**
			(0.178)	(0.177)
Natural log of community income			0.25	0.243
			(0.273)	(0.272)
Worsened perceived health				-(0.17)
				(0.118)
Constant	0.403***	-0.138	-2.228	-2.125
	(0.077)	(0.107)	(2.313)	(2.306)

*** p<0.001, ** p<0.01, * p<0.05, † p<0.1

[a] Data for these models come from the Mexican Family Life Survey. All models are weighted and all standard errors are adjusted for sampling design.

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