Published in final edited form as:
J Immigr Minor Health. 2014 August ; 16(4): 607–612. doi:10.1007/s10903-013-9828-2.

Uninsurance, Underinsurance, and Health Care Utilization in Mexico by US Border Residents

Dejun Su, PhD[1], **William Pratt, PhD**[2], **Jim P. Stimpson, PhD**[3], **Rebeca Wong, PhD**[4], and **José A. Pagán, PhD**[5,6]

[1]Center for Reducing Health Disparities, College of Public Health, University of Nebraska Medical Center, Omaha, Nebraska

[2]Department of Finance, Clarion University of Pennsylvania, Clarion, PA

[3]Department of Health Services Research and Administration, College of Public Health, University of Nebraska Medical Center, Omaha, Nebraska

[4]Sealy Center on Aging, University of Texas Medical Branch (UTMB), Galveston, Texas

[5]Department of Health Management and Policy, School of Public Health, University of North Texas Health Science Center, Fort Worth, Texas

[6]Leonard Davis Institute of Health Economics, University of Pennsylvania, Philadelphia, Pennsylvania

Abstract

Using data from the 2008 Cross-Border Utilization of Health Care Survey, we examined the relationship between United States (US) health insurance coverage plans and the use of health care services in Mexico by US residents of the US-Mexico border region. We found immigrants were far more likely to be uninsured than their native-born counterparts (63 versus 27.8 percent). Adults without health insurance coverage were more likely to purchase medications or visit physicians in Mexico compared to insured adults. However, adults with Medicaid coverage were more likely to visit dentists in Mexico compared to uninsured adults. Improving health care access for US residents in the southwestern border region of the country will require initiatives that target not only providing coverage to the large uninsured population but also improving access to health care services for the large underinsured population.

Keywords

Uninsurance; Underinsurance; Health Care Utilization; US-Mexico Border

INTRODUCTION

Currently almost 19 percent or 50.3 million of the nonelderly (0–64 years) US population does not have health insurance coverage. The full implementation of the Patient Protection

Corresponding Author: Dejun Su, PhD, University of Nebraska Medical Center, 984340 Nebraska Medical Center, Omaha, NE 68198-4340, Phone: (402) 552-2359, Fax: (402) 559-6493, dejun.su@unmc.edu.

and Affordable Care Act (PPACA) is expected to reduce the size of this population by about half (i.e., 9.8 percent of the nonelderly US population; 26.4 million).[1] The rate of uninsurance is particularly high in southwestern border states (Arizona, California, New Mexico, and Texas) and even higher in US-Mexico border communities. Millions of people living in the vast US-Mexico border region cope with uninsurance or underinsurance in a region that also has an acute shortage of health care professionals and facilities.[2] Under these circumstances, many US border residents become virtual "medical tourists"—whether by choice or not—by seeking health care services in Mexico, usually at substantially lower costs than similar health care services available in the US.[3,4]

Previous studies have documented how lack of US health insurance coverage affects the use of health care services in Mexico by US residents who live along the US-Mexico border.[5–9] These studies have consistently found that lack of health insurance coverage is one of the most significant predictors of cross-border utilization of health care services. Most of these studies define health insurance status as either having or not having US health insurance coverage.[5–8] However, many people who report being insured may actually be underinsured due to limited insurance coverage, lack of providers who accept specific health insurance plans (due to, for example, low reimbursement levels or reimbursement delays and difficulties), and/or high out-of-pocket medical expenses in the form of copayments and deductibles.[9] Little is known about how specific health insurance plans in the US are related to the use of health care services in Mexico. This concern creates a key policy issue for border communities because US health insurance plans differ considerably in their payment structures and coverage levels and, as such, it becomes important to know whether health plans are meeting the needs of a largely underserved, low income US-Mexico border population.

To address this knowledge gap, we used recent survey data collected from the South Texas border area to examine the relationship between specific US health insurance plans and the purchase of medication and the use of dental and physician services in Mexico during the 12 months prior to the survey. We first describe health insurance coverage by nativity, and then present bivariate and multivariate analyses of the association between US health insurance coverage plans and the purchase of medication and the use of dental and physician services in Mexico. Finally, we discuss the policy implications of our findings in the context of health care reform in the US.

METHODS

Data and the Study Area

We used data from the Cross-border Utilization of Health Care Survey, a population-based telephone survey conducted in the US-Mexico border region of Texas in the spring of 2008. The data collection utilized a random digit dialed sampling frame that included both listed and unlisted telephone numbers from working blocks of numbers in the study area. This approach provides nearly 100% coverage of all households with landlines. Our working sample contains 1,405 respondents 18 years of age or older at the time of the survey who were randomly selected after an initial screening process to verify age eligibility and

willingness to participate. The survey included questions regarding social and demographic background, level of acculturation, and health care use.

The study area for the survey included 32 border counties in Texas, defined by the US-Mexico Border Health Commission as all counties within 62 miles (100 kilometers) of the border. This area had a population of 2.3 million in 2005, with over 80 percent of local residents being of Mexican origin.[10] Despite a booming economy and rapid population growth in the past two decades, Texas counties bordering Mexico frequently have the highest poverty and uninsurance rates in the US.[8] The uninsurance rate in the 32 Texas border counties was estimated at 42 percent in 2002, compared to the national average of 15 percent.[11] The study area's economic structure also contributes to the high uninsurance rates —the region includes a high proportion of small businesses and seasonal workers.[12]

Measures

Utilization of health care services in Mexico by Texas border residents was classified into three categories: medication purchases, physician visits, and dentist visits. Medication purchases in Mexico were captured by two questions in the survey: "Have you ever bought medications from Mexico?" and, for those who responded "yes" to the first question, "When was the last time you bought medications from Mexico (year and month)?" We used responses to the second question to calculate the percentage of respondents who reported purchasing medications in Mexico within 12 months prior to the survey out of the total number of respondents in the sample.

Two similar questions were asked for visits to physicians in Mexico: "Have you ever crossed the border to see a physician in Mexico?" and, for those who responded "yes" to the first question, they were further asked "When was the last time you visited a physician in Mexico (year and month)?" Based on responses to the second question, we calculated the percentage of the respondents who reported physician visits in Mexico during the 12 months prior to the survey out of the whole sample.

Visits to dentists in Mexico were captured by these two questions: "Have you ever crossed the border to see a dentist in Mexico?" and for those who responded "yes", "when was the last time you visited a dentist in Mexico?" This allows for the calculation of the percentage of respondents who reported visiting dentists in Mexico during the 12 months prior to the survey out of the whole sample.

Health insurance coverage status was classified into six categories: no insurance, private insurance provided by employer, private insurance purchased by the respondent, Medicaid, Medicare, and other public or government insurance. Respondents who reported more than one health insurance plan were asked to identify their major plan.

Statistical Analysis

Data were weighted using a raking technique, a post-stratification weighting procedure. The weighted adjustments aligned the sample to the known adult distribution using the 2008 American Community Survey data.[13] Weighted variables included age, gender, ethnicity,

nativity and education. This weighting procedure resulted in a distribution similar to the American Community Survey.

We first examined the distribution of health insurance plans in the whole sample as well as by nativity status. T-tests were used to denote if there were significant differences between immigrant and native-born respondents in terms of health insurance coverage. We then assessed the relationship between US health insurance plans and the use of health care services in Mexico on a bivariate basis by calculating the percentage distribution and the p values based on the Pearson chi-square statistics. Finally, in our multivariate analysis of the relation between US health insurance plans and use of health services in Mexico, we also incorporated several control variables including age, gender, race and ethnicity, nativity, citizenship status, education, fluency in Spanish, annual household income, self-rated health, satisfaction with health services received in the US, and driving distance to the border. All analyses were conducted using SPSS 20.0.

RESULTS

Of US residents living in the US-Mexico border area, close to half (47%) held no insurance at the time of the survey. Employer-sponsored insurance was held by 23 percent of respondents. The remaining health insurance plans included Medicare (12.1%), Medicaid (5%) and self-purchased insurance (6.1%) as indicated in Table 1. Underlying this overall distribution, however, were substantial differences between native- and foreign-born respondents in terms of health insurance coverage. Foreign-born respondents were far more likely to be uninsured than their native-born counterparts (63.0 percent vs. 27.8 percent, $p<0.001$). Similar gaps between the two groups, though to a lesser extent, can also be observed in other health insurance plans.

Overall, 43.5 percent of respondents reported medication purchases in Mexico during the 12 months prior to the survey. In addition, 24.3 percent reported dentist visits and 37.1 percent reported physician visits (Table 2). Relative to those who had health insurance coverage at the time of the survey, the level of utilization was considerably higher among respondents with no health insurance coverage, with 54.2 percent reporting medication purchases in Mexico, and 26.6 percent and 46 percent reporting dentist and physician visits, respectively.

Among respondents who had health insurance coverage at the time of the survey, the chance of using health services in Mexico also differed by US health insurance plans. Nearly 43 percent of those with self-purchased health insurance plans crossed the border to buy medications in Mexico during the 12 months prior to the survey, a higher percentage than among those with other health insurance plans. Physician visits in Mexico were more commonplace among respondents with employment-based insurance (37.3 percent). Being insured with Medicaid was associated with the highest chance of going to a dentist in Mexico (31.7 percent). However, being insured with Medicaid was also associated with the lowest chance of visiting physicians in Mexico (8.9 percent).

We then examined the association between US health insurance plans and utilization of health care services in Mexico on a multivariate basis (Table 3). Respondents with self-

purchased health insurance plans were more likely to purchase medications in Mexico than were those with no health insurance coverage (OR=1.87, $p<0.05$). Compared to those with no health insurance coverage, respondents insured with Medicaid were more likely to visit a dentist in Mexico (OR=2.00, $p<0.05$). Those with health insurance coverage obtained through their employer were much less likely than the uninsured to seek medical services in Mexico ($p<0.01$ in all three cases).

DISCUSSION

Uninsurance and underinsurance are pressing issues in the US-Mexico border region. Over 60 percent of the foreign-born respondents in this study reported having no health insurance coverage in 2008, compared to 27.8 percent of native-born respondents. This substantial gap in health insurance coverage by nativity implies a differential role of Mexican health services in the overall health care utilization of immigrants and the native-born in the border area. While for most of the native-born, health care services from Mexico are at most supplementary to the care they receive in the US, for many immigrants in the US southern border area, these options serve as either their predominant source of care or a last resort.[14] The high rates of health care utilization in Mexico by US-Mexico border residents suggest unmet needs in health care services on the US side of the border. In the face of escalating gas prices in the US and persistent violence on the Mexican side of the border, it is likely that these medical tourists will curtail their border crossings for health care services.

This study adds to the literature on health care access and the challenges of uninsurance and underinsurance by showing that many US border residents who have health insurance coverage still take the time and trouble to cross the border to access health care services in Mexico, where these services are usually more affordable. Mexico currently constitutes an important source of care not only for US border residents who are uninsured, but also for those who have health insurance coverage but are underinsured due to limited coverage or high co-payments and/or deductibles. In particular, the finding that respondents with Medicaid were more likely than those with other health insurance plans to visit Mexican dentists deserves attention. This finding highlights the need to understand the relationship, if any, between Medicaid's current coverage scope and the unmet needs in dental care by those enrolled in Medicaid who cross the border to visit Mexican dentists. Medicaid in Texas only covers emergency dental services (e.g. paying for extractions of diseased teeth) for adult enrollees.[15] Despite this restriction, Texas Medicaid includes an outreach program designed to contact the parents and caretakers of children receiving Medicaid to inform them of the benefits under the program including how to effectively access and use dental care.[16] This might help explain why respondents with Medicaid in our sample were more likely than those without any health insurance coverage to visit dentists in Mexico.

It is possible that because health care services are more affordable in Mexico, some uninsured residents in the Texas border area lack the motivation to purchase US health insurance, even if they can afford it.[17] However, this group is unlikely to represent a large proportion of the total uninsured population because uninsurance is closely linked to poverty.[18] About 47 percent of the residents in the 32 border counties in Texas lived below 150 percent of the federal poverty level in 2000, compared to the US national average of 21

percent.[11] If these residents could afford adequate health insurance coverage in the US, presumably fewer of them would seek health care services across the border, given the volatile security conditions in Mexico and the time required to cross through the US-Mexico border entry ports.

The PPACA's gradual expansion of health insurance coverage in the US, and the establishment of state/federal health insurance exchanges may impact future utilization of health care services in Mexico by US residents living along the US-Mexico border. Under the provisions of the PPACA, legal Mexican immigrants will be required to obtain health insurance through newly created health insurance exchanges or through the expansion of Medicaid. Presumably, expansions in health insurance coverage should partly reduce the dependence on Mexico for health care for the newly insured border population. The PPACA, however, fails to alleviate the health insurance issue for many US-Mexico border residents. For example, federal premium eligibility requires verification of citizenship status, which would likely result in an uninsured undocumented immigrant population.

The availability of lower-cost alternative care in Mexico affects the competitiveness of US health care providers in border areas.[17] Responses to incentives stipulated in PPACA by US border residents and employers may differ from responses of other regions of the nation. Unless health care services in US border regions are competitively priced and provide similar quality to services offered in Mexico, cross-border utilization of health services in Mexico will continue to serve as an important source of care for US residents living along the US-Mexico border.

Limitations of this study include use of respondents' recall. The information we collected on cross-border utilization of health care and its timing was based on the recall of respondents. The degree of recall bias could potentially affect our findings. Second, the response rate in the telephone survey calls for caution when generalizing findings from this study to the whole border population or to other regions. Specifically in regard to differences between response rates by immigration status (e.g., documented vs. undocumented), our estimates may not fully represent the responses of undocumented residents. Despite study limitations, these data represent a unique source of recent survey data obtained directly from US residents using health services in Mexico.

Although it is common for US border residents to visit Mexico for health care services, little is known about the quality and safety of health care services received in Mexico and the extent to which these services satisfy the medical needs of US care seekers. Efforts to address the unmet needs in health care in the border area should target both the uninsured and the underinsured population, including those who are covered by health insurance plans but who struggle to obtain health care because of financial or other barriers.

References

1. Buettgens, M.; Carroll, C. Eliminating the Individual Mandate: Effects on Premiums, Coverage, and Uncompensated Care. Princeton, NJ and Washington, DC: The Robert Wood Johnson Foundation and The Urban Institute; Jan. 2012 Available from: http://www.urban.org/UploadedPDF/412480-Eliminating-the-Individual-Mandate.pdf [Accessed October 2012]

2. Health Professions Resource Center, Center for Health Statistics, Texas Department of State Health Services, in collaboration with East Texas Area Health Education Center at the University of Texas Medical Branch at Galveston, Texas. Texas, 1980–2009. 4. Austin, TX: Texas Department of State Health Services; 2009. Supply trends among licensed health professions.
3. Warner DC. Access to health services for immigrants in the USA: from the great society to the 2010 health reform act and after. Ethn Racial Stud. 2011; 35(1):40–55.
4. Kiy, R.; McEnany, A. Health Care and Americans Retiring in Mexico, International Community Foundation, US Retirement in Mexico Research Series. May. 2010b
5. Bastida, E.; Brown, HS., III; Pagán, JA. Health insurance coverage and health care utilization along the US Mexico border: evidence from the Border Epidemiologic Study of Aging. In: Angel, JL.; Whitfield, KE., editors. The health of aging Hispanics: the Mexican-origin population. New York: Springer; 2007. p. 222-236.
6. Byrd TL, Law JG. Cross-border utilization of health care services by United States residents living near the Mexican border. Rev Panam Salud Pública. 2009; 26(2):95–100. [PubMed: 19814888]
7. Rivera JO, Ortiz M, Cardenas V. Cross-border purchase of medications and health care in a sample of residents of El Paso, Texas, and Ciudad Juarez, Mexico. J Natl Med Assoc. 2009; 101(2):167–173. [PubMed: 19378635]
8. Su D, Richardson C, Wen M, Pagán JA. Cross-border utilization of health care: evidence from a population-based study in south Texas. Health Serv Res. 2011; 46(3):859–876. [PubMed: 21158855]
9. Wallace SP, Mendez-Luck C, Castañeda X. Heading south: why Mexican immigrants in California seek health services in Mexico. Med Care. 2009; 47(6):662–669. [PubMed: 19434002]
10. US Census Bureau. The calculation was based on information on population size by county. 2009.
11. US Department of Health and Human Services. Border county health workforce profiles: Texas. Rockville (MD): US Department of Health and Human Services, Health Resources and Services Administration; 2007.
12. Ortiz L, Arizmendi L, Cornelius LJ. Access to health care among Latinos of Mexican descent in colonias in two Texas counties. J Rural Health. 2004; 20(3):246–252. [PubMed: 15298099]
13. US Census Bureau. [Accessed January 2013] American Community Survey: Questions & Answers. http://www.census.gov/acs/www/Downloads/language_brochures/ACSQandA_ENG13.pdf
14. Su D, Wang D. Acculturation and cross-border utilization of health services. J Immigr Minor Health. 2012; 14(4):563–9.10.1007/s10903-011-9518-x [PubMed: 21874358]
15. McGinn-Shapiro, M. [Accessed January 20, 2013] Medicaid Coverage of Adult Dental Services. State Health Policy Monitor. 2008. http://nashp.org/sites/default/files/Adult%20Dental%20Monitor.pdf?q=files/Adult%20Dental%20Monitor.pdf
16. Texas Department of Health and Human Services. [Accessed January 20, 2013] Texas Medicaid and CHIP in Perspective. Chapter 6: Medicaid Benefits. 92013. http://www.hhsc.state.tx.us/medicaid/reports/PB9/7_PB%209th_ed_Chapter6.pdf
17. Brown HS III, Pagán JA, Bastida E. International competition and the demand for health insurance in the US: evidence from the Texas-Mexico border region. Int J Health Care Finance Econ. 2009; 9(1):25–38. [PubMed: 18663572]
18. DeNavas-Walt, C.; Bernadette, DP.; Smith, JC. U.S. Census Bureau. Current Population Reports, P60-235, Income, Poverty, and Health Insurance Coverage in the United States: 2007. U.S. Government Printing Office; Washington, DC: 2008.

Table 1

Percentage of US Health Insurance Coverage Status by Nativity

US Health Insurance Coverage		Nativity		
	Whole Sample	US-Born	Foreign-Born	t-test P-value
No Health Insurance	47.3	27.8	63.0	<0.001
Private Health Insurance (employer-sponsored)	23.2	27.8	19.4	<0.001
Private Health Insurance (self-purchased)	6.1	11.1	2.1	<0.001
Medicaid	5.0	8.0	2.6	<0.001
Medicare	12.1	14.9	9.8	<0.001
Other Public Insurance	6.3	10.4	3.1	<0.001
Total	100.0	100.0	100.0	
Number of Cases	1,397	623	774	

Source: The Cross Border Utilization of Health Care Survey.

Table 2

Percentage of Health Care Utilization in Mexico during the 12 Months Prior to the Survey by US Health Insurance Coverage Status

US Health Insurance Coverage	Use of Health Services in Mexico (%)[1]		
	Medication	Dentist	Physician
No Health Insurance	54.2	26.6	46.0
Private Health Insurance (employer-sponsored)	41.1	22.4	37.3
Private Health Insurance (self-purchased)	42.5	16.8	25.0
Medicaid	15.7	31.7	8.9
Medicare	23.6	17.8	22.4
Other Public Insurance	33.2	27.6	31.9
Total	43.5	24.3	37.1
Number of Cases	608	340	519
Chi-square P-value	<0.001	0.03	<0.001

Source: The Cross Border Utilization of Health Care Survey.

[1]Denoting among respondents with different health insurance coverage plans at the time of the survey, the percentage of them reported use of health services in Mexico. For instance, among those without any health insurance coverage at the time of the survey, 54.2 per cent of them reported purchase of medications in Mexico during the 12 months prior to the survey.

Table 3

Adjusted Odds Ratios and 95% Confidence Intervals of Utilization of Health Services in Mexico by Insurance Coverage Status in the United States

	Medication	Dentist	Physician
No Health Insurance (ref.)	1.00	1.00	1.00
Private Health Insurance (employer)	0.56 (0.39, 0.84)	0.50 (0.33,0.77)	0.50 (0.33, 0.73)
Private Health Insurance (self-purchased)	1.87 (1.02, 3.43)	0.56 (0.40, 1.67)	0.66 (0.34, 1.27)
Medicaid	0.25 (0.12, 0.55)	2.00 (1.04, 3.87)	0.15 (0.06, 0.38)
Medicare	0.42 (0.24, 0.74)	0.44 (0.23, 0.87)	0.47 (0.26, 0.86)
Other Public Insurance	0.74 (0.40, 1.37)	1.34 (0.70, 2.59)	0.74 (0.40, 1.39)
Number of Cases	1,338	1,338	1,338

Source: The Cross Border Utilization of Health Care Survey.

Notes: Analyses are adjusted for the effects of age, gender, race and ethnicity, nativity, marital status, citizenship, education, fluency in Spanish, self-rated health, satisfaction with care received in the US, driving distance to the nearest border crossing station, and annual household income.