MarketWatch

Willingness To Pay For Cross-Border Health Insurance Between The United States And Mexico

Cross-border health insurance could become an important part of future U.S.-Mexico immigration programs.

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ABSTRACT: This paper estimates the demand for a binational health plan comprising preventive and ambulatory care in the United States and comprehensive care in Mexico. The results show that 62 percent of the surveyed population were interested in the product, and 57 percent were willing to pay $75–$125 a month if services in Mexico were provided in public hospitals. Only 23 percent were willing to pay $150–$250 a month for the same plan if services in Mexico were offered through private providers. The strongest predictors of willingness to pay were having insured dependents in Mexico and sending them remittances for health purposes. [*Health Affairs* 27, no. 1 (2008): 169–178; 10.1377/hlthaff.27.1.169]

Mexican immigration to the United States has been growing rapidly in recent years. During the 1990s, the number of Mexican immigrants living in the United States rose approximately 6.5 million. As a result, nearly eleven million Mexican-born people resided in the United States in 2005.[1] According to the Current Population Survey (CPS) of the U.S. Census Bureau, only 61.7 percent of longer-stay Mexican immigrants (more than ten years in the United States) and 43.1 percent of recent Mexican immigrants (less than ten years) had health insurance in 2005. People born in Mexico (both those with longevity and those without) have the lowest coverage among the foreign-born populations in the United States, and their lack of insurance is about three times higher than for native-born U.S. citizens. Low health insurance coverage may be associated with poor health outcomes and slower improvements in socioeconomic status.[2] The undercoverage of Mexican immigrants has further implications for U.S. immigration reform, since Mexicans constitute almost 68 percent of the total number of undocumented U.S. workers. Their eventual legalization will have important consequences for health policy.

■ **Health care among Mexicans.** Previous ethnographic work shows that because of geographic proximity, Mexicans living in the United States usually go back home to receive some health care.[3] The reasons vary, although the most common are related to costs and cultural competency. Mexican immigrants in the United States also sent $20 billion to their relatives back home in 2005.[4] It is estimated that

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46 percent of those receiving remittances use some share of these funds for health care, which represents the single largest category of the intended use of remittances.[5] Most of this spending is out of pocket—the most inefficient way to pay for health care. This pattern may partly reflect the lack of affordable health insurance alternatives for the Mexican-born population in the United States and for their dependents living in Mexico.

■ **Options for binational insurance.** Since the 1990s, several organizations from both countries have been exploring the options for binational health insurance. Because health care costs in Mexico are 70–90 percent lower than in the United States, cross-border coverage aims to provide more-affordable insurance products to the uninsured Mexican-born population living in the United States by using, at least in part, coverage in Mexico.[6] California is the only state where health insurance can operate in conjunction with Mexico. This was accomplished through the amendment of the Knox-Keene Act in 1998. Employers in California can now purchase insurance coverage for their employees who either live in Mexico or prefer to use health services in that country. In current plans, all services in Mexico are provided by private hospitals in the border cities of Baja California, Mexico. In addition to Mexican regulations, these providers need to comply with strict regulatory standards established by California authorities.

Three U.S. private insurance companies and one insurance group from Mexico are licensed to offer this coverage.[7] Mexican immigrants can also purchase health insurance for their dependents living in Mexico through two public plans in Mexico: the Mexican Social Security Institute (IMSS), which offers a plan in the Mexican consulates in the United States, and Seguro Popular (Popular Insurance), a prepaid and subsidized plan that is intended to provide universal coverage in Mexico.

■ **Enrollment in cross-border plans.** Although cross-border insurance is an option, enrollment in these plans remains low (approximately 50,000).[8] Legal, cost, and geographic limitations are among its main obstacles. Private plans can be purchased only through employers in the San Diego or Los Angeles areas, while services in Mexico are available only in border cities. Such plans exclude self-employed people, who might be interested in buying less costly coverage in Mexico. Those working in California but whose dependents live farther south of the U.S.-Mexico border cannot be covered by the private plans, whereas the IMSS and Seguro Popular offer services in Mexico only. This fails to solve the problem of the uninsured Mexican-born population residing in the United States.

■ **Potential for future enrollment.** Considering these limitations, an expert panel of U.S. and Mexican health insurance representatives estimated the cost of a hypothetical new plan. Taking into consideration the contingent valuation literature, the willingness to pay for this new plan was determined during an event called Copa Federaciones.[9] This soccer tournament took place in Los Angeles during the summer of 2005, providing access to a wide and diverse sample of the Mexican-born population residing in California.

This paper analyzes the results of this valuation exercise and discusses its future policy implications under the proposed regularization of undocumented immigrants in the United States. Our objective is twofold: (1) to estimate the proportion of the Mexican-born population living in the United States that is willing to pay for cross-border health insurance, and (2) to assess the main determinants of willingness to pay, for policy purposes.

Background: Previous Research

Research in the field has found that willingness-to-pay estimates can be an effective mechanism to reveal real preferences for health treatments and coverage. A comprehensive study reviewed seventy-one willingness-to-pay surveys on health care to explore the empirical evidence.[10] Researchers concluded that willingness to pay enables a more comprehensive valuation of benefits than do traditional survey methods that ask for preferences directly.

The literature in this field has widely dis-

cussed the different possibilities and caveats of willingness-to-pay estimation. Surveys trying to determine willingness to pay can lack validity and reliability because of the framing of questions and people's tendency to overstate the real value of hypothetical goods. In the past, some valuations asked about preferences directly. Yet open-ended questions have lost popularity, because they generally produced biased and erratic results.[11] Research in contingent valuation suggests that questions on willingness to pay should be asked in a referendum format to minimize the tendency to exaggerate. Closed-ended (yes/no) responses are preferable because they reflect real-world behavior. In health care studies, the closed-ended method has been shown to work better than a referendum, since more respondents answer willingness-to-pay questions with fewer zero responses ("protest" answers) in a "yes/no" format.[12]

Study Data And Methods

■ **Survey venue.** The Copa Federaciones soccer tournament took place in Los Angeles 21 May–13 August 2005. Each Saturday, soccer teams with players originating in twelve Mexican states played each other, and the people from each state organized a folk event after the game. Thus, the gathering attracted not only soccer fans, who might have been overwhelmingly male, but also other family members. This competition also offered a unique (and low-cost) opportunity to access a broad sample of Mexican-born people.

■ **Price calculations.** Professional valuators from a for-profit health insurance company in California provided three different scenarios for the U.S. preventive and ambulatory care insurance component, including basic stabilization services before the patient was transferred to Mexico. The cost of comprehensive health coverage in Mexico and an estimate of pooled transportation costs were added to the cost of cross-border plans in the three scenarios. If this plan were offered in the marketplace, it would be priced in a range of $150–$250 a month, covering the subscriber and two to five dependents in Mexico.[13]

A relevant assumption of this valuation exercise was that all subscribers were responsible for paying only half of the cost of this cross-border health plan, because many employer-based insurance plans split costs between employers and employees. Different government sources, labor unions, or employers could be responsible for paying the second half. Thus, respondents were initially questioned on their own willingness to pay $75–$125 a month for a health plan.

■ **Strength of preferences.** To measure the strength of the preferences for this plan, the survey asked a separate question making explicit that health care was provided by public hospitals and clinics in Mexico. Another question inquired about respondents' willingness to pay for private services in Mexico. Yet the price range for this possibility was doubled to determine the willingness to pay for services that are generally more costly and paid for out of pocket ($150–$250 a month).

■ **Responses to the survey.** Soccer games have some limitations that hinder the application of surveys of any type. Attendees are generally excited about the game, and it is often difficult to divert their attention to the questionnaire. To avoid this issue, the interviewers applied most of the surveys before or some hours after the game, when family members were relaxed and eating at the park. They were trained to randomly select possible respondents, screening them based on two criteria: being old enough to pay for health insurance and having some relationship with Mexico.[14] The questionnaire was written, administered, and answered in Spanish. In general, the survey was well accepted, and most of those selected were willing to respond to it. Almost 90 percent of completed questionnaires had usable data, providing a sample of 702 responses.

■ **Empirical analysis.** In a valuation framework with a closed-ended format, the use of a binary (yes/no) dependent variable can be interpreted as the willingness-to-pay probability in a multiple regression framework.[15] A similar empirical strategy was applied here, but with the willingness-to-pay variables and their determinants fitted into logit regression

models. The dependent variables in these specifications were the following three values: willingness to pay for the product, willingness to pay public providers in Mexico, and willingness to pay private providers in Mexico.

It is important to mention that a quadratic term for time spent living in the United States was included in some models, since one's willingness to pay for cross-border coverage might decline over time. Relevant interaction terms were also included in some specifications. Although attrition was low in the survey, averages were imputed in some missing cases to avoid power issues. To address the possible bias from sample selection, the probability of being selected into the survey was estimated using propensity scores.[16]

Study Results

The objective of surveying the Mexican-born population living in the United States was achieved (91 percent were born in Mexico). In broad terms, the sample composition replicates some of its health status, remittances, and sociodemographic characteristics, although it slightly overrepresents longer-stay immigrants (66 percent had been in the United States for more than ten years).

■ **Sample characteristics.** The descriptive statistics confirmed known trends (Exhibit 1).[17] Those with health insurance were more likely than those without to visit a doctor if sick. Approximately 78 percent of respondents sent remittances to Mexico, and 46 percent sent remittances for health purposes alone. This result confirms that health care expenses represent one of the main motivations to remit money.

The sample population was slightly more male than female, and 54 percent were employed. The share of the undocumented population was also consistent with reality (44 percent).[18]

■ **Dependents' health insurance in Mexico.** This survey is probably the first source of health insurance information about dependents in Mexico. Approximately 44 percent of relatives living in Mexico had a health insurance affiliation, with the IMSS as the main provider. These insured dependents were more likely to use public than private providers, which is consistent with previous research.[19]

■ **Relevant variables.** When we compared willingness to pay for cross-border insurance with some relevant variables, we found that the population that went untreated when sick, was uninsured in the United States, sent remittances to Mexico, or was employed was consistently more likely to be willing to pay for cross-border insurance than the rest of the sample population (Exhibit 2). Similarly, respondents with more time in the United States, those sending money more frequently to Mexico, and those sending a higher proportion of remittances for health purposes were more likely to be willing to pay. Consistent with previous studies, respondents with higher income and age are more inclined to be willing to pay for insurance coverage (Exhibit 3).[20]

Students, agricultural workers, and employees of hotels and restaurants were more interested in the insurance plan than respondents in other jobs. This result appears to be consistent with the jobs in the United States where health insurance is least likely to be offered. From the perspective of the Mexican state of origin, natives of Michoacán and Jalisco expressed more willingness to pay than other Mexicans did. These entities are among the main states of Mexico sending migrant workers to California. From an institutional perspective, those with dependents affiliated with the IMSS and with private insurers in Mexico were more willing to pay for cross-border insurance than those affiliated with other public health insurance programs in Mexico (Exhibit 3).

■ **Confounding factors.** These correlations show trends observed in the population. However, some confounding and unobserved variables might be explaining these differences in willingness to pay. The logit models proposed in the previous section provide more precise estimates of the determinants for the overall plan, willingness to pay for public providers in Mexico ($75–$125), and willingness

EXHIBIT 1
Characteristics Of The Sample, Survey Of Mexican Immigrants' Willingness To Pay For Cross-Border Health Insurance, 2005

Respondent/dependents in U.S. or Mexico	Percent yes
Was sick in the previous year	72
Experienced one of the following conditions[a]	
Heart disease	8
Cancer	7
Diabetes	30
Injuries	10
Ocular condition	16
Problems with teeth	22
Visited the doctor in the previous year	70
Went to the hospital if sick	19
Used family remedies	23
Used alternative medicine (healers, witches)	2
Didn't receive any treatment if sick	2
Chose another treatment	4
Respondents/dependents living only in the U.S.	
Were uninsured	30
If sick	
Insurance paid for doctor visit	42
Were uninsured and visited a doctor	23
Employer pays for health insurance	20
Worker contributes to health insurance payments	22
Get Medi-Cal (California Medicaid)	16
Children get Healthy Families (California SCHIP)	9
Received care in community clinics	41
Dependents living in Mexico	
Had some form of public or private health insurance	44
Used private health care services	40
Used government-provided health care services	44
Used other type of care (such as charities)	4
Respondent	
Is willing to pay for the proposed cross-border plan	62
Is still interested, with public providers in Mexico	57
Is willing to pay for private providers in Mexico	23
Sent remittances to Mexico in the previous year	78
Sent money to Mexico for family health expenses	46
Was born in Mexico	91
Was male	55
Worked	54
Was undocumented[b]	44
Was U.S. citizen	27
Was permanent resident	27

SOURCE: Data collected during Copa Federaciones, 21 May–13 August 2005, Los Angeles, California.

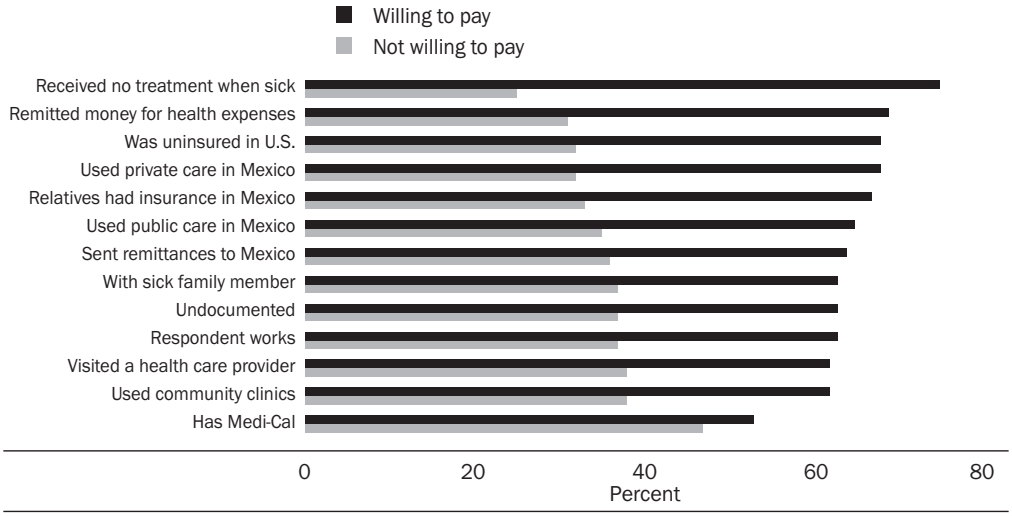
NOTES: N = 702. SCHIP is State Children's Health Insurance Program.

[a] These figures are not mutually exclusive. Respondents reported more than one condition.

[b] The question was not asked directly. The survey only asked about the main identification used in the United States. Those with *matrícula consular* (a consular ID for undocumented individuals), with fake IDs, and with "other IDs" were classified as undocumented.

to pay for private providers in Mexico ($150–$250). According to these results, 62 percent of respondents were willing to pay for the overall plan, 57 percent were still interested

EXHIBIT 2
Fractions Of The Sampled Mexican Immigrant Population Willing To Pay For Cross-Border Health Insurance, 2005



SOURCE: Data collected during Copa Federaciones, 21 May–13 August 2005, Los Angeles, California.

when they knew that public providers were responsible for services in Mexico, and only 23 percent were interested in the more costly plan with private providers in Mexico (Exhibit 1).

■ **Main determinants of willingness to pay.** In the regression model, two specifications were tested for each willingness-to-pay category, including quadratics and interaction terms in columns 2, 4, and 6 of Exhibit 4. The main determinants of willingness to pay estimated with the logit models were being uninsured in the United States, having insured dependents in Mexico, using private providers in Mexico, and sending remittances for health purposes. Once the willingness to pay for public services was tested, health and migratory status, the amount of remittances for health purposes, sex, age, and time in the United States turned significant, but using private providers in Mexico and being uninsured in the United States became insignificant. Income was the only significant variable in the models of willingness to pay for private insurance, which suggests that costs are an important limitation for this possibility. Fortunately, the term that measured the possible effect of selection bias in our model (p score) was not statistically significant in all models. Thus, the likely effect of sample selection in our specification should not affect our findings greatly.[21]

Discussion

Having dependents in Mexico with health insurance and sending remittances for health purposes were the strongest predictors of willingness to pay for cross-border coverage among Mexican immigrants to the United States. Having insured dependents in Mexico increased willingness to pay by 12 percent for those interested in cross-border health insurance, 11 percent among those willing to pay for public providers in Mexico, and 9 percent for those willing to pay for private providers in Mexico. In all specifications, the results were robust to quadratic and interaction terms. At first, it might seem counterintuitive that those who already have access to some form of health insurance coverage in Mexico are more willing than those who do not have such coverage to pay for a cross-border health plan. Yet willingness to pay might be attributable to differences in insurance perception among those with coverage in Mexico. They might be more

EXHIBIT 3
Categorical Variables, Study Of Mexican Immigrants' Willingness To Pay For Cross-Border Health Insurance, 2005

Variable	Number	Percent	Percent willing to pay
Respondent's time in U.S.			
<1 year	23	3	61
1–5 years	67	10	55
5–10 years	89	13	67
>10 years	460	66	62
Frequency of remittances			
Monthly	215	31	66
1–3 per year	214	30	65
Other	119	17	58
Never/missing	154	22	56
Share of remittances for health purposes			
10%–30%	163	23	64
50%	80	11	71
75%–100%	33	5	81
Respondent's age (years)			
≤19	53	8	47
20–39	406	58	62
40–59	220	31	65
60+	23	3	70
Respondent's yearly income			
<$10,000	150	21	57
$10,001–$25,000	224	32	64
$25,001–$50,000	173	25	66
>$50,001	55	8	71
Respondent's employment in U.S.			
Agriculture	17	2	71
Hotel/restaurant	56	8	70
Day laborer	34	5	59
Maid	36	5	64
Housewife	94	14	60
Unemployed	64	9	52
Student	12	2	75
Other	378	54	63
Respondent's state of origin in Mexico			
Michoacán	72	12	62
Jalisco	126	20	60
Other	424	69	64
Dependent's type of insurance in Mexico[a]			
Seguro Popular	12	4	58
IMSS	226	72	71
ISSSTE	37	12	54
Private	36	12	64

SOURCE: Data collected during Copa Federaciones, 21 May–13 August 2005, Los Angeles, California.

NOTE: N = 702.

[a] Seguro Popular is a health plan for those who are ineligible for Social Security (IMSS, ISSSTE) health coverage because they are self-employed or work in the informal sector.

conscious of the benefits of being enrolled in a health plan and thus be willing to pay for a product that also offers limited coverage in the United States. Meanwhile, those lacking insurance in Mexico might be more willing to forgo insurance in the United States.

A higher willingness-to-pay probability among those sending remittances for health

EXHIBIT 4
Responsiveness Of Willingness To Pay (WTP) For Cross-Border Health Insurance To Changes In Other Variables, 2005

Variable	(1) WTP	(2) WTP (squares and interactions)	(3) WTP: public	(4) WTP: public (squares and interactions)	(5) WTP: private	(6) WTP: private (squares and interactions)
Respondents/dependents were sick in previous year	3.3	3.6	9.3	10.6[a]	0.2	0.0
Respondents/dependents visited doctor in previous year	−1.7	−1.9	3.3	2.9	−1.3	−1.7
Respondents/dependents were uninsured in U.S.	10.1[a]	−25.8	2.2	−53.5	−1.1	−25.2
Dependents had some form of health insurance in Mexico	12.1[a]	12.5[a]	10.5[a]	11.7[a]	9.9	9.5
Dependents used private health services in Mexico	13.1[a]	13.0[a]	3.7	3.7	7.4	7.3
Dependents used government-provided health care in Mexico	4.6	4.4	4.8	3.9	−3.1	−2.7
Respondent sent remittances to Mexico in previous year	−1.2	−0.7	−3.1	−3.2	−2.5	−1.1
Respondent sent money to Mexico for family health expenses	14.4[a]	13.9[a]	11.0[a]	11.1[a]	7.4	7.7
Respondent was male	4.4	4.8	11.8[a]	12.6[a]	−2.2	−2.0
Respondent worked	−2.7	−2.2	−2.2	−2.1	6.2	6.5
Respondent was undocumented	4.3	4.2	10.2[a]	10.4[a]	0.5	0.6
Frequency of remittances sent to Mexico	−0.2	0.2	4.3	4.5	2.4	2.2
Amount of remittances for health purposes	10.1	−5.8	2.7	−16.5[a]	9.5	−36.3
Respondent's time in U.S.	5.7	2.1	7.1	10.3	5.5	−7.5
Respondent's age	7.6	81.5	20.2[a]	92.1	6.9	−61.9
Respondent's income	5.5	27.2	2.9	−32.0	7.7[a]	−33.7
Probability of being selected into the survey	8.0	11.3	17.6	17.3	13.4	30.6

SOURCE: Data collected during Copa Federaciones, 21 May–13 August 2005, Los Angeles, California.

NOTES: N = 702. All coefficients were converted from logit form to have the following interpretation: The number of percentage points by which a variable pushes WTP up or down. Categorical variables were indexed as continuous variables. They should be interpreted as the shift in WTP from a change in one category to the next. See online Appendix II for more details, at http://content.healthaffairs.org/cgi/content/full/27/1/169/DC1. Robust standard errors, squares, and interactions are also in Appendix II online.

[a] Statistically significant at the 0.05 level.

purposes is a more predictable finding. It increased willingness to pay by 14 percent for the overall plan and 11 percent for the public plan. Because health insurance provides more certainty about future health spending, it can be expected that those sending money for health purposes will have a higher willingness to pay than those who do not. It is necessary to recall that the values tested in the survey represented only half the cost of this hypothetical health plan. Consequently, any plan considering this type of coverage would need to either design a subsidized scheme or require compulsory enrollment to avoid adverse-selection problems.

Lastly, the design of this survey had an important strength. By assessing willingness to pay in three different questions, it clearly showed the propensity to overstate willingness to pay when a person ignores all or some of the characteristics of a product. In Exhibit 1, for example, a bigger share of the sampled pop-

ulation was interested in the health plan when they ignored who the providers of services were in Mexico. Once they realized that public providers were to be responsible for these services, their willingness declined approximately 5 percent. Because use of private health care providers in Mexico is high among this population, when the survey inquired about having coverage with private providers, at a higher cost, the willingness to pay declined even more. These results show how willingness-to-pay estimates are highly dependent on the stated characteristics of the product.

"If Seguro Popular addresses its current weaknesses, it could provide coverage for all dependents of migrant workers who still live in Mexico."

Policy Implications

The eventual regularization of up to twelve million undocumented immigrants who live in the United States, 68 percent of whom are of Mexican origin, may generalize and greatly expand the use of cross-border health insurance. Two main possibilities are now under consideration in the debate on immigration reform: a temporary guest-worker program or a conditioned amnesty to all or most employed immigrants.

■ **Guest-worker program.** An effective guest-worker program might be helpful to order immigration flows and control the profile of potential immigrant workers, although its implementation could be complex. Under this scenario, cross-border coverage could be an alternative for providing affordable health insurance to Mexican guest workers. Requiring employers to pay for expensive health coverage provided entirely in the United States could, however, reduce the incentives and the likelihood of formalizing these workers.

■ **Conditioned amnesty.** The second regularization mechanism might resemble the amnesty program of 1986, when millions of undocumented workers received green cards (for example, the Immigration Reform and Control Act). Under this scenario, immigration from Mexico to the United States would be expected to continue to rise, as family reunification programs attract the dependents of formalized workers. Under this scenario, cross-border insurance could become an alternative for first-generation immigrants. According to the CPS, 67 percent of recent Mexican-born immigrants (in the United States for less than ten years) were uninsured in the United States. Yet this figure declines over time, with 45 percent for longer-stay immigrants and only 23 percent for Mexican Americans.

These figures suggest that second- or third-generation Americans with Mexican ancestry are gradually assimilating in the United States. As do other Americans, they are becoming more likely to have employer-based health insurance. However, first-generation immigrants may remain ineligible for Medicare or Medicaid once they migrate to the United States, or they can face language barriers and other culturally related limitations. Under this scenario, cross-border insurance could be an affordable alternative for this population. Yet the main challenges that this program will face if implemented are (1) guaranteeing high quality standards among Mexican providers, and (2) homogenizing regulations in all U.S. states to allow the nationwide operation of cross-border insurance.

■ **Coverage for dependents in Mexico.** As it stands right now, Seguro Popular in Mexico is a promising program that may provide universal coverage by the next decade. Yet its benefits are not portable outside the community of origin, and its prospects for long-term funding seem uncertain. Thus, it may be an impractical alternative for highly mobile populations in the medium term. If this program addresses its current weaknesses, it could provide health insurance coverage for all dependents of migrant workers who still live in Mexico. In the long term, it might even become a strong candidate for a high-profile, cross-border health insurance program with the United States.

OUR STUDY PROVIDES useful information on a potential market that is willing to pay for cross-border insurance but that ignores the availability of existing products or does not pay for this coverage because of current geographic, cost, or legal limitations. Any policy to extend cross-border insurance will need to design a subsidized scheme or promote compulsory enrollment. Otherwise, adverse selection could be a problem. Those who are now debating immigration reforms can make it a requirement of an eventual guest-worker program between the United States and Mexico, or a requisite to regularize undocumented workers.

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NOTES

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