Migration and AIDS in Mexico

An Overview Based on Recent Evidence

Carlos Magis-Rodríguez, MD, MPH, Cecilia Gayet, MHD, MSS,* Mirka Negroni, MPA,† Rene Leyva, PhD,† Enrique Bravo-García, BD,* Patricia Uribe, MD,* and Mario Bronfman, PhD†*

Objectives: Provide an overview of the relation between migration to the United States and AIDS cases in Mexico. Characterize the sexual behaviors of Mexican migrants. Describe HIV/AIDS prevention and clinical attention actions developed.

Methods: The following were analyzed: AIDS cases databases, various prevalence studies, the migrants survey, and information of the Ministries of the Interior and of Health. A documental analysis was undertaken of works published between 1992 and 2000 on migration and AIDS.

Results: In terms of their sexual practices, migrants in the past year had more sexual partners, tended to use a condom in their most recent relation in greater proportion, and had greater use of injected medicines and drugs. Two bi-national programs undertake epidemiological surveillance activities, while several initiatives have used innovative formats to provide prevention information to migrants. Imminent universal coverage leaves the challenge to assure quality of attention for migrants.

Conclusions: Studies to evaluate the impact of international migration on distribution of infected persons will be indispensable to establish priorities in prevention and attention among migrants. More information is needed on bi-national health projects to understand the impact they may have in prevention, while continuity of the prevention initiatives must be guaranteed. Attention to migrants in bi-national contexts requires information exchange agreements on migrants living with the HIV/AIDS.

Key Words: migration, sexual behavior, Mexico, epidemiology, surveillance, AIDS

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From the *Centro Nacional para la Prevención y Control del VIH/SIDA, Secretaria de Salud, Mexico City, Mexico; and †Instituto Nacional de Salud Pública, Cuernavaca, Mexico.

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Reprints: Cecilia Gayet, Centro Nacional para la Prevención y el Control del VIH/SIDA, Herschel 119, Colonia Verónica Anzures, Del. Miguel Hidalgo, Mexico City, 11590, Mexico (e-mail: cgayet@flacso.edu.mx).

In Mexico, as in other countries, the AIDS epidemic has transformed into a complex public health problem, with multiple psychologic, social, ethical, economic, and political repercussions. According to the typology proposed by the Joint United Nations Program on HIV/AIDS (UNAIDS), Mexico can be classified as a country with a concentrated AIDS epidemic characterized by the prevalence of HIV infection rapidly disseminated in certain population subgroups but which has not yet reached the general population. Although the epidemic is moderate at the national level, there are nevertheless various transmission patterns and differentiated subepidemics in each region of the country, depending on the culture, social conditions, sexual dynamics, and other habits of regional residents. Increases in the association of AIDS cases with injected drug use in cities along the border with the United States[1] and an emerging pattern of increased heterosexual transmission[2] illustrate that the scope of the epidemic may be expanding. Given the increasing magnitude of the epidemic, not enough quantitative information is yet available on individual risk of acquiring HIV in distinct subpopulations.

Since the origin of the AIDS epidemic in Mexico, various researchers have associated its development with the phenomenon of large-scale migration toward the United States, given evidence of greater prevalence of HIV/AIDS in migration destinations, which, in turn, could have repercussions in the places of origin.[3] Studies have attempted to identify migratory flows and sociodemographic characteristics of persons reported with AIDS compared with persons without AIDS through quantitative techniques[4–6] and qualitative studies of sexual behaviors of the migrants[7] as well as to characterize the risk factors of migrants during their stay in the United States to explain the increasing rural prevalence of the epidemic in Mexico.[7a] One consequence of these migration studies was concern regarding increased AIDS prevalence in women, given their vulnerability as a result of the fact that the traditional feminine role in Mexico implies a low degree of power to negotiate sexual practices with their migrant partners.[8–11] Studies have also focused on southern Mexican border points through which persons from Central American countries transit in route to the United States.[12]

Following the theoretical proposal of Lalou and Pichet[12a] to understand the forms in which the relation between migration and AIDS has been conceptualized, research results may be divided between those which see the migrant from the optic of vulnerability, or from the perspective of HIV/AIDS dissemination. Vulnerability factors which have stood out may be grouped in two classes: within a macro-social level figure the characteristics of the society of destination of the Mexican migrants compared with the places of origin, and within a micro-social level are presented the migrants' individual characteristics (Table 1).

Given concern regarding the possible relation between migration and increasing prevalence of AIDS in Mexico, prevention policies emerged early in the epidemic. Execution of these policies has been hindered by challenges related to the scope of the epidemic, however. It is difficult to ensure that prevention messages reach the entire Mexican population, considering the dispersion of migrants among localities with characteristic inaccessibility.[13] An even greater challenge is determining methods of reaching this Mexican migrant population while it is in the United States, particularly because many migrants are undocumented and fear discovery and deportation.

METHODS

This article presents a current overview of the AIDS epidemic in Mexico based on the National Registry of AIDS Cases accumulated up to December 31, 2002, as well as prevalence studies of specific groups. The AIDS cases database was updated with information on population size obtained from the 1995 Population and Housing Census undertaken by the National Institute on Geography and Statistics. Also included is a characterization of sexual behaviors of Mexican migrants based on analysis of the Migrants Survey of HIV-Related Behaviors Surveillance System undertaken in the states of Morelos and Puebla in the year 2002.[14] In addition, a literature review was conducted of 106 works on migration and AIDS published between 1992 and 2002 and contained in the database known as Mexican AIDS Database of Research and Intervention Programs (RIIMSIDA), as classified by the Centro Nacional para la Prevención y Control del SIDA Mexican National Center for HIV/AIDS Prevention and Control (CENSIDA). The article then presents an overview of prevention activities that have been developed by the Mexican government as well as by private civic organizations.[15] Finally, the article describes the state of HIV/AIDS clinical care in Mexico and identifies obstacles to access to care for Mexican migrants.

RESULTS

Epidemiologic Characteristics and Behavior of Mexican Migrants

The first AIDS case in Mexico was diagnosed in 1983, and 68,145 accumulated AIDS cases have been registered up to December 31, 2002. Almost 90% of these accumulated cases were transmitted via sexual contact. Transmission by men who have sex with men accounts for little more than 50%

TABLE 1. Summary of the Literature on Vulnerability Factors for Migrants

Characteristics of the Society			
Destination (United States)	**Origin (Mexico)**	**Individual Characteristics**	**Risk Practices**
More permissive cultural models in regard to sexuality	Strict community norms on sexuality	Young ages and predominance of men	Involvement in risky sexual practices to survive (sale of sex)
High HIV/AIDS incidence rates	High and low HIV/AIDS incidence rates according to the entity	Single or traveling without their family	Sexual relations with sex workers
More extended use of intravenous drugs	Increased intravenous drug use in border cities	Predominance of agricultural occupations	Heterosexual men having sexual relations with other men because of isolation in work sites
Prevention campaigns in English, without impact on Mexican migrants		Low educational level and lack of knowledge of the English language	Intravenous drug use with infected needles
		Loneliness and affective isolation	
		Sexual preferences that stimulate them to migrate to a more tolerant society	

of the total accumulated cases. The male/female ratio of prevalence is 6:1.[15a]

According to estimates of CENSIDA, in Mexico, there are 150,000 HIV-infected adults, of whom 100,000 are men who have sex with other men, 40,000 are heterosexual, more than 4500 are prisoners, 3000 are intravenous drug users, and just more than 2500 are male and female commercial sex workers.[16]

It is important to point out that the HIV prevalence in adults in the United States (0.6%) is double the estimated prevalence in Mexico (0.3%),[17] meaning that Mexican migrants living in the United States are at much greater risk of acquiring HIV compared with populations remaining in Mexico. By the end of the year 2001, an accumulated 816,157 HIV/AIDS cases had been reported in the United States,[18] signifying an accumulated incidence rate of 285.4 per 100,000 inhabitants. In that same period, Mexico[19] had registered 51,914 accumulated cases for an accumulated rate of 51.7 per 100,000 inhabitants. Comparing these 2 rates, the risk in the United States is 5.5 times greater than in Mexico.

Background of Migration to the United States in Registered HIV/AIDS Cases

In early 2001, a study was undertaken that classified accumulated HIV/AIDS cases from the National Case Registry up to December 31, 2000, according to locality population size as reported by the 1995 Population and Housing Census. As a result of this research, it was established that of the total cases registered up to December 2000 (n = 47,617), 12.7% (6060) involved persons who had previously lived in the United States. This proportion is higher (approximately 14%) in reference to HIV/AIDS-infected persons living in localities with less than 5000 inhabitants and in those living in large cities with more than 500,000 inhabitants (Table 2).

At the beginning of the epidemic, all cases involved persons who had previously lived in the United States; that figure declined to 41.3% by 1991. Beginning in 1992, however, the Mexican epidemiologic surveillance system discontinued the systematic registry of variables related to migration history. Presumably, as a result, the percentage dropped abruptly to 20% that year, to 5.4% the following year, and successively until reaching 0.1% in the year 2000 (Table 3).

The 2 states that present the highest proportion of HIV/AIDS cases involving a history of residence in the United States are Michoacan and Jalisco, with figures greater than 20%. They are followed by Nayarit, Nuevo León, Coahuila de Zaragoza, and the Federal District (Mexico City), with proportions greater than 15% of the total cases (Table 4). In addition, in Michoacán, Durango, Zacatecas, Nayarit, and Jalisco, more than 20% of AIDS patients registered in rural areas (populations less than 2500 inhabitants according to the census definition) have backgrounds of previous residence in the United States (Table 5).

Behaviors of Mexican Migrants Related to HIV

We know little about the impact of migration on the development of the HIV/AIDS epidemic in Mexico. Sufficient data are lacking to measure the role of migration in the spread of the epidemic accurately. The lack of serologic surveys of Mexican migrant populations, which would allow establishment of relations between sexual and cultural practices and infection, has led to use of indirect inferences of individual risk based on estimations of differences in sexual practices between migrants and nonmigrants.

Progress has been made in identifying certain sexual practices of the mobile populations to reveal paths of transmission. The qualitative study undertaken by Bronfman and Minello[7] illustrated that changes in sexual habits are produced

TABLE 2. Accumulated AIDS Cases by Locality Size and Background of Residence in the United States: Data Up to December 31, 2000

Locality Size	AIDS Cases	Persons With AIDS With Background of Residence in United States	Percentage
Less than 2500 inhabitants	2089	287	13.7
2500–4999 inhabitants	893	126	14.1
5000–14,999 inhabitants	2031	275	13.5
15,000–49,999 inhabitants	2965	322	10.9
50,000–499,999 inhabitants	10,918	1167	10.7
500,000 or more inhabitants	26,387	3722	14.1
Subtotal	45,283	5899	13.0
Locality size unknown	2334	161	6.9
Total	47,617	6060	12.7

Elaborated by CENSIDA (Research Department) with data from the National AIDS Case Registry.

TABLE 3. Accumulated AIDS Cases by Year of Notification and Background of Residence in the United States: Data Up to December 31, 2000

Year of Notification	AIDS Cases	Persons with AIDS With Background of Residence in United States	Percentage
1983	6	6	100.0
1984	6	3	50.0
1985	29	23	79.3
1986	246	127	51.6
1987	518	325	62.7
1988	905	507	56.0
1989	1605	941	58.6
1990	2587	1480	57.2
1991	3155	1304	41.3
1992	3210	641	20.0
1993	5058	273	5.4
1994	4111	161	3.9
1995	4310	120	2.8
1996	4216	79	1.9
1997	3670	33	0.9
1998	4758	24	0.5
1999	4372	6	0.1
2000	4855	7	0.1
Total*	47,617	6060	12.7

*The total includes 286 cases of foreigners in transit through Mexico.
Elaborated by CENSIDA (Research Department) with data from the National AIDS Case Registry.

during the migratory process: numbers of sexual partners increase among men, and as a consequence of the loneliness, isolation, lack of women, and insertion in a "more open" society as well as the decline in social and family control, relations increase with male partners and/or with prostitutes who are often intravenous drug users. Learning of new practices was also noted among both men and women, especially different positions for vaginal coitus, oral sex, and anal sex.

Within the framework of the HIV-Related Behaviors Surveillance System,[14] between August and December 2001, a survey was carried out in 2 states with high migration rates toward the United States (Morelos and Puebla), with the objective of reaching a population with high spatial mobility for labor reasons toward other countries or other localities within Mexico. Men and boys (n = 789) and women and girls (n = 367) older than the age of 14 years were interviewed. The results partially confirm the findings of the previous qualitative research. Of total interviewees, 5% had no migratory experience, 15% had worked outside their locality at some time but not within the past year, and 80% had done so in the past year. Among the last of these, 15% traveled to another country and the rest traveled to another national locality. The group, composed of 125 persons who had left their locality to work in another country during the year before the survey, was consid-

TABLE 4. Accumulated AIDS Cases by Residence Entity and Background of Residence in the United States: Data Up to December 31, 2000

Federal Entity or State	AIDS Cases	Persons with AIDS With Background of Residence in United States	Percentage
Michoacán	1549	319	20.6
Zacatecas	268	55	20.5
Nayarit	583	101	17.3
Nuevo León	1321	227	17.2
Coahuila de Zaragoza	763	129	16.9
Mexico City (Federal District)	11,639	1763	15.1
Durango	358	53	14.8
Jalisco	5356	790	14.7
México	5576	820	14.7
Chihuahua	730	107	14.7
Colima	197	27	13.7
San Luis Potosí	497	67	13.5
Tamaulipas	917	108	11.8
Sinaloa	669	77	11.5
Guerrero	1487	166	11.2
Guanajuato	976	107	11.0
Morelos	1172	125	10.7
Yucatán	1124	108	9.6
Aguascalientes	244	23	9.4
Baja California	1723	158	9.2
Puebla	2951	266	9.0
Quintana Roo	247	21	8.5
Tlaxcala	397	33	8.3
Oaxaca	923	76	8.2
Hidalgo	473	34	7.2
Sonora	664	47	7.1
Chiapas	603	34	5.6
Baja California Sur	275	5	5.5
Querétaro	390	19	4.9
Tabasco	393	16	4.1
Veracruz	2619	85	3.2
Campeche	247	5	2.0
Extanjeros			
Non-nationals	286	79	27.6
Total*	47,617	6060	12.7

*The total includes 286 cases of foreigners in transit through Mexico.
Elaborated by CENSIDA (Research Department) with data from the National AIDS Case Registry.

TABLE 5. Accumulated AIDS Cases in Rural Areas and Background of Residence in the United States: Data Up to December 31, 2000

Entity	AIDS Cases in Rural Populations	Rural Persons With AIDS With Background of Residence in United States	Percentage
Michoacán	189	50	26.5
Durango	38	10	26.3
Zacatecas	61	16	26.2
Nayarit	80	18	22.5
Jalisco	148	31	20.9
Colima	11	2	18.2
Coahuila de Zaragoza	29	5	17.2
Nuevo León	24	4	16.7
San Luis Potosí	67	11	16.4
Tlaxcala	37	6	16.2
México	153	24	15.7
Puebla	242	35	14.5
Guerrero	114	16	14.0
Morelos	31	4	12.9
Guanajuato	58	7	12.1
Oaxaca	126	15	11.9
Quintana Roo	18	2	11.1
Chihuahua	21	2	9.5
Sonora	32	3	9.4
Hidalgo	124	9	7.3
Chiapas	29	2	6.9
Aguascalientes	15	1	6.7
Tamaulipas	34	2	5.9
Sinaloa	38	2	5.3
Querétaro	39	2	5.1
Baja California Sur	21	1	4.8
Yucatán	32	1	3.1
Veracruz	198	6	3.0
Baja California	13	0	0.0
Campeche	16	0	0.0
Mexico City (Federal District)	0	0	0.0
Tabasco	51	0	0.0
National total*	2089	287	13.7

*The total includes 286 cases of foreigners in transit through Mexico.
Elaborated by CENSIDA (Research Department) with data from the National AIDS Case Registry.

ered to represent international migrants for the purposes of this study. All were sexually active, and 75% were men or boys.

The results indicate that the international migrants had more sexual partners in the previous year than those who had not migrated to another country (for practical purposes, those who did not leave their locality and those who traveled to other locations within Mexico are referred to as nonmigrants). On average, the nonmigrant men and boys had 1.8 partners over the past year, whereas the international migrants had 3.3 sexual partners ($P < 0.00$). Among these partners, a greater proportion of male international migrants than nonmigrant men and boys reported having had sexual relations in the previous year with sex workers (commercial partners) and nonregular partners (Table 6). Among the women and girls who had sexual relations in the previous year, the study noted that the international migrants had a greater number of partners than nonmigrants. On average, the nonmigrant women and girls had 1.2 partners, whereas the female international migrants had 1.5 sexual part-

TABLE 6. Type of Partners of Men in the Previous Year by Migration Condition (Percentages)

Type of Sexual Partner in the Previous Year	Men	
	Nonmigrants (N = 288)	International Migrants (N = 71)
Wife or habitual partner	77.8	67.6*
Commercial partner	16.7	40.6†
Nonregular and noncommercial	19.6	35.3*
Outside of community or country	14.7	74.3†

*$P < 0.01$; †$P < 0.00$.

The percentages of the distinct types of partners total more than 100, because 1 man may have had sexual relations with more than 1 type of partner in the previous year.

ners ($P < 0.05$). The reduced number of cases of migrant women and girls interviewed did not permit comparison of other behaviors such as condom use and types of partners.

As opposed to the qualitative results, no significant results were found between the proportion of migrant men and boys who had declared having ever had sexual relations with another man compared with nonmigrants (3% and 2.6%, respectively).

In reference to condom use in the most recent sexual relation, the migrant men and boys tended to use condoms in a higher proportion with all partner types than nonmigrants. Among both groups (migrant and nonmigrant men and boys), there was greater use with commercial partners and with partners they had outside their locality or country than with a wife or habitual partner (Table 7). The figures show that an important number of sexual relations went unprotected.

Another indicator of greater exposure to HIV/AIDS risk among the international migrants compared with the nonmigrants is greater use of injected drugs for nonmedical purposes. Affirmative responses were received from 9.8% of the 122 migrants of both sexes, compared with 1.2% of nonmigrants ($P < 0.00$), to the question of whether they had used injected drugs that were not medicines in the past year. Interviewees were also asked whether they had ever tried cocaine, and 13.4% of migrants versus 1.7% of nonmigrants ($P < 0.00$) responded affirmatively. Even though no significant difference was found between international migrants and nonmigrants in the use of injected B complex, consumption was high (14.1% and 12.1%, respectively). Thus, it seems that injected use of vitamin B represents a risk for migrants if this practice is carried out in the United States, given that migrants may have greater difficulties in obtaining access to clean syringes, because of their migrant status and because clean syringes are more readily available without prescription in Mexico than in the United States. Lafferty[20] has highlighted the importance of the use of injected medicines in a convenience sample of Latino immigrants, in which he found a high frequency of injection of vitamins and antibiotics (20.3%) and 3.5% reporting sharing the syringe.

Prevention Policies and Actions on Migration and AIDS

This section outlines binational agreements in health established in the past 2 decades and their possible use in the framework of HIV/AIDS prevention in Mexico and the United States. Given the escalating vulnerability of the mobile transborder populations, there is an urgent and emerging need to establish international collaboration mechanisms. The Binational Commission was formalized in 1981 with the participation of Mexico and the United States; its aim is to allow for exchange experiences between governmental institutions in both countries. In May 1996, the Nuclear Group on Migrant Health was established as part of the Health Group of the Mexico–United States Binational Commission to investigate the needs and common problems related to health of migrant workers and their families. The Nuclear Group on Migrant

TABLE 7. Condom Use in the Most Recent Sexual Relation With Each Type of Partner, by International Migration Condition, Among Men

Type of Partner	Condom Use by Men in Most Recent Sexual Relation			
	Nonmigrants		International Migrants	
	Percentage Yes, Did Use	N (Total)	Percentage Yes, Did Use	N (Total)
Wife or habitual partner	13.0	254	37.3	59†
Commercial partner	57.6	59	76.9	39*
Nonregular and noncommercial	41.1	56	68.0	25*
Outside of community or country	53.2	47	77.6	49*

*$P < 0.05$; †$P < 0.00$.

Health aims to advance research in the following areas: women's health, AIDS/ HIV, sexually transmitted diseases (STDs), environmental health, and tuberculosis. Among its priority actions, it promotes development of a portable binational health registry, increased electronic communication, and exchange of information and bilingual material. In addition, it evaluates public health regulations that affect Mexican migrants.

In 1999, the Mexican and United States Health Ministries signed a Bilateral Agreement on Collaboration for Border Health. The Mexico–United States Binational Commission on Border Health was established in July 2000 to address health problems along the common border between the United States and Mexico. The Commission constituted 2 sections with 13 members each. The 2 countries' Health Ministers serve as Presidents of their respective sections.[21] On September 22 of that year, the Health Ministers of both nations initialed the Joint Declaration on Migrant Health, which constituted a historic recognition of the social and economic importance of Mexican workers in the United States.

In this context of binational agreements on migrant health care, there emerged a Mexican governmental program focused on the migrant population in the United States and on internal migrants in Mexico. The program, developed in 2001, is called "Go Healthy, Return Healthy" (*Vete Sano, Regresa Sano* [VSRS]). This program recognizes the situation of inequality of the undocumented workers living in the United States and of the national agricultural workers laboring far from their families and communities of origin. The VSRS program's mission is to guarantee a favorable state of health during the 3 moments of the migratory phenomena: origin, travel, and destination.[21a]

The VSRS program was developed within the Model of Integrated Attention to Migrant Health (*Modelo de Atención Integrada a la Salud del Migrante* [MAIS]), which determines international coordination strategies to avoid duplicated efforts.[21a] The MAIS highlights the responsibility of the governments, federal and state, in migrant health and works to make health services accessible for all migrants in national territory, regardless of their migratory condition. Within the Mexican Ministry of Health structure, the VSRS program is coordinated by the National Center for Infant and Adolescent Health.

The VSRS has 2 stages of action. The first implements the component to address the internally migrating population. Actions to respond to the international migratory population are developed in the second stage.

One of the proposals is to establish a personal identification scheme, such as a migrant health card, to allow the migrant to use National Health System services throughout his or her travel and temporary stays. Another proposal is to call for intensive health promotion campaigns to foster self-care.

The program directs its execution based on 4 areas: information to the population (eg, identifying social networks, developing information guides on disease prevention, first aid, personal hygiene, community training); preventative care in the place of origin, travel, and destination (eg, prevention and control of illnesses preventable by vaccination, nutritional surveillance, sexual and reproductive health counseling); medical attention in origin, travel, and destination (eg, migrant health card, sensitizing health service providers, incorporation of migrants within care modules regardless of nonresidence in the area); and simplified epidemiologic surveillance (eg, outbreak studies, opportune notification of mobile populations of more than 100 persons). Given their great importance, the strategies focus on the most vulnerable population, such as children and reproductive age and pregnant women, offering them simple and clear information in a sensitive manner, even translated into their own language (Náhuatl, Zapoteco, and Mixteco).

The VSRS goals for 2001 to 2006 in high-mobility states and municipalities in the area of migrant health information are to develop a migrant health guide; promote self-care in health, especially in prevention and damage protection; identify migrant networks, especially in the 10 states with the highest migration rates; and disseminate and promote the self-care health guide through community leaders or municipal health committees.

The program contemplates guaranteeing prevention and control of diseases preventable by vaccination, tuberculosis treatment supply, nutrition orientation and intervention, family planning and sexual and reproductive health counseling (attending to all pregnancies and births), opportune detection of chronic-degenerative diseases, and intervention in areas such as mental and dental health.

Increasingly, mobility seems to be an element that may favor HIV/AIDS vulnerability in socially disadvantaged groups, which, in this case, correspond to undocumented migrants along the Mexico–US border. The VSRS program incorporates surveillance and attention to 100% of STD and HIV/AIDS cases detected.

It is important to note that in the first phase of the VSRS program, actions in the places of origin were initially begun in the 10 states with highest mobility: Baja California, Colima, Guanajuato, Guerrero, Jalisco, Michoacán, Oaxaca, Puebla, San Luis Potosí, and Zacatecas. Actions during migratory travel focus on active surveillance of bus stations, airports, and highways points so that health service providers, identifying mobilizations, may promote foreseen strategies. Actions in the destinations are proposed systematically in close coordination with the states of origin for the sanitary control of the population. The United States intends to strengthen coordination with migrant attention centers by promoting already existing health services and promoting their use.

Other efforts to consider the migrant health situation from a regional perspective are the Mexico–California Health Initiative (*Iniciativa de Salud México–California* [ISMECAL]) and the Mexico–Texas Health Initiative (*Iniciativa de Salud México–Texas*). On October 12, 2001, the ISMECAL

was presented with the participation of the Mexican Ministry of Health, the Ministry of Health Services of the State of California, and the University of California, working in coordination with the VSRS and outlining a series of objectives such as coordination of efforts, improvement of the quality of life of the migrant and his family, promotion of binational health, education on health and disease prevention, facilitation of binational training of health professionals, broadening access to health services in California and in the 7 most important states of origin of the Mexican workers, exchange of information among sanitary authorities, and an annual binational public health week. In the most recent Binational Health Week in 2002, a focus was STDs and HIV/AIDS, with 1 day of the week dedicated to the issue.

Given that the epidemiologic registry and the surveillance system are unable to keep pace with population mobility between the 2 countries, the ISMECAL developed an agreement with the Universitywide AIDS Research Program (UARP), the California Department of Health Services (DHS), the Mexican Epidemiological General Office, and CENSIDA to develop a pilot project for epidemiologic surveillance in California and Mexico. The plan is for said population to have a specific system that offers reliable information on diseases such as HIV/AIDS or tuberculosis and development of STDs.[21b]

On November 11, 2002, the Mexican Ministry of Health and the Texas A&M University System[22] signed the Mexico-Texas Health Initiative as part of the binational cooperation effort toward migrant welfare. This coordinated collaboration has the objectives of improving the health and quality of life of the Mexican population in Texas, promoting education in health, and developing research in applied health among several other objectives. Unfortunately, this initiative did not include any section on HIV/AIDS or sexuality, nor does it have any article that bars future incorporation of said theme.

Despite the effort proposed by diverse authorities and governments, national and international, the high risk and vulnerability in which migratory flows are immersed have not been reduced in real terms. The media report almost daily on migrant deaths as a result of diverse circumstances, including abuse by local authorities, scarce respect for human rights, exploitation, denial of medical services,[12,23] and an infinite number of tragedies in relation to migrants' search to improve their quality of life. The daily human rights violations increase this group's vulnerability in relation to various diseases, including HIV transmission.

Future research is required to evaluate the impact of these policies on HIV transmission prevention among internal and international mobile populations. Incorporation of not only the health sector but the migration authorities, Ministries of Education, and Human Rights Commissions from both sides of the border seems necessary, given that HIV prevention in mobile populations requires holistic interventions and policies that take into account all the aspects that make migrants vulnerable to STDs and HIV.

HIV/AIDS Prevention Actions in Migrants

In addition to national policies, specific actions have been implemented to address the HIV infection problem in distinct mobile populations in Mexico.

Based on results of qualitative research on sexual habits of Mexican migrants carried out between May 1, 1991 and January 1, 1992,[7] a made-for-television movie was filmed within a format that facilitates presentation of the information in a colloquial and socially accepted manner. A script for 5 actors was developed, combining frequent situations, humor, and testimonies. The movie was televised in Mexico on December 1, 1992 and in the United States on December 6, 11, and 13, 1992 through different cable channels, with a potential audience of 22 million viewers.[24]

Another project with the specific objective of HIV prevention among Mexican migrants to the United States was the videotape "*La vida sigue*" (Life goes on)[25] and the adult comic book "*Más vale prevenir . . .*" (A little prevention is worth more. . .). To disseminate information on migration and AIDS, the videotape was originally designed in 1995, transmitted on March 8, 1996 on national television in Mexico, and later redesigned as an adult comic book by Mexican National Council for HIV/AIDS Prevention and Control (CONASIDA) in 1997. The comic book is based on the return of migrants from the United States to their places of origin. In 32 pages, it narrates the changes in interactions between the migrants and residents, provides information on HIV/AIDS transmission and prevention, and, above all, promotes the use of condoms. On the back cover, it synthesizes how AIDS is transmitted and prevented as well as providing elements to reduce myths and misconceptions on transmission and to discourage rejection of persons who live with AIDS. The TELSIDA hotline and a Web page (http://www.ssa.gob.mx) are highlighted for more information. An evaluation of these 2 materials was undertaken with focus groups, which concluded that the videotape was remembered better than the comic book, although the latter could be sent by mail from Mexico to the United States.[26] The comic book also reported positive acceptance, although to a lesser degree than the videotape. Forty thousand copies of the comic book were printed and have been distributed by state AIDS programs, Mexican consulates in the United States, and State of California health services since 2001.

Another noteworthy project is *Prevención del VIH/SIDA en la frontera Sur de México: Los traileros en Cd. Hidalgo, Chiapas* (HIV/AIDS prevention in the southern Mexican border: truckers in Ciudad Hidalgo, Chiapas). This work was undertaken between 1998 and 1999 by the National Institute of Public Health (INSP) and CONASIDA, with the purpose of evaluating the impact of STDs and HIV/AIDS information on intervention and condom use promotion. An eth-

nographic study that included truck drivers and key community informants (physicians, nurses, health registrars, sex workers, and informal small-load pedal-powered transporters known as "tricyclers") was carried out. A questionnaire was applied to 307 truckers encountered in cafeterias and boarding houses in Ciudad Hidalgo between June and July 1998, with the purpose of identifying what information they had on STDs and HIV/AIDS and on condom use. This group was considered a reference group to evaluate intervention impact. The intervention was evaluated 6 months later on 311 truckers. Of these, only 23% had participated in the intervention and the remaining 77% had not. The intervention consisted of developing and using materials that contained information on prevention and promotion of condom use. The truckers were also given pamphlets, key chains, and bumper stickers for their trailers, and informative posters were distributed in bars. The project evaluation identified that the forms used were effective and that it was appropriate to disseminate the information to specific groups. Border points are considered strategic locations in which to design and develop prevention actions with high potential for multiplication to increase information coverage within this specific group.

The educational television project "*Los caminos de la vida*" (The ways of life), for HIV/AIDS prevention among rural adolescents in Mexico, was undertaken between 1998 and 2000 by the civil society organization AFLUENTES. The objective was to train educators and health service providers from rural areas on sexuality and HIV/AIDS prevention. The project hoped to generate experience with which to launch a campaign directed to *tele-secundarias* (secondary schools in poor regions, which rely on televised instruction) throughout the country and to develop an educational manual on sexuality and STDs directed to rural educators. For that purpose, ethnographic studies were undertaken with youth in rural communities, educators, and community promoters. The studies considered elements such as migration and transformations in local world visions on sexuality as a result of contact with other cities in the country and abroad and included focus groups with local community members. Elements and concepts related to solidarity, responsibility, tolerance, love, acceptance, equity, and justice were also explored. The elaboration and production of the educational videotape "*Los caminos de la vida*" was undertaken in 2002 and 2003 following the previously mentioned focus groups, but its impact evaluation is not yet available. The goal is that the educational videotape be disseminated in rural communities in 17 states in collaboration with the Mexican Institute of Social Security (IMSS) OPORTUNIDADES program.

Clinical Care

In speaking about clinical care settings in Mexico, it is important to point out that the country has a segmented health system that includes social security institutions (IMSS), Mexican Institute of Social Security for bureacrat (ISSSTE), Mexican Government Oil Company (PEMEX), Ministry of Army (SEDENA), and Ministry of Navy (SEMAR), private institutions, and public institutions of the Ministry of Health. The social security institutions provide free access to integral care for all illnesses and maternity for governmental and private sector employees, including antiviral medications and all care requirements for HIV/AIDS. An important percentage of the population does not have this social benefit, however, including the informal sector, which includes field hands or day workers and independent and non–wage-earning workers. This situation leads to unfair financial distribution and great inequities in the system.

At the beginning of the epidemic, it was estimated that 52% of the infected population had access to social security. The latest National Health Survey undertaken in 2000 found that 31.8% of the population had access to the IMSS, 5.7% to the ISSSTE, 2.1% to other social security institutions, and 1% to private services, and that 60% had no social security and relied on Ministry of Health public services.

Because of this finding and the high costs of antiviral medications, which represent 86% of the total cost of HIV/AIDS care, [27] the Mexican Ministry of Health established a program in 1998 to support the HIV/AIDS-infected population without social security with free medication, initiating with coverage of all those younger than the age of 18 years and pregnant women.[28] Starting in 1999, coverage was gradually increased to adults, and the goal was established within the 2001 to 2006 action program to reach free coverage for 100% of the total registered living population with AIDS.[29] In 2002, 93% coverage of living registered AIDS sufferers had already been reached, and in a joint effort with civil society organizations, an additional budget allocation was obtained from the Legislative Congress, allowing free antiviral medication coverage of 100% of the population needing it in 2003, encompassing 28,068 AIDS patients. As part of the health system reform, 9 funds were created for catastrophic* expense protection, and in 2004, the fund related to HIV/AIDS will have been integrated, based on the already assigned funds for antiviral medications.

Parallel to this effort, and as a consequence of decentralization of the Ministry of Health, beginning in 1997, specialized services known as *Servicios Especializados para la Atención de las personas que viven con VIH/SIDA* (SEAS) have been established for attention to persons living with HIV/AIDS in all federal entities throughout the country, in accordance with a model established by national experts. A total of 77 SEAs currently exist in the country, most of them located

*Catastrophic expense is understood as that which represents more than 30% of family income.

within specialized hospitals and integrated by health teams selected in accordance with their positive attitude toward persons with HIV/AIDS and their technical abilities. To support the medical care, periodically updated guides are available on medical, psychologic, nursing, and ambulatory care.

As a result of constant advances in attention to persons with HIV/AIDS, permanent training of the health teams is indispensable as well as supervision mechanisms that ensure compliance with guidelines and criteria established for attention to persons with HIV/AIDS. Tutorial courses have been developed for the physicians as well as courses and symposiums to update and ensure the technical quality of the SEA health teams. To ensure the quality of treatment, the General Office on Quality of the Ministry of Health has collaborated in the construction of indicators to measure the quality of services offered and joint commissions have been established with participation of civil organization representatives and persons who live with HIV/AIDS.

Despite all these efforts, the quality of services provided is still mixed. For that reason, according to changes in the General Health Law made in May 2003,[30] services offered to persons with HIV/AIDS have to be accredited and criteria are to be established to ensure the quality of services offered.

Most specialized services are located in the main cities, given that most patients are concentrated in urban areas. This represents difficulties in access for persons living in rural areas, especially in those areas in which infrastructure and communication services are limited, implying hours of transport to the city in which the specialized service is located in some cases.

In addition to this, there is the problem of the lack of flexibility of medical services to attend to mobile populations, given that the norm limits persons to access to the service module in their place of residence. To date, there are no administrative policies for service payment between different institutions and federative entities. This situation may be resolved, however, with recent modifications to the General Health Law (Article 77 bis 5, Section B, fraction VII and Article 77 bis 18), which entered into effect on January 1, 2004. These changes establish mechanisms for service payments between institutions and federative entities. This is an important advance that should facilitate access to services for mobile populations, regardless of their place of residence or rights-holder institution.

One problem that requires careful evaluation relates to exchange of clinical files among institutions, given that, to date, the official Mexican norm on handling of medical files establishes that this information is confidential and does not allow its exchange between medical institutions. Only a summary of the file is disclosed at the patient's direct request, delivered to the respective institution. In addition, it is important to consider that it is necessary to establish mechanisms to promote adherence to therapeutic regimens and to provide integral attention linked to diverse services, including nutritional, social, psychological, and legal support, as well as care at home.

DISCUSSION AND CONCLUSIONS

There was early concern in Mexico about the relation between international migration and the course of the AIDS epidemic. Existing data have not allowed decisive conclusions to be reached on the impact that migration has had on development of the epidemic. Territorial distribution of cases in Mexico seems to indicate a relation between rural cases and migration to the United States. Conversely, previous research and new evidence seem to indicate a link between migration of Mexicans to the United States and behavioral changes that place them at risk for HIV infection. In reference to sexual practices, we have determined that the Mexican migrants have had a greater number of partners, especially nonstable partners, than nonmigrants. Information is not conclusive enough to evaluate risk of infection, however. Greater condom use has also been found in migrants. In reference to illegal intravenous drug use, migrants have been found to demonstrate greater use than nonmigrants. A limiting factor in the establishment of conclusions in regard to infection risk is the lack of data on shared needles. To estimate the future direction of the AIDS epidemic in Mexico, it is necessary to undertake studies that allow evaluation of the impact of international migration on the distribution of infected persons. Establishment of a territorial pattern of infection, without waiting for infected persons to develop AIDS, will be indispensable to establish prevention and attention priorities.

Given the characteristics and social vulnerability conditions of migrant groups, the Mexican government has relocated political responses for migrants within its priority policy projects. In the area of health, there is increasing recognition of population mobility as an element that may favor HIV/AIDS vulnerability in socially disadvantaged groups, which, in this case, correspond to undocumented migrants along the Mexico–US and Mexico–Guatemala borders.

The VSRS program is a Mexican government program focused on the migrant population in the United States. This program recognizes the situation of inequality in which undocumented workers live in the United States, where they are generally marginalized from actions of organizations with the potential to defend their rights. According to the Mexican Ministry of Health, the guarantee of efficient and dignified medical attention for Mexicans in the United States is a responsibility borne primarily by the government and society of that country, although it also points out the potential importance of actions by the 45 consulates, the presence of national radio and television channels in Spanish, and relations with corporations doing business in that country.[31] Knowing the reach of said projects in terms of their population coverage, attention capacity, available resources, and supply of services are central aspects in understanding their potential impact on a socially sensitive

problem like HIV/AIDS infection. The formulation of the VSRS program may possibly be based on the premise that migrants leave their communities of origin healthy and that the greatest risk is found in the destinations. There is no scientific evidence available to support this statement, however. Strategically, it allows focus of resources in the destinations, where the undocumented migrants are socially disadvantaged because of their unauthorized status compared with the citizens of the location. The development of binational health policies may contribute to address the HIV/AIDS problem as part of an integrated social response to the needs of these vulnerable groups.

The HIV/AIDS prevention actions analyzed are based on attempts to sensitize and alter behaviors by providing more and better information on HIV/AIDS. The search for innovative messages aiming to respond to the different insertion forms and experiences of migrants in the United States constitutes the central focus of the development of information strategies. The reach of these projects is evaluated in terms of coverage, in other words, number of readers, dissemination and demand for videotapes, and television audience ratings. In general, we may consider that the different information projects have been well received by the migrant community in their places of origin and destinations. It can thus be concluded that the projects analyzed and others have contributed to the fact that migrants and their families now have appropriate information on forms of HIV/AIDS prevention and transmission. Nevertheless, it must be recalled that information availability does not automatically lead to change in sexual behavior. In addition, lack of continuity and complementary coordination of the information projects constitutes the main limitation to their development and adaptation to changing contexts of the migratory phenomenon. In this sense, it is important to consider the development and strengthening of different forms of binational collaboration with the participation of civil society organizations to provide sustainability to these projects.

With the broadening of coverage in attention to HIV patients, which is estimated to reach 100% in 2003, the gap in coverage that exists between Mexico and the United States will be reduced, although the quality gap will remain. Quality of attention will be put to the test for patients living in rural communities, for whom the SEAs are far away. In addition, Mexican and US legislation should be harmonized to allow adequate exchange of medical files. Population mobility should also be taken into account in the design of services currently received by the population and in future services. New forms of organization and service delivery must be found that offer services to the migrant population, regardless of its place of origin or rights-holder institution. The recent reform of the General Health Law and ongoing reorganization of health services may contribute to improve this situation.

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