Soc. Sci. Med. Vol. 21, No. 1, pp. 93–102, 1985
Printed in Great Britain

0277-9536/85 $3.00 + 0.00
Pergamon Press Ltd

MEXICAN IMMIGRANTS AND THE UTILIZATION OF U.S. HEALTH SERVICES: THE CASE OF SAN DIEGO

LEO R. CHAVEZ[1,2], WAYNE A. CORNELIUS[2] and OLIVER WILLIAMS JONES[3]
[1]Centro de Estudios Fronterizos del Norte de Mexico (CEFNOMEX), Tijuana, Baja California, Mexico,
[2]Center for U.S.-Mexican Studies and [3]Department of Genetics, School of Medicine,
University of California, San Diego, CA, U.S.A.

Abstract—This paper examines survey data gathered from 2103 Mexican immigrants living or working in San Diego County, California, in order to explore four fundamental questions concerning the utilization of health services: (a) What type of health services do Mexican immigrants use? (b) When hospitals are used, do they tend to be emergency room services? (c) Do Mexican immigrants use preventive services? (d) To what extent do the utilization patterns of undocumented immigrants differ from their legally-immigrated counterparts? The socioeconomic profile of the sample is characterized through analysis of variables such as sex, age, length of residence in the U.S., occupation and income. Mexican immigrants, particularly the undocumented, are relatively young compared to the non-immigrant population, of short duration in the U.S. and earn low income. In addition, undocumented and legally-immigrated respondents are covered by medical insurance at rates far below the general population. Mexican immigrants, including the undocumented, use a variety of health services. Hospital services are not the primary source of care. However, when undocumented respondents did use hospital services, they were more likely to use emergency room care than their legally-immigrated counterparts, who were more likely to use out-patient services. Finally, undocumented respondents tended to neglect preventive services as evidenced by examination of the use of pre-natal care, general check-ups and dental services.

INTRODUCTION

Mexican migration to the United States raises a number of questions concerning the immigrants' use of health services in the communities in which they settle. Of particular interest to health researchers, health care providers and policy-makers are the migrants who enter the country without proper documentation from the U.S. Immigration and Naturalization Service. There may be as many as 3 million undocumented immigrants in the United States, with about half being from Mexico [1].

A reading of the literature on the utilization patterns of Mexican immigrants presents difficulties [2]. In the first place, scant information exists specifically on Mexican immigrants, particularly the undocumented. Most available characterizations of their behavior patterns are drawn from data on the general Hispanic population. This presents an additional problem because, as one researcher recently observed, "there is a limited amount of data on the health of the Hispanic population" [3].

The available information indicates Mexican immigrants underutilize health services, particularly preventive services [4–12]. On the other hand, Mexican immigrants overutilize hospital services, particularly emergency room care [13–16].

Our purpose here is to examine these two general hypotheses concerning the use of health services by Mexicans in the U.S. through the analysis of survey data collected in San Diego, California. The specific questions we will address are:

What type of health services do Mexican immigrants use?

When hospital services are used, do they tend to be emergency room services?

Do Mexican immigrants use preventive services?

To what extent do the utilization patterns of undocumented immigrants differ from their legally-immigrated counterparts?

METHODOLOGY

The fieldwork upon which this paper is based was conducted between March 1981 and February 1982. During this period, we conducted personal in-home interviews with 2103 adults (aged 17 or more) born in Mexico who were living or working habitually in San Diego County at the time of the fieldwork, regardless of their legal status in the United States.

Interviews were conducted in over 47 localities dispersed throughout the County (including rural as well as urban areas). Interviewees were distributed roughly in accord with the distribution of the County's Mexico-origin residents who, according to the 1980 Census, made up 12% of the County's residents (Hispanics in general comprised 15% of the total County population). Thus Mexican immigrants in San Diego County tend to take up residence in close proximity to U.S.-born residents of Mexican origin.

Interviewing a 'representative' sample of the Mexican immigrant population—in San Diego County or elsewhere in the United States—presents special difficulties because of the large proportion of undocumented migrants in this population. To date, the most successful approach for overcoming these identification and access problems among undocumented immigrants within the United States has been the 'snowball' sampling procedure, in which each successive interview is with a relative or friend

of a previous interviewee, who provides the interviewer with the necessary introductions and assistance in making contact with other members of his kinship/friendship network [17]. The initial interviewees thus help the researcher to establish his/her credibility and rapport with later waves of respondents.

The procedure of 'snowball' sampling within kinship/friendship network tends to bias the resulting sample of Mexican migrants toward permanent settlers or at least 'long-stayers' in the United States: people who have steady, year-around, urban-based jobs and relatively stable living arrangements. Given their longer residence in the U.S., these immigrants have acquired more friends and *compadres* (fictive kin), and they are also more likely to be known by local community influentials who may be relied upon by the researcher for initial contacts. For all these reasons, 'long-stayers' are more likely to show up in snowball samples of the Mexican immigrant population than newcomers or transient, 'shuttle' migrants.

In the present study we sought to reduce this inherent bias towards permanent settlers by seeking some of our initial contacts among certain occupational groups noted for high seasonality (e.g. farmworkers and certain classes of workers in the hotel and tourist industry), by dispersing our initial contact points over as wide a geographic area as possible, and by broadening the sources of initial contacts to include many different kinds of organizations and individuals in the community who have diverse clienteles. We avoided unduly clustering interviewees in any one geographic area, age group or sex. Nevertheless, the proportion of 'long-stayers' in our sample is undoubtedly somewhat higher than the 'true' proportion—i.e. the percentage of 'long-stayers' who would show up in a strict random sample of the population of Mexicans living or habitually working in San Diego County at any given point in time, if it were possible to delimit that population precisely and sample it through conventional sampling techniques.

The high proportion of 'long-stayers' in our sample should be kept in mind when interpreting our findings. These more-or-less permanent settlers constitute the portion of the Mexican immigrant population that is most likely to make use of health services in the United States—especially health services of a non-emergency character. These are the immigrants who, if married, are most likely to have dependents living with them in the U.S., including women in their child-bearing years and non-adult children. They are to be contrasted with the less stable elements of the Mexican immigrant population, such as transient male farmworkers who leave their dependents in Mexico during their sojourns of work in the United States. Truly short-term migrants are likely to seek medical attention only when they have an accident (often job-related) or some other kind of acute, possibly life-threatening health problem.

Our interviews with Mexican immigrants averaged more than two hours in duration. They were conducted by a highly skilled, well-trained staff of bilingual, full-time interviewers (most of whom were Mexican nationals and Chicanos) operating out of the Center for U.S.–Mexican Studies at the University of California–San Diego. Both the household head and spouse (if living in San Diego) were interviewed whenever possible. All interviews were conducted in Spanish, in the privacy of the respondent's place of residence.

Table 1. Immigration status

	Number	%
Permanent resident visas	971	46.8
Undocumented	1026	49.4
Student	11	0.5
Silva letter	6	0.3
Permission to work	11	0.5
U.S. citizens (naturalized and U.S. born spouses of Mexican immigrants)	52	2.5
Total	2077	100.0

SOCIO-ECONOMIC PROFILE

As shown in Table 1, our sample consists of approximately half documented and half undocumented immigrants. Of the 1026 undocumented immigrants, most stated directly that they entered this country without having first obtained proper documentation. Others claimed to be here with appropriate documents, mentioning local border crossing cards (80), tourist visas (16) or fake permanent residence visas (5) as the documents they hold, which do not allow permanent residence nor the freedom to work in the United States.

The sample of Mexican immigrants examined in this paper consists of slightly more males (51.1%) than females (48.9%). A somewhat higher proportion of men (54.7%) are undocumented than women (47.8%). Over half of our sample (55%) is under 35 years of age. Undocumented respondents tend to be relatively young, with other half falling in the 20–29 years age group (see Table 2). Legal immigrants are more evenly distributed throughout the age pyramid. As the Chi-square test results in Table 1, as well as the other Tables, indicate, the undocumented and documented subpopulations are independent. The likelihood that two such distinct patterns would occur by chance are very small.

The Mexican immigrant population we sampled is much younger than the general San Diego population. The 1980 Census places 14.8% of the men and 19.7% of the women in the 20–29 age category, compared to 41 and 35.1% for men and women respectively in our sample. The relative youth of the Mexican immigrants in our sample corresponds to the age profile of the general Mexican population. In

Table 2. Age by immigration status (in percentages)

Age	Undocumented ($N = 1016$)	Documented ($N = 959$)
14–19	8.6	1.8
20–29	52.8	22.9
30–39	24.3	25.0
40–49	8.6	19.4
50–59	4.7	19.5
60 and over	1.2	11.5

Significance level $\chi^2 = 0.001$ or less.

Table 3. Length of residence in the United States, by immigration status

Years	Undocumented N	Undocumented %	Documented N	Documented %	Total N	Total %
0–5	665	67.2	132	15.2	797	42.9
6–10	230	23.2	197	22.7	427	23.0
11–20	80	8.1	335	38.7	415	22.4
21 and over	15	1.5	202	23.3	217	11.7
Total	990	100.0	866	99.9	1856	100.0

Significance level $\chi^2 = 0.001$ or less.

addition, other studies of Mexican immigrants in the United States have also found that the 20–29-year age category is the most migration-prone group [18–22].

While the length of time which our respondents had spent in the U.S. during their present 'sojourn' varies tremendously (from 1 month to 65 years), the bulk of the sample has been living in the U.S. for 6 years or less (Table 3). The length of time an interviewee has been in the United States varies with immigration status. Undocumented interviewees can be characterized as relatively recent arrivals, with slightly more than two-thirds having been in the U.S. 5 years or less. However, almost 10% of the undocumented interviewees have been in the U.S. over 10 years. Legal immigrants in our sample tend to be relatively long-term residents, with 62.1% having been in the U.S. over 10 years.

While members of our sample work in many types of occupations in San Diego County, the majority (62.5%) are clustered in three main sectors: services, agriculture and commerce (Table 4). The largest group of interviewees (about 32%) was working in service occupations, including maid service (hotels and motels, house-to-house, live-in), gardening and landscaping, janitorial/maintenance service, auto repair, driving of vehicles, house painting, electrical repair and other private-sector services.

The second largest occupational category among our respondents was agriculture and livestock-raising work. More than 15% of our interviewees fell into this category. Most of the agricultural workers in our sample were undocumented. Included are fieldworkers who pick various fruits and vegetables, employees on egg ranches and workers hired to operate and/or maintain farm machinery. We also interviewed many legal immigrants who work on farms in the area as farmworkers, as well as some who rent land and farm it themselves. Although agricultural production continues to play an important role in the local economy, it employs only 3.5% of the County's working population, most of whom are of Mexico-origin (State Census Data Center, 1980 Census Summary Report, file 1, p. 4).

Table 5. Annual gross income per working interviewee, by immigration status (in percentages)

Income category	Undocumented (N = 628)	Documented (N = 512)	Total (N = 1150)
$7500 or less	59.2	34.8	48.3
$7501–$10,000	25.4	27.7	26.4
$10,001–$20,000	13.9	29.1	20.7
$20,001 and above	1.4	8.4	4.5

Significance level $\chi^2 = 0.01$ or less.

An examination of the income distribution for the sample reveals a sharp difference between men and women. Because women are concentrated in the service sector of the economy, where perhaps the lowest paying occupations are found (particularly domestic work), a larger proportion of women than men fall into the lowest income categories. Among women, 62.9% earned $7500 per year or less as compared with only 41% of the men interviewed. Median income for female immigrants was $6500 per year; for men it was $7800. Only 14% of the women in our sample earned more than $10,000 compared to 31.2% of the men. Clearly, Mexican immigrant women are at a disadvantage in earning power, *vis-à-vis* their male counterparts.

Income also varies by immigration status. Undocumented interviewees clustered at the minimum wage level (Table 5). Most (59.2%) undocumented workers earned $7500 or less. The large frequency in this lowest category is partly attributely to undocumented women who work as domestics—the lowest paying work in the County. Only 15.3% of the undocumented workers in our sample earned above $10,000, compared to 37.5% of the legal immigrant workers.

In order to estimate a total family income, spouse's income was added to the interviewee's income. Total family income for a single person, or a person whose spouse does not work, would remain equal to that individual's annual earnings. Examination of the estimated family incomes for families of 3 or more persons (to adjust for the large proportion of single males in the undocumented group) reveals that 25.8% of the undocumented interviewees and 29.8% of the legally-immigrated interviewees have incomes below the 'poverty level' as defined by the San Diego Department of Social Services in 1981. When 'near-

Table 4. Current occupational sector in United States, by immigration status and sex

Sector	Undocumented respondents: Male N	Male %	Female N	Female %	Documented respondents: Male N	Male %	Female N	Female %	Total N	Total %
Agriculture livestock	91	16.2	19	4.5	137	29.8	51	11.0	298	15.6
Construction	33	5.9	3	0.7	40	8.7	2	0.4	78	4.1
Manufacturing	25	4.5	16	3.8	33	7.2	32	6.9	106	5.6
Commerce	167	29.8	20	4.7	62	13.5	33	7.1	282	14.8
Services	205	36.5	208	48.9	121	26.3	79	17.1	613	32.1
Public service	0	0.0	1	0.2	6	1.3	5	1.1	12	0.6
Professions	0	0.0	3	0.7	15	3.3	18	3.9	36	1.9
Economically inactive	40	7.1	155	36.5	46	10.0	243	52.5	484	25.3
Total	561	100.0	425	100.0	460	100.1	463	100.0	1909	100.0

Significance levels χ^2: undocumented male—female = 0.001 or less; documented male—female = 0.001 or less; undocumented—documented = 0.001 or less.

Table 6. Respondents without medical insurance coverage by immigration status (in percentages)

	Without insurance	Total number	%
Undocumented	679	836	81.2
Documented	259	713	36.3

Significance $\chi^2 = 0.001$ or less.

poverty' (125% of the official poverty level) is also considered, the percentages rise to 40.1 and 41.3% of undocumented and legal respondents, respectively, who live below or near poverty level. In general, the immigrants represented in this study are an economically disadvantaged population.

In addition to generally receiving low incomes, many interviewees lacked private medical insurance. In our sample as a whole, 60.6% of the respondents did not have private health insurance. Lack of medical insurance was typical among both men (61.3%) and women (57.8%) in our sample.

Coverage by medical insurance differs by immigration status. As shown in Table 6, undocumented immigrants are less likely to have health insurance. Over four-fifths of the undocumented interviewees in our sample lacked coverage. Documented immigrants in our sample appear to have greater access to medical insurance, with over 60% claiming to be covered by some kind of coverage at the time of the interview.

Both documented and undocumented respondents display a pattern of medical insurance coverage distinctly below that of the general U.S. population. The Survey of Income and Education estimated that in 1980, 70% of the American population were insured under private health insurance plans, most obtained through the workplace [13, p. 95].

In sum, many Mexican immigrants are low-skilled, semi-skilled workers who earn low-incomes and do not have medical insurance. Within the overall population, undocumented immigrants fare worse than their legal counterparts on each of the socioeconomic indicators. In fact, the term 'undocumented status' seems to be associated with a series of descriptive characteristics such as a relatively young, short-term resident, employed but earning low income and rarely having medical insurance, all of which affect, to varying degrees, utilization of health services.

UTILIZATION PATTERNS

Location of health care providers

The majority of Mexican immigrants in our sample have utilized local health care services on one or more occasions. Responses to questions concerning the most recent occasion needing medical attention (Table 7) indicate that over three-quarters of our interviewees sought care from a health-care provider located in San Diego County. Most of the remaining interviewees did not seek medical attention anywhere (10.5%) or sought care on the Mexican side of the border (10.6%). The percentage of interviewees who had never sought medical care was much higher among the undocumented (17.7%); many of whom where young, single males working in the U.S. for only a temporary period of time, than among legal respondents (4.7%), many of whom were permanent settlers. Interviewees received care in Mexico either before they migrated to the United States or by making a return visit to Mexico specifically for the purpose of obtaining medical attention.

Table 7. Location of health care providers used during most recent illness

	Number	%
San Diego County	1559	77.4
Orange County	3	0.1
Los Angeles County	10	0.5
Other U.S. location	18	0.9
Tijuana	112	5.6
Hometown in Mexico	76	3.8
Other Mexico location	24	1.2
Have not sought medical care	212	10.5
Total	2014	100.0

Our data suggest that the Mexican immigrant population in San Diego commonly return to Mexico for health care. Almost one-third of our sample (30.8%) went to Mexico for care on at least one occasion since their arrival in the Country. They most commonly used health care providers on the Mexican side located in the border city of Tijuana, although some interviewees travel all the way back to their hometown in Mexico to seek care. Many more legal immigrants (8.7%) utilized health-care providers located in Tijuana the last time they sought health care than did our undocumented interviewees (2.7%) who would have to re-cross the border back into the U.S. clandestinely. More than a third (36.2%) of the undocumented interviewees had to use the services of a paid smuggler (*coyote*) to return to the U.S. the last time the sought care in Mexico. Twenty per cent were caught by the Border Patrol upon their return.

Type of health care provider used

As Fig. 1 indicates, immigration status affects the type of health care providers selected by our interviewees. Undocumented immigrants appear to rely upon hospital and clinic-based care in the U.S. to a somewhat greater degree than the legal immigrants in our sample [23]. However, about one-third of our legally-immigrated respondents and 29% of the undocumented respondents sought care from private physicians [24, 25]. For the undocumented, clinics are the preferred health care providers. Clinics are attractive to undocumented immigrants because they often offer sliding-free scales which can be paid in cash or in installments.

Use of health providers varies when we examine the immigrants' length of residence in the U.S. (Table 8). Recent migrants (less than 3 years in the U.S.) most frequently used clinics as their source of health care. Thirty-six per cent of the recent migrants used such clinics during their most recent attempt to obtain medical attention. Long-term undocumented residents also relied upon clinics proportionately more often than other types of providers. Hospitals were used by 18.8% of the recently-arrived immigrants. Long-term residents (3 or more years in the U.S.) turned to hospitals in 23% of the cases. Long-term *legally-admitted* immigrants used hospitals proportionately more than the other types of migrants.

As Mexican immigrants become more settled in the U.S., they increasingly make use of private physi-

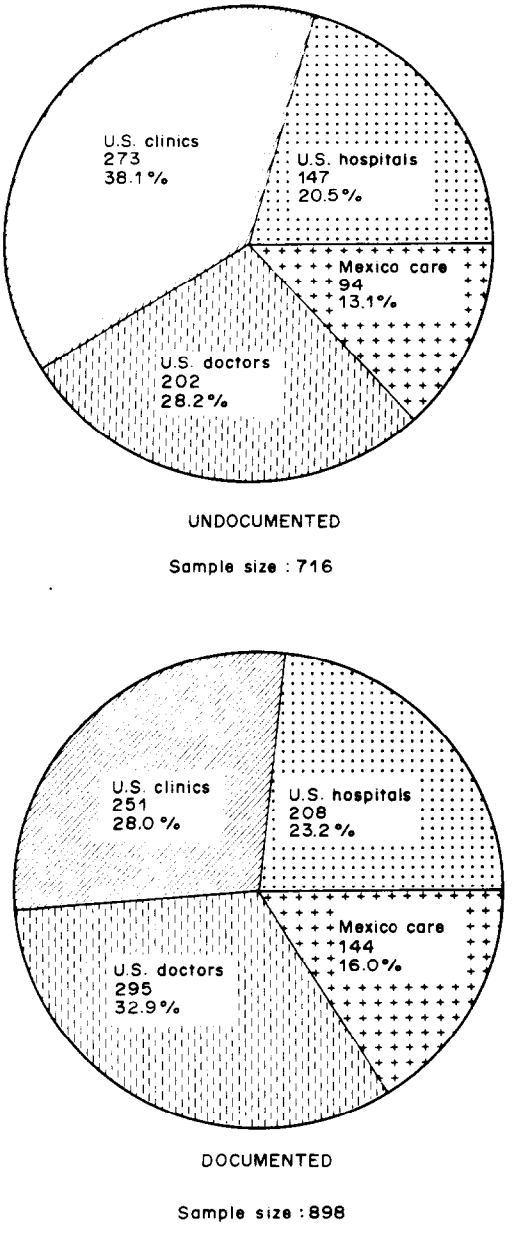

Fig. 1. Health service utilization patterns.

cians. Among the long-term immigrants (3 years or longer in the U.S.) in our sample, over one-third of both undocumented and legal immigrants had used private physicians during their most recent illness, as compared with less than one-fifth of the recently arrived migrants whom we interviewed.

Documented immigrants used hospitals more than their undocumented counterparts for preventive care, symptomatic problems, gastrointestinal problems and for accidents and injuries (Table 9). Undocumented immigrants resorted to hospitals more for respiratory problems and gynecological/obstetrics care. In contrast, undocumented immigrants turned to clinics and doctors more often for accidents and injuries than did documented immigrants. This latter pattern reflects the problem of access to hospital emergency rooms in all but life and death situations ('true emergencies') unless the patient can guarantee third-party payment, that is, medical insurance or eligibility for Medi-Cal or another government-sponsored program.

Although hospitals and clinics, taken together, are used to a proportionately greater degree than private practitioners by Mexican immigrants in our sample, they preferred the one-to-one relationship offered by private doctors. As one interviewee commented, "I go to a private doctor because many of us have had problems with hospitals; they don't attend to us well and charge a lot of money".

Recent legal immigrants (in the U.S. less than 3 years) used both clinics and private doctors in the U.S. less often than other types of migrants. But recent legal migrants utilized Mexico-based care to a much greater degree than any of the other types of migrants. Their legal status enables easy return to the U.S. and their recent arrival in the U.S. means they still have contacts and are familiar with the Mexican health-care system. Legal immigrants who are long-term residents of the U.S. resorted to Mexico-based health services less often than their recently arrived counterparts.

Importantly, Mexican immigrants utilize a variety of health care providers. Large hospitals and hospital emergency rooms are *not* the most frequently used source of care among the undocumented population.

Utilization differences

Some rather significant differences in utilization patterns emerge when male immigrants in our sample are compared with females (Table 10). Women are more likely than men to use clinics. They are also slightly more likely than the men to utilize private physicians in the United States. Women's needs for obstetric, gynecological, and child health care which are typically provided by community clinics and private physicians help explain most of these

Table 8. Health care providers by migrant types

Migrant types	U.S. hospitals	U.S. clinics	U.S. doctors	Mexico care	Total
Recent undocumented migrants	60	124	61	64	309
	19.4%	40.1%	19.7%	20.7%	99.9
Recent legal migrants	21	31	16	53	121
	17.4%	25.6%	13.2%	43.8%	100.0%
Long-term undocumented migrants	83	143	135	28	389
	21.3%	36.8%	34.7%	7.2%	100.0%
Long-term legal migrants	174	215	267	70	726
	24.0%	29.6%	36.8%	9.6%	100.0%

Significance $\chi^2 = 0.01$ or less.

Table 9. Major health problems, U.S. health care providers, and immigration status*

	U.S. hospitals		U.S. clinics		U.S. doctors	
	Undocumented $N = 156$ (%)	Documented $N = 197$ (%)	Undocumented $N = 282$ (%)	Documented $N = 245$ (%)	Undocumented $N = 217$ (%)	Documented $N = 293$ (%)
Preventative care (vaccinations, check-ups)	13.7	20.2	57.8	38.7	28.4	41.1
Gastrointestinal problems	26.9	39.7	35.8	24.7	37.3	35.6
Chest-pulmonary	22.1	18.8	40.2	39.1	37.7	42.0
Obstetrics/gynecology	37.0	33.3	42.0	33.3	21.0	33.3
Accidents/injuries	31.3	53.8	37.3	21.3	31.3	25.0
Symptomatic problems	20.4	28.8	46.3	33.3	33.3	37.9

*Percentages reflect the proportion of cases of particular health problems taken to the specific health care provider by undocumented and documented immigrants in our subsample.

differences. The men in our sample were twice as likely as the women to have received their last health care in Mexico. This reflects the fact that a higher proportion of our male interviewees are seasonal workers and are therefore more likely to make frequent return visits to Mexico.

Age makes a difference in the choice of health care providers (see Table 11). Immigrants over 30 years of age are somewhat more likely to utilize private physicians in the U.S. than those under 30, and they are less likely to obtain care in Mexico. In the under 30 age group, community clinics continue to be the main source of care. The over 30 group used doctors as their principal health care providers. Importantly, the general pattern of a diversification of health care providers is not affected by consideration of age.

The individuals who legally work in the United States but reside in Tijuana (commuters) received most of their medical attention in Mexico (61.5%) the last time they sought health care. However, commuters also used U.S. doctors (15.6%), hospitals (11.5%) and clinics (11.5%) during their last health-seeking experience.

Mexican immigrants in San Diego County exhibit a pattern of health service utilization that is practically the reverse pattern typical of the general U.S. population. Americans in general use private doctors as the principal source of health care. The vast majority of Americans (81%) went to a private physician the last time they sought care, which is over double the rate for Mexican immigrants in our sample. On the other hand, Mexican immigrants in our sample used hospitals the last time they sought care at more than double the general U.S. rate of 9% [13, p. 75]. Such differences in the use of health services led a recent Presidential Commission on health care to question "whether some individuals are systematically receiving 'second class' care of inadequate quality" [13, p. 75].

Hospital-based care received

Although undocumented immigrants used U.S. hospitals less often than U.S. clinics or private doctors, they tended to use emergency rooms rather than other types of hospital services (Fig. 2). Respondents legally in the country generally made use of hospital outpatient clinics to a much greater degree than their undocumented counterparts.

Use of hospital services also varied according to the differences in the migrant population. In general, the most frequent users of hospital-based medical services among our interviewees in San Diego County were legally-admitted immigrants who had been in the U.S. 3 or more years. However, an examination of the type of hospital services last used by interviewees in the United States, either for themselves or a member of their family, indicates that recently arrived undocumented migrants relied upon emergency room service to a greater extent than any of the other types of migrants represented in our sample (see Table 12). They used emergency services in half the cases in which hospitals were utilized. Emergency room use falls off only minimally among undocumented immigrants who have been long-time residents. Such results are not surprising, since most recently arrived, undocumented migrants tend to be young, relatively healthy individuals who do not seek medical care unless they have an accident or unless a health problem becomes severe. A nurse we interviewed summed up quite well the pattern of usage by undocumented immigrants at the clinic where she worked: "Sometimes we will see a child with pneumonia. Because the parents have postponed going to see a doctor, the child must be hospitalized. They are afraid of exposing themselves, to be found out, so they wait longer, use the [health] system less".

Use of emergency rooms by the recently arrived undocumented immigrant population also reflects their lack of knowledge concerning alternative sources of care available to them. This seems especially true of migrants originating in rural areas of Mexico (Table 13). Among our interviewees, nearly 45.5% of the rural-origin migrants who sought hospital-based care during their last illness went to emergency rooms, as compared with only 35% of the urban-origin migrants (who were twice as likely to use outpatient clinics).

Table 10. Health care providers by sex of respondent

	U.S. hospitals		U.S. clinics		U.S. doctors		Mexico care		Totals	
	N	%	N	%	N	%	N	%	N	%
Men	184	25.0	225	30.6	168	22.9	158	21.5	735	100.0
Women	193	23.7	325	39.9	210	25.8	86	10.6	814	100.0

Significance $\chi^2 = 0.01$ or less.

Table 11. Health care providers by age

	U.S. hospitals		U.S. clinics		U.S. doctors		Mexico care		Total	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Under 30 years of age	155	25.5	227	37.4	122	20.1	103	17.0	607	100.0
Over 30 years of age	218	23.6	314	33.9	254	27.5	139	15.0	925	100.0

Significance $\chi^2 = 0.01$ or less.

Table 12. Hospital services used by the various types of migrants

Type of hospital service	Recent undocumented migrants	Recent legal migrants	Long-term undocumented migrants	Long-term legal migrants	Border commuters	Total
Emergency room	68	17	98	162	16	361
Column %	50.4	23.3	46.4	34.5	30.8	38.4
Outpatient	33	26	36	138	10	243
Column %	24.4	35.6	17.1	29.4	19.2	25.8
Inpatient (admitted)	13	21	45	129	17	225
Column %	9.6	28.8	21.3	27.4	32.7	23.9
Maternity	20	9	29	35	8	101
Column %	14.8	12.3	13.7	7.4	15.4	10.7
Other	1	0	3	6	1	11
Column %	0.7	0.0	1.4	1.3	1.9	1.2
Total	135	73	211	470	52	941

Significance $\chi^2 = 0.01$ or less. Three cells have *N* of 5 or less.

Table 13. Use of U.S. hospital services, by Mexican immigrants from rural or urban areas in Mexico

	Rural		Urban		Total	
Type of service	*N*	%	*N*	%	*N*	%
Emergency room	147	45.5	226	35.0	373	38.5
Outpatient	53	16.4	195	30.2	248	25.6
Inpatient (admitted)	82	25.4	151	23.4	233	24.0
Maternity	38	11.8	66	10.2	104	10.7
Other	3	0.9	8	1.2	11	1.1
Total	323	100.0	646	100.0	969	99.9

Significance $\chi^2 = 0.01$ or less. One cell has an *N* of 5 or less.

Hospital utilization patterns vary by gender (Table 14). Women use emergency rooms less than men in the sample but used other hospital services more. Mexican men appeared willing to attempt to wait out a health problem, hoping that the problem would run its course and not need further attention. Problems which became critical required emergency care. Adding to the greater use of emergency rooms by men are accidents which occur to men outside of the home. Women used outpatient and maternity services more than emergency service.

Preventive care

Use of preventive medical care services is relatively uncommon among the Mexican immigrants in our sample. As Table 15 indicates, more than half of our sample (53.3%) had never had a general check-up when they were not ill. Although more women (58%) have had check-ups than men (36%), both groups need improvement in the area of preventive care.

Table 14. Use of emergency room service by sex of respondent

	Male (*N* = 469) (%)	Female (*N* = 524) (%)
Emergency room	44.3	33.6
Other hospital services	55.7	67.4

Significance $\chi^2 = 0.01$ or less.

Undocumented immigrants fare much worse in this regard. Practically two-thirds (65.2%) of the undocumented immigrants in our sample have never had a general check-up when not ill (Table 16). The pattern of general check-ups when not ill also varies according to the migrant's length of residence in the U.S. Preventive care is least common among recent undocumented migrants, and most common among long-term legal immigrants. However, recent legal migrants are more likely to have had a check-up when not ill than undocumented immigrants who have been in the U.S. more than 3 years, indicating the importance of immigration status, and its associated socioeconomic characteristics, for understanding patterns of preventive care usage.

A major gap exists between respondents' attitudes concerning the importance of yearly check-ups and actual behavior. Three-quarters of the respondents (74.2%) believed one should get a general check-up, even if not ill. While the attitude may be positive, other factors, such as the cost of care, lack of information about providers or fear of seeking care due to immigration status influence the actual behavior patterns observed in the data.

Preventive care is also important during pregnancy. When we examine the patterns of care exhibited only by women who delivered in the U.S. (rather than in Mexico) within the last 5 years, we find that undocumented mothers in particular tended to wait until late in their pregnancies to seek prenatal care (see Table 17). Of those undocumented women

Table 15. Respondents who never had a general check-up when not ill, by sex

Ever had a general check-up	Men		Women		Totals	
	N	%	*N*	%	*N*	%
No	581	63.8	362	41.8	943	53.1
Yes	329	36.2	503	58.2	832	46.9
Total	910	100.0	865	100.0	1775	100.0

Significance $\chi^2 = 0.01$ or less.

Table 16. Respondents who never had a general check-up when not ill, by immigration status and length of residence in the United States

	Total N	N without check-up	Without check-up
Recent* undocumented migrants	385	272	70.6
Recent legal migrants	124	70	56.5
Long-term† undocumented migrants	394	236	59.9
Long-term legal migrants	688	268	38.9
Border commuters	126	69	65.1
Totals	1717	915	53.3

Significance $\chi^2 = 0.001$ or less.
*Less than 3 years in the U.S.
†3 or more years in the U.S.

Table 17. Trimester of first prenatal exam for last birth in a U.S. hospital within the last 5 years, by immigration status

	Undocumented N	Undocumented %	Documented N	Documented %
Never examined	7	5.0	2	1.8
First trimester	75	54.0	94	86.2
Second trimester	48	34.5	11	10.1
Third trimester	9	6.5	2	1.8
Total	139	100.0	109	99.9

Significance $\chi^2 = 0.001$ or less.

who delivered their last child at a U.S. hospital, 6.5% sought prenatal care in their last trimester compared to 1.8% of the legal women who did so.

The percentage of mothers in our sample who recently delivered in San Diego with inadequate prenatal care, as defined by no care or care which began in the third trimester, is 3.6% of the legal mothers and 11.5% of the undocumented mothers. Mothers legally in the U.S. received inadequate prenatal care at about the same rate as mothers generally in San Diego. According to the Center for Health Statistics, only 3.8% of the mothers in San Diego County received inadequate prenatal care [26]. Undocumented mothers exhibited much higher percentages of births with inadequate prenatal care than women in San Diego County generally.

A pattern of regular dental check-ups is generally acknowledged as effective in preventing tooth decay and periodontal disease. However, dental care is one of the major health care needs of the Mexican immigrant population. Over 30% (31.9%) of our interviewees in Table 18 had never been to a dentist. The need for dental care among this population is underscored when compared with the general U.S. population, 11% of whom had never been to a dentist. The need for dental care among the Mexican immigrants in our sample also exceeds that of black Americans, 15% of whom had never been to a dentist [27].

As Table 18 indicates, lack of dental care varies by immigration status. Undocumented Mexican immigrants, of whom 43.6% have never been seen by a dentist compared to 19.2% of the legally immigrated respondents, are a population in particular need of dental care. The amount time individuals have been in the United States is another factor which influences the use of dentists. Over half of the recent undocumented immigrants lack dental care. On the other hand, immigrants who have resided legally in the U.S. on a long-term basis have a pattern of dental care similar to that of the general U.S. population. However, the pattern for long-term undocumented residents indicates they still have problems obtaining necessary dental care.

Clearly, the high cost of dental care in San Diego inhibits many of the Mexican immigrants living in the County—especially those who are undocumented—from seeking attention. Of our total sample, 40.9% believed that they needed dental work at the time of the interview; however, 49.7% of those respondents did not plan to seek care because of cost.

CONCLUDING OBSERVATIONS

Mexican immigrants, including the undocumented, utilized a variety of health services. Emergency room service did not surface as the dominant source of primary care for this population. However, when undocumented residents did resort to hospital services, they more often used emergency room service than did their legal counterparts.

The data reflect the diversity within the Mexican immigrant population and leads to the conclusion that the utilization of health services by Mexican immigrants varies considerably from one type of

Table 18. Respondents who have never had a dental check-up by migrant type

	Total N	N without dental visit	% Without dental visit
Recent* undocumented migrants	395	219	55.4
Recent legal migrants	128	50	39.1
Long-term† undocumented migrants	375	117	31.2
Long-term legal migrants	705	110	15.6
Border commuters	105	49	46.7
Totals	1708	545	31.9

Significance $\chi^2 = 0.001$ or less.
*Less than 3 years in the U.S.
†3 years or longer in the U.S.

migrant to another. 'Lone male' migrants who spend relatively short periods working in the U.S. are typically young and healthy, and are not likely to make use of the conventional system of health care delivery unless emergency care is needed. If they develop a serious but non-acute health problem, they usually return to Mexico where their dependents—if any—remain in the place of origin. The heaviest users of health services among the Mexican immigrant population are whole family units which settle permanently or on a long-term basis in the United States, especially those who do so as legal resident aliens.

Mines and Kearney [28] have noted that during the first few years after settlement in California, Mexican immigrant families may seek care more frequently than they do after a few more years of U.S. residence. In some cases this is due to the need for treatment of illnesses brought from Mexico (e.g. gastrointestinal problems). Also, children may need to receive inoculations in order to be enrolled in U.S. schools—inoculations available to many of these families for the first time.

In general, however, Mexican immigrants appear to have rates of health service utilization below those of the general U.S. population. In areas such as preventive care, dental care, and perinatal care, the underutilization of health care may constitute a far more serious problem than overutilization [16, p. 27]. The importance of the Mexican immigrants' socioeconomic integration into American society must be stressed as a factor affecting utilization patterns. Mexican immigrants, particularly the undocumented, generally earn low-incomes and few have medical insurance, which decreases their ability to afford the high cost of health care.

Compared to the general U.S. population, Mexican immigrants, particularly the undocumented, utilize hospitals and clinics as a source of care to a much greater degree, relying less upon private doctors. This pattern provides evidence for the argument that the health care market in the United States is undergoing a process of segmentation resulting in a two-tiered, or even a three-tiered, system of delivery [13, p. 75]. On the one hand, private doctors and hospitals which operate for profit will be primarily for patients with third-party payment guarantees, i.e. medical insurance or government-sponsored assistance. Individuals, such as the majority of Mexican immigrants, without medical insurance but eligible for government-sponsored programs will seek care primarily from clinics and hospital out-patient services. The medically indigent, those without insurance and not eligible for government-sponsored programs, or unwilling to apply for such programs (the undocumented), will seek care from clinics which offer special paying arrangements or they will neglect their health problems until they require care from a hospital emergency room.

Acknowledgements—The research presented here was supported by the California Policy Seminar, the Gildred Foundation of Solana Beach, California, the University of California Consortium on Mexico and the United States (UCMEXUS), the UC–San Diego School of Medicine, the University Hospital of the UC–San Diego Medical Center, and the California State Assembly. Leo R. Chavez would like to express his gratitude to the Rockefeller Foundation for their support during the writing of this work.

REFERENCES

1. Warren R. and Passel J. S. Estimates of illegal aliens from Mexico counted in the 1980 United States Census. Paper presented at the annual meeting of the Population Association of America, Pittsburgh, PA. U.S. Bureau of the Census, Washington, DC, 1983.
2. Weaver J. L. Mexican American health care behavior: a critical review of the literature. *Soc. Sci. Q.* **54**, 1.
3. Rice D. P. The health of the elderly: issues and challenges for the future. Paper prepared for the Health Policy in the 80's Project, University of California, San Diego (mimeo), 1984.
4. Cornelius W. A. *et al.* Mexican immigrants and Southern California: a summary of current knowledge. Center of U.S.–Mexican Studies, University of California, San Diego, Research Report Series, No. 36, San Diego, 1982.
5. Bullough V. L. and Bullough B. *Health Care for the Other Americans.* Appleton–Century–Crofts, · New York, 1982.
6. Keefe S. E. Help-seeking behavior among foreign-born and native-born Mexican Americans. *Soc. Sci. Med.* **16**, 1467–1472, 1982.
7. Community Research Associates. The undocumented immigrants: their impacts on the County of San Diego. County of San Diego, San Diego, 1980.
8. Marin B. V. O. *et al.* Utilization of traditional and nontraditional sources of care among Hispanics. Paper presented at the 88th Annual Convention of the American Psychological Association, Montreal, 1980.
9. Medina A. S. Hispanic reproductive health in California, 1976–1977. Paper presented at the Hispanic Health Services Research Conference, University of New Mexico, Albuquerque, 1979.
10. Walker G. M. Utilization of health care: the Laredo migrant experience. *Am. J. publ. Hlth* **69**, 667–672, 1979.
11. Young C. L. Providing health and social services to illegal alien families: A dilemma for community agencies. *Soc. Wk Hlth Care* **4**, 309–318, 1979.
12. Bergner L. and Yerby A. S. Low income and barriers to use of health services. *New Engl. J. Med.* **278**, 541–546, 1968.
13. President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. *Securing Access to Health Care: The Ethical Implications of Differences in the Availability of Health Services*, Vol. 1, p. 76. U.S. Government Printing Office, Washington, DC, 1983.
14. Roberts R. E. and Lee E. S. Medical care use by Mexican–Americans. *Publ. Hlth Rep.* **94**, 1980.
15. Congressional Budget Office. *Profile of Health Care Coverage: The Haves and Have-Nots.* U.S. Government Printing Office, Washington, DC, 1979.
16. Moustafa A. T. and Weiss G. Health status and practices of Mexican Americans. School of Public Health, University of California, Los Angeles, Division of Medical Administration, Advance Report 11, 1968; and Hospital Division of Medical and Hospital Administration, Advance Report 11, 1968.
17. Cornelius W. A. Interviewing undocumented immigrants: methodological reflections based on fieldwork in Mexico and the United States. *Int. Migr. Rev.* **16**, 378–411, 1981.
18. North D. S. and Houstoun M. The characteristics and role of illegal aliens in the U.S. labor market: an exploratory study. Report prepared for the Employment and Training Administration, U.S. Department of

Labor, Contract No. 20-11-74-21. Linton & Co., Washington, DC, 1976.
19. Bustamante J. A. Undocumented immigration from Mexico: research report. *Int. Migr. Rev.* **11**, 149–189, 1977.
20. Van Arsdol M. D. *et al.* Non-apprehended and apprehended undocumented residents in the Los Angeles labor market: an exploratory study. Report prepared for the Employment and Training Administration, U.S. Department of Labor, under Contract No. 20-06-77-16. National Technical Information Service, Springfield, VA.
21. Maram S. L. Hispanic workers in the garment and restaurant industries in Los Angeles County. Center for U.S.–Mexican Studies, University of California, San Diego, Research Report Series No. 12, La Jolla, California, 1980.
22. Cross H. E. and Sandos J. A. *Across the Border: Rural Development in Mexico and Migration to the United States.* Institute of Governmental Studies, University of California, Berkeley, 1982.
23. According to the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, "The hospital room or outpatient clinic is a traditional source of ambulatory care for many low-income people, uninsured individuals, ethnic and racial minorities and inner-city residents". President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research [13, p. 76].
24. In addition to hospitals, clinics, and private doctors, 1.9% of our respondents sought care from other types of providers as well. A health care 'provider' as used here is not restricted to medically trained personnel but includes any professional who makes independent decisions relating to the delivery of health care. See Brook R. H. and Williams K. N. Quality of health care for the disadvantaged. *J. Communit. Hlth* **1**, 133, 1975.
25. Seven persons admitted to having sought care from a *curandero* (practitioner of traditional Mexican 'folk medicine') for their last health problem. The 'other' category of health practitioners includes pharmacies, particularly in Mexico where drugs wh.ch require a prescription in this country are sold over the counter, (26), dentists, an optometrist, a chiropractor and a local woman (*inyeccionista*) who administers injections for individuals who purchase drugs at a pharmacy in Mexico. See Logan K. The role of pharmacists and over the counter medications in the health care system of a Mexican city. *Med. Anthrop.* In press.
26. Center for Health Statistics, *Health Data Summaries for California Counties 1982*, p. 186. Department of Health Services, Sacramento, 1982.
27. National Center for Health Statistics, *Health United States*, pp. 94–95. United States Government Printing Office, Washington, DC, 1982.
28. Mines R. and Kearney M. The health of Tulare County farmworkers: Report of the 1981 survey and ethnographic research for the Tulare County Department of Health, p. 89. 1982 (unpublished).