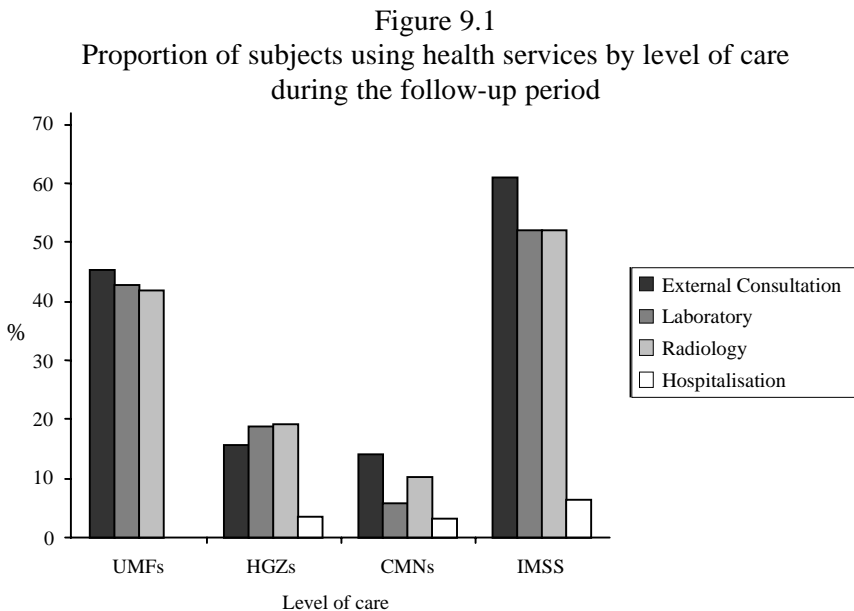


UTILISATION OF HEALTH SERVICES

9.1. USE OF THE MEXICAN INSTITUTE OF SOCIAL SECURITY

Users of health services

Over three-quarters (76% or 450,967 people) of elderly subjects had used health services in the IMSS during the follow-up period. Almost 61% had had a medical encounter in at least one of level of care, 52% had used radiology or laboratory services, 12% the emergency or preventive services, and a further 7% had been hospitalised (Figure 9.1).



Almost 67% of subjects had used health services in FMUs (45% of those using the FMU were attended in external consultation services and 43% in laboratory services), 38% in HGZs (19% used radiology, 16% external consultation and 4% were hospitalised), and 15% in CMNs (14% used external consultation and 3% were hospitalised). 41% of the subjects had used only one level of care (this could have been the first, second or third level), 28% two levels and 7.4% three levels. In the last two cases any of the possible combinations between the three levels of care were included within the category.

There were no statistically significant differences in the proportion of users of different levels of care, or in the number of levels used per person by sex, type of family, marital status or income. Significant associations with other variables are shown in Table 9.1.

The proportion of users increased with the number of chronic diseases that each person reported ($p < 0.001$). Those who had at least one injury used health services more frequently ($p < 0.001$) and the probability of using services was higher (90-100%) among those who had to cut down on activities compared with those who did not ($p < 0.001$). The likelihood of health services utilisation was twofold higher among those with HBP, cancer or diabetes mellitus ($p < 0.001$).

The prevalence of users was higher among those doing domestic activities (paid or non-paid) and those involved in informal trades. Other active workers presented a lower prevalence ($p < 0.05$). Utilisation was lower in those with higher levels of education ($p < 0.001$). Finally those who did not report another type of insurance were using services more frequently (77%) than those who did report having one (71%) ($p < 0.001$).

In the logistic regression model (Table 9.2) a total of 5,300 subjects were included. This significant model ($p < 0.00001$) achieved in classifying correctly 78% of cases. The subjects with the highest likelihood of using IMSS health services included those with the highest number of chronic diseases and with new chronic diseases in the period; who had the diagnosis of HBP, cancer or diabetes mellitus; who presented injuries (including poisonings); who had reduced their activities (daily and heavy); who had the lowest level of education; who did not have another type of insurance; and were domestic workers or traders.

There were differences in variables predicting health services utilisation by levels of care (Table 9.3). In the FMUs new chronic diseases and the diagnosis of cancer were not included in the predictive model; in HGZs and CMNs the current occupation, number of years of education, diagnosis of diabetes mellitus and HBP were not included. The diagnosis of cancer was also excluded from HGZs.

Table 9.1
Association between the use of health services in the IMSS
in the DF and different variables

<i>Variables</i>	<i>Use of health services</i>		<i>p</i>	<i>RR</i>	<i>IC 95%</i>
	<i>%</i>				
<u>Total number of chronic diseases</u>	No	Yes			
0	45.0	55.0	0.00001	—	—
1	22.7	77.3			
2	12.1	87.9			
3	7.4	92.6			
<u>New Chronic diseases</u>	No	Yes	0.00001	1.78	1.76-1.80
No	24.9	75.1			
Yes	15.5	85.5			
<u>Injuries</u>	No	Yes	0.0001	1.58	1.37-1.81
No	25.4	74.6			
Yes	18.3	81.7			
<u>Daily activities reduced</u>	No	Yes	0.0001	2.04	1.84-2.26
No	31.7	68.3			
Yes	16.2	83.8			
<u>Heavy activities reduced</u>	No	Yes	0.0001	1.86	1.69-2.05
No	34.9	65.1			
Yes	19.3	80.7			
<u>HBP diagnosed</u>	No	Yes	0.0001	2.14	1.90-2.40
No	30.3	69.7			
Yes	14.5	85.5			
<u>Cancer diagnosed</u>	No	Yes	0.0001	2.45	1.36-4.44
No	24.0	76.0			
Yes	13.2	86.8			
<u>Diabetes mellitus</u>	No	Yes	0.0001	3.00	2.51-3.58
No	28.1	71.9			
Yes	9.9	90.1			
<u>Current occupation</u>			.004	—	—
Housewife/husband	22.7	77.3			
Informal or formal trade	26.2	73.8			
Domestic workers	28.2	71.8			
Other	29.3	70.7			
Active employee	32.6	67.4			
Craftsman	42.7	57.3			
<u>Years of education</u>			0.0001	—	—
None	20.9	79.1			
1-6 years	22.4	77.6			
7-9 years	27.0	73.0			
10-12 years	35.3	64.7			
13 or over years	38.0	62.0			
<u>Other health services coverage</u>	No	Yes	0.0001	1.26	1.09-1.47
No	23.2	76.8			
Yes	29.5	70.5			

Table 9.2
Logistic regression model to predict health services utilisation in IMSS

<i>Variables in the Equation</i>	<i>Significance</i>	<i>Exp.(B)</i>
Diabetes mellitus	0.0000	3.2868
Cancer	0.0129	2.4756
HBP	0.0000	2.0196
Daily activities reduced	0.0000	1.7733
Other health services coverage	0.0002	1.5479
New chronic diseases	0.0043	1.5402
Heavy activities reduced	0.0000	1.4049
Injuries	0.0004	1.3910
Number of chronic diseases	0.0000	1.3805
Occupation	0.0149	1.0374
Years of education	0.0027	0.8986
Death during the following-up	0.0060	0.5473
Constant	0.0000	

Other variables included in the models by level were the following: In FMUs the family background of diseases and the diagnosis of any chronic disease. In HGZs age, ADL without help, family background of disease, and the diagnosis of cardiac failure. Finally, in CMNs the occupation in the past, having another health services insurance and the diagnosis of cardiac infarct and respiratory failure.

Rates of utilisation

The utilisation rate was high for outpatient consultation services (Figure 9.2) with an average of 9.2 encounters per person per year or an average of 15.2 if non-users are excluded. The total number of medical encounters was over 5 million per year and nearly 30% occurred in FMUs, 5% in HGZs, and the remaining 65% in CMNs. Excluding non-users of services each person consulted the medical doctor 5 times in average per year in FMUs and 45 times in CMNs.

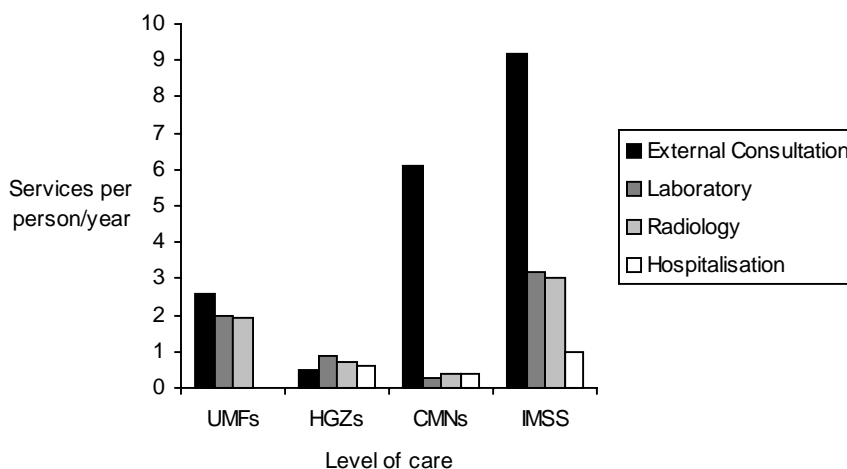
Use of laboratory and radiology services was 3.2 and 3.0 visits per person per year respectively. These services were more intensively used in FMUs.

Table 9.3
Variables predicting the utilisation of services by level of care

<i>U.M.F.</i>	<i>H.G.Z.</i>	<i>C.M.N.</i>
Years of Education	Age	Occupation in the past
Current Occupation	ADL without help	Other type of insurance
Diagnosis of chronic diseases	Heavy activities reduced	Heavy activities reduced
Daily activities reduced	Daily activities reduced	Daily activities reduced
Heavy activities reduced	Number of chronic diseases	Number of chronic diseases
Family background of diseases	Family background of diseases	New chronic diseases in the period
Other type of insurance	New chronic diseases	Injuries
Number of chronic diseases	Cardiac failure diagnosed	Cardiac infarct diagnosed
Diabetes mellitus diagnosed		Respiratory failure diagnosed
HBP diagnosed		

The average hospitalisation was 1.1 days or 13.3 days if non-users are excluded. Total days in wards (386,926 days) were more than in emergency rooms (263,224 days). 61% of days in wards occurred in CMNs. If non-users are excluded each person was hospitalised 6 days in average in HGZs and 13 in CMNs.

Figure 9.2
Rates of health services utilisation in IMSS by level of care (1996-1997)



There are no emergency rooms in CMN or in HGZs. This type of service is only provided in HGZs although “continuous admission” sometimes plays the role of emergency services.

The utilisation rate of health services by the elderly subjects in the IMSS was higher among subjects with a diagnosis of cancer, cirrhosis, or diabetes mellitus. It increased with the diagnosis of new chronic diseases in the period or the greater the number of chronic diseases. Those who had stayed at home or cut down on their daily activities because of health problems used the services more intensively. Those with a lower level of education were also using services with more intensity (Table 9.4).

Table 9.4
Multiple linear regression model to predict the utilisation rate of health services in the IMSS

<i>Variables</i>	<i>Non-standardised Coefficients</i>		<i>Standardised Coefficients</i>		
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>	<i>T</i>	<i>p</i>
(Constant)	.594	1.468		.404	.686
Cirrhosis	24.938	6.342	.052	3.932	.000
Cancer	20.432	4.269	.063	4.786	.000
Diabetes mellitus	11.715	1.435	.113	8.166	.000
New chronic disease in the period	9.344	1.786	.070	5.232	.000
Total number of chronic diseases	5.027	1.073	.071	4.683	.000
Stay at home	4.893	1.863	.054	2.627	.009
Daily activities reduced	4.304	1.846	.048	2.332	.020
Level of education	.889	.382	.031	2.329	.020

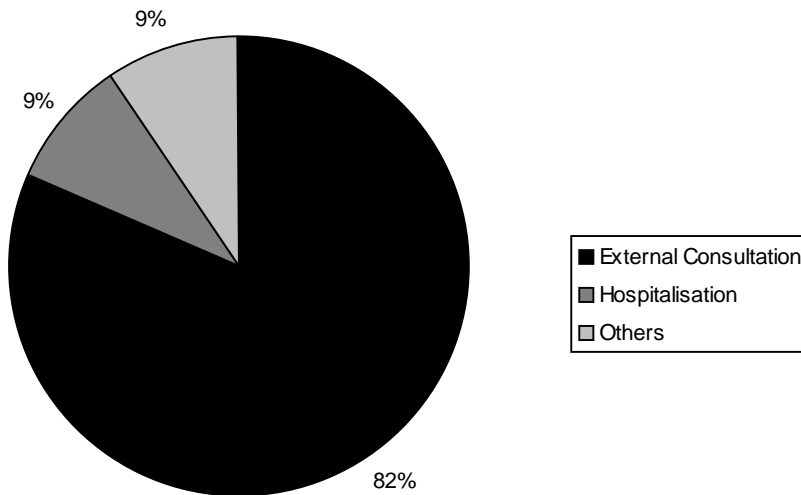
9.2. UTILISATION OF HEALTH SERVICES IN OTHER SETTINGS

Private services

During the observation period 7% of the elderly subjects used private health services, external consultations were 82% of this total. (Figure

9.3). Only 9% were hospitalised or used laboratory or radiology services. Those who had private insurance used private services more frequently ($p < 0.05$) but there was no difference in their utilisation of the services in IMSS. There was also no difference in utilisation of health services in IMSS between those using or not using private services. Since only 1.3% of the total population had private insurance coverage, 58% of those using private services (3.8% of the total population) were actually paying their own expenses.

Figure 9.3
Distribution of IMSS users of private settings



According to the logistic regression model results, elderly people at risk of using private services were those not using HGZs in IMSS, with less number of years with chronic diseases and fewer number of them, with the diagnosis of cataract, who had to cut down on heavy and daily activities, had problems to move legs and arms, those who did not have incontinence, personal income, a beneficiary spouse or parent in the IMSS scheme, and had other insurance coverage (Table 9.5).

Table 9.5
Association between private health services utilisation
and different variables

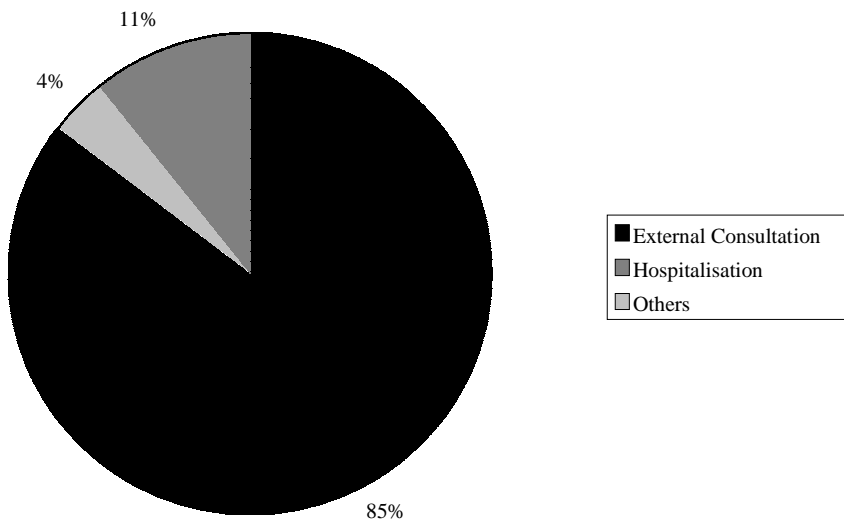
<i>Variables</i>	<i>Private services utilisation</i>		<i>p</i>	<i>RR</i>	<i>IC 95%</i>
<u>Use of public services</u>	No	Yes			
No	94.2	5.8	0.0001	1.03	1.01-1.04
Yes	92.3	7.7			
<u>Users of HGZ services</u>	No	Yes			
No	93.1	6.9	.743	0.99	0.97-1.00
Yes	94.3	5.7			
<u>Daily activities reduced</u>	No	Yes			
No	95.7	4.3	0.0001	1.04	1.02-1.05
Yes	91.5	8.5			
<u>Heavy activities reduced</u>	No	Yes			
No	96.4	3.6	0.0001	1.04	1.03-1.05
Yes	92.4	7.6			
<u>Faecal incontinence</u>	No	Yes			
No	93.4	6.6	0.291	0.98	0.96-1.01
Yes	95.9	4.1			
<u>Legs or arms problems</u>	No	Yes			
No	94.9	5.1	0.0001	1.031	1.02-1.05
Yes	92.0	8.0			
<u>Cataracts diagnosed</u>	No	Yes			
No	93.9	6.1	0.0001	1.03	1.00-1.05
Yes	90.9	9.1			
<u>Personal income</u>	No	Yes			
No	92.0	8.0	0.0001	0.97	0.96-0.99
Yes	94.6	5.4			
<u>Type of insurance</u>	Retired	Continuing in compulsory system			
Retired	95.7	4.3	0.0001	—	—
Continuing in compulsory system	96.2	3.8			
By their children	92.9	7.1			
Worker	95.4	4.6			
Spouse	91.2	8.8			
Volunteer system	93.8	6.2			
<u>Other health services coverage</u>	No	Yes			
No	94.1	5.9	0.0001	0.97	0.94-0.99
Yes	88.2	11.8			

Public services in other institutions

Over a third (37%) of the elderly subjects covered by IMSS in the DF reported they were using services in other public institutions. Since only 8% of the subjects had other public insurance, the remaining 27% were receiving services in DDF (Federal District Department), INSEN (National Institute of Third Age), Ministry of Health or in charity's health facilities. Some medical facilities from the latter were handed over to the DDF in 1998. However, this project was developed before this happened.

External consultation was again the service with the highest number of users (85%), followed by other services (laboratory and radiology) with 4% of the total population. Only 4% of those who used other public settings were hospitalised (Figure 9.4).

Figure 9.4
Distribution of IMSS users of other public settings



The use of health services in other public settings was not significantly different by age, sex, marital status or income. Table 9.6 shows some of the variables with significant associations (only those included in the last logistic model).

Table 9.6
Associations between utilisation of other public services and different variables

<i>Variables</i>	<i>Users of other public services</i>		<i>P</i>	<i>RR</i>	<i>IC 95</i>
	No	Yes			
<u>Number of years with chronic diseases</u>					
Less than one to three	54.5	45.5	0.0001	—	—
4-6 years	67.7	32.3			
More than 6 years	72.2	27.8			
<u>New chronic diseases</u>					
0	62.5	37.5	0.0001		
1	66.8	33.2			
2	53.6	46.4			
3	41.8	58.2			
<u>FMU's users</u>					
No	61.4	38.6	0.0001	0.91	0.87-0.95
Yes	67.6	32.4			
<u>Days in bed</u>					
No	—	100.0			
Yes	72.7	27.3			
<u>Daily activities reduced</u>					
No	56.1	43.9	0.001	1.31	1.26-1.36
Yes	75.5	24.5			
<u>Heavy activities reduced</u>					
No	62.1	37.9	0.0001	1.26	1.18-1.27
Yes	76.8	23.2			
<u>Problems in legs and arms</u>					
No	69.5	30.5	0.0001	1.13	1.09-1.17
Yes	75.3	24.7			
<u>Problems with teeth</u>					
No	61.0	39.0	0.0001	1.12	1.07-1.17
Yes	72.3	27.7			
<u>Sex</u>					
Female	54.2	45.8	0.0001	0.84	0.81-0.87
Male	61.0	39.0			
<u>Years of education</u>					
None	47.9	52.1	0.031	—	—
1-6 years	68.4	31.6			
7-9 years	66.0	34.0			
10-12 years	59.7	40.3			
13 or over years	63.9	36.1			
<u>Type of insurance</u>					
Retired	63.8	36.2	0.0001	—	—
Continuing in compulsory system	70.0	30.0			
By their children	59.5	40.5			
Worker	66.4	33.6			
Spouse	68.3	31.7			
Volunteer system	58.8	41.2			
<u>Other insurance coverage</u>					
No	56.9	43.1	0.0001	0.83	0.77-0.91
Yes	72.1	27.9			

The proportion of people using other public services increased with the number of new diseases but decreased with an increasing number of years with chronic diseases. Subjects who had an episode of poisoning or were not using FMUs had more probability of using other public services. Less frequent users were subjects who had cut down on daily or heavy activities, stayed in bed because of their health problems, and those who had problems in their legs, arms or teeth.

Women and people with less years of education were using other public services with more frequency than men or people with a better level of education. For education the proportion of users increased among those from one to 12 years of education but decreased later on. However, the proportion of users among those who did not attend school was always higher.

Elderly people covered through the voluntary system or by their children and those who had other type of insurance were using other health services with more frequency than other categories.

9.3. SUMMARY

1. A high proportion (76%) of the elderly subjects used IMSS health services at least once in the follow-up period, with most of them using external consultation.
2. Proportion of people using second and third levels (38% and 15% respectively) is higher than the expected average at IMSS (12% and 3%), while the proportion for the first level (UMFs) is lower.
3. Proportion of subjects using HGZs and/or CMNs without using FMUs is higher than expected, since medical doctors in the first level should be informed and follow their patients even if they have been sent to the third level.
4. Utilisation of services appears to be determined mainly by health status, severity of diseases, presence of special programmes for patients with chronic diseases, level of education, type of occupation and coverage by other types of insurance.

5. Utilisation of UMFs is generated mainly by health status, particularly the diagnosis of diabetes and HBP (chronic diseases under special programmes), severity of the diseases, level of education, occupation and coverage by other types of insurance.
6. Utilisation in HGZs increased with age, presence of chronic diseases and their severity and the presence of cardiac failure.
7. Utilisation of CMNs was determined by the presence of chronic diseases, (particularly cancer, cardiac infarct and respiratory failure), occupation and coverage by other type of insurance.
8. The rate of utilisation of health services was higher in Medical Centers with specially external consultations, with such users having an average of 45 medical outpatient encounters in a year.
9. The rate of utilisation was explained by the presence of chronic diseases (particularly cirrhosis, cancer and diabetes), their severity and the level of education.
10. Utilisation of private services among IMSS insurers is low (7%) and most of them are paying out of pocket for their private expenses.
11. Beneficiaries, those covered with other types of insurance, with fewer chronic diseases, and using other public services also were using private services with more frequency.
12. One third of subjects were using services in other public institutions and only 8% had other public insurance. This means they are using services available only for non-protected population in the DF.
13. Elderly people utilised public services from other institutions when they were covered with other types of insurance, received services in IMSS as beneficiaries or through voluntary schemes, or had recently been diagnosed with new chronic diseases. Subjects with limited activity generated by health problems and who also had a low level of education used other public services with greater frequency.