



## *Chapter Five*

### EVALUATION OF THE HEALTH SYSTEM

The classic approach to evaluate a health system considers two competing values: Efficiency and Equity. The World Health Report 2000 introduced new concepts in assessing a health system's performance. It considered among the goals to be attained "Responsiveness" and "Fairness in Financing". Even though some concepts were traditionally seen as parts of the issues of quality (patient satisfaction) and equity (accessibility and equity in financing), quality was not targeted specifically in the Report. The Report introduces also a broad definition to two functions of the health system: "Resource-generation" that goes beyond the financial aspect and, "Stewardship" that is considered wider than the commonly used "Regulation" term.

Concepts of Equity, Efficiency and Quality are complex and very much interdependent. This section does not pretend to cover all the dimensions of these concepts. This applies particularly to the Quality of health care, which needs extensive investigation if a complete picture is ever to be attained. Only few studies on particular quality aspects of specific services are

available. They are irrelevant as far as the overall analysis of the system is concerned. However, some aspects, such as consumer satisfaction, that are tackled throughout this work are directly related to quality. It is worth mentioning that accessibility as addressed in this section, deals with utilization of health services and their distribution. Related data are derived from the "Household Health Utilization and Expenditure Survey" (HHUES) undertaken in Lebanon in 1999.

Access has been defined as the timely receipt of appropriate care (Institute of Medicine, 1993). As mentioned by H.K. Armenian, this definition states the objective of accessible health care. However, the measurement of "good" access is not well defined. There are no universally accepted measures of timeliness and the measurement of appropriateness is equally complex. "Appropriateness criteria tend to be applied by payers and MCOs with the objective of reducing the unnecessary use of services. As a result, they do not frequently address the question of whether some people who need care fail to receive appropriate services"<sup>1</sup>.

As for Efficiency evaluation, it considers in general relating results obtained from a program to resources used to maintain that program<sup>2</sup>. We have adopted specifically the definition of William A. Reinke: "the ratio of output to input is a measure of efficiency"<sup>3</sup>.

Efficiency in the provision of health care can generally be divided into two categories: allocative efficiency and technical efficiency. "Allocative efficiency deals with how to allocate limited resources to programs which will result in the highest benefit. In health care, allocative efficiency involves determining which inputs can achieve a particular improved level of output (health status) with the least cost". "Technical efficiency may be interpreted as the pursuit of maximum output for a given level of resources or minimum cost for a given level of output"<sup>4</sup>.

## **1-EFFICIENCY ISSUES**

### **1.1 Allocation of Resources**

Despite the declared commitment of the government to reach the "Health for All" objective by adopting the strategy of Primary Health Care. PHC services remain weak and ill-organized. Moreover, in the absence of a referral system with gate-keeping role, financing is shifted towards less cost-effective hospital care. This shifting is enhanced by the reimbursement system, which is most generous and comprehensive for hospital care, and very limited for preventive and out patient care. *Allocative inefficiency* remains a major issue to address: Reimbursement of private hospitals represents the biggest share of the MOH budget; it has reached 78% in 1998. This while the budget of public hospitals, the front line providers of secondary care, represented only 5.8%, and primary health care cost, including national health programs and support to NGOs, represented less than 10%.

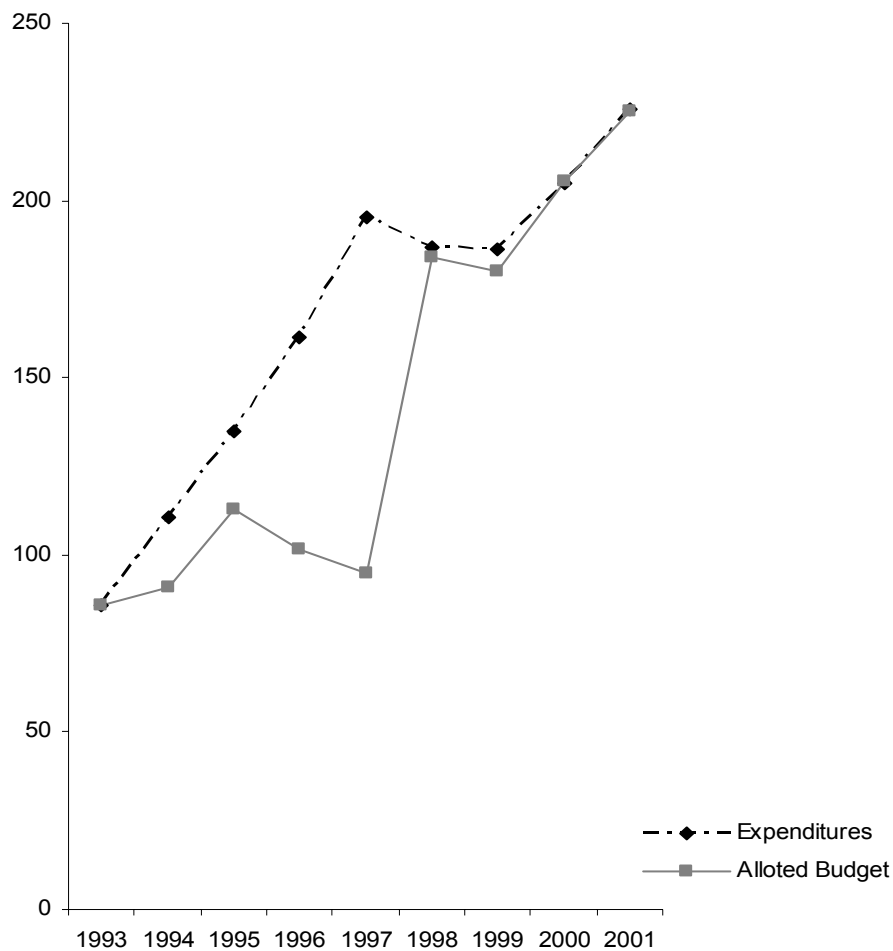
The MOH cost for curative care was 80 USD per eligible person per year, to be compared to only 6 USD per citizen per year for all public health programs and preventive care.

On the other hand, facing the very high cost of commissioning and operating the newly built public hospitals, the government is currently considering their privatization. In this case government investments would have contributed to the excessive supply in hospital beds and consequently to cost inflation, without getting any of the intended results discussed earlier in chapter II section 1<sup>5</sup>.

### **1.2 Public Financing Inflation**

After the war period, the Government faced a dilemma: to contain public expenditures on the one hand and to increase accessibility to a wide range of health services on the other. This dilemma had its impact on the MOH budget. Fig V-1 shows how narrowing the budget deficit necessitated from one side great efforts to rationalize expenses and from the other a meaningful increase in the 1998 budget.

MOH expenditures that are growing much faster than the average GDP growth rate, are hardly sustainable. The fact that 78% of the MOH budget is spent on the hospitalization of 3.2% of the population, of whom 0.2% benefits from 23% of the Ministry's budget through coverage of specific expensive problems, constitutes a typical example of *Pareto inefficiency*.



**Fig V-1: MOH allotted budgets and accrual expenditures on private hospitals from 1993 to 2001 (in billion L.P.).**

The adoption of different tariffication systems and control mechanisms weakens the purchasing power and control capabilities of public funds. The multiplicity of public funding and the impediment to free competition as detailed previously are responsible for *technical inefficiency* resulting in the poor value of services obtained for the money spent in the health sector.

### **1.3 Unregulated Service Delivery**

The lack of regulation of private providers and incentives created by the fee-for-service reimbursement have led to an oversupply of high-cost, technology-driven hospital services and specialized physicians' care, generating an ever-increasing, at times unnecessary demand. For example, the current availability per million inhabitants of 5 open-heart centers, 6 MRI machines and 7 lithotriptors exceeds that of most of the OECD countries. The over-supply of health services is also linked to the tremendous increase in the number of physicians witnessed during the last decade of the 20<sup>th</sup> century.

Calculations derived from NHHEUS reveal clearly the under-usage of hospital beds resulting mainly from over-supply. The average occupancy rate is 62.3%, a proxy indicator for inefficient investments in hospitals and/or inefficiency in running most of hospital beds. Sophisticated services are particularly under operated. Most open heart centers are performing on average, less than 3 interventions per week, with probable negative consequences on both efficiency and quality of care.

The government has been dealing passively and retroactively with the situation by financing hospital services to the uncovered population, and by fully reimbursing expensive interventions and drugs that are beyond the financial capabilities of households thus, fueling the perverted system. This generous reimbursement system in the absence of a beneficiaries' database creates incentives for cost shifting to the MOH even among those already covered by other public funds or private insurance plans. This is aggravated by cream skinning and exclusion of high-cost services, largely practiced by private insurance companies.

Providers belong to a diverse set of political and religious influential groups. This was pushing the MOH to contract with almost all the existing private hospitals, including the low-classified ones<sup>6</sup>. Under group pressures, MOH has been continuously increasing the number of contracted beds, irrespective of real needs and financial reimbursement capabilities. Payment is delayed through bureaucratic channels, which further hinder the accountability to contributors. Consequently, the government has been protecting mediocrity and encouraging oversupply, leading to the explosive growth in the consumption of hospital and curative outpatient care, without any guarantee for quality.

In summary, the use of resources without flexibility or links to performance indicators and the absence of mechanisms aiming at shifting risks to providers that are operating in an uncompetitive environment, are the main drivers of *technical inefficiency*<sup>7</sup>.

Under-utilization and supplier-induced demand apply also to ambulatory care, with an oversupply of physicians' cabinets and a big number of dispensaries that are not operating on a daily basis.

The absence of coverage for ambulatory care for the majority of the population increases its financial burden on households and weakens the primary health care system. Individual direct payment remains with no purchasing power in the absence of a Consumer Protection Association. Added to the existence of extreme asymmetry of information, this puts the consumer at the mercy of providers and leads to getting poor value for money.

#### **1.4 Impact on the Population's Health**

The large share of the GDP devoted to health and the rapidly increasing cost of health services do not seem to result in the expected impact in improving the health status of the population. *Ineffectiveness* can be revealed by comparing population health outcomes in Lebanon to those from other countries with relatively similar health resources.

**Table V-1: Comparison of key health indicators: Lebanon and other MENA countries**

Country	Life expectancy at birth	Infant Mortality Rate (per 1,000 live births)	Total Fertility Rate
Egypt	63	56	3.4
Greece	78	8	1.4
Jordan	70	30	4.8
Lebanon	71.3	28	2.5
Saudi Arabia	70	21	6.2
Syria	68	33	4.8
Turkey	67	48	2.5

*Source: World Bank data (1998), for all except Lebanon.*

Lebanon's health indicators are rather above average in comparison with other countries in the MENA region (table V-1). However, relative to many upper-middle income countries and other countries with comparable levels of health expenditures, health outcomes in Lebanon are actually below average<sup>8</sup> (table V-2).

**Table V-2: Health Expenditures and Basic Health Status Indicators**

Country	Health Expenditures (as % of GDP)	Infant Mortality Rate (per 1,000 live births)	Under-five Mortality Rate (per 1,000 live births)	Life expectancy at birth
Argentina	9.7	22	24	73
Canada	9.2	6	8	79
France	9.8	5	6	78
Germany	10.4	5	6	77
Lebanon	12.4	28	32	71
Switzerland	10.2	5	6	79

*Source: World Bank data (1999), for all except Lebanon.*

## 2- EQUITY ISSUES

Recent data provided by the 1999 Household Health Expenditures and Utilization Survey revealed that in terms of accessibility, regional disparities are minor. It indicated also the absence of gender inequality. It showed that the uninsured segment of the population had almost the same utilization rate for hospital and ambulatory care as the ensured one. Financial barriers



were attenuated by the coverage system, especially by the MOH safety net, even though a high cost is incurred by households.

### 2.1 Gender Equity

With regard to hospitalization, table V-3 shows that significant gender differences in utilizing hospital care is restricted to two age groups. For the 15-59 age group, more utilization of hospital care by females (10.7%) compared to males (6.7%) is clearly related to procreation (10.4% of hospital admissions are for delivery). For the under-five age group, once or more are hospitalization episodes of males (11.9%) higher than female (6.5%). This could be explained by the higher declared health problems and accidents rates among males than among females in the same age group.

**Table V-3: Hospitalization rates by age group, sex and insurance status**

<b>%</b>	<b>Hospitalized Once</b>	<b>Hospitalized &gt; once</b>	<b>Hosp. episodes per year (in %)</b>
< 5 years both sexes (Males, Females) (Insured, Not insured)	7.7 (M 9.9, F 5.5) (I 9.8, N 5.8)	1.6 (M 2, F 1) (I 2.1, N 1.1)	<b>12</b> <b>(M 14, F 9)</b>
5-14 both sexes (Males, Females) (Insured, Not insured)	4.1 (M 4.8, F 3.4) (I 4.3, N 4)	0.3 (M 0.4, F 0.3) (I 0.5, N 0.3)	<b>5</b> <b>(M 6, F 4)</b>
15-59 both sexes (Males, Females) (Insured, Not insured)	8.6 (M 6.7, F 10.7) (I 10.1, N 8)	1.3 (M 1.3, F 1.5) (I 1.8, N 1.1)	<b>12</b> <b>(M 9, F 14)</b>
> 60 both sexes (Males, Females) (Insured, Not insured)	17.6 (M 17.6, F 17.5) (I 19.4, N 16.6)	4.5 (M 4.9, F 4.1) (I 5.8, 3.5)	<b>28</b> <b>(M 29, F 28)</b>
<b>Total both sexes (Males, Females) (Insured, Not insured)</b>	<b>8.7</b> <b>(M 7.7, F 9.6)</b> <b>(I 9.7, N 8)</b>	<b>1.5</b> <b>(M 1.5, F 1.5)</b> <b>(I 1.9, N 1.2)</b>	<b>12</b> <b>(M 11, F 12)</b>

Further investigation was done to elucidate potential gender inequity in the under-5 age-group, by analyzing data related to ambulatory and dental care. The higher utilization of ambulatory care for males under 5 (41.5%), compared to females

(38.1%), is concordant with the occurrence of health problems for both sexes.

A higher utilization of dental care by females under 5 (1.7) is noticed compared to males (0.8) of the same age group. Therefore, gender discrimination inherent to the health system or parents' preference for boys in terms of health services utilization is unlikely.

There are no other findings that could arise suspicion about gender inequality in accessing health services, not in favor of males anyway. As shown in tables V-3, V-5, V-9 and V-10, females are using more health services in all age groups above 5, in all provinces and all household income categories.

## 2.2 Regional Distribution

Utilization rates of hospital services are relatively higher in rural areas compared to urban ones. The relatively low availability of hospital beds in the Bekaa for example did not seem to hinder accessibility. The MOH policy probably plays a positive role in this respect, with a contracted bed to population ratio relatively higher in the Bekaa as shown in table II-4. MOH contracted beds are most utilized in Nabatieh and the Bekaa (table V-4). This further highlights the MOH role in enhancing accessibility to hospital services in relatively deprived areas.

Table V-5 shows clearly a higher utilization of hospital, ambulatory and dental care in all mohafazats compared to Beirut, with few insignificant exceptions.

**Table V-4: Proportion of hospitalized cases benefiting from MOH assistance by mohafazat (in weighted%)**

%	Beirut	Beirut Sub.	Mount Leb.	North Leb.	South Leb.	Nabatieh	Bekaa	Lebanon	n
Hosp >24 h	14.7	19.2	24.2	25.2	23.5	30.5	38.5	<b>25.7</b>	3959
Hosp <24 h	7.3	7.9	7.9	11.4	7.7	15.4	14.4	<b>10.2</b>	813

**Table V-5: Utilization of health services by mohafazat and by sex**

	<b>Total Lebanon</b>	<b>Beirut</b>	<b>Beirut Suburbs</b>	<b>Mount Leb.</b>	<b>North Leb.</b>	<b>South Leb.</b>	<b>Nabatieh</b>	<b>Bekaa</b>
<b>% Hospitalized once or more in one year period (over 24 H stay)</b>	10.2 (M 9.2) (F 11)	7.6 (M 7.7) (F 7.7)	9.4 (M 7.9) (F 11)	9.8 (M 9) (F 10.8)	9.3 (M 8.7) (F 10)	10.8 (M 9.8) (F 12.2)	9.9 (M 8.6) (F 11.2)	14.3 (M 13.2) (F 15.4)
<b>% Hospitalized once or more in one year period (below 24 H stay)</b>	4.6 (M 4.2) (F 4.8)	4.2 (M 4.4) (F 4.4)	2.8 (M 2.6) (F 2.8)	6 (M 5.2) (F 6.4)	3 (M 2.8) (F 3.6)	6.8 (M 6) (F 7.4)	8 (M 8) (F 8.2)	4.8 (M 4.4) (F 5.8)
<b>Ambulatory care: % Used ambulatory care once or more during the last month</b>	28.1 (M 24.8) (F 31.2)	27.6 (M 23.6) (F 31.4)	27.5 (M 24.5) (F 30.2)	30.2 (M 27.6) (F 32.6)	25.1 (M 21.9) (F 28.3)	28.3 (M 24.3) (F 32.4)	22.4 (M 19.8) (F 25.2)	33.8 (M 30.4) (F 38.4)
<b>Dental care: % Use of dental care during the last 3 months</b>	16 (M 15.3) (F 16.7)	12.5 (M 10.7) (F 14.1)	15.7 (M 14.6) (F 16.7)	22.7 (M 23.1) (F 22.3)	14.2 (M 13.9) (F 14.5)	12 (M 11.4) (F 12.8)	16.4 (M 15.3) (F 17.3)	17.6 (M 16.8) (F 18.4)

It is worth noting that the highest utilization rate of dental care was found in Mount Lebanon, where 22.7% of the sample population visited dental clinics during the last three months, compared to 12% only in the South (table V-5). This utilization pattern is not only related to ability to pay, but also to the availability of dentists, who are more concentrated in Mount Lebanon (46.2%), compared to the South (8.1%) (Table V-6). In contrast, a 1994 study showed that dental problems were the most prevalent in the South for all age groups<sup>9</sup> (table V-7). Regional disparities discordant with the needs are therefore underlined in terms of accessibility to dental care, which is not covered by most public funds including the MOH.

**Table V-6: Distribution of dentists by mohafazat**

Mohafazat	n	%
Beirut	828	28.7
Mount Lebanon	1331	46.2
North Lebanon	270	9.4
South Lebanon	233	8.1
Nabatieh	43	1.5
Bekaa	178	6.1
<b>Total</b>	<b>2883</b>	<b>100</b>

*Source: Oral Health in Lebanon: a situation analysis, Doughan and Doumit 1994.*

**Table V-7: Mean DMF-T according to age and geographic location**

Age	Beirut	Mount Lebanon	North Lebanon	Bekaa	South Lebanon	Southern Suburb	General DMF-T
6	1.00	1.29	1.59	1.55	2.67	1.71	2.03
12	5.22	4.74	4.56	6.79	9.26	5.91	5.72
15	7.43	6.37	7.00	9.82	12.02	8.37	8.09
35-44	13.48	13.03	12.36	16.70	18.39	13.60	14.68
65-74	25.10	21.33	22.58	21.33	27.10	32.00	24.31

*Source: Idem DMF-T: Number of decayed, missing and filled permanent teeth.*

### 2.3 Financial Barriers

For ambulatory and conventional hospital care, the utilization rate almost increases as the household income decreases

(table V-8 and V-10). This indicates that the utilization of these services is rather related to the need, and does not very much depend on the ability to pay.

The coverage system in general and the role of the MOH in particular have contributed to a large extent in mitigating the financial barriers to accessibility. Nevertheless, the poor are still facing financial obstacles to access uncovered services. This argument is strongly supported by findings on utilization of dental care that is not covered by most insurers, nor by the MOH. Tables V-8 and V-11 show that high income categories have a much higher utilization of dental services than the lowest ones.

Besides dental care, figures that might suggest unequal accessibility are those of regular follow-up among the chronically ill. These come lower for the uninsured compared to the insured (table V-9).

It is worth mentioning that, under current circumstances, equal accessibility could have been reached mainly by using important out of pocket disbursement. This represented 54% of total health expenditures in 1997 and 74% in 1998.

**Table V-8: Mean number of episodes per person per year by type of service and household income category**

<b>Income Category (USD per month)</b>	<b>Out-patient care</b>	<b>Dental care</b>	<b>Over night hospitalization</b>	<b>Same-day hospitalization</b>
1 less than 150	4.9	0.50	0.18	0.06
2 150-333	4	0.60	0.14	0.05
3 334-533	3.9	0.60	0.12	0.05
4 534-800	3.9	0.70	0.12	0.05
5 801-1067	3.7	0.80	0.10	0.05
6 1068-1600	3.7	0.90	0.11	0.04
7 1601-2133	3.4	0.80	0.12	0.04
8 2134-3333	3.5	1.00	0.10	0.06
9 more than 3333	3.4	0.80	0.13	0.06
<b>Total</b>	<b>3.6</b>	<b>0.70</b>	<b>0.12</b>	<b>0.05</b>

**Table V-9: Distribution of individuals with health problems and needing regular follow-up, by regularity of visits and presence of insurance plan**

Follow-up	Non insured	Insured	Total
Yes, regularly	36.6	52.8	43.8
Yes, occasionally	31.4	32.2	31.8
No	31.7	14.7	24.2
<b>N</b>	<b>3421</b>	<b>2689</b>	<b>6110</b>

**Table V-10: Hospitalization rates by income category**

	Hospitalization > 24h (per year)		Hospitalization < 24 h (last 6 months)	
	Once	> Once	Once	> Once
< 300 both sexes (Males, Females)	10.5 (M 9.9, F 10.9)	3.1 (M 3.4, F 2.8)	2.8 (M 2.7, F 2.9)	0.1 (M , F 0.1)
300-500 both sexes (Males, Females)	9.6 (M 9.3, F 10)	1.7 (M 1.5, F 2)	2.2 (M 1.8, F 2.5)	0.1 (M 0.0, F 0.2)
501-800 both sexes (Males, Females)	8.6 (7.2, 9.9)	1.5 (M 1.4, F 1.6)	2.0 (M 1.9, F 2.2)	0.1 (M 0.1, F 0.1)
801-1200 both sexes (Males, Females)	9.1 (M 8.6, F 9.6)	1.5 (M 1.6, F 1.3)	2.4 (M 2.3, F 2.6)	0.1 (M 0.1, F 0.1)
1201-1600 both sexes (Males, Females)	7.6 (M 6.7, F 8.6)	1.3 (M 1.6, 0.9)	2.2 (M 1.8, F 2.6)	0.1 (M 0.0, F 0.1)
1601-2400 both sexes (Males, Females)	8.1 (M 7.1, F 9)	1.2 (M 1, F 1.5)	1.8 (M 2.0, F 1.7)	0.0 (M 0.0, F )
2401-3200 both sexes (Males, Females)	8.8 (M 6.7, F 10.9)	1.3 (M 1.2, F 1.5)	2.0 (M 2.3, F 1.8)	0.1 (M , F 0.1)
3201-5000 both sexes (Males, Females)	7.1 (M 6.5, F 7.6)	1.3 (M 1.2, F 1.5)	2.3 (M 1.7, F 2.9)	0.2 (M 0.2, F 0.2)
> 5000 both sexes (Males, Females)	7.8 (M 4.4, F 10.8)	2.2 (M 2.5, F 1.9)	2.4 (M 2.3, F 2.5)	0.1 (M 0.3, F )
Unknown both sexes (Males, Females)	10.3 (M 11.1, F 9.6)	2.6 (M 5.9)	2.6 (M 5.9, F )	
<b>Lebanon both sexes (Males, Females)</b>	<b>8.7 (M 7.7, F 9..6)</b>	<b>1.5 (M 1.5, F 1.5)</b>	<b>2.2 (M 2.0, F 2.3)</b>	<b>0.1 (M 0.1, F 0.1)</b>

**Table V-11: Ambulatory visits and dental care, by income category and sex**

Income category (L.P. per month)	Ambulatory Care (per month)		Dental Care (last three months)	
	Received Care x 1	Received Care > 1	Once	> Once
< 300 (Males, Females)	27.9 (M 24.5, F 30.6)	6.3 (M 3.5, F 8.5)	11.3 (M 10.8, F 11.6)	0.8 (M 0.9, F 0.8)
300-500 (Males, Females)	26.4 (M 23.9, F 28.9)	3.2 (M 2.7, F 3.8)	12.7 (M 12.3, F 13.1)	0.9 (M 0.7, F 1.2)
501-800 (Males, Females)	25.1 (M 23, F 27.2)	3.5 (M 2.8, F 4.2)	13.3 (M 12.9, F 13.6)	1 (M 1, F 1)
801-1200 (Males, Females)	24.6 (M 22.6, F 26.6)	3.7 (M 3.2, F 4.1)	14.9 (M 14.8, F 15)	1.1 (M 1, F 1.3)
1201-1600 (Males, Females)	23.6 (M 20.4, F 26.8)	3.1 (M 2.6, F 3.8)	15.6 (14.5, F 16.7)	1.3 (1.4, F 1.1)
1601-2400 (Males, Females)	24 (M 21.5, F 26.5)	3.3 (M 2.1, F 4.5)	17.1 (M 16, F 18.1)	1.3 (M 1.2, F 1.5)
2401-3200 (Males, Females)	21.6 (M 19.3, F 23.9)	3.2 (M 2.6, F 3.8)	16 (M 14.6, F 17.5)	1 (M 1, F 1.1)
3201-5000 (Males, Females)	24.7 (M 23.7, F 25.6)	2.2 (M 1.8, F 2.5)	21.5 (M 20.1, F 22.8)	1.3 (M 1.1, F 1.5)
> 5000 (Males, Females)	19.8 (M 13.8, F 25)	3.7 (M 3.4, F 3)	15.4 (M 15.8, F 15.1)	1.1 (M 1, F 1.1)
Unknown (Males, Females)	20.4 (M 19.7, F 20.9)	3.9 (M 3.1, F 4.6)	28.3 (M 21.5, F 33.7)	
<b>Lebanon (Males, Females)</b>	<b>24.6 (M 22.1, F 27)</b>	<b>3.5 (M 2.7, F 4.2)</b>	<b>14.8 (M 14.2, F 15.3)</b>	<b>1.1 (M 1, F 1.2)</b>

The mere comparison of utilization rates between household income categories, cannot give a clear picture on, whether or not, accessibility to health services is hindered by financial barriers. On the one hand, expenditure could reflect, better than income, the ability to pay<sup>10</sup>. On the other, for the same income or expenditure, a household's ability to pay depends on the number of its members. Therefore, it could be more informative, to group households by individual spending categories.

Surveyed households are reranked by increasing order of individual spending, and grouped into five equal categories<sup>11</sup>. The lowest of less than 1281 USD per person per year and the highest of more than 3885 USD (table V-12).

Table V-13 exhibits the average number of ambulatory visits per person by age group and by individual spending category as by the grouping showed in table V-12.

The relatively low utilization rate of the lowest category, when it comes to ambulatory care, becomes striking!

Table V-14 shows that the accessibility of the poorest is in fact hindered, regardless of their residence distribution by mohafazat.

The inequitable accessibility to dental care is reconfirmed and differences between spending categories are more accentuated in all mohafazats (table V-15).

Differences between spending categories with regard to hospitalization may be explained by the under-hospitalization of the poor or the over-hospitalization of the well-off, or probably both (table V-16). The higher hospitalization rate in the Bekaa confirm field observations of abuse, where unnecessary admissions are a common provider practice (table V-17).

**Table V-12: Households grouping by individual spending category**

Individual spending per year (thousands L.P.)	Spending Category				
	1	2	3	4	5
Upper Value	1922	2798	3903	5828	-----
Mean	1365	2344	3312	4719	9219



**Table: V-13: Ambulatory visits per person per year by age group and spending category (in%)**

Age group	Spending Category					Total
	1	2	3	4	5	
<5	4.5	6.3	6.5	7.5	6.1	<b>5.8</b>
5 – 14	2.0	2.6	2.8	3.5	3.7	<b>2.6</b>
15 – 59	2.5	3.2	3.3	3.9	4.1	<b>3.3</b>
60 plus	4.0	5.5	5.5	6.8	7.7	<b>6.0</b>
<b>Total</b>	<b>2.7</b>	<b>3.6</b>	<b>3.7</b>	<b>4.4</b>	<b>4.7</b>	<b>3.7</b>

**Table: V-14: Ambulatory visits per person per year by mohafazat and spending category (in%)**

Mohafazat	Spending Category					Total
	1	2	3	4	5	
Beirut	2.7	2.9	3.7	4.6	4.6	3.9
Beirut Suburb	2.5	3.3	3.7	4.7	4.8	3.8
Mount Lebanon	2.5	3.6	3.6	4.8	5.2	4.2
North Lebanon	2.7	4.1	3.8	4.0	3.7	3.4
South Lebanon	3.4	4.6	3.8	4.6	5.1	4.0
Nabatieh	2.2	2.8	3.4	3.5	5.0	3.0
Bekaa	2.5	3.4	3.5	3.1	3.0	3.0
<b>Total Lebanon</b>	<b>2.7</b>	<b>3.6</b>	<b>3.7</b>	<b>4.4</b>	<b>4.7</b>	<b>3.7</b>

**Table: V-15: Dental care visits per person per year by mohafazat and spending category (in%)**

Mohafazat	Spending Category					Total
	1	2	3	4	5	
Beirut	0.34	0.41	0.49	0.56	0.66	0.52
Beirut Suburb	0.33	0.39	0.68	0.77	1.04	0.65
Mount Lebanon	0.41	0.74	0.73	1.08	1.25	0.93
North Lebanon	0.40	0.64	0.80	0.71	0.86	0.58
South Lebanon	0.40	0.58	0.47	0.61	0.69	0.51
Nabatieh	0.44	0.60	0.75	1.00	1.04	0.67
Bekaa	0.53	0.79	0.86	0.98	0.93	0.72
<b>Total Lebanon</b>	<b>0.41</b>	<b>0.60</b>	<b>0.70</b>	<b>0.82</b>	<b>0.99</b>	<b>0.66</b>

**Table: V-16: Hospitalization episodes per person per year by age**

**group and spending category (in%)**

Age group	Spending Category					Total
	1	2	3	4	5	
<5	0.13	0.13	0.14	0.17	0.18	0.14
5 – 14	0.05	0.10	0.07	0.08	0.07	0.07
15 – 59	0.16	0.19	0.17	0.19	0.18	0.17
60 plus	0.35	0.37	0.35	0.39	0.41	0.37
<b>Total</b>	<b>0.14</b>	<b>0.18</b>	<b>0.17</b>	<b>0.20</b>	<b>0.20</b>	<b>0.17</b>

**Table: V-17: Hospitalization episodes per person per year by mohafazat and spending category (in%)**

Mohafazat	Spending Category					Total
	1	2	3	4	5	
Beirut	0.10	0.12	0.15	0.13	0.17	0.14
Beirut Suburb	0.11	0.13	0.14	0.18	0.16	0.14
Mount Lebanon	0.14	0.15	0.14	0.21	0.20	0.18
North Lebanon	0.11	0.18	0.16	0.16	0.23	0.15
South Lebanon	0.16	0.23	0.18	0.29	0.38	0.21
Nabatieh	0.14	0.16	0.24	0.26	0.31	0.20
Bekaa	0.20	0.27	0.21	0.23	0.25	0.23
<b>Total Lebanon</b>	<b>0.14</b>	<b>0.18</b>	<b>0.17</b>	<b>0.20</b>	<b>0.20</b>	<b>0.17</b>

**2.4 Health Outcomes Discrepancy**

Equality in access is one of the health system's objectives. It contributes partially to achieving the broader goal of health equity. The distribution of child mortality is most often used, as a proxy for health equity. However, this indicator is directly influenced by many factors extrinsic to the health system, such as mothers' education, hygiene and sanitation, and socioeconomic status<sup>12</sup>.

**Table: V-18: Child mortality rate (per thousand) by mohafazat for the years 1985, 1990 and 1994**

	1985	1990	1994
Beirut	26.7	23.5	15.9
Mount Lebanon	35.6	38.1	22.4
North Lebanon	61.1	55.4	51.5
South Lebanon	40.5	29.4	35.2
Bekaa	45.1	44.2	35.9
<b>Total</b>	<b>41.0</b>	<b>35.0</b>	<b>27.9</b>

The Mother and Child Health Survey published in 1996, provided the child mortality rates from 1985 through 1994. More recent data reflecting the expansion of the MOH coverage and the activation of health programs that took place after 1994, are not yet available. Table V-18 shows the significant improvement in child mortality rates in Lebanon between 1985 (41 ‰) and 1994 (27.9 ‰). It shows also significant regional discrepancies ranging between 15.9 ‰ for Beirut and 51.5 ‰ for the North in 1994. Whether these differences are lower at present or not, and whether these are attributed totally or partially to the health system, health inequity should remain a concern for policy-makers.

## **2.5 Equity in Financing**

### **2.5.1 Distribution of the Financial Burden among Households**

Households spend a big share of their budget (14.1%) on health. This share is relatively much higher for the very poor (19.9%) compared to the richest (8.1%) as shown in table V-19.

Of household expenditures on health, 51.9% are paid for ambulatory care and pharmaceuticals (68.7% and 30.7% for low and high income groups respectively), whereas only 11.8% are paid for inpatient care. It is worth mentioning that the middle-income category (1201-1600) paid the least share of their spending for hospital care (8.2%), compared to 16.5% for the lowest and 12.5% for the highest income categories (table V-20). Knowing that the highest percentages of insured are in middle-income categories, these figures reflect the impact of MOH and other funds policies in covering hospital care versus ambulatory care. Within this context, the big share of health spending of the middle income, paid for uncovered dental care (25.5%) is relevant. It is important to highlight the insurance premiums' share of health spending (14.5%), even though the difference between high (38.3%) and low (2.7%) income categories is striking (table V-20).



**Table V-20: Distribution of annual household spending on health by lowest, middle and highest income categories**

Monthly income (1000 L.P.)	< 300	1200-1600	≥ 5000	Global
Insurance	38	436	2,142	379
(%)	(2.7)	(14.7)	(38.3)	(14.5)
Hospitalization > 24h	210	202	590	264
(%)	(15)	(6.8)	(10.5)	(10.1)
Hospitalization < 24h	21	42	110	44
(%)	(1.5)	(1.4)	(2)	(1.7)
Dental care	168	758	1,030	570
(%)	(12)	(25.5)	(18.4)	(21.8)
Ambulatory care	644	1,113	1,366	956
(%)	(46.1)	(37.4)	(24.4)	(36.7)
Pharmaceuticals	316	421	307	396
(%)	(22.6)	(14.2)	(6.3)	(15.2)
<b>Total spending on health care</b>	<b>1,396</b>	<b>2,973</b>	<b>4,221</b>	<b>2,609</b>
<b>(%)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>

### 2.5.2 Distribution of the Health Coverage

About 46% of the population is covered by at least one of the existing public or private insurance agencies. The percentage of the insured in the lowest income category (24%) is much lower than that of the insured in the highest income category (75.1%) (table V-21).

Inequity in access has been significantly reduced by financing through the MOH budget, expensive health services for the uninsured mostly the poor. The MOH aims at establishing a safety net by covering the uninsured. However, an important percentage of those (29.3%) declared not being aware of their eligibility for MOH coverage. This percentage becomes undoubtedly lower when hospitalization is really needed (table V-22).

The non-insured in low-income categories (<1,200,000 L.P.) have used MOH services more often (7%), than those of highest income categories (> 5,000,000L.P.) whose use was less than 1% (table V-23). Almost 40% of the two lowest income categories hospitalization cases were covered by the MOH. More

than half of the hospitalized uninsured (all income categories included) were covered by the MOH (table V-24).

Using taxes as a source of financing is essential for the health system, in order to ensure equity in both access to and financing of health care. However, the fiscal system by itself is not equitable, since most of the tax money comes from indirect taxes that are rather regressive<sup>13</sup>.

**Table V-21: Distribution of individuals by insurance status, income category and sex**

Household monthly income category (1000 L.P.)	Insured	Non-insured	Not determined	n
Less than 300	24.0	74.1	1.9	1,078
300-500	28.8	69.7	1.4	4,256
501-800	34.0	64.8	1.2	7,462
801-1200	49.3	49.3	1.4	7,637
1201-1600	52.6	45.3	2.1	4,790
1601-2400	56.1	42.0	1.9	3,917
2401-3200	68.9	27.8	3.3	1,927
3201-5000	70.2	27.8	2.0	886
5000 and above	75.1	16.4	8.5	619
Missing	68.9	23.0	8.0	76
<b>Total</b>	<b>45.9</b>	<b>52.3</b>	<b>1.8</b>	<b>32,648</b>

**Table V-22: Non-insured population knowledge of the existence of MOH services by type of services (N=17049)**

Services offered by the MOH	Not applicable (<15 years)	Yes, I know	No, I do not know	Not sure	Missing	Total
Hosp. for any non-insured ind.	28.0	39.5	29.3	2.8	0.4	<b>100</b>
Cardiac surgery	28.0	37.6	31.4	2.6	0.4	<b>100</b>
Kidney dialysis	28.0	35.0	33.8	2.9	0.4	<b>100</b>
Medications for specific diseases	28.0	31.4	36.3	4.0	0.4	<b>100</b>

**Table V-23: Distribution of the non-insured population by usage of MOH services during the last 12 months and by income category**

Household monthly income category (in 1000 L.L)	Services offered by the MOH (%)		n
	Used	Did not use	
Less than 300	9.5	90.5	810
300-500	7.3	92.7	2973
501-800	6.7	93.3	4828
801-1200	6.4	93.6	3733
1201-1600	5.0	95.0	2158
1601-2400	4.0	96.0	1653
2401-3200	4.8	95.2	536
3201-5000	7.6	92.4	237
5000 and above	0.9	99.1	103
<b>Total</b>	<b>6.3</b>	<b>93.7</b>	<b>17049</b>

**Table V-24: Proportion of hospitalization cases covered by the MOH, by household income category and insurance status**

MOH Coverage	< 300	300-500	501-800	801-1200	1201-1600	1601-2400	2401-3200	3201-5000	> 5000	In-sured	Non in-sured	Total	n
<b>Hosp &gt; 24h</b>	39.4	38.4	30.7	23.9	20.3	13.9	13.2	28.0	1.1	3.0	51.7	<b>25.7</b>	3959
<b>Hosp &lt; 24h</b>	20.5	15.2	14.4	9.3	5.6	5.4	4.5	7.8		1.9	18.3	<b>10.2</b>	813

**2.5.3 Fairness of Financial Contribution**

It is of relevance to comment on the unsatisfactory ranking of Lebanon regarding the issue of fairness of financial contribution as presented in the World Health Report 2000 on Health Systems Performance Assessment (WHR 2000)<sup>14</sup>. Health Financing Contribution (HFC) of a household is defined in the WHR 2000 as the ratio of total household spending on health (prepayment + out of pocket) over its total capacity to pay, i.e. the permanent income above subsistence, defined as the total expenditure of a household plus its tax contribution minus expenditure on basic food items.

$$HFC_h = \frac{\text{prepay}_h + \text{oop}_h}{(\text{EXP} - \text{Food} + \text{aTax})_h}$$

The Inequality Index (II) is based on the mean of the cubed absolute difference between a household's contribution and the mean contribution of all households, and normalized by its maximum value 0.125.

$$II = \frac{\sum |HFC_h - \text{Mean } HFC_h|^3}{N * 0.125}$$

The cubing is meant to give a high weight for the right hand tail of the distribution, i.e. to those who pay a larger share of their income for health services.

The Fairness of Financial Contribution index (FFC) is defined by adjusting the Inequality Index:  $FFC = 1 - 4 * II$

$$FFC = 1 - 4 \frac{\sum_{h=1}^n |HFC_h - \overline{HFC}|^3}{0.125 n}$$

FFC = fairness of financial contribution  
 HFC<sub>h</sub> = health financing contribution of a household  
 n = total number of households

The FFC score ranges theoretically between 0 and 1, and countries with scores tending to 1 have fairer health financing systems. Based on that estimate, Colombia with an FFC of 0.992 ranks first globally-Lebanon with an FFC of 0.929 ranks 101-102



globally. Least well ranked (191) is Sierra Leone with an FFC of 0.468.

However, the NHHEUS (tables V-9 and V-10) revealed that the utilization of health services is almost the same for different groups of the population defined by sex, region or income. The mere fact that these services are actually utilized implies that they are accessible and probably affordable (otherwise they wouldn't be utilized). This gives the impression that there are no financial barriers hindering the access of the poor, as a group, to health services.

Examining the FFC index, two remarks are raised: First, the formula considers individual households (not groups of households), making it more sensitive to horizontal equity\*. Second, this formula considers households that have utilized health services and have paid for that. It does not capture households that have not utilized needed health services because unaffordable<sup>15</sup>.

If we are to measure the contribution (relative to ability to pay) of the rich versus that of the poor i.e. vertical equity\*, we should eliminate random deviations of individual households. This can be done by grouping households into spending categories and considering the mean contribution of households within each category.

$$FFC = 1 - 4 \frac{\sum_{i=1}^k |\overline{HFC}_i - \overline{HFC}|^3}{0.125 k}$$

$\overline{HFC}_i$  = the mean contribution of households in each spending category  
 $\overline{HFC}$  = the mean contribution Of all households  
 k = number of household spending categories

The calculation done for Lebanon according to this formula gives a score of 0.999!

\* Vertical equity is the extent to which the rich pays more for the health system than the poor. Horizontal equity is the extent to which households with the same income pay the same amount to the health system<sup>16</sup>.

### 3-CONSUMER SATISFACTION ISSUES

With the availability of modern hospitals, sophisticated medical services and qualified medical and paramedical personnel, good quality of health services should be expected in Lebanon, especially that a big share of the GDP is spent on health. However, as discussed previously, resources are not used efficiently in the sector, and good return for money remains wishful. Quality indicators measures for medical services are lacking. Nevertheless, consumer satisfaction remains an important aspect to be tackled. Data obtained from the NHHEUS can be analyzed to that end. The consumers' position is considered with relation to both providers and financing agencies. The self-perception of consumer's own health status is also a pertinent dimension to examine.

### 3.1 Satisfaction with Providers

Almost 75% of patients seeking ambulatory and hospital care declared that physicians spent enough time with them, and provided sufficient information on their health conditions, the treatment and its side effects. Less than 50% however declared obtaining enough information about the entailed cost (table V-25).

**Table V-25: Relationship with physician**

	<b>During out-patient care</b>			
	<b>Not applicable</b>	<b>Sufficient</b>	<b>Fair</b>	<b>Insufficient</b>
Time spent by physician with the patient %	12.8	74.9	10.8	1.5
Explaining treatment and side effects %	12.9	73.2	12.0	1.9
Explaining cost %	24.7	47.3		28.0
	<b>While being hospitalized</b>			
	<b>Not applicable</b>	<b>Physician did explain</b>	<b>Physician did not explain</b>	<b>Explained to a family member</b>
Information on health status %	0.6	75.4	3.3	20.6
Information about treatment %	0.6	75.5	3.4	20.3
Information on side-effects of treatment %	0.6	74.2	4.8	20.3

Table V-26 shows that consumers have a rather good impression about the cleanliness of health facilities and about

health care provided by physicians and paramedical staff, in both health centers and hospitals.

More than 92% of hospitalized patients declared having had no difficulty to be admitted to hospitals, while 6.4% declared having had to wait a long time before being admitted. Only 0.8% declared that they had to go to many hospitals before finding an available bed (table V-27).

**Table V-26: Consumer's impression about health facilities**

	<b>Not applicable</b>	<b>Excellent</b>	<b>Good</b>	<b>Fair</b>	<b>Bad</b>	<b>Missing</b>
Cleanliness of health centers	5.6	31.6	48.9	12.8	0.4	0.7
Cleanliness of hospitals rooms	0.2	30.6	46.2	18.8	2.8	1.5
Care in Health centers	5.6	32.4	48.8	11.8	0.6	0.8
Hospitals physicians care	0.2	37.0	44.2	15.1	2.1	1.5
Hospitals nursing and support staff care	0.2	34.4	43.9	16.9	3.1	1.5

**Table V-27: Difficulty in being admitted for hospitalization**

	<b>Public</b>	<b>Private</b>	<b>NGO</b>	<b>Total</b>
Has no difficulty	92.0	92.2	91.3	92.1
Waited a long time before being admitted	6.3	6.3	8.7	6.4
I had to go to many hospitals to find a bed	0.3	0.9		0.8
Missing	1.4	0.6		0.6
<b>n</b>	<b>343</b>	<b>3394</b>	<b>222</b>	<b>3959</b>

### 3.2 Satisfaction with Funding Agencies

The NHHEUS revealed an important degree of dissatisfaction with services offered by funding agencies. Almost one third of the interviewed adults adhering to the NSSF declared being not satisfied. Satisfaction was much higher among those having a complementary private insurance. Most of the unsatisfied respondents remain adherent to the NSSF because of they have no choice. An even lower percentage of satisfaction (45%) was noticed among the interviewed CSC adult adherents. It is important to report that only 62.6% of those holding a private insurance policy declared being satisfied with it (table V-28).

For the non-insured seeking MOH services, only 11% find those to be unsatisfactory. Thus, surprisingly as a covering agency, the MOH services are much better perceived by beneficiaries than those of other public funds and private insurance! (table V-29).

This can hardly be considered as an argument in favor of a better quality of MOH services. It may rather indicate that the interviewed are more demanding towards an insurance they have paid for, compared to the MOH coverage obtained without any prepaid contribution.

Most of the interviewed that sought the MOH coverage declared not waiting long to get the Ministry's approval (84.7% for overnights hospitalization and 92.4% for some day hospitalization). This percentage is even higher in case of injuries or accidents (table V-30).

Most of the hospitalized who were not covered by the MOH (66.6%) declared having not needed the Ministry's assistance because they were insured or well-off. Only for 4.1% was the request rejected, whereas 15.9% did not apply because they thought the administrative procedures would be too complicated (table V-31).

**Table V-28: Distribution of the insured population by type of insurance and degree of satisfaction with the insurance services (weighted)**

Type of insurance plan	Degree of satisfaction					n
	Non applicable (< 14 years)	Satisfied	I will change insurance	I have no choice	No comments	
NSSF	29.9	49.7	1.1	13.3	6.0	<b>5,595</b>
CSC	24.1	45.2	1.1	20.7	8.8	<b>1,501</b>
Military schemes	27.0	55.9	1.0	10.4	5.6	<b>2,685</b>
Private insurance	25.1	62.6	1.4	5.3	5.6	<b>2,543</b>
Complementary private insurance	17.1	75.7		7.2		<b>56</b>
Mutual Funds	30.8	52.3	0.7	12.2	4.0	<b>599</b>
Municipalities	18.0	55.4	2.4	17.6	6.6	<b>125</b>
Ins. during work or school hours.	54.7	23.2	1.5	9.9	10.7	<b>278</b>
Other	30.0	21.4	2.3	40.2	6.1	<b>1,634</b>
<b>Total</b>	<b>28.4</b>	<b>49.3</b>	<b>1.3</b>	<b>14.9</b>	<b>6.1</b>	<b>15,016</b>

**Table V-29: Evaluation of the MOH services used by the non-insured population during the last 12 months (in %)**

Evaluation of MOH Services	%
Very good	17.8
Good	42.7
Satisfactory	28.4
Poor	9.1
Bad	1.9
<b>Total</b>	<b>100.0</b>

**Table V-30: Hospitalization cases covered by the MOH by waiting time to get the Ministry's approval (in %)**

Reason for treatment	Waited long time	Did not wait	n
<b>Hospitalization &gt; 24 h (100%)</b>	15.3	84.7	1011
Acute medical problem	12.6	87.4	429
Chronic disease	18.7	81.3	380
Injury or accident	6.9	93.1	56
General check-up	8.5	91.5	15
Delivery	11.2	88.8	84
Others	29.4	70.6	47
<b>Hospitalization &lt; 24 h (100%)</b>	7.6	92.4	84
Acute medical problem	10.7	89.3	22
Chronic disease		100.0	37
Injury or accident		100.0	5
Others	20.0	80.0	20

**Table V-31: Reasons behind MOH coverage rejections by household income category**

Household monthly income category (in 1000 L.L.)	Reason for not obtaining the MOH coverage					n
	Did not have approval	Did not need it	Difficulty in application measures	Difficulty in finding a bed	Others	
<b>Hospitalization &gt; 24 h</b>						
< 300	5.3	41.1	21.9	1.7	30.0	115
300-500	5.8	43.9	20.9	4.2	25.3	342
501-800	5.5	61.1	18.0	3.1	12.3	635
801-1200	3.0	74.5	13.7	2.2	6.6	718
1201-1600	4.3	69.1	15.9	3.0	7.7	405
1601-2400	3.9	70.4	17.1	4.5	4.1	379
2401-3200	1.5	81.5	10.5	1.9	4.5	196
3201-5000		88.6	8.3	3.1		66
> 5000	3.6	90.4	3.6	0.0	2.3	82
Missing		61.2	9.0	0.0	29.8	10
<b>Total</b>	<b>4.1</b>	<b>66.6</b>	<b>15.9</b>	<b>3.0</b>	<b>10.5</b>	<b>2948</b>
<b>Hospitalization &lt; 24 h (All categories)</b>	<b>2.6</b>	<b>52.7</b>	<b>31.7</b>	<b>4.1</b>	<b>9.0</b>	<b>729</b>

### 3.3 Self-Perception of Health Status and Incurred Spending

People's perception of their own health and preferences in household budget allocations provide indirect information on the consumers' positions toward the health system.

A meaningful proportion of consumers in the lowest income category perceive their health status as poor. This represents 18.4% compared to an average of 6.7%. The overall trend reflected in table V-32, shows that the higher the income the better the perception of one's own health.

**Table V-32: Distribution of individuals by self-assessment of health status and by household income category (in %)**

Household monthly income category (in 1000 L.L.)	Perception of health status					n
	Poor	Fair	Good	Very good	Excellent	
< 300	18.4	22.1	25.0	18.8	13.8	1078
300-500	9.2	20.0	31.5	23.2	14.6	4256
501-800	7.4	17.1	32.4	24.3	17.5	7462
801-1200	6.5	15.7	34.4	26.1	15.8	7637
1201-1600	4.7	15.1	33.0	25.9	19.1	4790
1601-2400	5.4	13.8	36.6	25.0	17.2	3917
2401-3200	3.7	11.2	33.9	28.8	19.0	1927
3201-5000	1.8	12.7	34.1	32.7	16.6	886
> 5000	3.1	8.4	23.5	31.6	25.0	619
Missing	7.5	14.3	22.6	32.6	14.9	76
<b>Total</b>	<b>6.7</b>	<b>16.0</b>	<b>33.0</b>	<b>25.4</b>	<b>17.0</b>	<b>32648</b>

With regard to out-of-pocket spending, the 1999 household survey reveals clearly the important contribution of households, where the average per capita annual spending on health is 2,609,000 L.P. equivalent to 1,720 USD (5,592,000 L.P. for high and 1,396,000 L.P. for low income category). It is important to highlight that the burden of health expenditures represents for the poor 19.9% of total household expenditures, rated in the second position after food. This is compared with 8.1% and 5<sup>th</sup> position for high-income households.

The 1997 household survey had previously shown that health spending represented 13.2% and 4.8% of total household expenditures for lowest and highest income categories respectively. Spending on health was rated in the third position for the poor, and in the 9<sup>th</sup> position for the well-off. Health was considered then of high priority by the poor, in response to a question on their preferences for budget reallocation, should their income improve. They placed health in the second position, which was probably an indication for a low level of satisfaction with health services actually obtained.

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