Report No. 33416-PY

# Paraguay
# Health Service Delivery in Paraguay
A Review of Quality of Care and Policies on
Human Resources and User Fees

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Latin America and the Caribbean Region

**Document of the World Bank**

# CURRENCY EQUIVALENTS
Currency Unit: The Paraguayan Guarani (PYG)

## EXCHANGE RATE
(January 12, 2006)
1PYG = 0.000162 USD
1 USD = 6,151 PYG

## WEIGHTS AND MEASURES
Metric System

## FISCAL YEAR
January 1 – December 1

## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| DGEEC | Dirección General de Encuestas, Estadísticas y Censos (Census Bureau) |
| DHS | Demographic Health Survey |
| ECV | Encuesta Calidad de Vida (Household Survey) |
| EIH | Encuesta Integrada de Hogares (Household Survey) |
| ENDSR | Encuesta Nacional de Demografía y Salud Reproductiva (Demographic and Reproductive Health Survey) |
| FF | Fuente de Financiamiento (Source of Funding) |
| IMR | Infant Mortality Rate |
| IPS | Instituto de Previsión Social (Social Security Institute) |
| LSMS | Living Standards Measurement Survey |
| MECOVI | Medición de Condiciones de Vida (Program for Improving Household Surveys) |
| MEF | Ministry of Finance |
| MOH | Ministry of Health |
| OLS | Ordinary Least Squares |
| PAHO | Panamerican Health Organization |
| QC | Quality of Care Index |
| QI | Quality of Interaction Index |
| s.d | Standard Deviation |

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# ACKNOWLEDGMENTS

# INTRODUCTION AND EXECUTIVE SUMMARY

## Motivation

1       In 1996, Paraguay adopted a Health Law that guaranteed health care to "all people, in an equitable, timely and efficient manner-without  discrimination of any kind". Nevertheless, the quality of health-care available for the poor has been a consistent concern in the country. Results from the country's latest census suggest wide disparities in the availability of health-care, at least as measured through access to insurance. As a stark expression of the inequalities in coverage, only 1 percent of those in the lowest socio-economic quintiles has access to insurance of any form; this compares to 46 percent in the highest  quintile.

2       International comparisons show that Paraguay's health outcomes are worse than average in the case of maternal mortality and slightly better than average in infant mortality but show slow progress over time.  It is also apparent that there are large within-country differences, across geographical regions or socioeconomic groups, with rural areas and poor households doing significantly worse than the rest. This could be related to supply-side or demand-side factors, or a combination.  The current debate on health care in Paraguay focuses specifically on three issues that could explain the slow progress in outcomes: (i) demand and supply-side bottlenecks in public health care that prevent the system from improving; (ii) user costs; and (iii) quality of care in public facilities. This report provides an overview of health care in Paraguay, and analyzes the three abovementioned factors. Specifically, the report answers three main questions:

   i.   What are the main characteristics of supply of and demand for health care in public facilities and how have they changed in the last few years?
   ii.  How efficient is the user fees system and to what extent does it screen and exempt poor people effectively?
   iii. How is quality of care in public facilities and how is it affected by facilities, institutional, human resources, and patients characteristics? Are the poor subject to any kind of discrimination in the quality of care they receive?

3       In order to answer these questions this report made use of several sources of data described below. Some of these data were collected specifically to analyze the questions posed above. It is expected that this report will assist in developing a medium term strategy for improving health care provision -with the ultimate goal of improving heath outcomes— serving as an instrument for larger reforms in the sector, and that it will provide information and recommendations that can feed into the preparation of new operations in the health sector.

# Main Findings

**_Paraguay could spend more on health and achieve better outcomes_**

With the exception of maternal mortality, where it performs worse than average, Paraguay's health outcomes are in line with expectations. However more could be done to improve results: (i) Paraguay has been the country in Latin America with the slowest progress in reducing infant mortality in the last 50 years; (ii) maternal mortality has shown no progress in the last 15 years; (iii) the percentage of spending devoted to health is among the lowest in Latin America; (iv) there is large variation in outcomes by region and socioeconomic groups, with poor regions and quintiles doing significantly worse than rich regions and quintiles.

**_Utilization of health facilities is low and unequal_**

With 49 percent of households who reported feeling sick in 2000 actually seeking care -37 in rural areas— Paraguay ranks low in utilization of health care facilities compared to other countries in the region. The use of facilities increases with income: 31 percent of households in the poorest quintile seek care when sick, compared to 69 percent in the richest quintile. Other countries show similar patterns but higher utilization rates for each quintile. Cost is one prominent reason for not seeking care, as reported by 20 percent of households who did not seek care in a recent national household survey. In general the richest quintiles seek care at private facilities while the poorest quintiles attend public health care centers. A high percentage of women (17 percent) gave birth at home in 2000 -38 percent of women in the poorest quintile.

**_Public facilities have made progress over the last seven years, but they need to improve the supply of certain services_**

Even though the supply of services has improved over the last seven years, with more facilities offering more services -and more often— and an improved infrastructure, some deficiencies still exist, in particular in areas in which outcomes are bad. Maternal care-related services are not universally offered, there is a deficit in the handling of normal and complicated births, and in vitamin supplementation for pregnant women.

The problems seem to be associated with services and supplies, i.e. "inputs" rather than infrastructure. This conclusion stems from the fact that facilities have in general low occupancy rates. In spite of progress over the last seven years, problems remain with regards to availability of essential supplies, availability of trained staff and full-time personnel, which results in somewhat restrictive opening hours for many facilities. Finally, monitoring by the central level is lax -22 percent of facilities had never been inspected by the MOH- and record keeping practices of patients, fees, and exemptions is irregular.

**_Paraguay should design a comprehensive human resources policy in health to reduce perverse incentives and improve performance_**

The loopholes in the current norms and regulations create a number of perverse incentives that affect performance negatively. Specifically: (i) the distribution of personnel is uneven across sanitary regions, (ii) the type and number of staff varies greatly, even in facilities of the same size and characteristics, (iii) qualified personnel in some areas is in short supply while other areas have a surplus, (iv) there is a large number of part-time workers -multiple job holders- who perform worse than average. In addition the proportion of personnel devoted to administrative duties seems large compared to the guidelines, and their performance could be improved. The absence of a salary scale, the fact that salaries and positions are negotiated on an individual basis in an ad-hoc manner, and the absence of a monetary system rewarding performance has resulted in a situation where (i) performance decreases with salary (i.e. low salary workers perform better than high salary ones), as opposed to the predictions of the traditional theory on incentives; (ii) contract personnel performs better than permanent personnel, and (iii) multiple job holders perform worse than average.

**_Quality of care is good on average with no discrimination against poor patients_**

The analysis of quality of care was based on the observation of patient-doctor interactions for ambulatory care. It shows that the poor receive slightly better or similar service than the rich, at least in the public sector. Therefore there is no evidence of discrimination against the poor when it comes to care received by health personnel, and overall quality of ambulatory care seems to be quite good. The rich almost certainly use the private sector more and probably receive better quality-of-care, but at least within the public sector the country has achieved remarkable parity of care across patients from different socio-economic backgrounds. There is large variation in

quality of care, and in general health personnel within the IPS, on permanent contracts, receiving higher salaries, or male offer lower quality of care. Many of these factors can be related to the bargaining power in negotiating contracts.

*User fees are a significant yet volatile source of revenue for the but the system 's guidelines for exemption are confusing and not being implemented, resulting in a slightly progressive system with significant leakage*

A well functioning user fee system requires three elements: (i) sizeable revenues; (ii) clear rules and guidelines in order to minimize distortions; and (iii) equity, through an adequate exemption mechanism. This study shows that Paraguay's system has to be revised in order to overcome problems in all three areas. Since one of the main objectives of the user fees system is to improve the quality of care at the local level, as facilities are not allowed to keep at least part of the revenues they have no incentive to collect them; and since monitoring is lax many of them do not even report them to the sanitary region as mandated by law. In addition, the guidelines for fees and exemptions are confusing and this study shows that in many cases they are not applied. In part because of this, the exemption system is only slightly progressive; even though a higher percentage of poor people are being exempted, (i) conditional on paying fees, the poor do not pay less than the rich; (ii) there is substantial type I error or under coverage -31 percent of patients in the poorest tercile did pay for services; and (iii) there is substantial type II error or leakage —50 percent of patients in richest tercile were exempted. A revision of the rules, and devising an effective targeting mechanism should improve the equity of the system.

*The private sector remains highly unregulated*

This study did not collect data on private sector activities. However some of the survey work performed for this study showed a worrisome trend: many public health facilities are now outsourcing some services, and in many cases these services have not been authorized by the Ministry of Health, and when authorized, the fees charged by these services are not regulated. This could potentially have serious consequences and limit demand for health care, particularly for the poor.

*Five main recommendations emerge from this report*

The analysis lends itself to the following four main recommendations:

i. As cost seems to be a major reason for the poor not to use health facilities, a movement towards subsidizing health care for the poorest seems to be the right approach. The government is already implementing a pilot in two *departamentos* to subsidize the demand for care through the mother child insurance program.

ii. Improving the supply of public health care requires focusing on inputs, increasing availability of supplies, services, and opening hours wherever possible. A stricter monitoring on the part of the Ministry of Health is essential for this. The flow of funds within the health system should be structured so as to respond to actual demand for services.

iii. Develop a comprehensive human resources policy for the health sector, addressing at least the following aspects:
   • Estimation of personnel needs. The guidelines already in place could be a good starting point. In addition the criteria for allocating human resources should be refined, establishing criteria by geographical location, type of facility, complexity level, population, and socioeconomic/epidemiological/demographic profiles of the population to be covered.
   • Quantifying of the gap between needs and current staff availability
   • Design of a methodology to evaluate personnel's performance and productivity
   • Design of a mechanism to provide incentives for staff to relocate according to need (e.g. to rural and less populated areas) and to perform (i.e. revision of salary scale, promotion mechanism, and hiring practices).

iv. The efficiency of the user fees system could be improved by adopting some of these measures: (i) increase the frequency and scope of monitoring by the MOH; (ii) devise some kind of revenue sharing system so that facilities are allowed to keep some of the proceeds from user fees; (iii) improve the flow of funds of user fees between the central level and the facilities; (iv) set clear guidelines regarding the use of revenues collected through fees, including some redistribution scheme across regions; (v) revise guidelines for exemptions in order to simplify the process wherever possible; (vi) improve the

record keeping capabilities of facilities in order to facilitate reporting of fees and exemptions to higher administrative levels; and (vii) determine patients willingness and ability to pay, and revise the current fees scale accordingly.

v. The equity of the user fees system could improve with the adoption of some of those measures, like better record keeping and improved guidelines. By far the most welfare improving measure has to be a change in the targeting mechanism for exemptions. This can start by defining clearly who is going to be exempted, i.e. refining the concept of "noticeable poverty" stated in the current guidelines, and how it is going to be measured and implemented. It is necessary to decide if the services will be exempted to everybody or to a certain group of the population. This could be based on economic and medical criteria.

## Structure of the Report

4        Chapter One provides a brief overview of health care in Paraguay and describes its institutional framework. It then analyzes the patterns of supply of and demand for health care, using information from household surveys and a survey on health facilities. The survey of facilities is also used to determine if there have been any significant changes during the last decade, during which Paraguay followed an aggressive investment policy in health infrastructure. It finds that Paraguay faces challenges on both supply and demand. On the supply side the problems are not related to the number of facilities, which seems to be adequate, but to the type of services being offered, their frequency, availability of supplies, and personnel characteristics. On the demand side it finds that utilization of services is low compared to other countries and varies greatly by quintiles. In addition cost seems to be an important factor deterring the poor from using facilities.

5        Chapter Two examines the issue of quality of care at the facility level by analyzing one of the most important dimensions of quality, that of the human resources for health. Since health care provision tends to be very labor intensive, the quality of human resources is central to the quality of care individuals receive. Chapter Two analyzes the characteristics of human resources for health at an aggregate level, including geographic distribution, classification according to contractual status, and nature of the work being performed (administrative or health-related). It also tests some of the hypotheses mentioned before, namely that the average quality of care is low and that poor patients are subject to worse treatment than rich patients. It ends up rejecting both hypotheses.

6        Finally, chapter Three tackles the issue of user fees in health, that affects both supply of and demand for health care. User fees affect supply because they are an important source of revenue for many facilities, and affect demand as they alter the price people pay for health care. The analysis of Chapter Three begins with a description of the user fees and exemptions system and later provides some empirical evidence on collection of fees, geographical variation, and its relationship to poverty and other regional characteristics. It finally analyzes the factors affecting collection of user fees at the facilities level, and explores the hypothesis that the system is not equitable and does not screen the poor appropriately, exempting them from paying. It finds that this is partially true.

## Data

7.      Multiple sources of data were used for this report, many of them original. The analysis of outcomes and utilization made use of existing information from various demographic and health surveys, administrative records, and two household surveys implemented by the DGEEC in 1997/98 and 2000/01. The analysis of human resources and user fees benefited from the generosity and support of the Ministry of Health and IPS, through which it was possible to obtain the payroll databases for both institutions, as well as administrative information on user fees and exemptions by sanitary region and in some cases by facilities. In preparing this report, two original sources of data were produced: (i) a case study involving six health care facilities to analyze the knowledge facilities have about user fees and exemption rules and to what extent those rules are being followed; (ii) a series of surveys on facilities, households, doctors, and patients, to analyze their characteristics and interrelations. In total 89 facility surveys in four *departamentos* were conducted, together with 296 interviews with providers, 2,334 observations of patient-doctor interactions, 2,288 exit surveys, and 648 household interviews.

## Relationship to the World Bank's Work in the Health Sector

8       The current report forms part of the World Bank's support for Paraguay's health sector development. In the sector, the Bank's engagement in Paraguay over the past decade consisted of an ongoing policy dialogue and the financing of the Paraguay Maternal Health and Child Development Project, which became effective in 1997 and closed in June 2004. Among others, the project, over a sum of US$20.6 million, supported (i) the rehabilitation and equipment of primary and secondary health facilities in the poorest areas of the country, (ii) training of health center staff in basic obstetric and neonatal care, (iii) creation of a communications and transportation network to improve referrals and transport of obstetric emergencies to health facilities, and (iv) the strengthening of the national immunization campaigns.   A recent evaluation of the project showed that it did succeed in improving efficiency of maternal-child health service delivery but that its expansion of coverage fell significantly short of expectations.  This is mirrored by the findings in the first chapter of this report -- on average, utilization of installed capacity in public health facilities in Paraguay today is below 50 percent.  On the other hand, utilization rates of health facilities is -- by international standards -- low, especially for the poor.

9       Several of the conclusions of the report directly feed into the Maternal-Child Health Insurance Project which has recently been negotiated between Government and the World Bank. One of the key program development objectives is to lower the maternal mortality rate -- shown in this report to be unusually high in Paraguay given its income level -- and to contribute to a decrease of the infant mortality rate whose decline over the last decades, as explained in chapter 1, has been the lowest in the LAC region. The project will support the piloting of a non-contributory insurance system in several departments in Paraguay, covering a package of basic services and medicaments for poor mothers and children up to the age of five years old who currently do not have formal insurance coverage. The program is built on the premises that the key bottleneck to health service delivery in Paraguay today is not the availability of infrastructure, as confirmed by this study, but rather both demand factors (as

utilization among the poor is low) as well as supply factors which are linked to the availability of services and inputs. Public health centers will be the primary agents for delivery of the basic package of mother-and child care and they would be reimbursed for actual services rendered -- thereby contributing to a flow of resources within the system where actual demand arises.

**Future Extensions of this Report**

10. The study is limited in scope by three main aspects which also suggest a path for future work:
    1. Reasons for non-utilization: An important extension of the current analysis consists in additional data collection to further explore the reasons why poor households do not use services, as this study focused its data analysis on users of facilities. As an issue for further study it is recommended to focus on the non-users, as the report shows that a significant percentage of the population do not seek care when sick.
    11. Inpatient versus outpatient care: The analysis of patient-doctor interactions and quality of care is limited to outpatient consultations. An analysis of the quality of inpatient care would be an important extension.
    111 Private sector: due to the nature of the study, the private sector could not be included in the analysis. It would have been virtually impossible to observe doctor-patient interactions in the private sector, and the analysis of quality of care is based mostly in this observation. The private sector still represents a significant portion of health care provision in Paraguay, and even though it is used mostly by the rich, it is worth exploring its characteristics, regulations, and performance in the future.

# CHAPTER 1. SUPPLY OF PUBLIC HEALTH CARE AND UTILIZATION PATTERNS

11.     This chapter describes three aspects of health care provision in Paraguay that provide the basis for the analysis of Chapters two and three.  First, after a brief description of the institutional framework, it benchmarks Paraguay's health outcomes in an international context by comparing it to countries with similar income levels, and highlights within-country differences wherever possible.  Second, it analyzes patterns of demand for health care through the analysis of utilization of public health care facilities. Third, it looks at the supply of health care and the main changes observed in the provision of care during the last decade, making use of a survey of facilities designed specifically for this report. It concludes that in spite of being a relatively good performer in health outcomes for its income level, maternal mortality is worse than expected, and progress in improving other indicators has been slow. In addition utilization of health care facilities is low and unequal by geographical area and socioeconomic status, and even though physical infrastructure improved during the last decade, some severe deficiencies are still present in the system.

## 1.1    Description of Health Care in Paraguay
### (i)    Institutional Organization

12.     The health system in Paraguay is fragmented, with no separation between financing and provision, and with a highly centralized structure.  The National Health System Law passed in 1996 adopted a structure similar to the general governmental framework of three tiers for administrative purposes -national, departmental, and municipal, the last two with varying degrees of autonomy. The movement towards decentralization in health involved the creation of regional and local health secretariats -each *Departamento* is now a Sanitary Region with some autonomous authority, and so is the capital of the country, Asunción— and a decision to decentralize health services, but to this date decentralization efforts have been ad-hoc and irregular.  The Sanitary Regions do not have much autonomy in decision making as they act mostly as an agent for the MOH. Human resources are allocated and controlled by the central level, creating inconsistencies between actual allocations and local needs. The same is observed in other aspects of health care administration like purchase of essential drugs and supplies, and the user fees policies, discussed in depth in Chapter Three.

13.     Current providers are divided in three:  (i) the public sector, through the MOH (and a number of autonomous entities like the National University); (ii) the IPS; and (iii) the private sector. Each of these entities finances health care provision in their own facilities, with little coordination among them.'  The Ministry of Health provides health care at its facilities at a subsidized price, charging user fees for most procedures.  The IPS is financed with a payroll tax of 14 percent on employers, 9 percent on employees, and 1.5 percent contribution from the government, but this contribution is split between its different insurance schemes -old age, disability, survivors, and sickness being the most important- in a non-systematic way. The private sector fees are not regulated.

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[1] There is a small transfer from IPS to the Ministry of Health as a contribution to prevention activities.

14      The geographical distribution of care under the MoH follows a "center-periphery" model.   The peripheral (and more rural) populations are provided care through basic ambulatory centers; moving closer to the center increases the size and complexity of the facility. Most IPS facilities in contrast are located in urban areas, where the bulk of the population with regular employment resides.

*(ii)*      *Coverage*

15.      Coverage of the system is not universal.   The IPS, funded through employees and employers contributions, provides health care to about 17% of the population. The private sub-sector covers about 10% of the population.   Finally, the MOH is responsible for health care provision to the low-income population and for public health activities and in principle should provide care to the remainder of the population.   However there is a significant percentage of the population that receives no health care.

16      According to the MOH, there are about 994 facilities comprising the public sector umbrella of health care provision in the entire country. That is, facilities of different level of care and complexity, administered by the MOH, the military, the police, the IPS, and the national university. On the private sector side, there are about 982 facilities with different levels of complexity.   Facilities are classified in four levels of care -from basic to specialized— and seven levels of complexity, from *Dispensarios* as the most basic ambulatory centers to specialized hospitals.  Even though facilities are distributed in the country with a population criterion, there exists significant variation across *Departamentos,* with a high concentration of both facilities and professionals in the capital Asunción. There is about one MOH health facility every 4,500 inhabitants and one IPS facility every 12,000 affiliates.

## 1.2      Paraguay's Health Outcomes in International Context

17      A first approximation to health outcomes in Paraguay can be found by looking at its performance among a group of countries with similar income levels. The comparison is based on countries with similar GDP levels controlling for the size of their populations. With the exception of maternal mortality, Paraguay is not an underperformer. However, sustained low levels of public spending in health have resulted in slower than expected progress towards better outcomes as some time-comparisons show.[2]
The estimated infant mortality rate in Paraguay is lower than the rate for countries with similar income levels. The latest DHS (2004) shows an infant mortality rate of 27 deaths per 1,000 live births. This represents a 2 point decrease with respect to the 1995-96 ENDSR, the

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[2] The international benchmarking exercise consists of running a linear OLS regression of the outcome in question (for example, the infant mortality rate) on the log of per capita GDP, using the PPP adjusted value. Countries that are significantly far from the regression line could be over or underperformers depending on the outcome being discussed.   For example when the outcome is infant mortality, countries below the line are performing better than would be expected given their per capita income levels. The sample in the regressions in this chapter includes *all* of the countries in the American continent for which data are available, based on the PAHO database. Regressions are weighted by population, as detailed in the notes at the foot of each figure. Unweighted OLS estimates provided similar benchmarks.

latest for which comparable data are available -a statistically insignificant change- and shows a slower progress in reduction if compared with previous years. Figures 1 and 2 show that the relative position of Paraguay vis-à-vis other countries in the region has not changed much in the last ten years.

FIGURE 1
**Actual and predicted Infant Mortality Rates for selected countries, 1990**
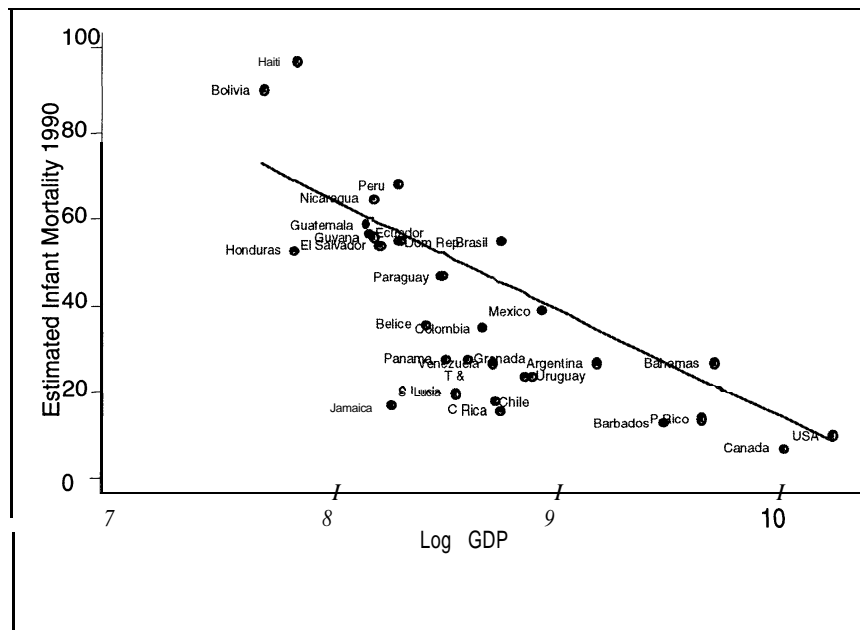


*Note;* The line corresponds to the predicted infant mortality rate (estimated from surveys as reported in the PAHO database) from a weighted regression on log per capita GDP, PPP adjusted, and a constant, with the weights given by the population in a country. The sample size for the regression is 30 countries. Source: WB estimates, based on data from PAHO.

FIGURE 2
**Actual and predicted Infant Mortality Rates for selected countries, 2004**
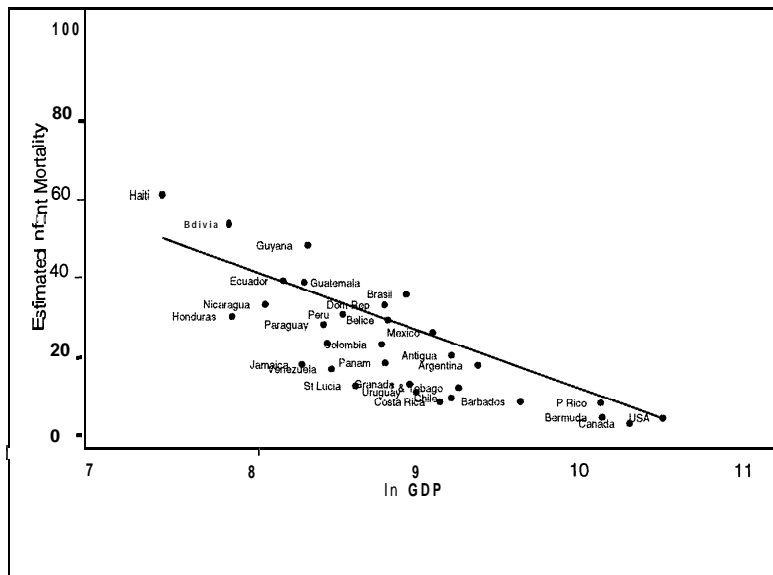


*Note:* The line corresponds to the predicted infant mortality rate (estimated from surveys as reported in the PAHO database) from a weighted regression on log per capita GDP, PPP adjusted, and a constant, with the weights given by the population in a country. The sample size for the regression is 30 countries.
Source: WB estimates, based on data from PAHO.

18      However, even though all countries have experienced a reduction in infant mortality rates, Paraguay's has been among the smallest. Tables 1 and 2 show the change in infant mortality rates for different countries in the region.  Between 1950 and 1995 Paraguay was the country with the least percentage decrease in IMR, and the one with the smallest point decrease among countries in the same income range. This suggests that even though infant mortality may not be a significant problem -considering Paraguay's income level- a more explicit effort should be devoted to reduce this rate further. Many countries in Latin America are devoting specific programs to this end, and the pilot Mother and Child Basic Insurance Project is a move in the right direction to address this problem.

TABLE 1
**Percent change in IMR between 19504995 and 19904995**

| Percent decrease | Countries |
|---|---|
| 80 and more | Chile, Cuba, Barbados; Costa Rica, Martinica, Guadalupe; Canada; Puerto Rico; Jamaica |
| 70-79 | Venezuela, Trinidad & Tobago; Colombia; Bahamas; Honduras; Panama; Mexico, Dominican Republic; El Salvador, USA; Nicaragua |
| 60-69 | Ecuador; Guatemala; Brasil, Peru, Suriname, Uruguay; Argentina; Guyana, Haiti; Belice |
| so-59 | Bolivia |
| 40-49 | Paraguay |

Source: PAHO, Estadisticas de salud de las Américas. Edición de 1998. Washington, DC: OPS; 1998. (Publicación Cientifica567). En prensa.

TABLE 2
**Decrease in points in IMR 19504955 and 19904995**

| Decrease in points | Countries |
|---|---|
| 100 + | Haiti; Honduras; Nicaragua; Barbados; El Salvador, Dominican Republic; Chile; Peru; Bolivia |
| 80 to 99 | Colombia, Ecuador; Guatemala; Brasil, Mexico; Venezuela; Costa Rica |
| 60 to 79 | Guyana; Cuba; Panama, Jamaica; Trinidad & Tobago; Bahamas |
| 40 to 59 | Suriname; Guadalupe; Martinica; Belice; Puerto Rico; Argentina |
| 20 to 39 | Uruguay; Paraguay; Canada; USA |

Source: PAHO, Estadisticas de salud de las Américas. Edición de 1998. Washington, DC: OPS; 1998. (Publicación Científica.

19      Maternal Mortality is higher than average, and has shown no progress in the last 15 years -if anything it has worsened slightly. It was 188 in the period 1982-1988, 192 in 1989-1995, and the latest reported figure from the Ministry of Health is 190. In fact Paraguay is above its expected value given its income level. In addition, Paraguay has the fourth largest maternal mortality ratio in the continent. Maternal mortality is a serious problem that could be avoided by increasing access to good quality of care. According to the ENSMI 1998, the percentage of births attended by qualified health personnel (institutional births) was about 56 percent. This is lower than Bolivia for example -a country with lower GDP levels— where the percentage of institutional births was 58 in 2003.

FIGURE 3
**Actual and Predicted Maternal Mortality, Selected Countries, 2004**
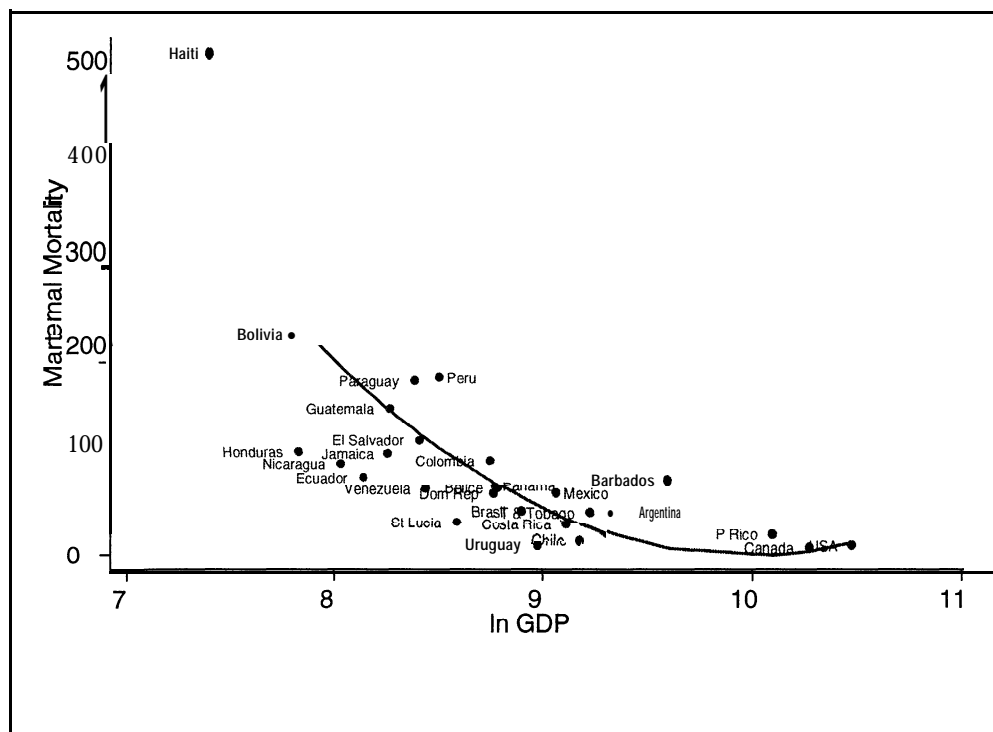


*Note:* The 'line corresponds to the predicted maternal mortality rate from a weighted regression on log per capita GDP, PPP adjusted, and a constant, with the weights given by the population in a country. The sample size for the regression is 30 countries.
Source: WB estimates, based on data from PAHO.

20    A low level of public spending in health may be contributing to this problem. Even though Paraguay increased its share of GDP devoted to the social sectors during the first half of the 1990s, the percentage devoted to health has been systematically low during the last few years. At 2.6 percent of GDP, public spending on health is among the lowest in the region.  It is also about a quarter of a percentage point of GDP below its expected value for countries of similar income. Only six countries in the American continent spend less than Paraguay in health care.  There is in general a strong correlation between good health outcomes and how much a country spends on health.

FIGURE 4
**Actual and Predicted Spending as Percentage of GDP, Selected Countries, 2004**
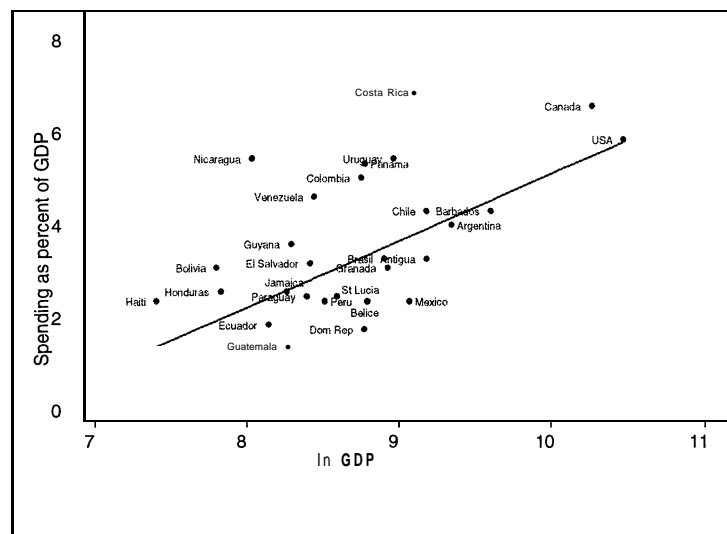


*Note:* The line corresponds to the predicted maternal mortality rate from a weighted regression on log per capita GDP, PPP adjusted, and a constant, with the weights given by the population in a country. The sample size for the regression is 30 countries.
Source: WB estimates, based on data from PAHO.

21. Even though Paraguay may not be a noticeable under-performer when compared to other countries with similar income levels, most available health surveys for Paraguay show significant *within-country* disparities in outcomes, as well as large differences among socio economic groups. The latest available information on infant mortality by region is from the ENDSR1995-96 and shows a 10 point disparity between the capital area and the north of the country.[3]

TABLE3
**Infant mortality rates differ by region**

| Region | Infant mortality |
| --- | --- |
| Gran Asunción | 28 |
| Norte | 37 |
| Centro-Sur | 31 |
| Este | 37 |

Source: ENDSR1995-96

22 With respect to outcomes by socio economic groups, World Bank (2000) provides information about health outcomes by wealth quintiles, based on the DHS 1990. The differences across quintiles are striking: the infant mortality rate for the poorest quintile is 42.9 per 1000 live births and for the richest quintiles it stands at 15.7; also, while in the poorest quintile 22.5 percent of children are stunted, in the richest quintile the percentage of stunting is 3.

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[3] Sample sizes were too small to compute maternal mortality rates by region.

23    Intermediate health outcomes also show a large disparity by socioeconomic status. While prenatal care with qualified personnel is almost universal for the richest quintile of the population, it is only about 70 percent for the poorest quintile. About 37 percent of pregnant women in Paraguay had less than the statutory number of prenatal controls, and the percentage was about 48 percent for those speaking mostly Guarani and those living in rural areas. According to the EIH2000/01 institutional births reached 72 percent, with wide disparity across geographical areas -42 percent of births from mothers speaking mostly Guarani or living in rural areas were non-institutional, compared to 7 percent for those living in Asunción and 9 percent for those speaking Spanish).[4]

TABLE 4
**Selected Health Outcomes Show Significant Differences Across Wealth Quintiles**

| Indicator | Poorest | Second | Middle | Fourth | Richest | Average |
|---|---|---|---|---|---|---|
| Infant Mortality Rate | 42.9 | 36.5 | 46.1 | 33.5 | 15.7 | 35.9 |
| Under Five Mortality Rate | 57.2 | 50.0 | 59.0 | 39.4 | 20.1 | 46.6 |
| Children Stunted (%) | 22.5 | 19.0 | 12.5 | 6.3 | 3.0 | 13.9 |
| Children Underweight (% moderate) | 5.9 | 4.3 | 4.0 | 1.8 | 0.8 | 3.7 |
| Antenatal Care Visits to a Medically Trained Person — doctor, nurse, or nurse midwife (%) | 69.5 | 79.5 | 85.6 | 94.8 | 98.5 | 83.9 |
| Delivery Attendance by a Medically Trained Person (%) | 41.2 | 49.9 | 69.0 | 87.9 | 98.1 | 66.0 |

Source:  World Bank 2000, Socio Economic Differences in Health, Nutrition, and Population in Paraguay, Working Paper.

24    Since Infant mortality rates and maternal mortality ratios are mostly related to preventable causes, a low utilization of services -for certain groups of the population or in certain regions— can partially explain the poor outcomes in health. Some of the reasons for low utilization of health care services can be found on demand-side factors, like the high price for services, or the long distance to facilities; other explanations are supply-side related, like the low quality of care provided in facilities. This report examines both factors.

### 1.3    The Demand Side: Utilization of health care facilities

25    The main source of data for demand for services comes from the national household surveys  that Paraguay implemented in  1997/98 and in 2000/2001.[5] Both survey questionnaires contain a question that tries to elicit how many people consulted some type of qualified health personnel in case of sickness.  Unfortunately the question and options on overall sickness have changed slightly in the EIH 2000/01, reducing the scope for strict comparisons over time. While in 1997/98 the question referred to "being" sick, ("During the last three months, were you sick?"), in 2000/01 the question referred to "feeling" sick

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[4] Exclusion Social en Salud (DGEEC 2003).
[5] The latest survey, EIH 2004, was not processed by the time this study was being produced.

("During the last 90 days did you feel or were you sick?"). As an approximation to changes in demand for health services, Table 1.5 shows the percentage of the population who reported being or feeling sick and the percentage that consulted any help.

TABLE 5
**Percentage of population sick last 3 months and those that consulted help by urban/rural**

|  | 1997198 | | | 2000/01 | | |
|---|---|---|---|---|---|---|
|  | All | Urban | Rural | All | Urban | Rural |
| Sick (% of all) | 33.1 | 31.5 | 35.0 | 37.8 | 35.5 | 40.5 |
| Consulted Help (% of all) | 18.2 | 20.2 | 15.9 | 18.4 | 21.3 | 15.0 |
| Consulted Help (% of sick) | 55.7 | 64.8 | 46.1 | 48.7 | 60.1 | 36.9 |

Source: WB estimates based on EIH 1997/98 and EIH 2000/01

26     The percentage of households reporting sickness increased from 33 percent to 38 percent, something that could reflect the change in phrasing of the question. However the percentage of people seeking help decreased from 56 percent of those who reported being sick to 49 percent. This decrease was more pronounced in rural areas, where only 37 percent of those reporting being sick sought help. These figures are somewhat low compared to other countries in the region; for example in Bolivia, the MECOVI 2001 shows that about 63 percent of the population feeling sick sought care; 67 percent did the same in Ecuador, according to the ECV 1998; and 58 percent in Guatemala according to the 2000 LSMS.

27     The information available on utilization rates by quintiles also suggests that utilization rates in Paraguay are low and unequal; while 31 percent of those who reported being sick in the first quintile consulted qualified personnel, 69 percent of those in the richest quintile who reported being sick did the same.

28.     The questionnaires in the household surveys are not very exhaustive about the reasons for not seeking care. The main categories are listed in Table 6. The reason quoted most frequently is that the household considered the illness to be a minor ailment. This figure increased from 25 percent to 40 percent. The next most important reason is self-medication -33 percent and down from 52 percent in 1997/98— followed by cost (20 percent). Not only is cost an important reason for not seeking care, but it is reported by twice as many households as in 1997. The "self-medication" and "minor ailment" categories could hide other fundamental reasons for not seeking care, like quality of service or even the price — even though "quality of service is bad" was listed as a category in the survey questionnaire and it garnered less than 1 percent of positive answers. It would be worth exploring these issues further in future household surveys. In spite of the ambiguity in some categories, it is apparent from the surveys that cost is an important consideration in seeking care, and that distance to facilities seems relatively unimportant.

TABLE6
**Reasons for not seeking care, 1997-98 and 2000-01**

| Reasons for not seeking care | EIH 1997-98 | EIH 2000-O 1 |
|---|---|---|
| Minor ailment | 25 | 40 |
| Facilities are far | 3 | 4 |
| Expensive | 10.5 | 20 |
| Self-medicated | 52 | 33 |
| Other | 9.5 | 3 |

Source: WB estimates based on EIH 1997-98 and EIH 2000-01

29    Utilization of public health care facilities has increased over time, at the expense of the private sector.  Between 1997 and 2001 the percentage of those sick who requested medical attention in public facilities went up from 40 to 45 percent, while the percentage of those seeking help at private facilities -private hospital or center, basic ambulatory centers, or pharmacies— went down from 55 percent to 48 percent. This could suggest an economic reason as private facilities tend to be more expensive on average than public facilities. An analysis of utilization of facilities by quintiles shows that the rich mostly use private facilities -57 percent of households in the highest quintile go to a private health facility when sick— while the poor use mostly public facilities -23 percent of the households in the poorest quintile use basic health centers and 29 percent go to a traditional healer.

30.    Public hospitals are also being used more often to give births. According to the IEH 1997/98 and 2000/01, use of public hospitals for last birth increased from 13.2 to 18.3 percent. An analysis by quintile shows that the poorest quintile still prefers to give birth at home, but that percentage has gone down from 52 to 38 percent. The richest quintile still prefers the private hospitals, with 44 percent of them giving birth in such facilities.

FIGURE 5
**Women are increasingly giving birth at public hospitals instead of Health centers or at home**
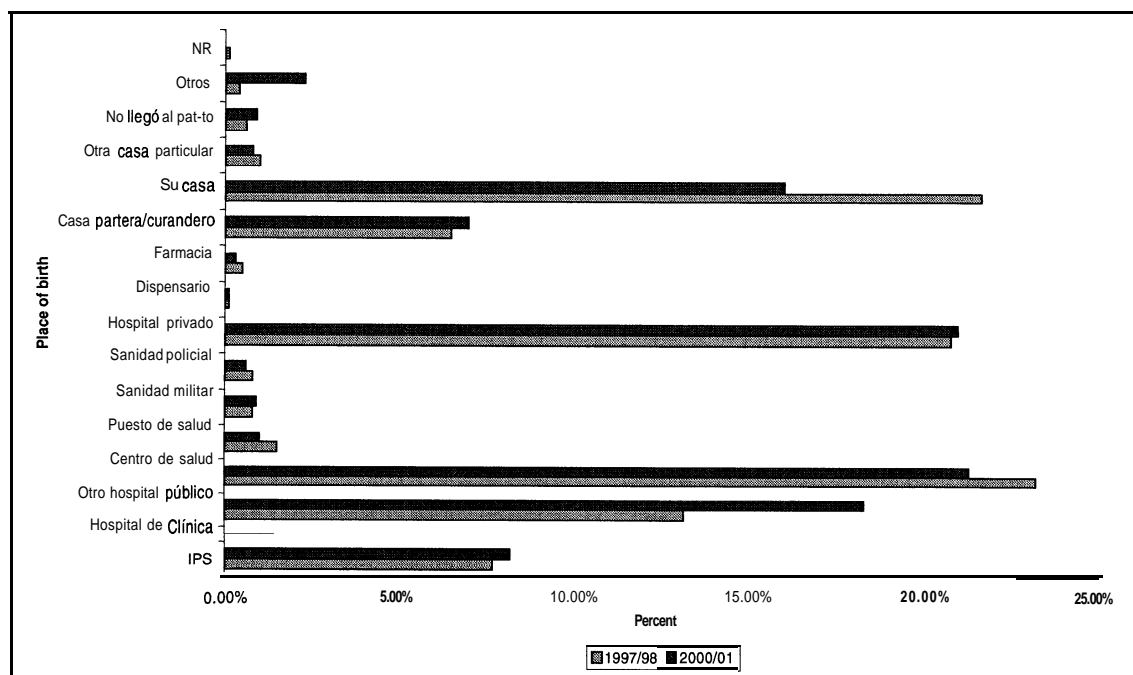
## 1.4    Supply side issues. Characteristics of Facilities

31.    During the last years of the 1990s the Government of Paraguay followed an aggressive investment policy in health. Between 1997 and 2002 the number of health care facilities administered by the Ministry of Health increased by almost 20 percent, from 725 to 849, with a concomitant increase in the number of beds from 3,268 to 3,98 1. The increase in the number of facilities did not benefit all *Departamentos* in the same way. There is a somewhat weak relationship between population and the number of facilities in each *Departamento,* and in addition, facilities do not register the same degree of usage. Most facilities are being used at levels well below their full capacity. Occupancy rates in general are not very high and show significant variation across *Departamentos,* suggesting that the demand for services seems not to have been taken into account when the decisions to build new facilities were made. As Figure 6 shows, occupancy rates vary between 15 and 87 percent, with a country average of 47 percent.

FIGURE 6
**Occupancy Rates Are Low and Show Significant Variation Across *Departamentos***
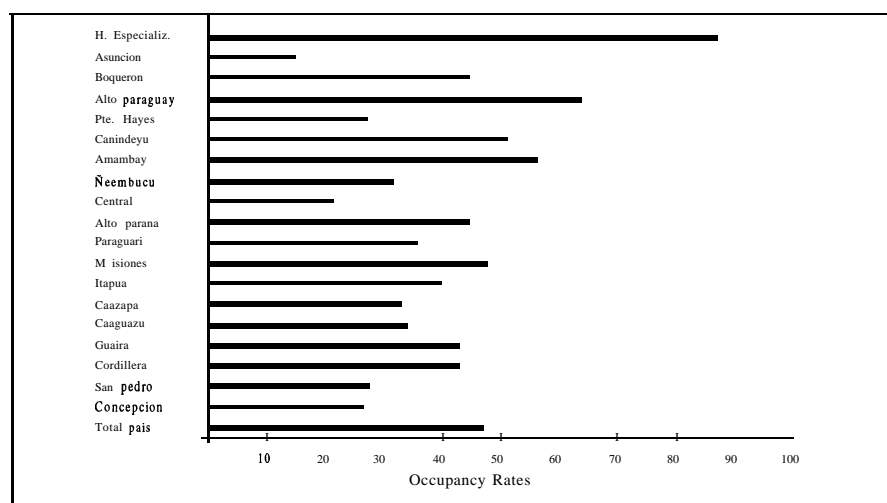


Source Ministry of Health, 2000.

32      Medical Personnel is also unequally distributed across regions. The relationship between doctors and population in each *Departamento* is weakly positively correlated. In spite of this, the number of doctors per 10,000 inhabitants varies significantly across *Departamentos;* Asuncion aside -with 19.5 doctors per 10,000 inhabitants- the number of doctors varies between 1.2 and 4.5 per 10,000 inhabitants!

33      Since the policy of investing in infrastructure was implemented, there has been no systematic analysis of the changes, if any, that health facilities across the country have experienced. The latest such survey was implemented in 1998, as part of a study to analyze the effect of decentralization on health outcomes funded by USAID.[7] The survey was conducted in 124 public facilities in the *Departamentos* of Asuncion, Central, Cordillera, and Misiones and it contained a variety of questions about the type of services provided and the main characteristics of each facility.   For the purpose of this report a new survey was conducted in the *same Departamentos,* on 76 facilities administered by the MOH and 10 facilities administered by IPS, a sample that reflects the approximate share of facilities each institution administers in the country and its distribution by level of complexity. There is a large overlap of facilities in both surveys in order to provide valid comparisons. This survey was complemented with interviews to providers, observation of patients, patient exit interviews, and household surveys in order to test a number of hypotheses explored in chapters two and three.  Following is a summary of the main conclusions of the facility survey, highlighting the main changes that have occurred since 1998.

*(i)      Availability of Health Services -Maternal Care*

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[6] MOH (2004) "Foro Nacional de Recursos Humanos en Salud: Los Nuevos Enfoques en la Gestión de Recursos Humanos en Salud".i88
[7] MEASURE (1999). A study was also conducted by the IDB in 1996 to analyze some characteristics of supply and demand for health care.

34. Activities related to maternal care can be grouped in (i) prenatal care, (ii) birth, and (iii) post partum, and in general it is less than optimal. Prenatal care is almost universally provided in the sampled *Departamentos,* except in the *Departamento* Central, where about 85 percent of facilities offer this service. However there seems to be a deficit in related services, like Vitamin A, Folic Acid, Mineral supplementation for pregnant women, and sonograms, maybe reflecting the low quality in the type of prenatal care provided. For example less than 30 percent of facilities offer vitamin A supplementation -16 percent of facilities in Cordillera and Misiones.

35. Facilities on the other hand seem to be less prepared to handle birth related activities. The percentage of facilities handling normal births is about 50 percent, with the highest percentage in Cordillera (72 percent of facilities). However only 32 percent of the facilities sampled are capable of handling complications related to births.

36. There are some differences in the type of maternal care offered by type of facility. IPS for example offers good pre- and post-natal care, as a large percentage of its facilities provide sonograms and preventive services like vitamin and mineral supplementation. However it does not handle a correspondingly high percentage of births (either normal or complications). This is consistent with information from the household survey according to which the MOH hospitals are the preferred choice for giving births, and may be suggesting the presence of cross subsidies from the MOH to the IPS. In the sample of facilities surveyed for this study 75 percent of MOH hospitals offer normal birth services and 70 percent handle complications related to birth. It also seems that a lot of health centers -81 percent— handle normal births, as opposed to health posts that are not prepared to do it. High technology and more complex activities are performed mostly in hospitals (Sonograms) and almost no health post is prepared to handle complicated births.

37. When comparing the information from the current survey with that of 1998, the most significant changes are the increase in nutrition related activities (e.g. the increase in the proportion of facilities providing Vitamin A from 14 to 28 percent) and the proportion of facilities handling complications related to birth, which, although still low, shows an increase from 24 to 33 percent. There is also a reduction in the number of days most services are being offered, particularly normal and complicated births.

TABLE 7
**Percentage of Facilities Offering Selected Maternal Care Services 1998-2004**

| Service | Facilities offering service (%) | | Average number of days service is offered per week | |
|---|---|---|---|---|
| | 1998 | 2004 | 1998 | 2004 |
| Pregnancy control | 84 | 91.9 | 5.3 | 5.2 |
| Vaccination of pregnant women | 88 | 90.7 | 6 | 5.1 |
| Iron Supplements | 44 | 68.6 | 5.5 | 4.0 |
| Supplements Folic Acid | 23 | 58.1 | 5.5 | 3.2 |
| Vitamin A Supplements | 14 | 27.9 | 5.7 | 1.5 |
| Normal Childbirth | 44 | 50.0 | 6.7 | 3.2 |
| Complicated births | 24 | 32.6 | 6.5 | 2.0 |
| Puerperium Control | 79 | 88.4 | 5.2 | 5.0 |
| Test of PAP | 80 | 93.0 | 5.2 | 5.1 |

Source: WB estimates and MEASURE (1999)

## (ii)    *Availability of Health Services -Child Care*

*38*    In the case of child care information was also collected on preventive activities like growth control and vaccinations, and curative activities like treatments of ARIs or use of re-hydration therapies. In general child care is more widely offered than maternal care, with some variation across *Departamentos.* However it is surprising that some common services like vaccination and growth control are not universally provided. Curative services are not universally provided either; only 76 percent of facilities in the *Departamento* Central and 78 percent of health posts implement re-hydration therapy. The main difference between IPS and MOH facilities stems from the low participation of IPS facilities in vaccination and other preventive care, even though they offer close to universal curative care.[8]

*39*    Between 1998 and 2004 four important trends can be observed: (i) more facilities offer vaccinations -about 91 to 98 percent of facilities depending on the type of vaccines; (ii) the proportion of facilities doing growth control and perinatal care is now larger; (iii) the only service that has become less prevalent now is the use of re-hydration therapy; and (iv) the proportion of facilities offering growth control and vitamin A supplementation is now larger, but still low.

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[8] This is consistent with the contribution that IPS pays to the MOH in order to finance preventive care.

TABLE 8
**Percentage of Facilities Offering Selected Child Care Services 1998-2004**

| Service | Percentage of clinics offering service | | Average number of days service is offered per week | |
|---|---|---|---|---|
| | 1998 | 2004 | 1998 | 2004 |
| Vaccination BCG | 81 | **90.9** | 2 | 1.8 |
| Vaccination Polio | 90 | **97.7** | 5.5 | 5.5 |
| Vaccination DPT or Penta | 90 | **97.7** | 5.5 | 5.4 |
| Vaccination Measles | 88 | **97.7** | 2.9 | 5.2 |
| Growth Control | 70 | 86.4 | 4.9 | 4.5 |
| Treatment of Diarrhea | 93 | 95.5 | 5.9 | 5.6 |
| Treatment of ARI | 89 | 95.5 | 5.6 | 5.5 |
| Perinatal care | 78 | 88.6 | 5.3 | 4.9 |
| Therapy of Rehydration | 89 | 72.7 | 5.9 | 4.1 |
| Vitamin A supplements | 12 | 25.0 | 5.6 | 1.3 |

Source: WB estimates and MEASURE (1999)

## (iii) *Infrastructure and Availability of Supplies*

40. In general the infrastructure of facilities has improved between 1998 and 2004, in some cases significantly. For example, the proportion of facilities with a telephone or radio has increased from 45 percent to 64 percent, but it is surprising that not every facility has access to communications in case of emergencies (only 73 percent do). There are still problems with the flow of supplies. About 12 percent of facilities have experienced stock-outs of disposable needles in the six months prior to the survey. The same phenomenon was observed in 26 percent of facilities with regards to disposable gloves. In addition there are still facilities with no access to drinking water (about 7 percent).

TABLE9
**Percentage of Facilities with Certain Infrastructure and Supplies, 1998-2004**

| | 1998 | 2004 |
|---|---|---|
| Electricity | 100 | 100.0 |
| Drinking Water | 85.5 | 93 |
| Telephone or radio | 45.5 | 64.2 |
| Access to telephone or radio in case of emergency | 66.7 | 72.6 |
| Refrigerator for Vaccines | **94.6** | **96.5** |
| Blood Bank | 4.4 | 16.6 |
| Pharmacy | 24.1 | 33.3 |
| Disposable Needles | 99 | 100 |
| Disposable gloves | 87.8 | 100 |
| Stock out needles last 6 months | 8.4 | 11.9 |
| Stock out gloves last 6 months | 35.8 | 26.1 |
| Sample size | See Note | 84 |

*Note:* Sample size in 1998 survey varied between 92 and 112 depending on the question.

*(vi)*    ***Record Keeping and Monitoring***

41    The facilities survey also gathered information on the quality of record keeping at the facility and the monitoring carried out by the Ministry of Health (or the IPS). For the first issue interviewers asked to look at the medical records kept at each facility and provide an assessment according to three categories: (i) very good; (ii) good; and (iii) bad. Table 10 shows that about 12 percent of facilities were assessed as keeping bad records, 68 percent kept good records, and 19 percent kept very good records or their patients. In addition, not every facility keeps the address of patients on record -only 79 percent of facilities in the *Departamento* Central do, and 88 percent at the national level- while the percentage of facilities keeping a separate record for fees and exemptions, as mandated by the law, is even lower; only 67/66 percent of facilities comply with this, respectively.

**TABLE 10**
**Record Keeping Practices, Total and by *Departamento,* 2004 (Percent of Facilities)**

|  | Total | Cordillera | Misiones | Central | Asunción |
|---|---|---|---|---|---|
| Quality of Record Keeping is bad (assessed by interviewer) | 11.6 | 11 | 8.3 | 18.4 | 0 |
| Address for Patient in Record | 88.3 | 88.8 | 100 | 78.9 | 100 |
| Separate Registry for User Fees Exists | 67.4 | 66.6 | 83.3 | 65.7 | 61.1 |
| Separate Registry for Exemptions Exists | 66.2 | 66.6 | 66.6 | 65.7 | 66.6 |

*Source:* WB estimates based on Facilities Survey 2004

42    The survey also shed some light on the frequency and intensity of monitoring activities. Facilities should be inspected at least on two grounds: (i) general health services provided, and (ii) immunization services. The general finding is that monitoring of activities is not as periodic as it should be.  Out of the 86 facilities surveyed 19 had never been inspected by a health inspector and 13 had never been visited by an immunizations inspector, representing 22 and 15 percent of facilities respectively. Health posts and IPS facilities have the highest rate of non-inspection (16 percent of health posts and 60 percent of IPS facilities have never been visited by a health inspector).

43    Monitoring activities have become more lax over time; while 15 percent of facilities had never been visited in 1998, 22 percent of facilities had never been visited by a health inspector in 2004.  The geographic location of facilities has a significant impact on the probability of receiving an inspection, as the facilities in Asuncion obviously receive the most inspections; about 30 percent of facilities had been visited the week before the survey in 2004, and 50 percent within the month before the survey. In Misiones on the other hand, less than 10 percent of facilities had been visited in the same period.  The frequency of inspections is also correlated with the geographical location of facilities. In the last six months prior to the 2004 survey more than 40 percent of facilities in Asuncion and Central received 4 or more inspections, compared to less than 20 percent of facilities in Cordillera and no facilities in Misiones.

FIGURE 7
**Time of Last Visit by Health Inspector, by *Departamento* 1998-2004 (percent of Facilities)**
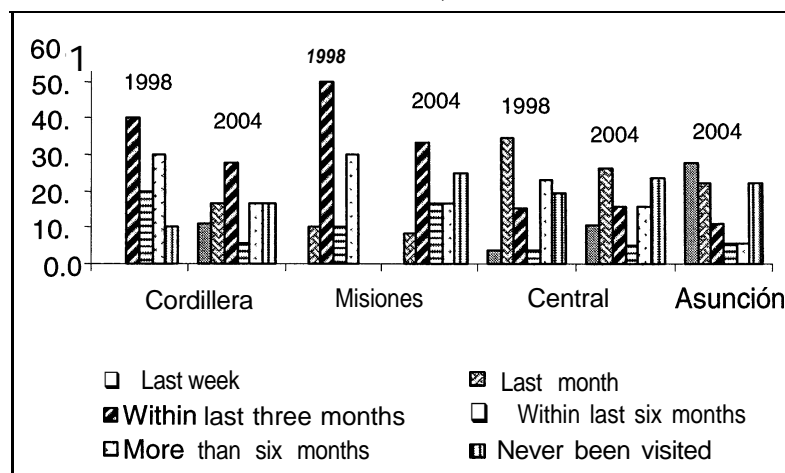


*Source:* WB estimates

$_0V$    *Staff availability and training*

4 4.    The availability of qualified personnel is one of the variables used to assess quality of care. In Paraguay many facilities do not have full time doctors but rely instead on part time personnel. Holding multiple positions is a widespread practice in the medical profession — an issue that is explored further in Chapter 2. About 38 percent of facilities do not have a full time doctor in their staff. Table 11 shows that higher complexity facilities like hospitals have more qualified personnel and are larger on average. Health posts and health centers on the other hand rely mostly on nurses and auxiliary nurses which have very little training. Finally, the IPS facilities have a large number of doctors, both relative to the MOH facilities and to the median number of nurses. In general health centers and health posts are better staffed now than in 1998, as the median number of doctors and nurses in health centers has gone up slightly. The same phenomenon is observed with the number of nurses in health posts.

**TABLE11**
**Median Number of Staff Available, by Facility Type, 2004**

| Facility | General Practitioner | Pediatrician | OB/GYN | Nurse (Licensed) | Nurse (Auxiliary) |
|---|---|---|---|---|---|
| Hospitals | 4 | 7 | 3 | 6 | 38 |
| Health Centers | 2 | 1.5 | 1 | 2 | 9 |
| Health Posts | 1 | 0 | 0 | 0 | 2 |
| IPS | 7.5 | 7 | 5 | 2 | 4 |

*Source:* WB estimates

*(vi)*   **Opening**  *Hours*

45.    Facilities are open on average between 30 and 40 hours per week, depending on the services.   The services offered most hours are vaccination and family planning, while Gynecology is offered the least. Many facilities offer services only during morning hours or afternoon hours, and in many cases services are not offered every day of the week. There is also significant variation in the opening hours across and within facility type. For example hospitals offer pediatric services on average 44 hours per week -varying with the complexity level of the hospital— while health centers offer these services about 30 hours a week, and health posts only 28 hours a week. In general IPS facilities are open longer hours than the MOH facilities, and most variation in opening hours happens in health centers and health posts. This variation has also increased when compared to the 1998 opening hours.

## 1.5    Conclusions and Recommendations

**46.**    Even though Paraguay's health outcomes are not significantly worse than average for countries with similar income levels, the national averages hide notorious differences across geographical areas and income levels.  The current debate in health care in Paraguay centers on what is the best way to improve these results. The analysis of Chapter One highlights that in order to improve outcomes, both supply and demand issues have to be tackled. On the demand side, it is apparent that households do not make use of services as much as other countries. In addition, the pattern observed elsewhere is also present in Paraguay, with richer quintiles demanding more services than poorer quintiles. Cost of services seems to be an important consideration as reported in household surveys. Therefore efforts by the government to make health care more accessible for the poor should be explored (see Box 1). On the supply side the report shows that infrastructure seems to be widely available; with an average occupancy rate of 47 percent and households not reporting distance to facilities as one of the main reasons for not seeking care, supply side problems are not related to availability of infrastructure.  On the other hand the report finds evidence that the inputs could be improved. This could be done by: (i) setting clear guidelines of staffing according to the complexity of facilities; (ii) evaluating the referral system, as many low level facilities are very basic and it is not clear that patients seek care in high complexity facilities when their cases cannot be resolved at the lower levels; (iii) making sure that facilities are well stocked in supplies and that offer the services necessary for their respective target populations; (iv) analyzing patterns of utilization so that opening times and availability of trained staff are related to those patterns.

| BOX 1 |
| :---: |
| **Government's Strategy: Mother-Child Basic Insurance Program** |

As discussed in Chapter One, cost seems to deter many households from seeking care. The government's health sector strategy is addressing this issue in its national health plans. The central tenet of this plan is to reduce maternal and child mortality by improving access to quality health services and expanding the coverage of basic health care to those who cannot afford to pay for it, through targeted increases in public sector spending in the health sector. The key strategy to achieve this goal is to initiate the implementation of the Mother and Child Basic Insurance Program (MCBI), which would progressively increase the availability and effectiveness of public subsidies to improve the health status of the poor. All women of reproductive age and children up to six years of age in the participating geographical areas would be eligible for the program. Rather than a contributory health insurance, the MCBI, is a publicly-subsidized package of basic health services selected to address the main causes of maternal and child mortality in Paraguay. Both the package of services and the operation of the MCBI have been designed to reduce the barriers to the use of basic health services by the poor and indigenous people, particularly in rural areas.

The MCBI Program will be implemented in phases to reduce the risks and complexity of executing this **type** of changes. The MCBI will be launched in two departments (Itapúa and San Pedro) and as the various implementation hurdles are overcome and the program is refined, it would be progressively extended, during a second phase, to eight additional departments (Amambay, Canindeyu, Alto Paraná, Pte. Hayes, Boquerón, Concepción, Caazapa and Caaguazú"), thus covering over half of the country (10 out of 18 departments). These eight departments could enter the MCBI when they are ready for implementation as evidenced by signed management agreements demonstrating political commitment and implementation capacity.

Participation in the MCBI will occur through voluntary enrollment of mothers and their children. Enrollment will be done through enrollment campaigns and in situ, when the person gets in contact with the services. The annual coverage goals (percentage of the target population reached through the MCBI), would be determined when a department enters the program and annually thereafter.

# CHAPTER 2. HUMAN RESOURCES FOR HEALTH

*47.* The analysis of Chapter 1 highlighted some of the problems underlying health care in Paraguay. Specifically it showed that utilization of services is low, and that it varies greatly by quintiles, with cost, distance, bad quality, and bad service among the reasons quoted for not seeking health care at public health facilities. Chapter 1 also showed that in spite of improvements in the last few years, there are still large deficits in the supply side, with regards to some services, staffing requirements, and to a lesser extent, infrastructure.

*48.* This Chapter examines the issue of quality of care at the facility level as a possible explanation for not using services, by analyzing the characteristics human resources for health. Since health care provision tends to be very labor intensive, the quality of human resources is central to the quality of care individuals receive. This chapter examines the characteristics of human resources for health in Paraguay using two sources of information: (i) administrative information from the MOH human resource payroll database, the equivalent database for the IPS, and the latest census for human resources in health implemented by the Ministry of Health; (ii) a survey implemented for the purposes of this study on doctors, patients, households, and health care facilities. The first set of databases is used to analyze the characteristics of human resources for health at an aggregate level, like their geographic distribution and basic classification according to contractual status and nature of the work being performed (administrative or health-related). The information provided by the survey on health personnel, facilities, and patients is used to test a number of hypotheses on the relationship between quality of care provided by health personnel and facilities, doctors, and patient characteristics.

*49* The first part of the chapter looks at the characteristics of MOH -mainly- and IPS personnel, size of the labor force, composition, geographical distribution, and trends over time. The second part of the chapter discusses the factors affecting quality of care provided by health personnel, and investigates how quality is affected by facility characteristics, and doctor and patient characteristics. The initial hypotheses, that quality of care is relatively low and that there is discrimination towards poor patients, i.e. that poor patients receive on average worse quality of care than rich patients, are rejected. That is, the study finds that not only the quality of the interaction between health personnel and patients is relatively good, but also that poor patients do not receive worse care than rich patients.

## 2.1 Main Characteristics of Human Resources for Health in Paraguay
### *Overview of Human Resources for Health*

50. The regulations governing the administration of human resources for health are fragmented and incomplete. In spite of numerous norms regulating the administration of the health labor force, some essential aspects are neglected. For example there is surprisingly little mention to a salary scale and a promotion system; nobody knows what the starting salary for a health professional is or how it is determined, and there is no systematic mechanism in these regulations to reward good performance. The administration of health personnel is highly centralized, as hiring and firing is done directly by the MOH. In addition,

new appointments are made only as a result of vacancies, therefore producing a mismatch between the "positions" and the actual job being performed.[9]

51      Personnel are classified according to their category (medical or administrative), and contractual status (permanent or contract).   Within the medical personnel there is an enormous range of categories, some that require very little training or technical expertise (like Auxiliary nurses).  Contract staff is appointed by the regional levels with agreement from the Ministry of Health and their contract is revised yearly. Contract personnel are easier to hire and fire, and do not receive any pension benefits, while permanent staff is appointed by a Ministerial decree, have open ended contracts, and more job security.

52.     There is an ideal level of staffing that depends on the facility's complexity." Table 12 provides a list of the main categories, and it clearly shows that the level of complexity of hospitals dictates number and type of staff, a certain ratio of administrative versus health personnel, and a direct relationship between complexity of facilities and population served. These guidelines recommend a ratio of administrative to health personnel of between 8 and 12 percent depending on the type of facility, as well as very few doctors to be hired at health centers and no doctors hired at health posts.

[9] **MOH** and PAHO (2004): Foro Nacional de Recursos Humanos en Salud: Los Nuevos Enfoques en la Gestión de los Recursos Humanos en Salud.

[10] Mongelds de Hamuy: "el empleo y la gestion De los recursos humanos En las regiones sanitarias del ministerio de salud publica y bienestar social".   Tesis para optar por el grado de Magister en salud publica. December 200 1. (December 200 1).

TABLE 12
**Guidelines for Allocation of Human Resources for Health, MOH**

| | Level of Complexity | | | | |
|---|---|---|---|---|---|
| | Regional Hospital | District Hospital | District Hospital | Health Center | Health Post |
| PROFESSIONAL | >120.000 Hb. | > 40.000 Hb. | > 15.000 Hb. | 6 -15.000 Hb. | < 6.000 Hb. |
| Administrator | 1 | 1 | 1 | **0** | **0** |
| General Practitioner | 11 | 1 | 1 | 1 | **0** |
| Surgeon | 5 | 4 | 1 | | **0** |
| OBGyn | 17 | 11 | 1 | 1 | **0** |
| Pediatrician | 16 | 11 | 1 | 1 | **0** |
| Radiologist | 5 | 4 | | | **0** |
| Dentist | 6 | 5 | 3 | 2 | **0** |
| Other professional | 8 | 5 | 3 | 1 | **0** |
| Nurse Lic. | 4 | 4 | 1 | 1 | **0** |
| Obstetrician Lic. | 4 | 6 | 1 | 0 | **0** |
| Statistician | 2 | 2 | 0 | 0 | **0** |
| Social worker | 2 | 2 | 0 | 0 | **0** |
| PROFESSIONAL  TOTAL | 98 | 68 | 14 | 8 | 0 |
| TECHNICIANS  TOTAL | 22 | 11 | 6 | 1 | 0 |
| AUXILIARES | | | | | |
| Auxiliar de Enfermeria | 60 | 30 | 9 | 6 | 1 |
| Auxiliar de Obstetricia | | | | 3 | 1 |
| Other | 9 | 12 | 7 | 2 | |
| AUXILIARY  TOTAL | 69 | 42 | 16 | 11 | 2 |
| ADMINISTRATIVE  TOTAL | 15 | 15 | 3 | 1 | 0 |
| SUPPORT TOTAL | 32 | 22 | 9 | 4 | 1 |

Source: Mongelós de Hamuy (2001).

53      These parameters can be used to estimate if there are any shortages of personnel at a given facility by comparing it with the current allocation for the sample of facilities surveyed for this study.   Figure 8 presents the results by type of facility. The four main trends observed are the following:  (i) the availability of personnel is not evenly distributed across facilities of the same type. For example 31 percent of health centers do not have an OBGyn, and 36 percent do not have a licensed nurse, in spite of having on average twice as many nurses as suggested by the guidelines; (ii) regional hospitals tend to have a deficit in almost all medical categories and an excess of nurses and auxiliaries; (iii) health centers tend to have a surplus in most categories; and (iv) the category most distanced from the guidelines is that of administrative personnel. Health centers have an average of 10 compared to a guideline of 1; health posts also have some administrative personnel in spite of not being required. Finally, regional hospitals have an average of 47 administrative employees against a guideline of 15.

FIGURE 8
**Required and Actual Staffing Levels by Type of Facility, Selected Categories**
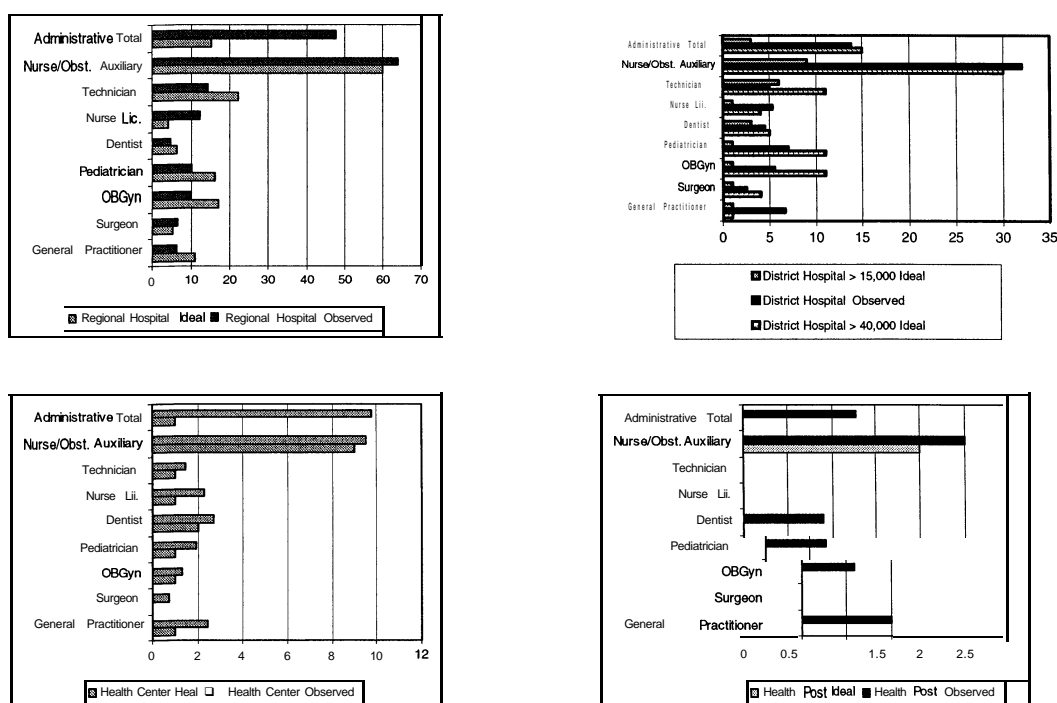


*Source:* WB estimates

54    In 2003 the Ministry of Health implemented a census of human resources in all the sanitary regions of the country.   The results, still preliminary, show a total of 18,73 1 employees working for the Ministry of Health and all its dependencies. According to the census administrative personnel represents approximately 41 percent of the total labor force at the MOH.[11] Doctors represent only a minor percentage, about 12 percent of the total, and as shown in Chapter 1, many health facilities are only staffed by health personnel with lower levels of skills and training, like auxiliary nurses and obstetricians.

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[11] These numbers are somewhat different from the ones used in this study, provided by the Ministry of health through its payroll database.   Since the census numbers are preliminary and do not allow for an analysis at facility level or municipality level, most of the analysis in this Chapter uses the payroll database information unless otherwise noticed. MOH (2004) discusses the lack of uniformity in sources with regards to the number of health personnel in the country. The source of data is reported where appropriate.

**Total health personnel, MOH census, 2003**

| Category | Number | Proportion of Total |
|---|---|---|
| Doctors | 2,293 | 12.2 |
| Bio-Chemists | 317 | 1.7 |
| Dentists | 412 | 2.2 |
| Lic. Nurse/Obstetritician | 1,140 | 6.1 |
| Other university professional | 97 | 0.1 |
| Auxiliary (white) | 4,743 | 25.4 |
| Technician | 997 | 5.4 |
| Other | 1,027 | 5.5 |
| Administrative | 7,705 | 41.2 |
| Total | 18,731 | 100 |

Source: MOH Census

55. The main features of the health labor force in the MOH and IPS are the following:

- **Type of personnel:** about 39 percent of all positions at MOH are administrative (7,904 out of 20,522) while at IFS 51 percent of positions are administrative (3,864 out of 7593);

- **Distributions by gender:** female health personnel represent 64 percent of the labor force in the MOH and 60 percent in the IPS. This is reversed when looking exclusively at doctors, where female doctors represent 41 percent of the total in the MOH.

- **Qualifications:** there seems to be a bi-modal distribution of health personnel (white) according to qualifications: on relatively high number of doctors and low-level auxiliary staff, and a relatively low number of technical level personnel. This is particularly worrisome in basic ambulatory centers or health posts, or in facilities that are far from urban centers, where medical personnel are absent and health care depends on staff with low qualifications.[12]

- **Remunerations:** the IPS and MOH databases show that on average salaries at IPS are significantly higher than at MOH. Male personnel earn on average more money, which could be a reflection of their access to high level positions more often than female personnel. It is also apparent that the remuneration system tends to promote a centralized system, as the personnel in national centers earns on average more than in the periphery.[13]

- **Contract versus permanent:** the MOH relies heavily on contract personnel. About 46% of positions in MOH are contracted nationwide, compared to only 8% at IPS. Clearly both institutions have more permanent than contract personnel. This is more so in the case of administrative positions, as about 58 percent of non-medical positions in the MOH are permanent, while for medical positions 51 percent of positions are permanent. The number of contracted positions has been increasing at the MOH: Between 2001 and 2004 it increased about 32 percent;

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[12] MOH and PAHO (2004).
[13] MOH and PAHO (2004).

*56*    In analyzing the trends in human resources for health it is important to distinguish between positions and employees.   Even though it is strictly prohibited by the law, a significant percentage of MOH and IPS employees hold more than one position. Therefore the total number of positions is higher than the total number of employees. The Ministry of Health has been increasing the number of positions to be filled through contract personnel, only partially at the expense of a reduction in the number of permanent positions. Contracted positions and employees increased significantly between 2001 and 2004, but positions increased more than the employees (32 and 27 percent respectively), while both permanent positions and employees went down but the number of employees decreased less than the number of positions.

*57*    In order to determine the extent of multiple job holdings, the MOH and IPS human resources databases were merged and compared. There are 887 employees that hold at least one permanent job at MOH and one permanent job at IPS simultaneously. Including all multiple job holders (i.e. within IPS, within MOH, and across institutions, both permanent and contracted), there are 2,053 multiple job holders, which is approximately 8 percent of the labor force of IPS and MOH combined. The issue of multiple job holdings turns out to be relevant as (i) it could be the reason why many facilities do not have a full time professional available; and (ii) it could affect performance (later in the chapter it is shown that multiple job holders perform worse than average).

**TABLE  14**
**Single and Multiple Job holders in MOH and IPS**

| Category | Non medical | Medical | Total |
|---|---|---|---|
| single job in Moh | 7,743 | 9,680 | 17423 |
| single job in IPS | 3,140 | 2,033 | 5173 |
| Permanent jobs across Moh & IPS | 21 | 861 | 882 |
| Multiple permanent jobs in MoH | 0 | l | l |
| Multiple contract within MoH | 0 | 317 | 317 |
| Multiple mixed jobs within MoH | 5 | 338 | 343 |
| Multiple mixed jobs across Moh & IPS | ll | 441 | 452 |
| Multiple Contract jobs across Moh & IPS | 5 | 48 | 53 |
| out of category IPS | 502 | 503 | 1005 |
| Multiple mixed or permanent or contract | l | 4 | 5 |
| Total | 11,428 | 14,226 | 25654 |

Source: WB estimates based on MOH 2004 and IPS 2002 Payroll Databases.

*ɡi*    *Regional Distribution of Human Resources*

*58*    There are some commonalities with respect to the geographical allocation of human resources, like the prevalence of permanent staff: more than two-thirds of the regions have more permanent than contract staff.  However there is significant variation in the ratio of permanent to contract staff across regions.  For example in the XII Sanitary Region 34 percent of personnel is permanent while in the VII Sanitary Region 72 percent of personnel is permanent.   There is also high variation in the proportion of employees devoted to

administrative activities; in regions like Asuncion or Alto Paraguay the ratio of administrative to health personnel is almost one -there is slightly more health personnel— while regions like Boquerón or Caaguazu have less than 30 percent of total personnel devoted to administrative activities. Finally, the percentage of multiple job holders also varies by region, reflecting the pattern of available facilities; Asuncion registers the largest share of multiple job holders, with 31 percent of its personnel holding more than one job.

FIGURE 9
**Total Number of Employees, MOH, 2003**
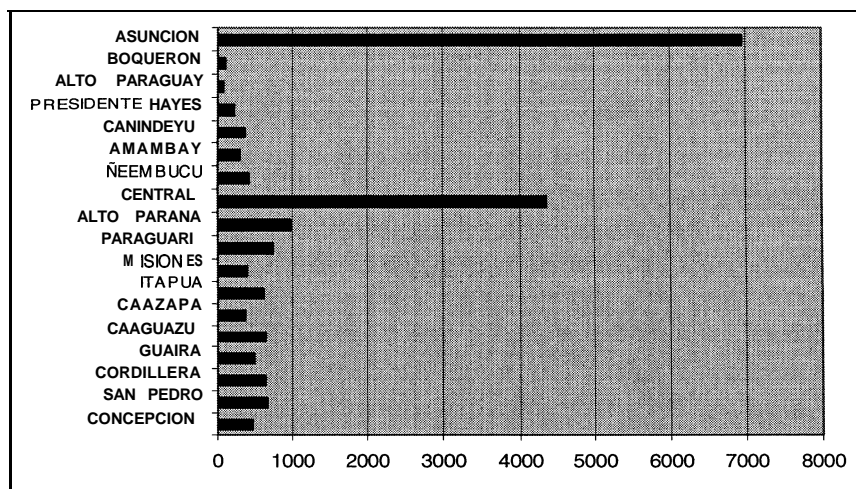


59. There are several factors that could explain the distribution of personnel across regions: (i) the number and type of facilities, as more complex facilities could require more personnel; (ii) the population in a region; and (iii) the revenues collected, as it could be argued that "richer" facilities could hire more personnel. In a regression analysis the two variables that seem to matter the most to explain the number and characteristics of personnel are the average complexity of facilities and the total population in a given region. Both multiple job holdings and total number of personnel are positively affected by the complexity of facilities. In the case of multiple job holders, it could be that they have special skills that hold them in high demand, and therefore are more prevalent in areas where facilities are more complex. The regression analysis also seems to suggest that the higher the complexity level, the lower the ratio of doctors to administrative personnel, which suggests that complex facilities tend to require a larger ratio of administrative to medical personnel, a somewhat counterintuitive result. Finally, poverty at the regional level does not affect the total number of personnel or its type.

FIGURE 10
**Health and Non-Health Personnel by Region, MOH 2003**
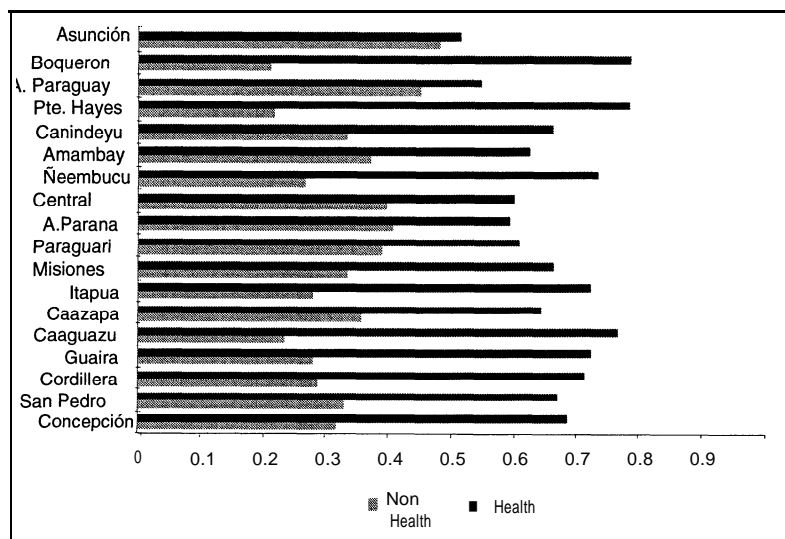
## 2.2    Using Contractual Status and other characteristics to explain quality of care

60      One of the most common explanations for the disparities in health care utilization as well as some health outcomes between the rich and the poor has been differential quality of care. Both the popular press and institutional reports suggest that the quality of care available to the poor is significantly worse than that available to the rich; consequently, the demand for care among the poor is much lower. However, there has not been any systematic documentation of differentials in care across socio-economic divisions and/or evidence of low-quality treatment for the poor in the country.   The rest of the chapter is devoted to examine this question.

61.     The following analysis shows that contrary to public perception there is little evidence that the quality-of-care is low.  On average, doctors in Paraguay spend more time, ask more questions, and do more examinations than those in low-income countries for which comparable data exist. Furthermore, there is little difference in the quality-of-care received by the rich and the poor. This "equality across socio-economic" groups is true both in the location of public doctors and in the treatment patterns of public doctors. While doctors in the public sector see patients from a wide socio-economic range, treatment-patterns are the same for both the rich and the poor. Consequently, the "average" quality-of-care that a poor patient receives is identical to that received by a rich patient. However, there is large variation in the quality of care across doctors and institutions with female doctors, doctors in the Ministry of Health (as opposed to the IPS) and doctors on a temporary contract performing better than their relevant counterparts.

*(i)      Methodology*

62.      Two important aspects of quality of care are its variation, both across income groups and across different doctors and institutions, and the relative contribution of "access to care" and "discrimination" in the ultimate quality of care received by the patient. The issue of access refers to whether patients who live in poor areas have access only to low performance doctors, that is, "will the same patient receive lower quality care from a doctor in a poor area compared to a doctor in a rich area?" The issue of discrimination refers to whether the same doctor treats different patients differently, i.e. "if the same doctor treats a rich and a poor patient, does the latter receive lower quality care?"

63      In order to look at these issues, 2200 doctor-patient interactions were observed in 92 public  facilities -78 from the Ministry of Health and 14 from the IPS- in 4 of the 18 sanitary regions (see Box 2). These 4 regions -Asuncion, Central, Misiones and Cordillera— are located around the capital, and thus represent the wealthier segment of the population. [14] Within the 4 regions, the sample is representative of MoH and IPS facilities and follows the sampling methodology of a previous study carried out in the same facilities in 1998. Moreover, as each of these 4 regions is further divided into 32 municipalities; it is possible to relate quality of care to the poverty rates in the different municipalities, using a poverty map from 2003.

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[14] Census data from 2002 shows that poverty rates in these 4 departments was lower than in the other 14.

| BOX 2 |
| :---: |
| **Main Characteristics of the Sample Used** |

The data come from three matched sources. The first is data on clinical observation, where an observer (Nursing students, with some medical knowledge) sat in the doctor's clinic and observed details of every interaction. These included the time spent with the patient, the number and type of examinations and the number of questions asked. In addition, the observer also noted details about the medication given and the willingness to provide additional information. As the patients left the clinic, a second field-worker interviewed them and completed a short questionnaire with information on the patient's socio-economic status, educational background, health-status (measured through a self-reported measure and Activities of Daily Living) and satisfaction with the interaction. Finally, the doctors who conducted the consultations were also interviewed to collect data on educational background, experience, age and gender. A detailed description of their employment history also provides information on the jobs they currently hold, the hours they work in every job and the salary they earn. This matched data then is used to understand the relative importance of patient characteristics and provider characteristics on quality of care.

Table 1 (Statistical Annex) provides some characteristics of the sample: (i) 2200 interactions between patients and doctors were observed, and exit-interviews with all of them were conducted after the consultation; (ii) 286 doctors participated in the study, implying an average of 7.7 interactions for every doctor. Three-quarters of the doctors who participated were from the Ministry of health and 23.3 percent from the IPS. Across the MoH and the IPS, there were more female doctors and doctors with permanent positions. This ordering also holds for each institution individually, although the ratio of females to males is slightly higher in the IPS and that of permanent to contractual doctors is (much) higher in the MoH.[15]

Doctors with permanent positions in the sample tend to be relatively older (45 vs. 40), with longer tenures in their current positions (19 years vs. 14 years) and earn higher salaries (Gs. 1,688,686 vs. 1,205,981). As in other countries, doctors can simultaneously hold public and private jobs. In our sample, 22 percent of the doctors also work in a private clinic. The patients in the sample tend to be female (66.5%), young, and with an average of 8.2 years of schooling. For the majority (86.4%) this was the first visit to a health-facility for their current sickness, and most had come to the facility closest to their place of residence. Not surprisingly given the employment requirement for a visit to the IPS, the average patient in the IPS was richer and more educated compared to one in the MoH.

64. Quality of care is measured by two indices. The first index, called "quality of interaction" (henceforth QI) captures the care provided for every doctor-patient interaction, and therefore takes a different value for every doctor-patient *pair*. Since the QI index reflects both the medical practice of doctors and the condition of the patient, a second index, called "quality of care" (QC index) was constructed to isolate the quality of care specific to the doctor by controlling for a wide range of relevant patient characteristics. In contrast to the **QI** index, the QC measure takes a different value only for every *doctor* in the sample, as all the patient characteristics have been averaged out. Thus, there are 2200 values of the QI index but only 286 values of the QC index.

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[15] This is not a facet of the sample-payroll data for all MoH and IPS employees reveal that 46 percent of MoH positions are contractual compared to 8 percent in the IPS.

## *(ii)    Results*

*65*    The first set of results looks at the QI index. Table 15 explores the average quality of interactions and compares Paraguay to other countries. The third column in the table (the QI index) shows the average value of the index for doctors in the lowest, middle and highest terciles. The difference between each of these terciles is roughly 1 standard deviation. The fourth, fifth and sixth columns then present the average values of each of the components of the index-the time spent with the patient, the questions asked and the number of examinations performed. The index differentiates fairly well between different doctors— those in the lowest tercile spent on average 5.8 minutes with every patient, asked 5.3 questions and undertook 1.4 examinations. In contrast, doctors in the highest tercile spent 11.3 minutes, asked 11.9 questions and did 3.6 examinations. Moving from the lowest to the highest tercile thus more than doubles the quality of the interaction between the patient and the doctor.

*66*    The performance of doctors in Paraguay is better than in other low-income countries like Tanzania, Nigeria, Malawi and India, and compares well even to high-income countries. This is not related only to the income of the country; doctors in Paraguay report higher consultation lengths than those in Germany and Spain and spend around 1 minute less than those in UK.

**TABLE  15**
**Benchmarking  the  Quality  of  Interaction**

| Sample | Effort Categories or Country | The Effort measure | Time Spent | Questions asked of Patient | Number of examinations |
|---|---|---|---|---|---|
| Paraguay | Doctors who exert low effort | -0.46 | 5.79 | 5.33 | 1.38 |
| | Doctors who exert medium effort | -0.02 | 7.90 | 7.50 | **2.93** |
| | Doctors who exert high effort | 0.56 | 11.34 | 11.91 | 3.64 |
| | All  Doctors | 0.03 | 8.33 | 8.23 | 2.65 |
| International Comparisons | Delhi[a] | N/A | 3.80 | 3.20 | |
| | Tanzania[b] (2003) | N/A | 6.95 | 3.57 | |
| | Tanzania[c] ( 199 1) | N/A | 3.0 | N/A | N/A |
| | Nigeria | N/A | 6.3 | N/A | N/A |
| | Malawi | N/A | 2.3 | N/A | N/A |
| | Germany | | 7.6 (4.3) | | |
| | Spain | | 7.8 (4.0) | | |
| | Netherlands | | 10.2 (4.9) | | |
| | Belgium | | 15.0 (7.2) | | |
| | UK | N/A | 9.4 | N/A | N/A |

Source:  World  Bank  Estimates

*67*    The issue of equality of access is examined by relating the QC index to characteristics of the  area the facility is located in, doctor characteristics, and characteristics of the

institution the doctor practices in. Specifically, the relationship between the QC index and the poverty rate in the municipality and the QC index and the type of facility (MOH or IPS) is examined, and the difference in the QC index between female and male doctors, doctors on permanent versus temporary contracts, doctors who receive higher and lower salaries, and multiple versus single job holders.

68. Figure 11 compares the value of the QC index for doctors located in municipalities with high/low poverty rates as well as doctors located in health facilities at varying degrees of complexity (Health posts, Health Centers, hospitals -Regional, District, and Specialized— and the IPS). Both comparisons reveal similar patterns. The value of the QC *index* is *higher* for doctors located in municipalities with higher poverty rates and is higher for doctors located in smaller health centers at lower levels of complexity. Since the smaller health facilities tend to be located in rural regions with higher poverty rates, the two patterns are mutually consistent. IPS doctors perform markedly worse and the same is true of doctors in more complex facilities as Hospitals. In IPS the QC index is almost 1 standard deviation lower than quality in the health posts. This corresponds to roughly 5 minutes, 5 questions and 2 examinations less in IPS facilities compared to the health posts.

69 Figure 12 explores another salient feature of the QC index by comparing the value of the index across different kinds of doctors. Uniformly, female doctors, doctors with a temporary contract and doctors with *lower* salaries report better performance than their relevant counterparts. Thus, the QC index for male doctors in the MoH is 0.2 standard deviations below the mean compared to 0.4 standard deviations above the mean for females. Values are lower for both males and females in the IPS, but the magnitude of the difference is equivalent—0.6 s.d below the mean for males and 0.2 s.d. below for females. The QC index for doctors in permanent positions is lower than those with temporary contracts with an average difference of 0.27 s.d; again the same pattern holds separately for the MoH and the IPS. Finally, there is a surprisingly strong *negative* correlation between the salary of the doctor and his/her performance. The difference between doctors in the lowest salary tercile is around 0.5 standard deviations higher than those in the highest. Since salaries are determined mostly on a case by case basis, without any kind of structure or rewards scale; this result suggests that doctors who are able to negotiate higher salaries also tend to perform worse. This is the opposite of what one would expect if pay was related to performance. Finally, multiple job holders perform significantly worse than single-job holders.

FIGURE 11
**Quality of Care over Providers and Levels of Poverty in area**
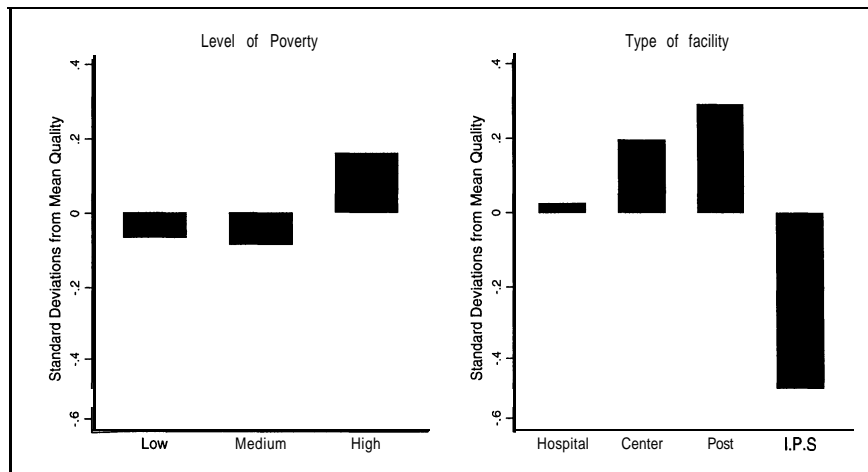


FIGURE 12
**Quality of Service over Gender, Salary and Type of Contract**
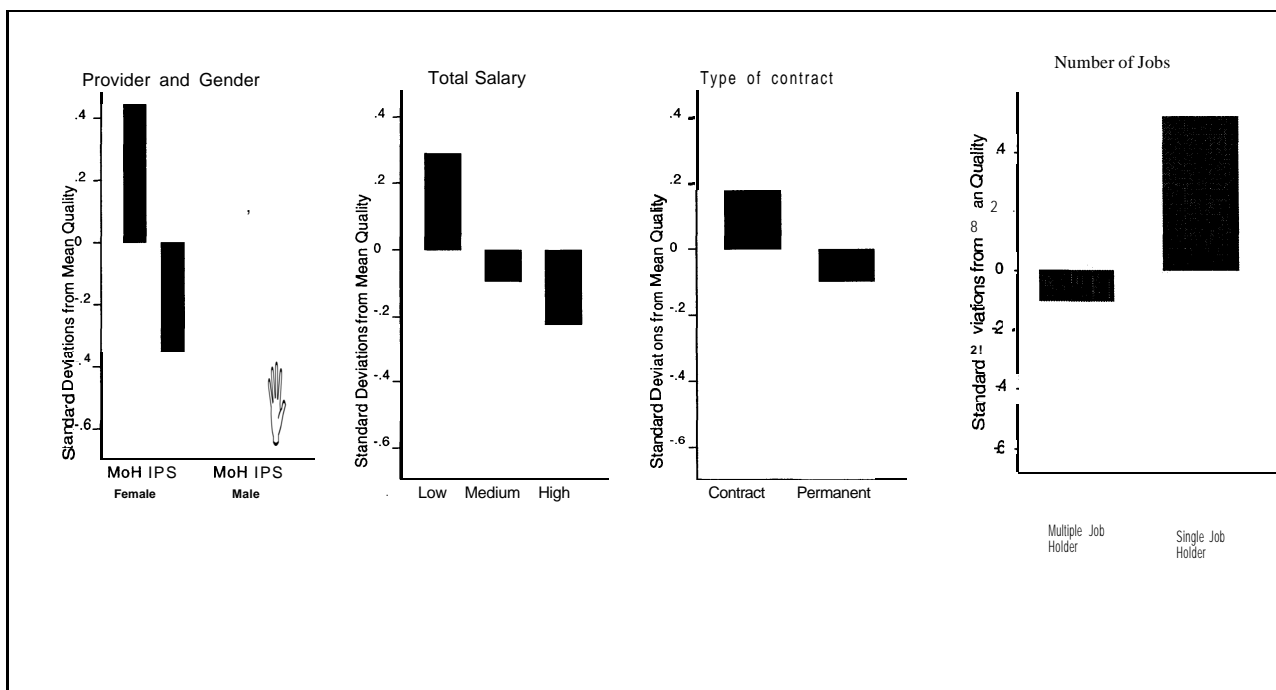


70      The Third set of results look at the issue of discrimination against the poor. This is done by looking at whether the *same* doctor reports higher QI scores for patients from better socio-economic backgrounds, controlling for other patient characteristics. If so, this would imply systematic discrimination with differential treatment-patterns by the same doctor across rich and poor patients. The three relevant patient characteristics are education, gender, and the socio-economic condition. The analysis (reported in Annex 1) shows that there is no discrimination between male and female patients or discrimination based on educational

level. With regards to the wealth of patients, measured by the asset index, the analysis shows that not only there is no discrimination against the poor, but the *opposite:* not only do poor areas tend to have a better service than average, but less fortunate patients also tend to receive a better service than average.

## 2.3 Conclusions and Recommendations

71     Paraguay does not have a comprehensive human resources policy for health. The laws and resolutions that regulate the administration of human resources leave many issues unresolved, creating perverse incentives that affect performance negatively. Therefore (i) personnel is not evenly distributed across sanitary regions, (ii) there is high variation in type and number of staff by facilities of the same size and characteristics, (iii) there is a shortage of qualified personnel in some areas and a surplus in others, (iv) there is a large number of part time workers -multiple  job  holders— who perform worse than average in their jobs. In addition the proportion of personnel devoted to administrative duties seems large, at least compared to the guidelines, and they do not perform their jobs adequately as revealed by the record keeping practices and application of rules on user fees and exemptions (see Chapter 3). The absence of a salary scale, the fact that salaries and positions are negotiated on an individual basis in an ad-hoc manner, and the absence of a monetary system rewarding performance has created perverse incentives that are reflected in (i) worse performance by high salary workers, (ii) worse performance by permanent personnel, and (iii) worse performance by multiple job holders!

72.     It is essential therefore that Paraguay define a human resources policy for the health sector, revising the rules and regulations and closing the loopholes to reduce perverse incentives affecting performance. This policy should:
  i.  . Estimate personnel needs. The guidelines already in place could be a good starting point. In addition the criteria for allocating human resources should be refined, establishing criteria by geographical location, type of facility, complexity level, population,  and  socioeconomic/epidemiological/demographic  profiles  of  the population to be covered.
  ii.  Quantify the gap between needs and current staff availability
  iii.  Design a methodology to evaluate personnel's performance and productivity
  iv.  Design a mechanism to provide incentives for staff to relocate according to need (e.g. to rural and less populated areas) and to perform (i.e. revision of salary scale, promotion mechanism, and hiring practices)

73.     The analysis of quality of care shows that the poor receive slightly better or similar service than the rich, at least in the public sector.   Therefore there is no evidence of discrimination against the poor when it comes to care received by health personnel, and

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[16] In 1998 a study was commissioned to look at the salary scale of the health personnel. It found that (i) there are about 300 budgetary categories to allocate salaries and 91 salary grades (meaning that the same salary is applied to more than one category); (ii) salary is unrelated to seniority, technical skills, studies, or geographic location of facilities; (iii) there are no clear criteria to classify positions or functions and workers do not know their respective  budgetary category that determines their salary. (Mongelos 2001).

overall quality of ambulatory care seems to be quite good. The rich almost certainly use the private sector more and probably receive better quality-of-care, but at least within the public sector the country has achieved remarkable parity of care across patients from different socio-economic backgrounds.

74    The report finds a positive correlation between the quality-of-care and the poverty rate of the municipality that disappears once doctor characteristics are included. This implies that doctors who perform better are also disproportionately located in poorer areas. A simple tabulation bears this out: health personnel located in the richer municipalities tends to be on permanent contracts with much higher negotiated salaries, and these are the very doctors whose performance is lower. These data are consistent with the explanation that doctors who have considerable bargaining power within the health hierarchy both receive better positions (permanent as opposed to temporary contracts) and larger salaries. Given their bargaining power their performance is also lower.  Therefore, higher performance in poorer municipalities has more to do with negotiated postings in the health ministry, whereby those with lower bargaining power but greater incentives to provide quality care are posted to poorer areas, and less to do with explicit equity considerations. On the one hand, this has positive implications for the quality-of-care received across different population groups, and is similar to strategies used in other countries (Barber and Gertler 2005 document the case for Indonesia) and in other sectors (a number of countries send "trainee" teachers to rural areas). On the other, the salary system turns the "pay-for-performance" notion on its head-doctors in Paraguay with lower performance receive *higher* pay. This is particularly true for women who consistently outperform men, but receive lower salaries.  Given the link between incentives and performance, a more rational and transparent pay scale either on a capitation or a fee-for-service basis could dramatically increase the quality of health-care. This would also be fairer for doctors, particularly for those with limited bargaining power.

75    The large difference in quality between IPS and MoH facilities is puzzling, since all patients who visit the IPS can choose to visit MoH facilities, but not vice-versa.  Why is it that patients do not use female doctors, doctors on temporary contracts and doctors in the MoH more, especially given the strong association between patient satisfaction and quality of care? One explanation is the lack of information regarding quality indicators across doctors and facilities. If this reasoning is valid, an appropriate policy is to disseminate information on various dimensions of quality to the general population.

76    The obvious recommendation in this case is to establish clear guidelines on salaries and promotions, in order to limit the bargaining power of "bad doctors", and reduce perverse incentives to bad performance.

77.    The analysis of this chapter has some limitations.  First, it applies only to quality of outpatient care.  There is no contradiction with the previous analysis in the chapter that shows that a significant number of facilities rely on low-level technical staff, especially in rural areas, which refers mostly to complex and inpatient procedures. Second, even though the sample is representative of the distribution of facilities between MOH and IPS in the country, it only covers four *Departamentos*.  A similar analysis should be performed in the rest of the country when designing the comprehensive human resources policy for health.

Third, the analysis applies to health personnel that were present at the time of the observation/interview. The study did not address the issue of absenteeism, or how part-time doctors and short opening hours of facilities are reflecting into quality of care. These aspects most likely affect performance negatively.  The facilities survey addressed the issue of absenteeism indirectly, as facility directors were asked to provide a list of employees and state if they were present -in case they were supposed to. About six percent of health personnel that were supposed to be present at the time of the survey were not there. In the same manner, the analysis is based on the intensive margin, i.e. conditional on a service being offered it then evaluates how good the service is.  The extensive margin, i.e. if a certain service is being offered, was analyzed by the facilities survey and reported in Chapter 1, and concluded that there are still many challenges with regards to service availability. Finally there are other dimensions of quality and discrimination that were not included in the analysis, like ethnicity.

# CHAPTER 3. USER FEES

78.     Many developing countries have adopted a system of user fees to partially fund health expenditures.  Unable to fund health care provision through general revenues, governments around the world have resorted to charging for the use of services, and in some cases user fees have become a significant source of revenue. Efficiency and equity considerations are at play when discussing the implementation of a user fee system. From an efficiency stand point, the user fees system can generate distortions in facilities and patients behavior and therefore it is essential to find the right implementation mechanism. From an equity point of view, the theoretical effect of user fees on the welfare of the poor is ambiguous. [17]  On the one hand, proponents maintain that user fees are a source of revenue which (i) could increase demand for services if the proceeds are used to improve quality of the services provided; (ii) could reduce out of pocket expenses in health if it substitutes public services sold at a cheaper price for higher priced private services; and (iii) it could target public subsidies to the poor adequately if combined with a system of waivers and exemptions. On the other hand opponents claim that user fees (i) rarely result in improvements in quality of care; (ii) could reduce demand for health care by the poor beyond the optimal levels by increasing the price; and (iii) could crowd out other sources of funding for health services, like general revenue, which could harm the poor from an equity point of view.

79.     The discussion then involves three main issues: (i) how good are user fees as a source of revenue? (ii) what kind of distortions in behavior do the rules governing user fees create?  And (iii) what are the equity consequences of a user fees system -and the accompanying exemption system if available?  This chapter tackles the three issues by analyzing the characteristics of the user fees and exemption systems in Paraguay. First it describes the public health budget, sources and uses of funds, and evolution over time, showing that fees have become a significant source of revenue.  Next it describes the regulations governing the user fees and exemption systems in Paraguay, and concludes that the current system is potentially creating large distortions in behavior, mostly resulting in under-reporting by facilities and not necessarily increasing quality of care.  Finally it provides some empirical evidence on the distribution of resources from user fees across regions and facilities, the extent to which facilities are aware of and apply the rules governing exemptions, and how well equity considerations are taken into account in exempting patients. The overall results suggest that (a) guidelines for user fees are unclear and oftentimes are not applied; (b) the system of user-fees is mildly progressive, so that the poor pay less than the rich, but the main difference is in the extensive margin -so that the poor are fully exempt more than the rich— rather than the intensive margin -it is not the case that conditional on paying something, the poor pay less; and (c) there are large errors in charging and exempting the wrong people so that a lot of poor people end up paying fees and a lot of rich people end up being exempted.

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[17] See World Bank (2003) for a full discussion.

## 3.1    Public Health Financing in Paraguay

**80.**    Paraguay's spending in public health is a combination of three different sources —
*Fuentes de Financiamiento* (FF): (i) FF10 or general revenues; (ii) FF20 which are resources
from public debt, both internal and external; and (iii) FF30, which are own resources or user
fees. The combined sources provided for an approved budget in 2003 that represented about
14 percent of the total budget of the central government, 3.7 percent of the total national
budget, and in 2001 about 1.3 percent of GDP.

81    The evolution of the MOH health budget over the last few years shows an increase in
real terms from 1997 to 1999 and a decrease thereafter. Moreover, the budget for 2003 was
only 76 percent of the 1999 budget. However the approved budgets are only guidelines of
what the actual executed budget is going to be; Paraguay follows a practice pervasive in
many countries in the region of setting approved budgets at relatively high levels but limiting
its execution during the year.   Therefore executed budgets are usually much lower than
approved budgets.   Table 18 shows both, approved and executed budgets between 1997 and
2003, in real terms. On average executed budgets have been about 75 percent of approved
budgets.

TABLE 16
**Approved and Executed Budget, Billion 2003 Gs**

| Concept | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|
| Approved   budget | 591.9 | 680.3 | 810.5 | 795.2 | 701.7 | 645.2 | 618 |
| Executed   budget | 462.7 | 493.9 | 528.7 | 573.0 | 551.2 | 545.6 | 462.0 |
| Percent   Executed | 78,2 | 72,5 | 65,2 | 72,1 | 78,6 | 84,6 | 73,2 |
| Percent Variation (Approved.) | | 14.9 | 19.1 | -1.8 | -11.7 | -8.0 | -2.2 |
| Percent Variation (Executed.) | | 6.7 | 7.0 | 8.3 | -3.8 | -1.0 | -15.3 |

Source: World Bank Estimates based on CIRD (2004)

82    The main source of funding in the public health budget over the last 7 years has been
general revenues FF10.  It has fluctuated between 55 and 65 percent of the total approved
budget and between 66 and 78 percent of the executed budget. Public debt follows in
importance when looking at the approved budget. However as a percentage of the executed
budget the preeminence of public debt over user fees is not clear. For example in the year
*2000* public debt represented about 19 percent of the executed budget and user fees were
about 12 percent, but in 2003 public debt was 12 percent of the executed budget while user
fees were approximately 16 percent.

83    User fees have been slowly increasing in importance within the MOH budget. The
increase of the percentage of the executed budget financed out of user fees has gone up from
11 percent in 1998 to 16 percent in 2003. In the last seven years, on average, 72 percent of

MOH expenditures were financed out of general revenues, 15 percent with credit, and about 13 percent with fees and other institutional resources.

<div align="center">

TABLE 17
**MOH Budget by Source of Funding, Approved and Executed, Percent of Total**

| Category | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|
| **Approved Budget** | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| General Revenues | 62.6% | 61.4% | 59.3% | 55.2% | 65.7% | 61.3% | 61.2% |
| Public Debt | 21.0% | 24.9% | 28.1% | 33.6% | 20.6% | 25.1% | 23.0% |
| Institutional Resources | 16.4% | 13.7% | 12.6% | 11.2% | 13.7% | 13.6% | 15.8% |
| **Executed Budget** | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| General Revenues | 75.0% | 78.2% | 71.4% | 68.6% | 73.5% | 66.9% | 72.1% |
| Public Debt | 10.7% | 10.4% | 17.6% | 19.3% | 14.2% | 19.3% | 12.3% |
| Insitutional Resources | 14.3% | 11.4% | 11.1% | 12.1% | 12.3% | 13.8% | 15.6% |

</div>

84 Regarding the use of funds, personnel are the largest item in the budget, representing between 43 and 53 percent of the approved budget and between 60 and 64 percent of the executed budget. It is also the item with the highest execution level, almost 100 percent every year. In 2003 however the reduction in the total budget affected this category more than others: a 16 percent reduction in the total executed budget vis-a-vis the 2001 budget resulted in a 14 percent decrease in the personnel budget.

## 3.2 User Fees and Exemptions in Paraguay

85. Like many other developing countries, Paraguay has been partially funding health services through user fees for a long time. Before 1991 fees were collected in concept of "donations" and were kept at the facility to be used at its own discretion. In 1991 the Ministry of Finance determined that user fees were resources of the treasury, and as such subject to the regulations that norm the budget process in the Paraguayan Public Sector. This implied that: (i) fees collected had to be deposited in an MOH special account, and (ii) the use of such funds was subject to an ex-ante control, i.e. it had to follow the same rules of budget planning and execution as any other public funds (see Box 3).

86 In the case of user fees, there is a differential treatment between decentralized entities, which control their funds directly, and the institutions that are part of the central government, which cannot dispose of those funds directly since they have to be managed through the MEF under the same set of rules that apply to general revenues. In the MOH there are 75 units (SUC following its name in Spanish) with the authority to collect institutional funds and allocate those funds as they see fit. Each sanitary region for example is a SUC, but the health facilities that depend on the sanitary region are not, i.e. they have to collect user fees but cannot allocate them freely, and in principle there is no obligation at the regional level to return the funds to the facilities where they were collected. Other decentralized units are some specialized hospitals and high complexity centers, and the National University Hospital. Figure 13 describes the flow of user fees since they are collected at the facility level until they go back to the facilities, a process than takes on average more than 100 days.

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┌─────────────────────────────────────────────────────────────────────────────┐
│                              BOX 3                                          │
│              The Budget Process for Institutional Resources                 │
│                                                                             │
│  COLLECTING OF FUNDS                                                        │
│  1.       Health facilities collect fees and send them to the Sanitary     │
│  Region within the first ten days of the                                   │
│  month after collection has taken place. *Average time: 35 days from       │
│  revenue collected on the first day of*                                    │
│  *previous month.*                                                         │
│  2.       Once all the reports from the facilities in a given Sanitary     │
│  Region have been received, a report is                                    │
│  sent to the central government (Department of Revenues), which will then  │
│  authorize the monthly allocation                                          │
│  of FF30 resources according to an Allocation Plan. The Financing          │
│  department will provide the funds for                                     │
│  the Allocation Plan depending on available funds.  *Average time: 5 days* │
│                                                                             │
│  UTILIZATION OF FUNDS                                                       │
│  1.       The Sanitary Region will procure goods and services according    │
│  to the Allocation Plan; it has to                                         │
│  present supporting documentation that creates a credit in favor of the    │
│  Sanitary Region. *Average time: 10*                                      │
│  *days*                                                                    │
│  2.       Once the credit has been acknowledged by the Accounting          │
│  Department at the MOH, the                                                 │
│  documents are sent to the Auditing Department, and then the Department of │
│  Budget Execution where the                                                │
│  requests for transfer of resources are authorized (STR), and then sent to │
│  the MEF.  *Average time: 8 days*                                         │
│  3.       MEF transfers resources to MOH.  *Average time 40 days*         │
│  4.       The MOH deposits resources at the Central Bank (BCP) in an MOH   │
│  account, then transferred to                                              │
│  the *Banco Nacional de Fomento (BNF),* after which it can be pay for      │
│  expenses.  *Average time 3 days*                                         │
│  **5.**       Authorization to pay suppliers ensues and payments are made. │
│  *Average time 5 days*                                                     │
│                                                                             │
│  This means that on average, and assuming all the documents are correct,   │
│  the funds will return to the                                              │
│  Sanitary Regions 105 days after they were collected.                      │
│                                                                             │
│  Source: CIRD (2004)                                                       │
└─────────────────────────────────────────────────────────────────────────────┘
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87.     In theory the user fees system generates some redistribution across Sanitary Regions, as all the collected fees are deposited in one account of the MOH at the Central Bank, *Cuenta 113,* together with a subsidy from the IPS of 1 percent of its monthly revenues in concept of primary and preventive care. These funds are later reallocated by the MOH to the different Sanitary Regions, but there are no clear guidelines on how this allocation should be made.

FIGURE 13
**Collecting and Utilization of User Fees**
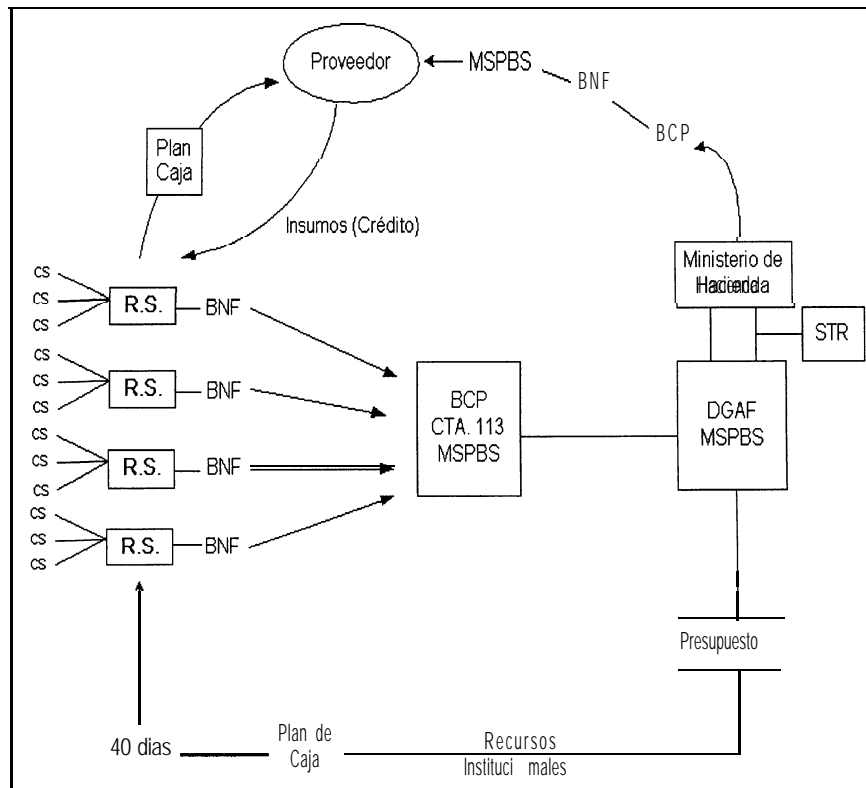


Source: CIRD (2004)

88      From the point of view of equity, the user fees system should ideally distinguish the patients' ability to pay and exclude from payment those who cannot afford it?  The exemption policy at MOH health facilities is regulated by the MOH Resolution n.456 of 2001 that establishes procedures, responsibilities and mechanisms for exempting patients from paying user fees.  Another Ministerial Resolution (S.G n.19 from 2001) regulates the fees to be paid for different services, lists the services that should be provided free of charge, and establishes that all the services not included in the resolution are thereby free. This payment scale includes about 1,000 items that range from Gs. 5,500 (US$ 0.5) for ambulatory care to Gs. 1,056,000 (about US$150) for certain types of surgery. All these items are categorized according to five larger groups:  (i) medical care; (ii) medicines and

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[18] The user fees literature distinguishes between two types of policies to subsidize the poor in a user fees system: (i) a waiver is a right conferred to an individual to obtain health services in certain health facilities at no charge or reduced price; (ii) an exemption on the other hand is associated with services rather than individuals, as it is a kind of service provided at no charge for everybody. In its broadest form a waiver entitles its holder to receive all services at no charge, while an exemption implies that a given service will be provided to all individuals at no charge. (World Bank 2003). Paraguay uses a mixed system, as there are certain services which are in principle provided universally at no charge (e.g. certain maternal care procedures) while other services are provided for free only to a certain group. This report uses the generic name of exemptions to refer to both.

supplies; (iii) diagnostics services; (iv) hospital services (inpatient); and (v) other. The fees scale has remained unchanged since its creation in 2001.

89      The Ministerial Resolution is accompanied by an operations manual that provides the following guidelines for exemption:

- A patient can be exempted only in the case of "noticeable poverty"
- War veterans from the Chaco war as well as their spouses and offspring aged 16 or younger (unless they are disabled) are also exempted.
- A social worker or, absent this, an authorized member of the facility personnel, has to interview the patient
- The patient is required to fill up an affidavit, and the facility has to provide the patient with a receipt, a copy of which has to be filed at the facility.
- The information provided by the patient requesting the exemption has to be reviewed by the social worker, together with the facility director and administrator.
- The director of the facility is the person authorized to grant exemptions; if the director is not present, the following people in succession have the authority to grant exemptions: (i) the medical director, (ii) the administrator together with the social worker, (iii) the chief doctor on duty at the time together with the social worker; or (iv) where a social worker does not exist, an explicitly named member of the personnel authorized by the facility's authority to grant exemptions.
- After granting the exemption, the social worker has to make a follow up visit to the patient's house to verify that the information provided in the affidavit is correct.
- Finally, a registry of exempted patients has to be kept at the health facilities.

90      There are substantial shortcomings with the user fees and exemptions guidelines. First, the guidelines for exemptions do not include a clear definition of noticeable poverty, consequently the participation of a social worker is essential in order to determine the patients' ability to pay. However very few health facilities have social workers as part of their staff -there are 72 social worker positions in the entire MOH payroll database of almost 20,000 to cover almost 1,000 facilities. Even in the case that a social worker were present in every facility, the lack of objective criteria to define poverty would result in a different interpretation of the guidelines. Second, in many cases the cost of implementing the guidelines could outweigh the revenues that would result from identifying the patients who can afford paying the fees. For example not only it is necessary to have a social worker or authorized personnel interview patients and perform a follow up visit, but also it is required to keep adequate records and follow other administration requirements, which many facilities are unable to fulfill. Third, the user fees scale does not seem to reflect the actual cost of procedures, and moreover the lack of updating reduces the effectiveness of the instrument as a source of revenues. Finally, and probably most important, since facilities have no control on the use of resources and are subject to little monitoring from the central level, there is absolutely no incentive to report fees or to follow the guidelines. It was already mentioned that monitoring by the MOH is lax and that record keeping is not up to the standards imposed in the regulations. Since facilities are not "punished" for not reporting, the percentage of facilities that report user fees to the regional level tends to be low; on average only 55 percent of facilities report exemptions to their respective Sanitary Regions but in many regions the percentage is much lower.

## 3.3    Empirical Evidence on User Fees

91.    Three sources of information are used to determine how the Paraguayan user fees and exemption system works in practice: (i) a small case study conducted in *6* health care facilities evaluated to what extent facilities know and apply the guidelines for user fees and exemptions; (ii) information provided by the Department of Financial Management of the Ministry of Health on user fees collected and exemptions granted during 2003 by region and facilities (where available) was used to determine any noticeable regional patterns; (iii) the information collected during the survey of facilities, patients, and households was used to analyze equity considerations in the system, i.e. if the poor have more likelihood to be exempted from paying for health services.

### *(i)    Results from the Case Study*

*92*    The case study analyzed the patterns of user fees and exemptions in six facilities, three from cities in the metropolitan areas and three from cities in the countryside. The director of the facility and the administrator were interviewed in three of the facilities and the administrator alone in the rest, in both opportunities using a questionnaire designed to determine if the facilities were following the guidelines in the operations manual according to Min. Res. 456/2001. The facilities main characteristics are summarized in Table 20.

*93.*

**TABLE 18**
**Facilities Used for the Case Study**

| Facility | Beds | Personnel | Level | Code |
|---|---|---|---|---|
| Regional Hospital | 18 | 108 | 5 | HRI |
| District Hospital (Metropolitan) | 15 | 111 | 4 | HDM |
| District Hospital (Countryside) | 16 | 32 | 4 | HDI |
| Health Center (Capital) | 6 | 61 | 3 | c s c |
| Health Center (Metropolitan) | 13 | 52 | 3 | CSM |
| Health Center (Countryside) | 4 | 18 | 3 | CSI |

Source: CIRD (2004)

*94*    In general the case study revealed some serious lack of knowledge about how the user fees should be collected and exemptions administered. Specifically:
- Many facilities use a different person from the authorized to collect fees;
- 85 percent of facilities have non-authorized personnel grant exemptions.
- Very few facilities keep a record of exempted patients or user fees collected from them -which is consistent with the results from the facilities survey reported in Chapter 1.
- The most worrisome trend in user fees has to do with outsourced services: 5 out of the 6 facilities in the study have some kind of outsourcing arrangement for selected services, and only one has had it approved by the MOH. Moreover, the fees charged for those outsourced services are not regulated by the MOH, except for one case.
- Only one facility follows the process of transferring the revenues collected through the appropriate channels. This suggests that many facilities do not really transfer the

revenues to the central level and have developed some kind of informal arrangement to keep those proceeds in-house.

TABLE 19
**Summary Responses from Case Study**

| Guideline from Operations Manual | Number of Facilities Complying |
|---|---|
| Have a dedicated person to collect user fees | 5 |
| Non-authorized personnel collecting fees | 4 (due to dedicated person not available all the time) |
| Aware of norms regulating user fees | 4 |
| When are fees collected? | In all facilities: before consultation; emergency after the procedure, and hospitalization at the time of discharge |
| Have some services contracted out | 5 |
| Contracting out authorized by MOH | l |
| Fees from contracted out services determined by MOH | l |
| Exempt fees from contracted out services | 4 out of 5 |
| Follow exactly procedure to deposit amount and transfer to RS | 1 (other have different kind of informal arrangements) |
| Social worker present and interviews exempted patients | 3 |
| Aware that there exist exemption guidelines | 4 |
| Authorized personnel grants exemptions | l |
| Registry of exempted patients during last year available | l |
| Accounting registry of exemptions | 6 |
| Percent of exempted patients last year | Between 40 and 70 percent depending on the facility |
| Percent of fees returning to the facility | Between 0 and 70 percent depending on the facility. In many cases supplies are provided in exchange for the fees |
| Hires personnel with user fees resources | l |
| Aware of the FRs mechanism | 2 (but it is not used) |
| Registry of patient's name, address, reason for consultation, exempted and if not how much paid | l |

95. There is some variation in fees charged for different procedures. The largest variation comes from relatively expensive procedures (like C-sections) or those where services are more likely to be outsourced, like blood exams, x-rays, sonograms or EKG. Most basic procedures are exempted, following the Ministerial resolution that in 2004 declared that pregnant women and children under 5 years of age were entitled to free health care.

96 The low level of reporting of revenues collected from user fees is a reflection of the lack of incentives to collect or to report. Since facilities are not allowed to keep the proceeds, and monitoring by the Ministry of Health is lax, it is not surprising that facilities do not report user fees. In this context it would be interesting to get an approximation of how much a facility would collect if the incentives were not perverse. Such an approximation is possible in Paraguay through the analysis of a pilot experience implemented in one municipality, Fram. As part of a decentralization pilot, the user fees collected by the health facilities in Fram are administered by the local health secretariat under the legal figure of

"donations".   The user fees collected cannot be used for personnel or investment, categories that are still under the responsibility of the MOH. However the operational expenses are financed by the local health secretariat.   Tables 22 and 23 compares a set of productivity indicators and operating costs for the facilities surveyed in the case study and the one in Fram.

TABLE 20
**Selected Indicators of Productivity in Case Study and in Fram**

| Establecimiento | N° Camas | N° Egresos | Bed-days occupied. | % de Ocupación de Camas | Volumen de Consultas | N° RRHH | RRHH: horas disponibles / mes |
|---|---|---|---|---|---|---|---|
| Hospital Regional | 18 | 1.241 | 2.476 | 38.21% | 16.112 | 108 | 16.413 |
| Hospital Distrital del Interior | 16 | 669 | 1.021 | 16.13% | 10.577 | 32 | 4.108 |
| Centro de Salud Capital | 6 | 61 | 78 | 3.4% | 7.004 | 61 | 5.628 |
| Hospital Distrital Metropolitan0 | 15 | 1.305 | 3.378 | 62.56% | 31.714 | 111 | 14.300 |
| Centro de Salud Metropolitan0 | 13 | 502 | 738 | 15.77% | 12.597 | 52 | 5.844 |
| Centro de Salud del Interior | 4 | 105 | 155 | 9.98% | 2.712 | 18 | 2.096 |
| Piloto: Centro de Salud de Fram | 9 | 817 | 1.683 | 48.6% | 10.496 | 33 | 3.957 |

TABLE21
**Expenses and Revenues in Case Study and in Fram**

| Establecimiento | Gasto Operativo Anual – 2003 | Ingresos percibidos ▪ 2003 | % de recuperación de costos |
|---|---|---|---|
| Hospital Regional | 1.519.843.701 | 116.456.350 | 7,7% |
| Hospital Distrital del Interior | 330.422.670 | 28.642.010 | 8,7% |
| Centro de Salud Capital | 644.964.087 | 103.878.650 | 16,1% |
| Hospital Distrital Metropolitan0 | s/d | s/d | s/d |
| Centro de Salud Metropolitan0 | 542.936.500 | 87.550.050 | 16,1% |
| Centro de Salud del Interior | 170.708.8 18 | 4.119.900 | 2,4% |
| Proyecto Piloto: Centro de Salud de Fram | 120.696.453 | 64.856.321 | 53,7% |

97     Even though there is no rigorous impact evaluation of the Fram pilot, it is apparent that the health center in Fram is more productive than other comparable facilities from the case study.   It has the second largest percent of occupancy, the third largest number of discharges, and a high volume of consultations from the case study sample. The most noticeable difference between Fram and the other facilities has to do with the cost recovery through user fees: while the average revenue over expenses in the other facilities is about 11 percent, in Fram revenues are about 54 percent of operating expenses. This is the case even though user fees in Fram are set at the same level as any other facility administered by the MOH. This increase in collection may be both supply and demand-induced; as patients

perceive an increase in quality they may also be willing to demand more services.

## (ii    *Collection and Exemption of Fees by Sanitary Region*

98    The Department of Revenues of the Ministry of Health provided information on user fees collected by *Departamento*/Sanitary Region between 1999 and 2003. The series shows an erratic behavior by region, with some regions collecting a significant and increasing amount over time while other collecting very little. Between 1999 and 2003 the total amount of fees collected (and reported) in Paraguay increased 43 percent in real terms. It is not possible to assess if this increase is due to higher fees per service -as explained before the current fees were set in 2001, an increase in the production at the facilities, better monitoring systems, or an increase in the proportion of facilities reporting fees to the central level.

FIGURE 14
**Fees Collected (Reported) by Sanitary Region, 1999-2003 (Gs. 2003Bn)**
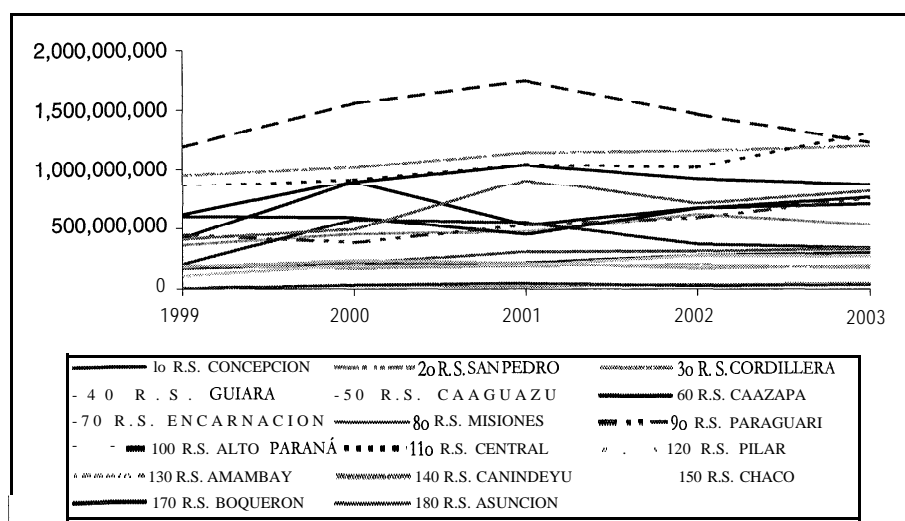


Source:    World   Bank   Estimates

99    Figure 14 also shows that some Sanitary Regions have had a continuous increase in fees collected since 1999 while others have experienced more volatility. The fees collected from the three Sanitary Regions with the largest revenues represented about 40 percent of total revenues from fees in 2003. A simple regression analysis shows that total population, average complexity of facilities, and the percentage of facilities reporting fees are all positively correlated with fees collected in a given sanitary region.

100.    Exemptions are subject to the same kind of variation as revenues. Total amount of exemptions in 2003 varied between Gs.27M.in Caaguazú and Gs.720M. in Alto Paraná. As can be seen from figure 19, the lowest collecting sanitary regions are not necessarily the ones that show the most amount of exemptions.   The ratio of exemptions to revenues varies between 30 percent (Asunción) and more than 200 percent (Boquerón). As exemptions are granted to patients with "noticeable poverty" there should be a positive relationship between the amount of exemptions in a given region and its poverty rate. However, after controlling

for the size of the population and the percentage of facilities reporting exemptions, there is no systematic relationship between poverty rates and exemptions at the Sanitary Region level.

FIGURE 15
**Revenues and exemptions by Sanitary Region, 2003 (in Million Gs.)**
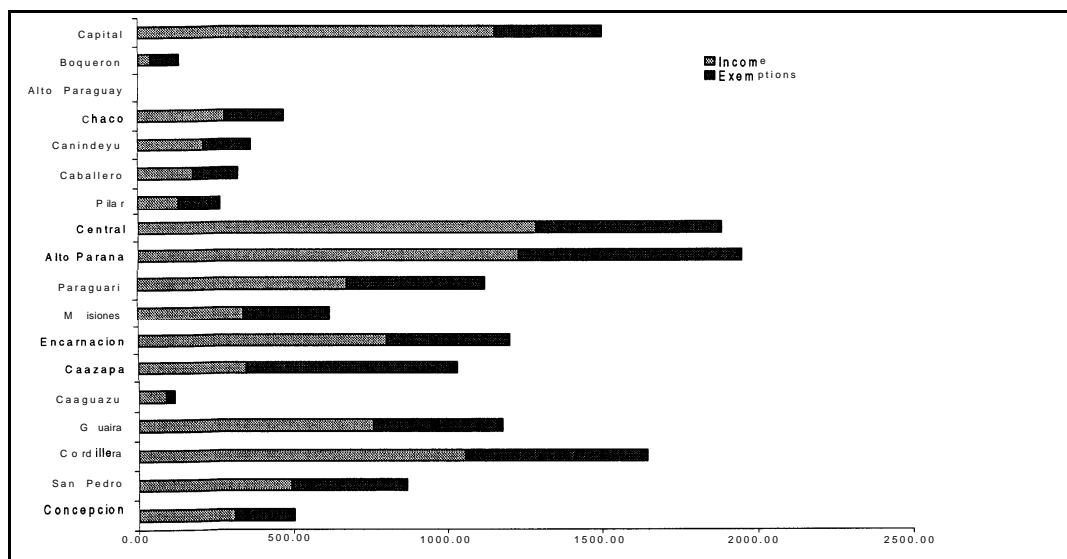


*Source*: MOH(2003)

### *(iii)    User-Fees and Poverty: Do the poor pay less than the rich?*

101    One way to determine whether user-fees are charged in a progressive manner (so that the rich pay more than the poor) is to link the amount paid to the income (or wealth) of the household. Since this kind of linkage requires information both on the wealth of the patient and the amount paid, studies have typically used one of two approaches. One approach is to use a household survey, whereby respondents are asked both about their own wealth and the amount paid in the last visit to a health facility (see for instance Gatti and others 2004). Another approach is to conduct "exit-surveys", where the amount paid is collected at the facility itself, and information on the patient's income is ascertained through a short interview as the patient leaves the facility. While the first method decreases the likelihood that doctors will change their behavior because they are being observed, it is likely that the respondent's memory will not be accurate, and poor and rich people may forget in different ways. The second is more accurate in terms of the user-fees collected, but is subject to the criticism that doctors may have behaved differently because they knew they were being observed.

102    Both methods are used in this report. That is, patients were interviewed as they left the facility and asked (among other things) about their household assets and self-reported health status.  In addition, for a sub-sample of facilities individuals who had visited the health-facility in the month preceding the survey were also canvassed -therefore it is

possible to directly compare user-fees for those observed in the facility and those who had visited the facility at a time when the doctors were not being observed.

103    Three sets of results are presented.  The first set of results looks at patients' perceptions about user-fees and the link between patient satisfaction and user-fees.  Then the study looks at the relationship between poverty and user-fees at the extensive margin-are the poor less likely to pay anything at all? Finally, basic correlations at the intensive margin are presented -conditional on paying a non-zero amount, do the poor pay less than the rich?

104    About 56 percent of all patients surveyed -2,288 patient exit interviews and 648 households surveyed— were exempted from paying user-fees in facilities operated by the MoH. Conditional on paying something, the mean payment is Gs. 5,700, which tallies closely with the standard charge for a consultation (Gs. 5,500). However, the amounts that patients paid varied significantly with their health-status, income, age and (surprisingly), gender. As Table 22 shows full exemptions were granted more often to those who were (more) healthy (68 percent received an exemption compared to 42 percent for those who were less healthy), poorer (61 percent among the poorest tercile were exempt compared to 50 percent among the richest), younger (87 percent of those below 5 were exempt compared to 34 percent of those above 5) and male (64 percent versus 52 percent). The differences along the intensive margin tend to be smaller.  Thus, restricting attention to only those who paid something, richer patients pay on average 22 percent more than poor patients, but male patients and patients under five years of age also tend to pay more (even though these groups are exempted more often). It is somewhat encouraging that the system seems to charge the rich more often and more, but in a non-systematic way.

TABLE 22
**Relationship between User Fees and Selected Patients Characteristics**

|  |  | The Extensive Margin How many pay? (%) | The Intensive Margin Among those who pay, how much do they pay?  (Gs.1,000s) |
|---|---|---|---|
| Patient's Health Status | Good | 32% | 5.79 |
|  | Average | 40% | 5.99 |
|  | Poor | 58% | 5.34 |
| Household  Assets | Poor | 39% | 5.28 |
|  | Middle | 45% | 5.38 |
|  | Rich | 50% | 6.44 |
| Gender of Patient | Female | 48% | 5.48 |
|  | Male | 36% | 6.24 |
| Age of Patient | Below 5 years | 13% | 6.10 |
|  | Above 5 years | 66% | 5.63 |
| Overall |  | 44% | 5.69 |

105    As the system seems to work in exempting the poor -in an ad-hoc manner- perhaps it is' not surprising that satisfaction with the system of user-fees is high.   According to the household and patient surveys 65 percent of patients at the exit survey and 56 percent at the household survey rated the amounts paid as "affordable"; 62 percent of patients at the exit survey reported that the decision to exempt them (or not) was fair, and 70 percent of patients

maintained that the facility is right in charging user-fees to those who can pay. The reverse of this result implies that about 16 percent of households and 10 percent of patients rated the system as "expensive or very expensive" and 20 percent of households were dissatisfied with the decision of facilities to charge them for services (for more comparisons see Annex 2).

106.    Figure 16 shows the basic relationship between patient attributes and user-fees. The figure on the left shows the non-parametric relationship between user-fees and household wealth for patients who self-reported their health to be "poor", "average" and "good". The figure on the right shows the same non-parametric relationship, but for patients who are less than and greater than 5 years in age.  Both figures confirm the strong positive relationship between wealth and user-fees. Across all self-reports of health and age-groups, user-fees in MOH facilities increases with wealth. Further, those who are in poor health generically pay more than those in better health, and those who are older pay more than those under 5.

**FIGURE 16**
**Relationship between Wealth of Patients and User Fees Paid**
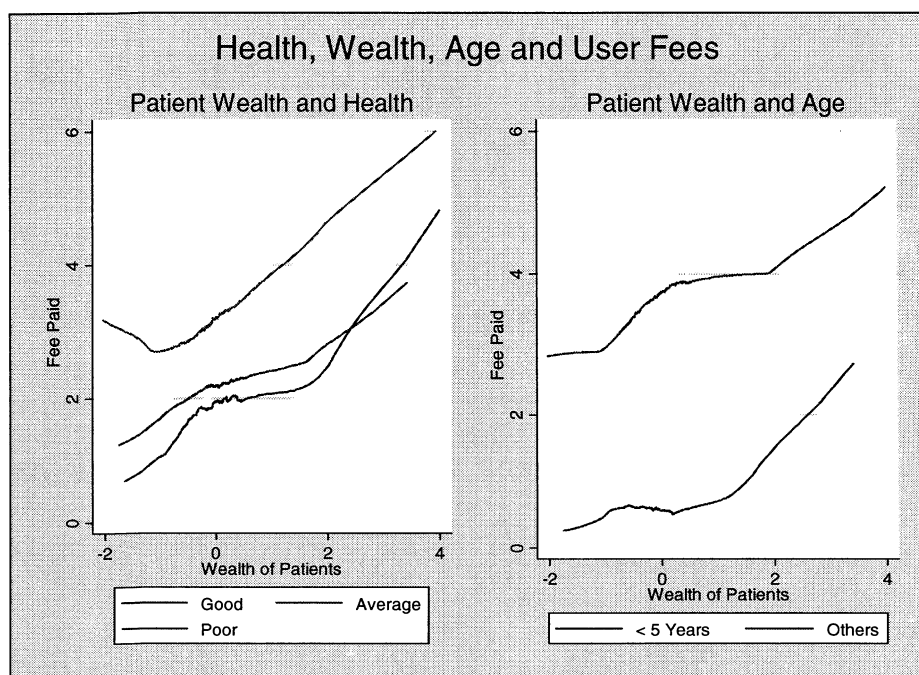


Source: World Bank Estimates

107    Further analysis (see Annex 3) explores the relationship between user fees and wealth by breaking up the payment of user-fees into the extensive margin (the difference between those who pay and those who do not) and the intensive margin (the difference in the amount paid, conditioning on some payment). Three characteristics emerge from the analysis. First, wealth is associated with higher user-fees both on the extensive and the intensive margin. Thus, patients who are 1 standard deviation richer are between 6 and 7 percent more likely to be charged some fees, and conditional on not being exempt, pay between Gs.500 and Gs.1000 more. However these numbers are very small; given the distribution of wealth in

the sample, this suggests that those in the top 10 percent are only 15 percent more likely to pay than patients with median wealth. Furthermore, conditional on payment, they pay only between Gs.1000 and Gs.2000 more. Second, on the extensive margin, the other patient characteristics explored in the figure above are highly significant. Patients who are in worse health pay more, females pay more, and those older than 5 pay more. The largest differences in the probability of payment are those between patients in good and poor health and those below and above 5 years of age. This suggests that the latest guidelines by the Ministry of Health to exempt children below 5 years of age from paying fees are being implemented by most facilities. Third, on the intensive margin, there is now no difference between female/male patients and younger/older patients. This is consistent with differences in granted exemptions but no differences in the amount paid when the patient is not exempted. Interestingly, the difference between healthier and sicker patients is now reversed so that healthier patients pay higher amounts than sicker patients. Facilities thus tend to take smaller amounts more frequently from sicker compared to healthier patients. Finally wealth is no longer significant, so conditional on paying, richer and poorer patients pay similar amounts.

## 3.4    Conclusions and Recommendations

108.    A well functioning user fee system requires three elements: (i) sizeable revenues; (ii) clear rules and guidelines in order to minimize distortions; and (iii) equity, through an adequate exemption mechanism. The analysis of this chapter shows that Paraguay's system has to be revised in order to overcome problems in all three areas. User fees are now a significant source of revenues for the Ministry of Health. However, it is a somewhat volatile source, resulting from (i) the lack of monitoring by the MOH; (ii) the long process for the revenues to flow back to facilities; and (iii) the inability of facilities to make direct use of those funds. These three issues together result in a low incentive to collect revenues and a low percentage of facilities reporting those revenues.

109    Regarding rules and guidelines, the case study and facilities survey revealed that (i) there is a widespread lack of knowledge about the regulations for granting exemptions and charging fees; (ii) the record keeping practices of many facilities do not follow the guidelines and therefore it is hard to estimate exact amount of exemptions and fees; (iii) in many cases the guidelines are known but are not followed; and (iv) there are many services outsourced to the private sector that remain unregulated, both on quality and fees charged. In addition, the lack of clarity in the rules leave many loopholes that potentially distort facilities and doctors behavior, like the vague definition of the beneficiary of exemption policies. Finally, some guidelines seem to be respected; for example almost all facilities did not charge fees for patients who were five years or younger, respecting the recent guidelines established by the Ministry of Health.

110    Finally, with regards to equity, the report finds that the exemption system is slightly progressive, as a higher percentage of poor people are being exempted. However: (i) conditional on paying fees, the poor do not pay less than the rich; (ii) there is substantial type I error or under coverage -31 percent of patients in the poorest tercile did pay for services; and (iii) there is substantial type II error or leakage -50 percent of patients in richest tercile were exempted. In general patients are willing to pay, even tough between 15 and 20 percent

of users consider the system expensive, or disagrees with the decision of facilities to charge them for services.

111    The efficiency of the system can be improved by providing facilities with more incentives to collect fees and apply the guidelines correctly. The following measures could be considered: (i) increase the frequency and scope of monitoring by the MOH; (ii) devise some kind of revenue sharing system so that facilities are allowed to keep some of the proceeds from user fees; (iii) improve the flow of funds of user fees between the central level and the facilities; (iv) set clear guidelines regarding the use of revenues collected through fees, including some redistribution scheme across regions; (v) revise guidelines for exemptions in order to simplify the process wherever possible; (vi) improve the record keeping capabilities of facilities in order to facilitate reporting of fees and exemptions to higher administrative levels; and (vii) determine patients willingness and ability to pay, and revise the current fees scale accordingly.

112.    Some of the measures described above would certainly improve the equity of the system too, like better record keeping and improved guidelines. By far the most welfare improving measure has to be a change in the targeting mechanism for exemptions. This can start by defining clearly who is going to be exempted, i.e. refining the concept of "noticeable poverty" stated in the current guidelines, and how it is going to be measured and implemented. It is necessary to decide if the services will be exempted to everybody i.e. pure exemptions -easier to monitor— or to a certain group of the population, i.e. a waiver system, or a mix as it currently applies in Paraguay. This could be based on economic and medical criteria. A system of waivers is more complex to implement but provides more flexibility and in principle better targeting to the poor. If Paraguay opts for a waiver system, then the targeting mechanism needs to be thoroughly revised. Factors to be considered are: (i) who grants the waiver? (ii) Are waivers provided every time there is a consultation or periodically, e.g through a beneficiary card? (iii) What are the eligibility requirements? And (iv) what's the duration of the waiver? (v) What are the services covered by the waiver?

113    Last but not least, it is essential that the policies regarding outsourcing of services and fees/exemptions for such services be developed. This is probably one of the largest loopholes in the system.

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# Annex 1. Using Contractual Status and other characteristics to explain quality of care. Regression Analysis

Tables Al .1 and Al .2 explore the relationship between quality of care and wealth in a multiple-regression context. Each successive specification (columns in the table) contains additional explanatory variables in the specification so that Column (1) includes only the poverty rate of the municipality, Column (2) adds in facility dummies and Column (3) adds in doctor characteristics. The poverty rate of municipalities is significantly related to the QC index at a 10 percent level. However, when controlling for other variables in column two and three the poverty rate is no longer significantly related to the service provided, but the sign always remain positive. This shows that the service in poor municipalities is not worse than average, if anything the service in poor areas is better than average. Further, the more important factors for quality of service are the kind of facility (IRS or MoH), the gender of the doctor and the total salary earned by the doctor. A move from a MoH to an IPS facility is generally associated with a 0.15 standard deviation decrease in the quality of service received, while service is expected to be 0.30 standard deviations lower when seeing a male doctor compared to a female doctor. Recall that these results are irrespective of the conditions of the patient as the QC index is purged of patient conditions.

**Table Al.1**
**Relationship between Purged Quality of Service and Poverty**

|  | QC index | QC index | QC index |
|---|---|---|---|
| Level of Poverty | 0.012 | 0.006 | 0.004 |
|  | [1.84]c | [0.93] | [0.68] |
| IPS dummy |  | -0.599 | -0.352 |
|  |  | [4.24]a | [2.35]b |
| Male dummy |  |  | -0.599 |
|  |  |  | [5.24]a |
| Age of doctors |  |  | 0.004 |
|  |  |  | [0.55] |
| Permanent positions dummy |  |  | -0.200 |
|  |  |  | [1.58] |
| Log of total salary |  |  | -0.310 |
|  |  |  | [3.04]a |
| Constant | -0.229 | 0.017 | 4.813 |
|  | [1.66]c | [0.12] | [3.07]a |
| Observations | 286 | 286 | 268 |
| R-squared | 0.01 | 0.07 | 0.19 |

Absolute value oft statistics in brackets c significant at 10%; b significant at 5%; a significant at 1%

To examine the issue of discrimination against the poor the study looks at whether the *same* doctor reports higher QI scores for patients from better socio-economic backgrounds, controlling for other patient characteristics. If so, this would imply systematic discrimination with differential treatment-patterns by the same doctor across rich and poor patients. The three relevant patient characteristics are education, gender, and the socio-economic condition. Table Al .2 puts this together in a regression framework. Column (1) presents results including only the patient characteristics;

column (2) then adds in observable doctor and institutional characteristics; column (3) looks only at differences across patients within the same doctor by including both doctor and facility fixed effects. All three regressions show that there is no discrimination between male and female patients or discrimination based on educational level. However the wealth of patients measured by the asset index is significantly related in all regressions, but with a *negative* sign. This means that not only do poor areas tend to have a better service than average, but less fortunate patients also tend to receive a better service than average.

**Table Al.2**
**Relationship between Quality of Care and Socioeconomic Status**

|  | QI index | QI index | QI index |
|---|---|---|---|
| Gender of patient | -0.093 | -0.028 | -0.028 |
|  | [ 1.641 | [0.61] | [0.72] |
| Asset index | -0.067 | -0.045 | -0.039 |
|  | [2.44]b | [1.85]c | [1.98]b |
| Years of education | -0.007 | -0.000 | 0.000 |
|  | [1.01] | [0.08] | [0.04] |
|  |  |  |  |
| Control for Patient Conditions | X | X | X |
| Doctor Characteristics: |  |  |  |
| IPS dummy |  | -0.338 |  |
|  |  | [6.62]a |  |
| Male dummy |  | -0.422 |  |
|  |  | [9.81]a |  |
| Age of doctor |  | -0.00 1 |  |
|  |  | [0.36] |  |
|  |  |  |  |
| Dummy for facility located in urban area |  | -0.210 |  |
|  |  | [2.34]b |  |
|  |  |  |  |
| Constant | -0.07 1 | 0.282 | -0.154 |
|  | [0.68] | [1.84]c | [2.20]b |
| Observations | 2193 | 2130 | 2193 |
| R-squared | 0.07 | 0.13 | 0.06 |
| Number of fixed effects |  |  | 286 |

Note: Robust t statistics in brackets. c significant at 10%; b significant at 5%; a significant at 1%.

# Annex 2. Summary Statistics for Patients from Household Survey and Exit Survey

| Question | Household survey Number | Household survey Percent | Exit survey Number | Exit survey Percent |
|---|---|---|---|---|
| Are you satisfied with the decision of the hospital of charging and/or exempting you for the consultations? | | | | |
| Yes | 507 | 78 | 1,418 | 62 |
| No | 136 | 20 | 341 | 15 |
| How much did you pay for consultation? | | | | |
| Nothing | 314 | 48 | 1,513 | 66 |
| 5,000 | 142 | 21 | 124 | 5 |
| 5,500 | 76 | 11 | 405 | 18 |
| Who did you pay to? (of those who paid) | | | | |
| Treasurer/administrative | 246 | 77 | 722 | 91 |
| Doctor/nurse who gave care | 75 | 23 | 72 | 9 |
| How much did you pay for medicine? | | | | |
| Nothing | 487 | 75 | 2,231 | 97 |
| 5,000 | 16 | 2.5 | | |
| 10,000 | 11 | 2 | | |
| | | | | |
| How much did you pay for materials? | | | | |
| Nothing | 614 | 95 | 2,251 | 98 |
| What do you think about the cost of the service? (those who paid) | | | | |
| Very expensive | 8 | 2.4 | 14 | 1.8 |
| Expensive | 45 | 13.7 | 61 | 7.9 |
| Neither expensive nor cheap | 27 | 8.2 | 24 | 3.1 |
| Affordable | 186 | 56.8 | 497 | 64.8 |
| Cheap | 58 | 17.7 | 169 | 22 |
| Don't know | 3 | 1 | 1 | 8.1 |
| Did Doctor/nurse request additional payment (of those who paid) | | | | |
| Yes | 11 | 4 | | |
| No | | 96 | | |
| | | | | |
| Did you leave work to come to the facility | | | | |
| Yes | 221 | 34 | | |
| No | 427 | 65 | | |
| Do you think the facility is right in charging to whoever can afford to pay | | | | |
| Yes | 610 | 94 | 1,598 | 69.6 |
| No | 19 | 2.9 | 104 | 4.5 |
| Did you get a receipt | | | | |
| Yes | | | 1,048 | 46 |
| Do you believe exemptions are granted to | | | | |
| Many people | 238 | 36 | 631 | 33.1 |
| Few people | 131 | 20 | 174 | 9.1 |
| Nobody | 15 | 2 | 10 | 0.53 |
| Do not know | 264 | 40 | 1,089 | 57.2 |
| | | | | |
| Number of observations | 648 | | 2,288 | |
| Affiliated to private insurance | 36 | 5.5 | 54 | 2.3 |
| Affiliated to IPS | 85 | 13 | 685 | 30 |
| No insurance | 525 | 81 | 1,529 | 67 |
| Urban | 456 | 70 | | 85 |

## Annex 3. User-Fees and Poverty: Do the poor pay less than the rich?
### Regression Analysis

The following analysis complements the results of chapter 3, using regression techniques. Table A3.1 looks at the relationship between patient's satisfaction and user fees paid. All three specifications presented use satisfaction as a binary dependent variable (satisfied or not-satisfied). The first specification includes only an indicator variable for whether the patient paid any user-fees; the second includes the wealth, health, age and gender of the patient, and the third controls for the illness of the patient through a full-set of dummy variables for symptoms reported and the number of days sick. Across all three specifications, whether the patient pays user-fees or not has no impact on his/her satisfaction with the visit. The coefficient is very small and insignificant-with a full set of controls, the estimates suggest that a patient who is exempt from the user-fees is 1 percent more likely to report that she was satisfied with the interaction. The quality-of-interaction index, discussed previously in Chapter 2 remains highly significant; the likelihood of reporting satisfaction with the interaction is 6 percent greater for patients who received one standard deviation better quality care from the doctor. The overwhelming message from these specifications is that patients in the sample are less worried about the amount they pay and more about the quality-of-care that they receive.

One worry with these results is that doctors may have changed their behavior because they knew they were being observed. This turns out to be partly true, as the number of patients who are exempted increases under observation -as reported during exit survey vis-a-vis the household survey— and more people in the household survey report dissatisfaction with the exemption process (Appendix 1). However, since the extent of "additional exemptions due to observation" does not vary by the income (or other attributes) of the patient, the overall relationship between satisfaction (and poverty discussed below) does not change.

**Relationship between Satisfaction and Selected Patient Characteristics**

| | (1) | (2) | (3) |
|---|---|---|---|
| Did the person pay any user-fees | 0.023 | 0.007 | 0.008 |
| | (0.026) | (0.030) | (0.031) |
| Quality of Interaction Index | | 0.066 | 0.059 |
| | | (0.023)*** | (0.023)** |
| Wealth | | -0.003 | -0.001 |
| | | (0.014) | (0.014) |
| Patient in Average Health | | -0.183 | -0.189 |
| | | (0.032)*** | (0.032)*** |
| Patient in poor health | | -0.138 | -0.135 |
| | | (0.035)*** | (0.035)*** |
| Patient c 5 years old | | 0.058 | 0.039 |
| | | (0.031)* | (0.033) |
| Gender of patient | | 0.023 | 0.028 |
| | | (0.027) | (0.027) |
| Full Set of Patient Illness Characteristics | | | X |
| Constant | 0.602 | 0.696 | 0.693 |
| | (0.016)*** | (0.034)*** | (0.038)*** |
| Observations | 1733 | 1716 | 1716 |
| Number of Facilities | 83 | 83 | 83 |

*Significant 10 percent
** Significant 5 percent
*** Significant 1 percent level
Dependent variable is an indicator variable that takes value o if patient is not satisfied and 1 if patient is satisfied with the service provided

Tables A3.2 and A3.3 explore the relationships between user fees and patient characteristics by breaking up the payment of user-fees into the extensive margin in Table A3.2 (the difference between those who pay and those who do not) and the intensive margin in Table A3.3 (the difference in the amount paid, conditioning on some payment). The first three specifications combine differences within and across facilities and introduce additional patient characteristics. The last three specifications look only within facilities. That is, including facility fixed-effects factors out differences across facilities and limits the analysis to the difference paid by patients who visited the same facility during the day of the observation.

Three characteristics are common across the regressions. First, wealth is associated with higher user-fees both on the extensive and the intensive margin. Thus, patients who are 1 standard deviation richer are between 6 and 7 percent more likely to be charged some fees, and conditional on not being exempt, pay between Gs.500 and Gs.1000 more. However these numbers are very small; given the distribution of wealth in the sample, this suggests that those in the top 10 percent are only 15 percent more likely to pay than patients with median wealth. Furthermore, conditional on payment, they pay only between Gs.1000 and Gs.2000 more.

Second, on the extensive margin, the other patient characteristics explored in the figure above are highly significant. Patients who are in worse health pay more, females pay more, and those older than 5 pay more. The largest differences in the probability of

payment are those between patients in good and poor health and those below and above 5 years of age. This suggests that the latest guidelines by the Ministry of Health to exempt children below 5 years of age from paying fees are being implemented by most facilities.

Third, on the intensive margin, there is now no difference between female/male patients and younger/older patients. This is consistent with differences in granted exemptions but no differences in the amount paid when the patient is not exempted. Interestingly, the difference between healthier and sicker patients is now reversed so that healthier patients pay higher amounts than sicker patients. Facilities thus tend to take smaller amounts more frequently from sicker compared to healthier patients. Finally wealth is no longer significant, so conditional on paying, richer and poorer patients pay similar amounts.

**Table A3.2**
**Regression Analysis of Fees and Exemptions on Selected Characteristics**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| The **Extensive Margin:** Dependent variable is an indicator that takes the value 1 if the patient paid anything. | | | | | | |
| Patient's wealth | 0.058 (0.016)*** | 0.072 (0.017)*** | 0.078 (0.018)*** | 0.063 (0.013)*** | 0.073 (0.013)*** | 0.06 1 (0.01 1)*** |
| Patient in Average Health | | 0.089 (0.043)"" | 0.058 (0.048) | | 0.045 (0.030) | 0.030 (0.026) |
| Patient in poor health | | 0.279 (0.046)*** | 0.193 (0.057)*** | | 0.213 (0.033)*** | 0.127 (0.028)*** |
| Patient above 5 years of age | | | 0.49 1 (0.038)*** | | | 0.455 (0.024)*** |
| Gender of patient | | | 0.129 (0.041)*** | | | 0.049 (0.022)** |
| Constant | | | | 0.446 ( 0 . 0 1 1)*** | 0.357 (0.025)*** | 0.125 (0.031)*** |
| Patient Illness Characteristics | | | X | | | X |
| Facility Fixed Effects | | | | X | X | X |
| Observations | 1725 | 1718 | 1718 | 1725 | 1718 | 1718 |
| Number of Facilities | | | | 83 | 83 | 83 |
| R-sauared | | | | 0.01 | 0.05 | 0.32 |

*Significant 10 percent
** Significant 5 percent
*** Significant 1 percent level

**Table A3.3**
**Regression Analysis of Amount paid in fees on Selected Characteristics**

|  | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| **The Intensive Margin:** Dependent variable is fees paid in $1000 and sample is restricted to only those who can pay | | | | | | |
| Patient's wealth | 0.092 | 0.086 | 0.078 | 0.057 | 0.053 | 0.048 |
|  | (0.053)* | (0.053) | (0.05 1) | (0.030)* | (0.030)* | (0.030) |
| Patient in Average Health |  | -0.191 | -0.244 |  | -0.278 | -0.296 |
|  |  | (0.344) | (0.288) |  | (0.085)*** | (0.085)*** |
| Patient in poor health |  | -0.22 1 | -0.234 |  | -0.169 | -0.201 |
|  |  | (0.330) | (0.283) |  | (0.087)* | (0.088)** |
| Patient above 5 years of age |  |  | 0.364 |  |  | 0.066 |
|  |  |  | (0.346) |  |  | (0.098) |
| Gender of patient |  |  | 0.278 |  |  | -0.067 |
|  |  |  | (0.207) |  |  | (0.068) |
| Constant | 5.386 | 5.563 | 5.286 | 5.385 | 5.579 | 5.561 |
|  | (0.192)*** | (0.341)*** | (0.500)*** | (0.026)*** | (0.073)*** | (0.123)*** |
| Patient Illness Characteristics |  |  | X |  |  | X |
| Facility Fixed Effects |  |  |  | **X** | X | X |
| Observations | 756 | 752 | 752 | 756 | 752 | 752 |
| R-squared | 0.00 | 0.01 | 0.06 | 0.01 | 0.02 | 0.04 |
| Number of Facilities |  |  |  | 75 | 75 | 75 |

*Significant 10 percent
** Significant 5 percent
*** Significant 1 percent level