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Targeting Public Health Expenditures in Peru: Situation and Alternatives

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Partnerships
for Health
Reform



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PHR advances knowledge and methodologies to develop, implement, and monitor health reforms and their impact, and promotes the exchange of information on critical health reform issues.

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Abstract

This report takes on the subject of the targeting of public health spending in Peru in two ways. The first section analyzes the distribution of public spending on health among regions and also among social strata, revealing that spending is not distributed equitably. Particular emphasis is placed on the charging of user fees, which does not contribute to targeting as these fees are not concentrated among those with the most resources. The second section proposes a multi-faceted strategy to improve the targeting of public spending on health, including the prioritization of services aimed at mothers and children, the adaptation of health services to the cultural requirements of indigenous groups, the gradual geographic reallocation of spending toward the poorest and neediest areas, the fostering of a form of self-selection through the promotion and appropriate regulation of private services, and a system of identification of the poor and needy through “proxy means testing” or socio-economic indicators.

Table of Contents

Acronyms	ix
Foreword	xi
Acknowledgments	xv
Executive Summary	xvii
1. Introduction	1
2. Equity and Health Policy: A Review	3
3. Inter-Departmental Assessment of the Redistributive Nature of Health Spending	7
3.1 Introduction	7
3.2 Methodology	7
3.3 Results and Analysis	11
3.3.1 Graphing the Index of Health Needs and Spending per Uninsured Person	13
3.3.2 Generalized Lorenz Curves	14
3.3.3 Simple Correlation Coefficient and Pseudo-Gini Coefficients	16
3.4 Analysis Considering Only the Poor	18
3.5 Conclusions	23
4. Distribution by Quintile of the Public Subsidy in Health	25
4.1 Methodology	25
4.2 Vaccination	26
4.3 Care for Pregnant Mothers	27
4.4 Medical Visits	28
4.5 Hospitalization	31
4.6 Overview of the Distribution of the Subsidy by Stratum	33
5. An Overview of the Diagnosis	41
6. Proposed Strategy for Targeting Public Spending in Health	43
6.1 Objectives	43
6.2 Instruments	43
6.3 Specific Mechanisms	44
Annex A: Public Expenditures on Uninsured By Department, 1992–1995	47
Annex B: Bibliography	49

List of Tables

Table 1. Health Needs: Indicators and Summary Index	10
Table 2. Public Expenditures in Health by Department	12
Table 3. Summary Measures of Regional Distribution in Health Expenditures	17
Table 4. Public Health Expenditures by Department (in current soles)	19
Table 5. Public Expenditures in Health per Uninsured Poor Person by Department, 1992–1995	20
Table 6. Summary Measures of Regional Distribution of Health Expenditures	21
Table 7. Children without Vaccination (as a percentage)	26
Table 8. Care for Pregnant Women	27
Table 9. Medical Visits and Disease	29
Table 10. Site of Medical Visit (as a percentage)	30
Table 11. Site of Hospitalization (as a percentage)	32
Table 12. Distribution of MINSA Health Care	33
Table 13. MINSA Spending by Type of Care, 1994	33
Table 14. Distribution of MINSA Spending by Quintile	34
Table 15. Fee Payments in MINSA Facilities	35
Table 16. Payments for Public Health Services	36
Table 17. Public Subsidies by Stratum and Type of Care	37
Table 18. Distribution of the Subsidy in Health, 1994	38

List of Figures

Figure 1. Total Expenditures in Health and Health Needs (in current soles)	13
Figure 2. Expenditures in Basic Health for All and Health Needs (in current soles)	14
Figure 3. Distribution of Total Public Expenditures in Health	15
Figure 4. Distribution of Expenditures in Basic Health for All	15
Figure 5. Regional Budget Distribution	16
Figure 6. Total Public Health Expenditures 1992-1995 Distribution According to Poverty	21
Figure 7. Basic Health for All Distribution According to Poverty	22
Figure 8. Regional Budget Distribution According to Poverty	22

Acronyms

BCG	Bacillus Calmett-Guerin (tuberculosis vaccine)
BHA	Basic Health for All
DTP	Diphtheria-Tetanus-Pertussis Vaccine
ENAHO	<i>Encuesta Nacional de Hogares</i>
ENDES	<i>Encuesta Nacional de Demografía y Salud</i>
ESAN	<i>Escuela Superior de Administración</i>
IHN	Index of Health Needs
IMR	Infant Mortality Rate
INEI	<i>Instituto Nacional de Estadística e Informática</i>
IPSS	<i>Instituto Peruano de Seguridad Social</i>
LSMS	Living Standards and Measurement Survey
MINSA	<i>Ministerio de Salud</i>
PHR	Partnerships for Health Reform
UBN	Unmet Basic Needs
USAID	United States Agency for International Development

Foreword

Part of the mission of the Partnerships for Health Reform Project (PHR) is to advance knowledge and methodologies to develop, implement, and monitor health reforms and their impact. This goal is addressed not only through PHR's technical assistance work but also through its Applied Research program, designed to complement and support technical assistance activities. The main objective of the Applied Research program is to prepare and implement an agenda of research that will advance the knowledge about health sector reform at the global and individual country levels.

An important component of PHR's applied research is the Small Applied Research (SAR) program. Small Applied Research grants are awarded, on a competitive basis, to developing country research institutions, individuals and non-profit organizations to study policy-relevant issues in the realm of health sector reform. The SAR program has twin objectives: to provide data and analyses relevant to policy concerns in the researcher's own country, and to help strengthen the health policy research capacity of developing country organizations.

A total of 16 small research grants have been awarded to researchers throughout the developing world. Topics studied included health financing strategies, the role of the private sector in health care delivery and the efficiency of public health facilities.

SAR grant recipients are encouraged to disseminate the findings of their work locally. In addition final reports of the SAR research studies are available from the PHR Resource Center and via the PHR website. A summary of the findings of each study are also disseminated through the PHR In-brief series.

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Executive Summary

An analysis of the distribution of public subsidies in health among income strata shows that public spending is distributed similarly to the distribution of the population in Peru, that is to say, there is no concentration of spending among the poorest groups. Even when the poor use health services, they do so more often at Ministry of Health (*Ministerio de Salud*, MINSA) facilities (MINSA visits comprised 61 percent of total visits in the poorest income quintile as compared to 18 percent in the highest quintile), and this trend is offset by the fact that there are fewer visits among the poor in general (25 percent consulted health facilities as compared to the 62 percent that were sick). In the case of visits for pregnant mothers, the poorest members of the population have far fewer check-ups than those who are not poor (1.4 percent compared to 6 percent).

Since the policy of implementing user fees can be used as a targeting tool by charging more to those with the ability to pay, it is necessary to analyze how fees charged for visits and other services are assigned. However, we find that the fees charged across regions in Peru do not support a better targeting of the public funds. This deficiency results from the fact that exemptions from the payment of fees are not concentrated among the poorest groups as they should be. Few exemptions are granted, and those who benefit from them are both the poor and the non-poor. For example, among completely exempt visits, barely 16 percent of the poorest quintile were represented, and 82 percent of those exempt were not extremely poor.

It is also important to gather evidence regarding the effects that user fees may be having on access to health services for the poorest groups. Surveys show that between 70 and 80 percent of those who did not consult a medical facility, even though they believed it necessary, were prevented from doing so because “they didn’t have the money.” Another recent study (Petrera 1997) shows that the availability of medicines free of charge is a significant determinant of demand for health services among rural women.

Even more critical is an analysis of spending by department. Public expenditures in health financed by regional budgets is higher in the departments where there are fewer poor and fewer health needs. For example, in 1995, 21 soles were spent in Cajamarca (one of the departments with the greatest health needs) for every uninsured person, while 148 soles were spent in Callao (a department with fewer health needs). The funds in the public health program Basic Health for All (BHA), although they do not demonstrate this inadequacy, are still not concentrated in the poorest and neediest departments. The BHA program allocated 8 soles per uninsured person to Cajamarca and 10 soles to Callao. If we consider the target population of MINSA as the poor in general, rather than all uninsured persons, this analysis does not change.

An analysis of the rates charged to users reveals that widely varied criteria is used for determining fees and that user fees have the potential to substantially affect the demand for health services. While medical visits are charged at reduced rates, medicines are sold at cost, and despite the apparent cost advantage of the use of generics, prices remain expensive for many households. Also, the cost of surgical operations is beyond the reach of the majority. For example, an operation in the hospital of Andahuaylas, one of the poorest provinces in Peru, can cost patients between 300 and 500 soles.

The potential for affecting the demand of the poor for health services depends on exemptions. This study shows that there is little standardization of the objectives, criteria and procedures for exemption. Exemption is minimal in the case of medications, as well as in the case of hospitalization. The criteria used for granting exemptions are varied, in many cases including elements such as “physical appearance,” and practically no record of the information upon which exemptions are based is maintained.

The conclusion is clear: serious problems of inequity persist. The sources of this problem are the poor distribution of spending among departments, obstacles to access for the poorest (for whom fees weigh heavily), and a system of exemptions that does not support targeting.

A targeting system for public spending on health should include four essential objectives. It should (1) guarantee access for the poor and needy to health services within a context of increased collection of fees; (2) improve the accessibility and quality of health services in poor areas; (3) improve the distribution of resources, reducing the amount of subsidies to sectors with the ability to pay in order to transfer them to the poor and needy; and (4) create insurance incentives for informal and self-employed workers who have the ability to pay.

Fundamental considerations should be taken into account in the design of this system. A targeting program must (1) establish clear and simple criteria to determine who should pay for certain health services and who should not; (2) consider all the services and costs that must be faced by the user to recover his health; (3) avoid excessive administrative costs for the targeting system given the great difficulty of obtaining reliable information on incomes; (4) promote community participation; and (5) reduce incentives for unethical staff conduct in determining exemptions.

Based on these objectives and considerations, this proposed targeting strategy would combine various mechanisms for targeting. These mechanisms would be (1) the selection by type of service (establishing special rates and/or free services); (2) the geographic allocation of spending; (3) individual selection through “proxy means testing” or socio-economic characteristics that approximate a family's ability to pay, and (4) self-selection (through the existence of private care alternatives).

This targeting system would not charge for collective health programs and care for children and mothers. It would establish lower fees in primary care facilities and in rural areas and include medicines, exams, medical supplies and surgical interventions within the subsidy. This system would serve to distribute treasury resources in favor of the poorest and neediest departments through geographic allocation by using the indicator of spending per uninsured person.

By using the indicator of spending per uninsured person, this targeting system could allocate all new funds to departments with below-average spending in order to carry out a gradual adjustment toward greater equity, given the difficulty of reducing spending for some departments due to social and political restrictions. This method could be made more precise by considering levels of poverty and needs, but there are still great differences among departments, making it difficult to simply equalize unit spending among poorest departments and the other departments. To reduce public funds allocated to some departments, we could opt for promoting a higher

collection of fees in those departments. This system could be duplicated within the departments. However, it is clear that it would not be applicable to specialized institutes and regional hospitals.

Mechanisms of the system of targeting could also establish a point system for classifying the poor and non-poor, based on housing characteristics. The inclusion of more information to determine who is poor and who should pay does not significantly improve the precision of the method. Reducing the number of variables by using housing characteristics would yield significant improvements in targeting by requiring relatively little information which is difficult for the user to falsify and is indicative of structural, not just situational, levels of poverty. For simplicity sake and due to difficulties in obtaining information, it is considered better to establish only two payment categories (pays or does not pay) rather than an entire payment schedule.

This targeting system should also avoid incentives for health personnel to charge excessively, which causes public treasury funds to be partially reduced, by increasing incomes and standardizing their use so that only part of the income would revert back to the facilities. Any system in this respect requires levels of control to prevent personnel of health care facilities from implementing collection policies directed towards their own benefit. Goals could be established so that the income of the personnel could be related to the spending and type of care in the facilities.

Finally, a targeting system should develop procedures to process “reconsiderations” for those requests for exemption that have been refused, which should include the participation of members of the community.

01. Introduction

Peru is characterized by extreme poverty levels and by income gaps which are among the greatest world-wide. The latest statistics (from 1994) indicate that half of the population is poor and that one-fifth is extremely poor—to the extent that nutritional intake is insufficient even when all income is used to purchase food. The social services provided by the State, particularly in the area of health, must play an essential role in combating this situation.

In the short term, it is essential that the entire population have coverage of basic needs such as caring for and maintaining health, thus satisfying the basic rights contained in the Universal Declaration of Human Rights. The recent World Social Summit in Copenhagen has established as the sixth pledge signed by all the world's governments “the universal and equitable access to quality education, the highest possible level of physical and mental health, and the access of all to primary health care.”

Recent developments in economic theory, developed in new currents of endogenous growth theories, have demonstrated the importance of the investment in human capital to the long-term growth and development of a country. While these theories have placed a greater emphasis on the role of education, public investment in health has also been shown to have a positive effect (Behrman 1993).

For the last few decades, health services in Peru have been divided into three segments: (1) services provided by the Ministry of Health (*Ministerio de Salud*, MINSa) for the poorest and those in the informal economy; (2) services provided by the Peruvian Social Security Institute (*Instituto Peruano de Seguridad Social*, IPSS) for salaried personnel; and (3) private services provided for those with higher incomes. There are also low technology health services of doubtful effectiveness, namely pharmacists who write prescriptions and healers. Per capita spending is much higher in the private sector, intermediate in the IPSS, and lower under MINSa (ESAN 1996, *Grupo Técnico Institucional* 1997).

However, public services are not always within the reach of those who need them most—the poor. This problem has been generated through various access costs. Among these costs are direct costs, such as fees charged by hospitals or health centers, transportation costs, and medicines. There are also indirect, or opportunity costs, such as income not earned as a result of time spent receiving care, travel to the health center, the wait at the health facility, and, in some cases, the treatment itself.

The fees charged by hospitals is a particularly important issue at present since reductions in the amount of public funds allocated to hospitals have led these institutions to develop a policy of charging user fees without any general control criteria and without a clear assessment of the potential effects on the issue of providing equitable access to health services. Earlier research has shown that charging fees in hospitals could lead households with lower incomes to reduce their use of health services (Gertler et al. 1987). Research has also discussed the further effect that the economic crisis might have in this area (Petrera 1990).

Knowing who is reached by state-allocated subsidies allocated to the provision of basic services, or more specifically, to the provision of health services, is essential in order to be able to frame health policy as part of a social policy that effectively attacks poverty, that is not deflected towards other, less needy social groups, and that does not aggravate the problems of unmet basic needs (UBN) among the poor. The purpose of this study is to gain a better understanding of this problem by analyzing access to various public health services and the payments made for these services.

02. Equity and Health Policy: A Review

In the 1960s and 1970s, studies conducted on the problems of unequal income distribution and poverty (Webb and Figueroa 1975) found that these problems were severe and that the poor were highly concentrated in rural areas where the presence of state and social services was practically non-existent. It was thus assumed that those with lower incomes were also those with less access to social services. This assumption was later confirmed by various studies on access among the poor to services such as potable water, electricity, and education. (Cuánto Institute 1991). For 1994, the Central Reserve Bank (1995) indicated that among the extremely poor, only 21.4 percent had a sewer system through a public network or a septic tank. This percentage rose to 55.4 percent for those who were not extremely poor, and to 75.7 percent for those who were not poor.

The studies of de Habich (1991) and Bazán et al. (1991) on health spending for 1985-1986 showed that a lesser percentage of public spending on health reached the poorest groups, in particular those in rural areas, and that spending was more concentrated for those with middle-income levels and for urban areas. At the national level, the probability of a sick person obtaining a public medical consultation was 6 percent for the lowest income quintile, whereas this probability rose to 11 percent for the ninth decile in income distribution. The most pronounced difference was between urban and rural areas: the probability was 10 percent in urban areas and 6 percent in rural areas. Therefore, the redistributive impact of social spending turned out to be significantly limited, reducing inequity by only 0.6 percent.

Bazán et al. (1991) establishes that the case of health insurance provided by the IPSS would have a distributive effect because although the spending is not redistributive, the contributions would be redistributive, creating an overall positive effect on the distribution of income. However, this analysis starts by assuming that the IPSS contribution is paid entirely by the worker, which would only be true if demand for labor were completely elastic or the supply inelastic (Selowsky 1979), which is probably not the case in Peru. It has also been demonstrated that health insurance behaves pro-cyclically, providing a lower level of protection when workers' conditions are more difficult (Petrera 1990).

A result similar to that found for health spending was obtained by Rodríguez (1992) with respect to public spending on education for the same period. In the case of education, public spending on university education was particularly skewed towards the middle-upper levels, and there was less access for the poor even in primary and secondary education.

Such findings confirmed a pessimistic view of the role of public spending and state-provided social services in improving the income distribution and the living conditions of the poorest groups in Latin America, views held by international agency experts such as Tanzi (1977) and Selowsky (1979).

For example, the World Bank indicates that “in general additional spending in social services will not automatically help the poor” (World Bank 1990c, p. 90). From this perspective,

effective social policy would essentially be not to increase social spending but rather to adequately channel it; thus, in this scenario, there would be no conflict between adjustment policies which call for reduced public spending and policies to combat poverty.

The pessimistic view regarding the access of the poor to public services has led to the development of a strong tendency at the international level to place a greater emphasis on “targeting” social spending. Targeting is understood as action that is designed to direct social programs to those who are most poor, and limiting access for those who are not poor by having them pay for services. This process can be seen in the World Bank document, for example, where it aligns its policies with respect to poverty (World Bank 1992).

This pessimistic view has also led to proposals designed to establish fees for public services. Given that those who use these services are not among the poorest, there would be room for some cost recovery (De Habich 1991). There have also been analyses showing that in basic education, the poorest groups would be willing to pay to have schools built closer to their homes (Gertler and Glewwe 1992). However, Gertler et al., (1987) showed that such a policy for health services in Peru would have a negative effect on the opportunities for access to these services among the poorest members of society, and thus a negative effective on equity.

However, such viewpoints have not gone unchallenged. On one hand, research on the social consequences of adjustment policies has emphasized the recorded decline in public social spending, holding that this decline would have a significant effect on the poor (Cornia et al. 1987; Figueroa 1996). This assessment of the effects of adjustment implicitly assumes that social spending actually has had a significant effect on the poor and the distribution of income, and thus cuts in such spending would also have an effect.

From a more conceptual point of view, human rights agencies have criticized proposals for targeting, in the belief that they create a sort of discrimination and provide services as “assistance” rather than as the recognition of a right (United Nations 1992; Asociación Pro-Derechos Humanos, Centro de Asesoría Laboral 1995).

In Peru, these differing viewpoints must also be contrasted with the rapidly-changing reality of recent years. The decades of development policies from the 1950s to the 1970s have had social repercussions that persisted throughout the 1980s as the state, though already showing clear symptoms of crisis, continued to increase the coverage of basic social services to the detriment of quality. In addition, the economic crisis, the adjustment policy, and the level of violence have all changed how we Peruvians live. As a result of these changes, what was valid 10 years ago (the national studies cited are based on 1985 data) is no longer necessarily true today.

A study on access to education in 1991, a year of severe economic crisis, showed that in fact there had been important changes compared to the situation from 1985 to 1986 (Francke 1994). Unlike the earlier years, the poorest levels of society went to school almost as often as the middle and upper levels, particularly in primary and secondary education. At the same time, problems in the quality of public education had led to a concentration of the poorest groups in public education while the middle and upper levels had increased attendance at private schools. Thus, public spending was concentrated on the poor (57 percent on the first two quintiles).

Changes in the last decade which have fostered a greater access to health services in general, and in particular among the poor, include

- ▲ the construction of infrastructure for health centers, posts, and sanitation networks (households with water inside the home increased from 38 percent to 43.1 percent between 1981 and 1993);
- ▲ greater levels of urbanization (70.1 percent in 1993 compared to 65.2 percent in 1981);
- ▲ higher levels of communication between the city and the country through the mass media (71.3 percent of households had a radio in 1993 compared to 64.8 percent in 1981);
- ▲ higher educational levels among mothers, fathers, and children (illiteracy declined from 18.1 percent in 1981 to 12.8 percent in 1993); and
- ▲ health education campaigns on subjects such as vaccination, oral rehydration, treatment against specific epidemics such as cholera and family planning.

At the same time, there are other changes working against access to health services and their quality (Petrera 1992). Among other factors, we have experienced the reduction of the national budget for health, the exacerbation of the problems of poverty (which raises the relative costs of health services), fees for services in health facilities, a scarcity of medications, the destruction of health posts, and transportation difficulties in some areas as the result of terrorism.

03. Inter-Departmental Assessment of the Redistributive Nature of Health Spending

3.1 Introduction

This chapter presents the methodology and results of an assessment of the distribution of Ministry of Health expenditures (financed by the public treasury) among the country's different departments in 1995. Given that a special MINSA program called Basic Health for All (BHA) was introduced in 1994, one of whose objectives is precisely to increase equity in health spending, this program is analyzed separately.

There is earlier evidence for Peru that there are strong variations in spending among departments (ANSSA 1986). Although in the case of health spending, some of this variation may be due to the differences in the type of care (for example, in Lima there is a higher percentage of hospitalizations which are more expensive), there is probably also a differential from region to region, even for the same type of care.

3.2 Methodology

The study approaches the problem of distribution through an analysis of the distribution of public expenditures in health among the various regions of the country. To carry out this analysis, we have used two basic indicators. The first is spending per uninsured person. This variable reflects the amount spent by the Ministry of Health on each person assumed to be part of the target population. This means we are assuming:

- ▲ that insured persons are not part of the target population as they have an alternative mechanism for better quality health care;
- ▲ that the entire population requires the same expenses, which must be counterbalanced by the different existing age structures (the requirements of children, women, and the elderly are greater) and by the different epidemiological profiles (the costs to treat tuberculosis are higher than for other diseases).

The second indicator seeks to resolve the problems created by the assumptions implied when considering the entire population equally within the calculation of per capita spending. Given the difficulty of considering these aspects, the many variables to be considered, and the

problems with existing information, we have opted to construct an indicator that seeks to summarize these variables, which we have called the Index of Health Needs (IHN)¹ (see table 1).

This index is unweighted and has been calculated on the basis of the following variables:

- ▲ Infant mortality rate,
- ▲ Chronic malnutrition rate among children age 6 to 9 in the first grade of primary school,
- ▲ Percentage of households without sewers,
- ▲ Percentage of illiterate women over the age of 15,
- ▲ Percentage of women between the ages of 30 and 49 with four or more children,
- ▲ Index of Unmet Basic Needs.

The infant mortality rate was considered because it is a variable directly associated with the health status of a priority population, such as children.

The chronic malnutrition rate reflects children's most serious problem, given that nearly one-half of the country's children have this deficiency. In addition, it is recognized that chronic malnutrition substantially raises the morbidity/mortality risk.

Households without sewers run a greater risk of contagion, due to sanitary reasons.

The education of mothers is a proven factor of fundamental importance for the state of health of both children and households as mothers influence hygiene, eating, and general health care habits. The rate of illiteracy among women reflects a severe deficiency with regard to these issues, and reflects the educational level of mothers.

The variable of women with four or more children reflects two health problems: inadequate access to family planning programs and a greater risk of morbidity/mortality among children.

The index of UBN is a summary index of the deficiencies in the circumstances of the population, which is closely associated with both the population's health status and with the possibilities of accessing private health care services. The UBN considered are to be the following:

- ▲ Children not attending school,
- ▲ Dwellings with inadequate physical characteristics,

¹For a more detailed explanation of the IHN, please see "¿Cómo hacer para que la salud pública llegue a los pobres?" by Pedro Francke.

- ▲ Overcrowding,
- ▲ Dwellings without sewers,
- ▲ High rate of economic dependency.

As we can see, the Index of Health Needs attempts to present a synthesis of the population's incomes as well as health problems, and considers factors from the difficulty of paying to greater needs due to higher morbidity/mortality rates.

Table 1 shows the data used as a basis for calculating the Index of Health Needs. One can see here that the differences among the departments are quite consistent for all the indicators used. For example, using Huancavelica and Callao as an example, the ratio between their infant mortality rates is 4.5 to 1, similar to the differences in the IHNs.

In addition, there are policy proposals suggesting that not all the uninsured should be part of the target population—that those who have the ability to pay should be excluded, and only the poor should be considered under the public subsidy. This problem is handled as follows: the first section includes calculations based on the entire uninsured population; the criterion of considering only the uninsured poor as the target population is included later.

It is interesting to note that there is a strong correlation between the percentage of the population which is insured and the departments' levels of development, as measured by the indices for unmet basic needs or health needs. In effect, the correlation between the percentage of the population with insurance and these indices is 0.84 and 0.87, respectively.

Table 1. Health Needs: Indicators and Summary Index

	Women with More than Four Children	Infant Mortality Rate	Chronic Malnutrition	Female Illiteracy	Population without Sewers	Basic Needs Unmet					Index of Health Needs	IHN with Weight 2 to TMI
						One Need	Two Needs	Three Needs	Four or More Needs	Summary Index		
HUANCAVELICA	35.0	106.6	71.9	47.7	87.5	41.2	30.8	15.0	5.2	33.7	63.7	69.9
APURIMAC	34.7	85.4	68.6	51.5	70.2	35.3	28.1	15.2	4.6	31.1	56.9	61.0
AYACUCHO	31.3	84.8	64.2	45.8	71.8	32.5	26.9	16.5	7.5	33.2	55.2	59.4
CUSCO	28.4	91.8	60.0	36.4	65.3	35.3	24.3	12.0	4.3	27.4	51.6	57.3
HUANUCO	29.0	71.1	62.2	34.6	62.9	31.2	26.2	15.7	5.9	30.9	48.4	51.7
PUNO	28.4	89.9	53.6	32.9	59.0	39.8	22.9	8.4	2.4	24.1	48.0	54.0
CAJAMARCA	28.7	62.4	65.5	39.0	53.7	27.4	26.2	17.9	7.5	32.7	47.0	49.2
PASCO	28.5	65.6	57.4	22.8	70.4	36.6	27.9	13.2	3.5	29.2	45.7	48.5
AMAZONAS	30.6	67.7	64.1	29.4	45.4	26.5	25.9	17.5	8.1	32.6	45.0	48.2
LORETO	28.8	72.3	59.7	14.9	49.0	25.9	29.0	17.4	6.3	32.3	42.8	47.0
PIURA	26.0	65.7	49.9	21.2	50.7	29.2	23.0	12.4	5.7	27.0	40.1	43.7
JUNIN	25.6	63.0	58.5	20.2	47.7	36.7	19.0	7.8	2.5	21.6	39.4	42.8
ANCASH	26.4	57.3	54.3	29.9	46.0	34.3	19.6	8.2	2.0	21.2	39.2	41.8
UCAYALI	27.9	69.1	52.3	12.6	39.5	29.4	26.0	13.9	4.0	27.8	38.2	42.6
MADRE DE DIOS	25.1	62.8	53.6	12.9	41.3	31.4	29.4	13.6	2.3	28.0	37.3	40.9
SAN MARTIN	26.4	56.5	52.0	18.5	35.7	25.1	24.4	15.6	6.8	29.6	36.4	39.3
LA LIBERTAD	21.2	45.5	47.5	18.4	33.6	28.6	13.6	6.4	2.1	16.7	30.5	32.6
LAMBAYEQUE	21.6	49.0	39.8	14.6	25.0	29.6	12.8	4.6	1.5	15.0	27.5	30.6
TUMBES	23.3	52.2	27.4	8.0	28.8	30.8	20.3	8.2	2.3	21.0	26.8	30.4
MOQUEGUA	19.0	41.9	23.7	13.9	31.9	27.6	14.2	5.2	0.9	15.0	24.2	26.8
AREQUIPA	17.7	44.8	30.2	11.6	22.0	24.8	12.2	4.8	1.5	13.9	23.4	26.4
ICA	20.7	39.1	29.1	8.0	26.5	29.0	11.3	3.3	0.8	12.9	22.7	25.1
TACNA	16.6	40.3	18.1	11.2	19.5	24.7	9.8	3.4	0.8	11.5	19.5	22.5
LIMA	14.6	26.4	23.6	6.2	13.0	22.7	8.6	2.8	0.5	10.1	15.6	17.2
CALLAO	14.4	22.9	19.7	4.4	11.8	21.9	8.7	2.3	0.4	9.6	13.8	15.1

3.3 Results and Analysis

The base data are shown in Table 2, with the departments ordered according to the IHNs. The initial columns in the table contain the spending figures for 1995 (see annex A for the other years and per capita and actual data). Total spending in the departments funded by the Public Treasury² and Basic Health for All is calculated at 991 million soles for 1995, with another 365 million in spending for the central Ministry headquarters, decentralized public agencies, and other programs. It should be pointed out that this group includes the specialized health care programs carried out by hospitals in Lima (cancer programs, mental health institute, etc.) that are assumed to serve the entire country. However, the largest portion of these services is probably concentrated in Lima, and thus the concentration of spending in the metropolis is probably higher than we have calculated.

Spending on the Basic Health for All Program in 1995 represents 23 percent of spending in the health in the subregions. In per capita terms, total spending amounts to almost 51 soles for every uninsured person, with 41 soles coming from the subregional budgets and 11 soles from the BHA program. (The average exchange rate in 1995 was 2.45 soles per dollar.)

Dividing total spending among the uninsured population, we obtain the figure of spending per uninsured person. For 1995, this figure was on the order of 57 soles per uninsured person on average in the departments (78 soles at the national level). There are also marked differences between departments in spending per uninsured person. These differences reach a maximum of 148 soles in Callao and a similar level in Madre de Dios, while the minimum is in Cajamarca with only 25 soles per uninsured person. In other words, the difference between these departments is six to one.

The analysis of the regional distribution of these expenditures has been made by using graphs, generalized Lorenz curves, and statistics.

² This is how we identify departmental health spending funded by the Public Treasury. Later, we will speak of regional budgets

Table 2. Public Expenditures in Health by Department

Public Expenditures in Health				Health Needs Index	Percentage Population Insured	Population Uninsured (thousands)	Total Expenditures per Uninsured Person	Distribution	
	Regional Budget (thousands of soles)	Basic Health for All (thousands of soles)	Total (thousands of soles)					Population Uninsured (%)	Total Expenditures (%)
Huancavelica	7,784	6,458	14,242	64	11.7	359	40	2.1	1.4
Apurímac	10,669	8,710	19,379	57	8.8	367	53	2.1	2.0
Ayacucho	15,703	10,578	26,281	55	11.9	459	57	2.7	2.7
Cusco	24,945	9,832	34,777	52	16.9	902	39	5.2	3.5
Huánuco	15,160	7,497	22,657	48	11.0	614	37	3.5	2.3
Puno	29,549	6,361	35,910	48	12.8	979	37	5.7	3.6
Cajamarca	15,467	15,634	31,101	47	6.6	1,233	25	7.1	3.1
Pasco	6,797	5,099	11,896	46	28.9	173	69	1.0	1.2
Amazonas	8,241	3,382	11,623	45	11.8	318	37	1.8	1.2
Loreto	21,666	6,442	28,108	43	16.0	629	45	3.6	2.8
Piura	23,661	13,925	37,586	40	22.9	1,106	34	6.4	3.8
Junín	33,586	9,285	42,871	39	20.4	885	48	5.1	4.3
Ancash	29,210	7,541	36,751	39	17.1	829	44	4.8	3.7
Ucayali	14,362	4,871	19,233	38	19.7	271	71	1.6	1.9
Madre de Dios	5,079	3,633	8,711	37	15.3	60	145	0.3	0.9
San Martín	16,210	5,434	21,644	36	11.0	518	42	3.0	2.2
La Libertad	37,954	7,197	45,151	30	22.5	1,014	45	5.9	4.6
Lambayeque	18,534	5,105	23,639	28	31.2	665	36	3.8	2.4
Tumbes	5,635	2,619	8,255	27	26.3	119	69	0.7	0.8
Moquegua	8,344	2,413	10,756	24	33.4	88	122	0.5	1.1
Arequipa	36,360	7,542	43,902	23	38.7	585	75	3.4	4.4
Ica	26,794	4,633	31,427	23	37.9	365	86	2.1	3.2
Tacna	16,178	4,822	21,000	20	30.3	159	132	0.9	2.1
Lima	332,054	26,121	358,175	16	34.9	4,291	83	24.8	36.1
Callao	43,188	3,304	46,491	14	52.2	315	148	1.8	4.7
SUBTOTAL	803,130	188,436	991,567	0		17,305	57	100.0	100.0
Programas*	228,846		40,410						
Resto	253,290		253,290						
OPD	71,926		71,926						
SUBTOTAL	554,063		365,626						
TOTAL	1,357,193	188,436	1,357,193	34		17,305	78		

*Para el total, solo incluye Salud Basica para Todos en la parte no distribuida por departamentos.

3.3.1 Graphing the Index of Health Needs and Spending per Uninsured Person

Figure 1 shows spending per uninsured person for the years 1992 to 1995 and the IHN. As we can see, there is an inverse relationship between the two variables, with spending per uninsured person increasing significantly in the five or six departments with fewer health needs. However, this relationship is weak given that there are significant fluctuations in per capita spending unrelated to the IHN in departments with small populations, such as Pasco and Madre de Dios or with high social security coverage for their relative development, such as Pasco, Tacna, and Moquegua.

Figure 1. Total Expenditures in Health and Health Needs (in current soles)

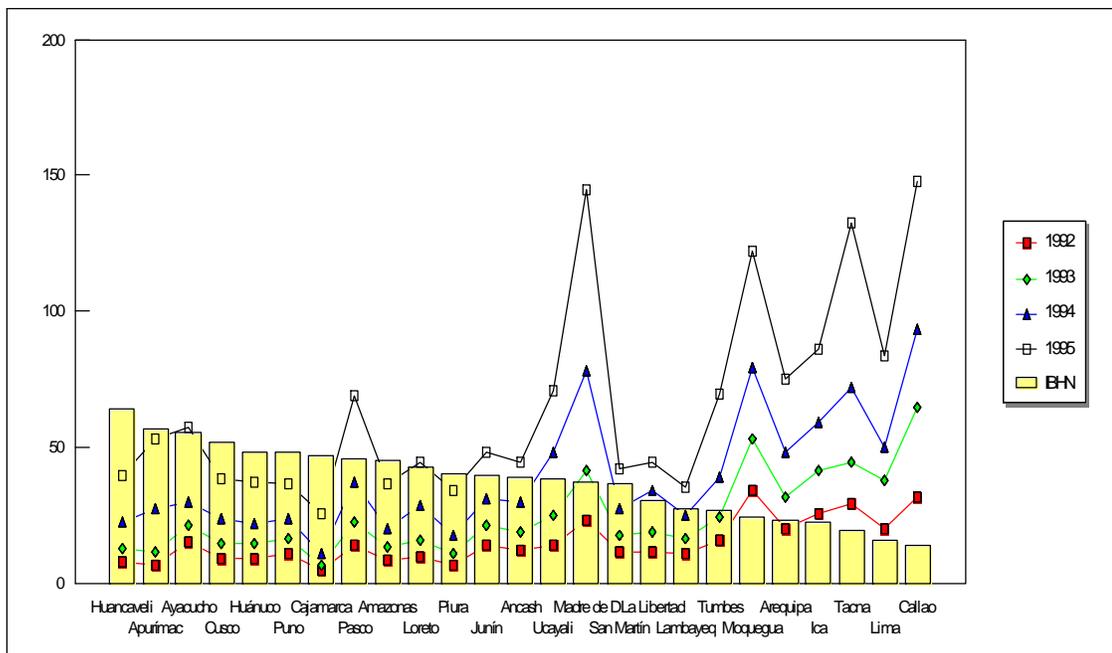
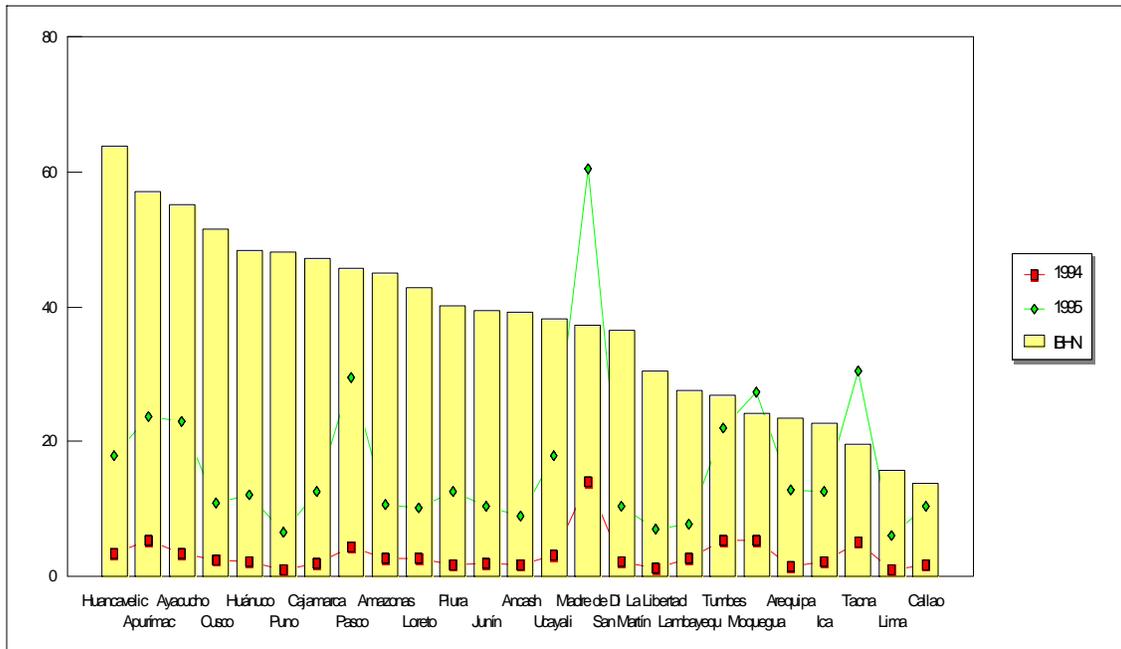


Figure 2 shows that spending under the Ministry of Health's Basic Health for All Program, created to promote equal access, does not show a very clear relationship with the Index of health Needs. Despite the evidence that spending by departments was poorly distributed, this program does not seem to be clearly directed to overcoming this problem.

Figure 2. Expenditures in Basic Health for All and Health Needs (in current soles)



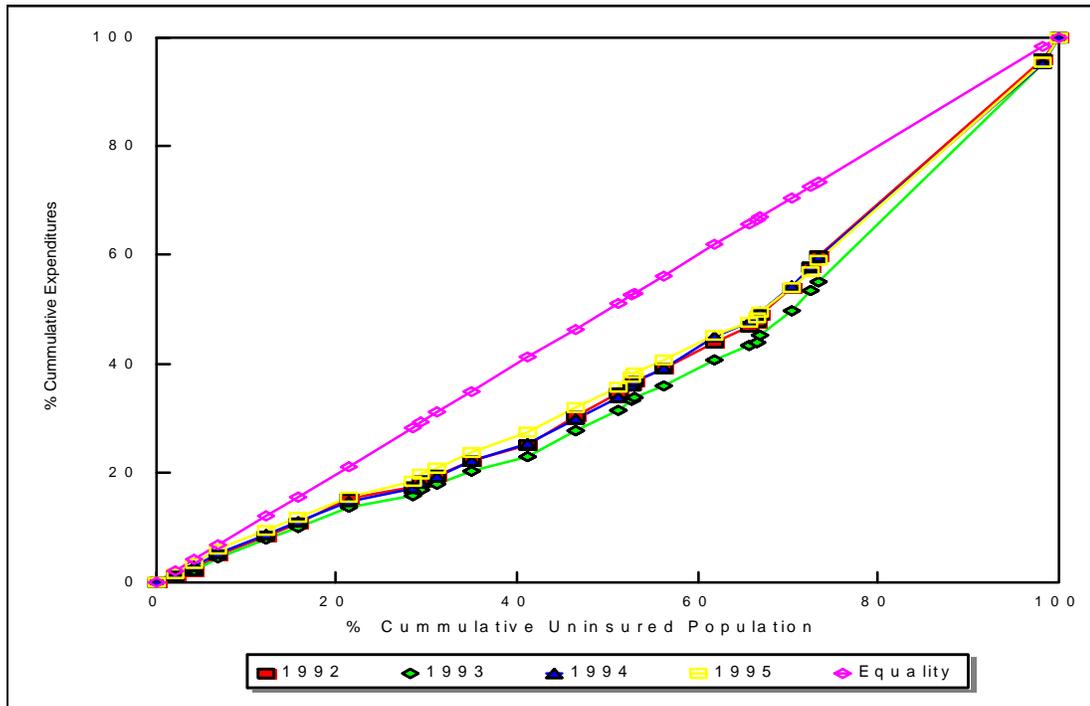
3.3.2 Generalized Lorenz Curves

Generalized Lorenz curves are curves that show what percentage of spending on health is accumulated in a given percentage of the population with the greatest health needs. For example, we find that almost 30 percent of the uninsured population live in the eight departments with the greatest health needs (Huancavelica, Apurímac, Ayacucho, Cusco, Huánuco, Puno, Cajamarca, and Pasco), yet these departments receive only 20 percent of public funds for health. The generalized Lorenz curve shows the health spending allocated to each cumulative level of the uninsured population. The diagonal line shows what equality would be, or the case where all departments receive the same amount of spending per uninsured person.

Figure 3 shows this curve for total public health expenditures between 1992 and 1995. We can see that for all of the years listed, the departments with the greatest health needs received a percentage of spending which was lower than what the uninsured population actually represented. In other words, they received a below-average amount of spending per uninsured. At the same time, Lima and Callao received a percentage of funds that was much greater than what the uninsured populations in those regions represented, and they thereby skew the curve downwards. The fact that the curve is found in the lower right triangle indicates that spending is regressively redistributive, or more concentrated for those who are richer (and less in need).

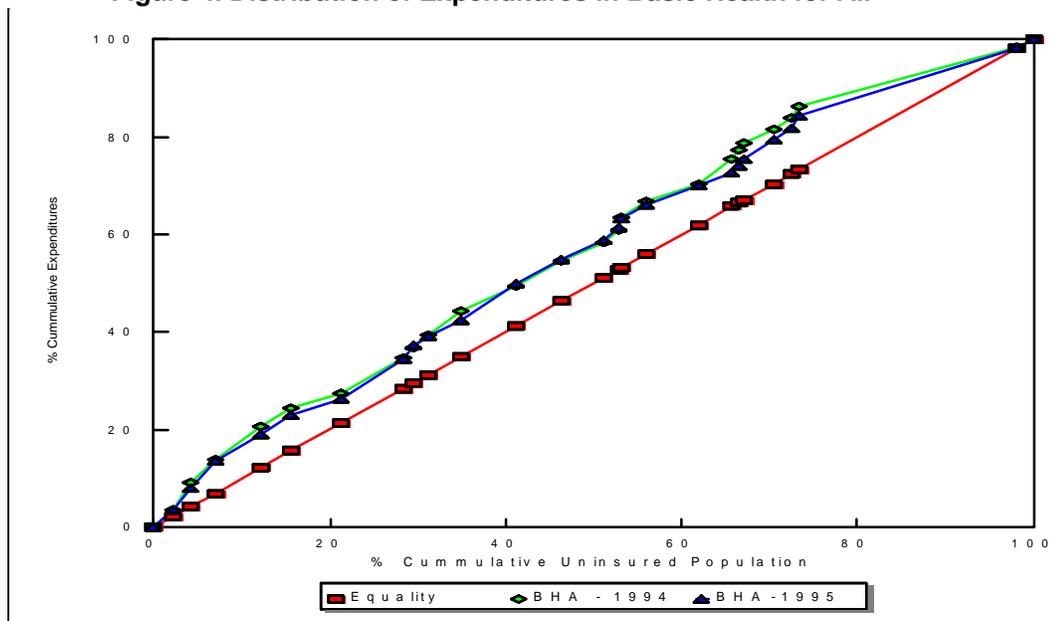
There are no significant differences from year to year. Despite the introduction of the Basic Health for All Program, there are no large overall changes in the departmental distribution of public health expenditures. The curves are very similar for 1992, 1994 and 1995.

Figure 3. Distribution of Total Public Expenditures in Health



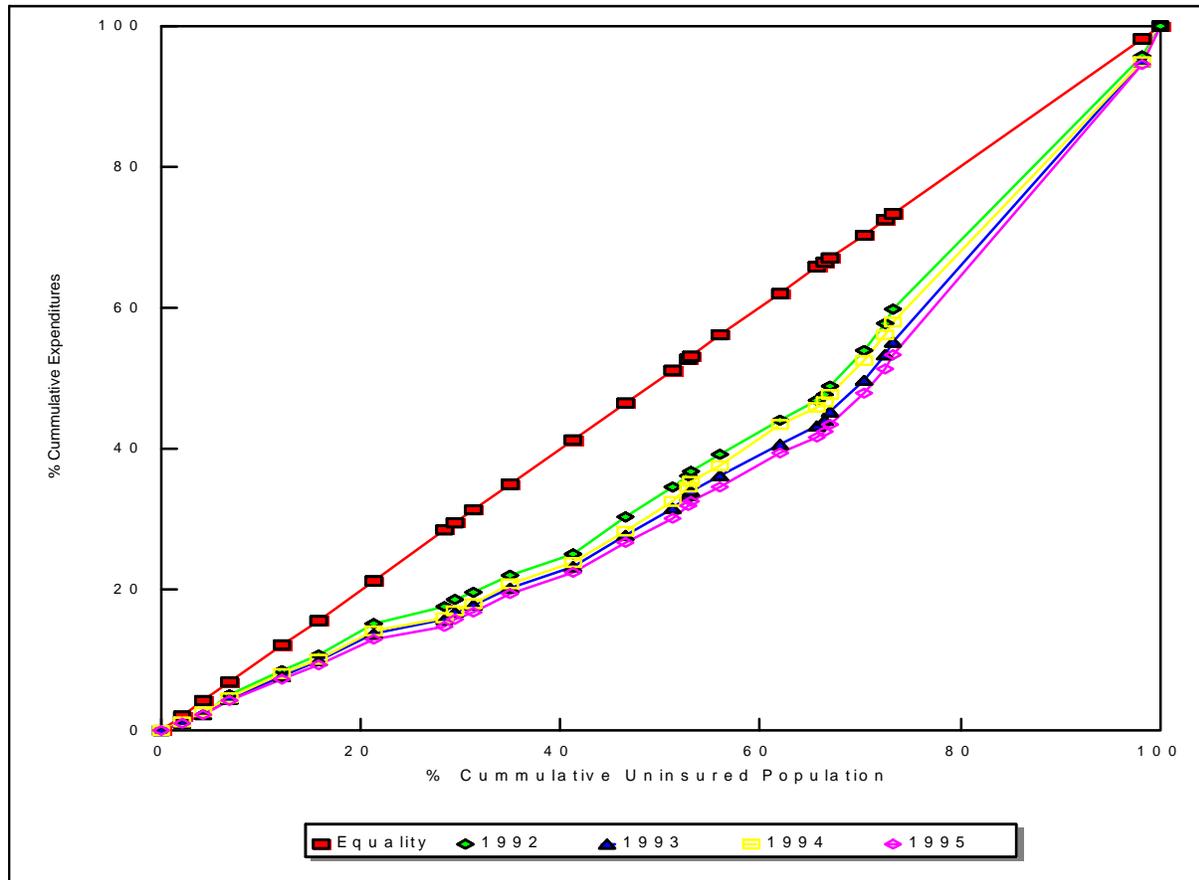
The Basic Health for All Program has a redistributive effect: while the eight most needy departments receive only 16 percent of regional budget expenditures, they receive 37 percent of the Basic Health for All expenditures. Nonetheless, the lesser importance of BHA means that on the whole, those departments which should be relatively more favored (given their greater poverty and health needs), are relatively unfavored. We can see this in the shape of the Lorenz curve found in the upper left triangle of figure 4. However, the fact that the curve is not very far from the line of equality indicates that the preference for those most in need is not very marked.

Figure 4. Distribution of Expenditures in Basic Health for All



The distribution of regional budgets shows a deteriorating situation between 1992 and 1995, although it improves from 1993 to 1994 (see figure 5). It is this deterioration that counterbalances spending under the Basic Health for All Program in 1994 and 1995 and makes the distribution of total spending similar in 1992 and 1995. The efforts of the program created specially to promote equity are eliminated by the distribution of regional budgets effected by the Ministry of Economics, which aggravates the situation.

Figure 5. Regional Budget Distribution



3.3.3 Simple Correlation Coefficient and Pseudo-Gini Coefficients

To obtain summary statistical measures of the distribution of health spending by department, we have used coefficients of correlation and pseudo-Gini coefficients.

Coefficients of correlation indicate how close the relationship is between two variables. As can be seen in table 3, these measures of correlation are negative, strong and statistically significant between the index of health needs and health spending per uninsured person. That is to say, the greater the health needs, the lower the spending per uninsured person. These figures reveal the profound deviation in the distribution of resources with respect to equity criteria, given that those who are less in need receive more.

With regard to the BHA program, we find a positive but low and statistically insignificant relationship with the IHN, revealing how erratically redistributive the program is.

Pseudo–Ginis or concentration coefficients are summary measures obtained on the basis of the generalized Lorenz curves. These coefficients are similar to the Gini coefficient, which measures inequality of income.

Table 3. Summary Measures of Regional Distribution in Health Expenditures

Correlation with IHN	Correlation Coefficient	t Statistic in terms of IHN Order	Pseudo - Gini
Regional Budgets			
1992	-0.74	-5.3	0.21
1993	-0.75	-5.5	0.25
1994	-0.73	-5.2	0.23
1995	-0.76	-5.4	0.27
Basic Health for All			
1994	0.05	0.23	-0.15
1995	0.05	0.25	-0.13
Total			
1992	-0.74	-5.3	0.21
1993	-0.75	-5.5	0.25
1994	-0.69	-4.5	0.21
1995	-0.62	-3.8	0.19

In graphical terms, the pseudo–Ginis or concentration coefficients are calculated as the area found between the line of equality and the generalized Lorenz curve.³ If the generalized Lorenz curve is above the line of equality, the concentration coefficient is negative, indicating absolute progressivity.

The concentration coefficients calculated for spending under the Basic Health for All Program for the uninsured population are -0.15 for 1994 and -0.13 for 1995, indicating the absolute progressivity of that program.

For their part, subregional health spending and budgets show positive concentration coefficients between 0.21 and 0.27, growing over time. This confirms their regressive nature and the fact that they have increased over time. Total spending, which is equal to the sum of regional health spending and the BHA remittances, shows a concentration coefficient between 0.19 and 0.25. Thus, it is still regressive, but to a lesser extent than the subregional budgets, showing that the effects of BHA counteract the greater regressiveness of the latter.

³Restoring the area below the line of equality to 1.

3.4 Analysis Considering Only the Poor

An analysis has been done that does not consider the entire population but rather considers only the uninsured poor. Using this approach, poverty would be the determining factor for the allocation of public funds for health. Equity would consist of allocating the same amount of funds to every uninsured poor person, and poverty would be the variable that determines the ranking of the need for funds in the departments. The rationale would be that the principal health expenses refer to individual care that should only be provided free-of-charge to the poor. The poverty assessment has been completed assuming the poor as the 60 percent of the population with the lowest incomes.

The basic data are shown in table 4, where we can see that there is a very close relationship between the IHN and the percentage of poverty among the uninsured. Some exceptions seem to be Puno, where the percentage of the poor is very high while the index of basic health needs is not so high, and Cusco, where the reverse is true—a high index of basic health needs and a relatively low poverty level. We can also see that the levels of poverty among the uninsured are very high—over 90 percent in four departments and over 80 percent in another 10 departments. The IHN seems to be more variable, as long as the percentage of poor people remains very high in three-fourths of the departments. The correlation coefficient between the two variables is 0.84.

The calculations for spending per uninsured poor person are shown in table 5. We can see that enormous differences remain, even greater than those found in the calculation not limited only to the poor, given that the percentage of poor people is lower in the departments with less need and greater spending in health. Average spending per uninsured poor person rises to 83 soles (not considering non-departmental spending), but the difference ranges from 28 soles in Cajamarca to more than 400 soles in Callao. With this analysis, differences open up between Madre de Dios and Callao, which have very similar spending per uninsured person but very different spending per uninsured poor person. In general, we see much greater relative concentration of spending in Lima and Callao. More than 25 percent of the population in these cities is uninsured, but only 14 percent of the population is both uninsured and poor. The five million uninsured poor in the poorest departments receive 200 million soles of public health expenditures, while the five million poor living in the most developed departments receive 465 million soles.

A comparative summary of the distribution measures is presented in table 6. As we can see with greater clarity with the summary indicators, the analysis that considers the poverty situation in the departments shows an inequity in the regional distribution of spending that is even greater than in the analysis of the index of basic health needs. For example, the pseudo-Gini for the regional budgets becomes more unequal, rising from an average of 0.27 to 0.44 for 1995. Spending under the Basic Health for All Program ceases to be absolutely redistributive, becoming only relatively so. (That is, its pseudo-Gini is greater than zero but less than the one for the Index of Health Needs).

Table 4. Public Health Expenditures by Department (in current soles)

	Public Expenditures in Health				Percentage of Uninsured in Poverty	Percentage of Population Uninsured	Population Uninsured (thousands)	Total Expenditures Uninsured Poor Person	Distribution	
	Regional Budget (thousands of soles)	Basic Health for All (thousands of soles)	Total (thousands of soles)	Index of Health Needs					Uninsured Population (%)	Total Expenditures (%)
Huancavelica	7,784	6,458	14,242	64	95%	11.7	359	42	2.8	1.4
Puno	29,549	6,361	35,910	48	93%	8.8	979	39	7.6	3.6
Apurímac	10,669	8,710	19,379	57	91%	11.9	367	58	2.8	2.0
Ayacucho	15,703	10,578	26,281	55	90%	16.9	459	64	3.4	2.7
Amazonas	8,241	3,382	11,623	45	89%	11.0	318	41	2.4	1.2
Cajamarca	15,467	15,634	31,101	47	89%	12.8	1,233	28	9.1	3.1
Pasco	6,797	5,099	11,896	46	88%	6.6	173	78	1.3	1.2
Huánuco	15,160	7,497	22,657	48	87%	28.9	614	42	4.5	2.3
Loreto	21,666	6,442	28,108	43	83%	11.8	629	54	4.3	2.8
San Martín	16,210	5,434	21,644	36	83%	16.0	518	51	3.6	2.2
Piura	23,661	13,925	37,586	40	81%	22.9	1,106	42	7.5	3.8
Ucayali	14,362	4,871	19,233	38	81%	20.4	271	88	1.8	1.9
Lambayeque	18,534	5,105	23,639	28	80%	17.1	665	44	4.4	2.4
Cusco	24,945	9,832	34,777	52	80%	19.7	902	48	6.0	3.5
Ancash	29,210	7,541	36,751	39	78%	15.3	829	57	5.4	3.7
Junín	33,586	9,285	42,871	39	77%	11.0	885	63	5.7	4.3
Tumbes	5,635	2,619	8,255	27	76%	22.5	119	91	0.8	0.8
La Libertad	37,954	7,197	45,151	30	71%	31.2	1,014	62	6.0	4.6
Moquegua	8,344	2,413	10,756	24	68%	26.3	88	179	0.5	1.1
Arequipa	36,360	7,542	43,902	23	64%	33.4	585	117	3.1	4.4
Ica	26,794	4,633	31,427	23	64%	38.7	365	135	1.9	3.2
Tacna	16,178	4,822	21,000	20	55%	37.9	159	240	0.7	2.1
Madre de Dios	5,079	3,633	8,711	37	54%	30.3	60	269	0.3	0.9
Lima	332,054	26,121	358,175	16	37%	34.9	4,291	226	13.2	36.1
Callao	43,188	3,304	46,491	14	34%	52.2	315	435	0.9	4.7
SUBTOTAL	803,130	188,436	991,567	0			17,305	83	100.0	100.0
Programs *	228,846		40,410							
Rest	253,290		253,290							
DPO	71,926		71,926							
SUBTOTAL	554,063		365,626							
TOTAL	1,357,193	188,436	1,357,193	34			17,305	113		

*For the total, Basic Health for All is included only in the portion not distributed by departments.

Table 5. Public Expenditures in Health per Uninsured Poor Person by Department, 1992–1995

	Origin of Budget				Basic Health for All		Total			
	1992	1993	1994	1995	1994	1995	1992	1993	1994	1995
Huancavelica	8	13	20	23	4	19	8	13	24	42
Puno	12	17	24	32	1	7	12	17	25	39
Apurímac	7	13	24	32	6	26	7	13	30	58
Ayacucho	17	23	29	38	4	26	17	23	33	64
Amazonas	9	15	20	29	3	12	9	15	23	41
Cajamarca	5	8	10	14	2	14	5	8	12	28
Pasco	16	25	37	45	5	33	16	25	42	78
Huánuco	10	16	22	28	2	14	10	16	25	42
Loreto	11	19	31	42	3	12	11	19	34	54
San Martín	14	21	30	38	3	13	14	21	33	51
Piura	8	13	20	26	2	15	8	13	22	42
Ucayali	17	31	56	66	4	22	17	31	60	88
Lambayeque	13	20	28	35	3	10	13	20	31	44
Cusco	11	18	27	35	3	14	11	18	30	48
Ancash	16	24	36	45	2	12	16	24	38	57
Junín	18	27	37	49	3	14	18	27	40	63
Tumbes	21	32	44	62	7	29	21	32	51	91
La Libertad	16	26	46	52	2	10	16	26	47	62
Moquegua	50	77	108	139	8	40	50	77	116	179
Arequipa	32	49	72	97	2	20	32	49	75	117
Ica	40	65	89	115	4	20	40	65	93	135
Tacna	53	81	121	185	9	55	53	81	131	240
Madre de Dios	42	77	119	157	26	112	42	77	145	269
Lima	55	103	133	210	3	16	55	103	135	226
Callao	94	190	269	404	5	31	94	190	274	435
<i>SUBTOTAL</i>	<i>20</i>	<i>34</i>	<i>47</i>	<i>67</i>	<i>3</i>	<i>16</i>	<i>20</i>	<i>34</i>	<i>50</i>	<i>83</i>
TOTAL	29	47	67	113	3	16	29	47	67	113

For the total, Basic Health for All is included only in the portion not distributed by departments
Source: Public Treasury; in New Soles.

Table 6. Summary Measures of Regional Distribution of Health Expenditures

	Pseudo - Gini for the Uninsured	Pseudo - Gini for the Insured Poor
Regional Budgets		
1992	0.21	0.38
1993	0.25	0.42
1994	0.23	0.40
1995	0.27	0.44
Basic Health for All		
1994	(0.13)	0.03
1995	(0.11)	0.04
Total		
1992	0.21	0.38
1993	0.25	0.42
1994	0.21	0.38
1995	0.19	0.36

Figures 6, 7, and 8 show the generalized Lorenz curves for the regional budgets, spending under the BHA, and total spending by department. We see that the curves relating to total spending and the regional budgets are more “convex,” and that the curve for the BHA moves above the line of equality, indicating greater inequity.

Figure 6. Total Public Health Expenditures 1992-1995 Distribution According to Poverty

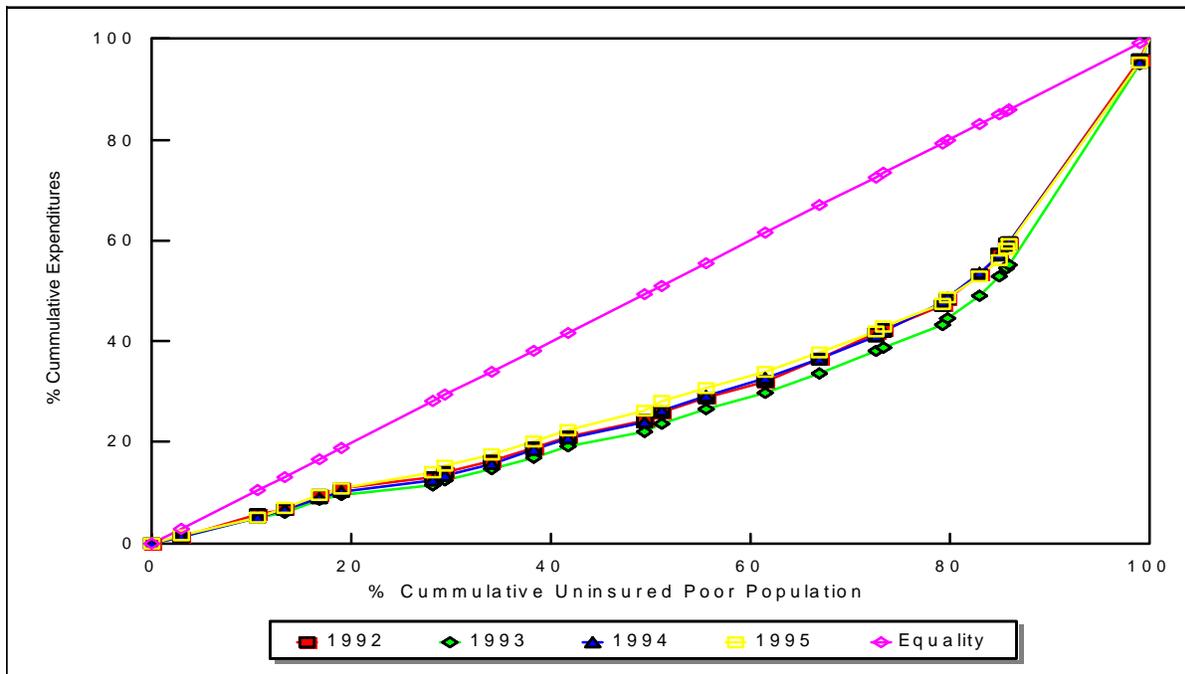


Figure 7. Basic Health for All Distribution According to Poverty

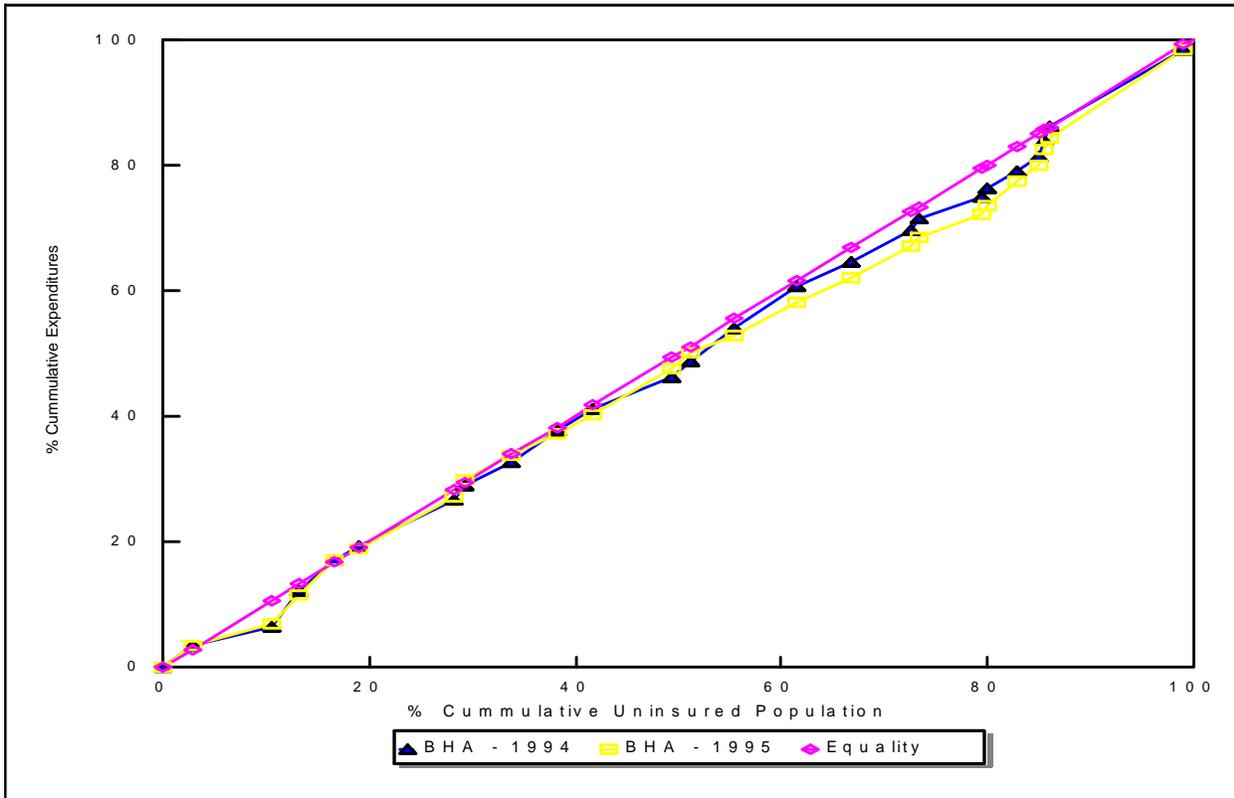
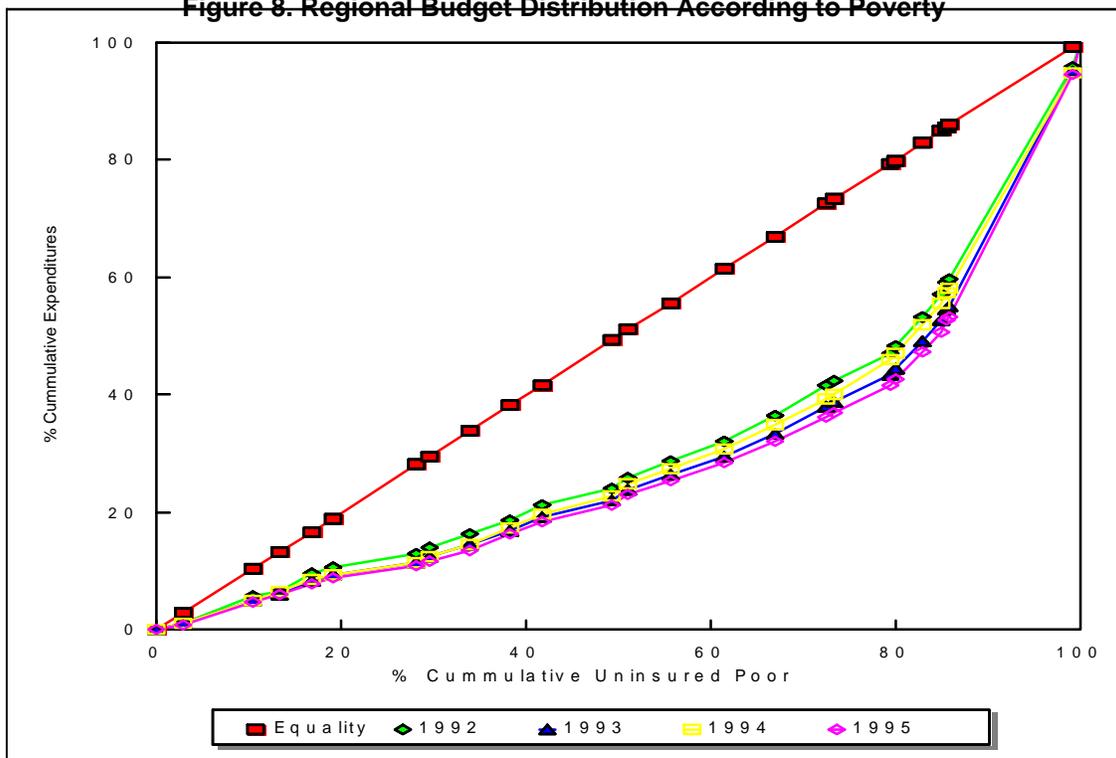


Figure 8. Regional Budget Distribution According to Poverty



3.5 Conclusions

The methodology that was used adapts the “social maps” technique to the health sector. Thus, it starts with the assumption that differences between departments and health subregions are significant and that the populations within these boundaries are homogeneous.

The results obtained in the study indicate that spending under the Basic Health for All Program is redistributive, and that the opposite is true of spending by the health subregions. This latter effect is what predominates, so that total spending in health is regressive from both sources.

This phenomenon is true despite the fact that the correlation between BHA expenditures per uninsured and health needs is only weakly positive.

However, the progressivity of the Basic Health for All Program cannot reverse the regressiveness of the regional health budgets. This limitation results from the facts that the latter are much more regressive and that the Basic Health for All Program only accounts for a minor part of health spending (18 percent of the subregional budgets in 1995). Furthermore, it is likely that spending on specialized health care is directed primarily to the inhabitants of Lima and the large cities, which would make total public health expenditures even more regressive than have been calculated here.

One limitation that the available data imposes on this study’s methodology is that this information tends to over-assess the redistributive degree of health spending. In effect, as there are probably more privately-insured users and more private care provided in the departments and subregions with fewer health needs, these areas may actually have smaller populations potentially served by MINSA and higher spending per person. It is also likely that the funds allocated for specialized health care are more directed to patients in these areas. However, given the limited magnitude of these phenomena—private care and spending on specialized care—these limitations would not alter the basic conclusions of the study.

Yet these phenomena could be changing the observed trend. It was found that between 1992 and 1995, the distribution of health spending among the regions probably did not improve, in spite of implementation of the Basic Health for All Program, due to a greater regressiveness in the regional budgets. However, we also find that non-departmental health spending declined, from 32 percent to 27 percent. If such spending primarily benefits the population of Lima, which has fewer health needs, this reduction could be leading to a better overall distribution of public health expenditures.

04. Distribution by Quintile of the Public Subsidy in Health

4.1 Methodology

This chapter is limited to approximations of the differences in access to health services and in the distribution of current public spending for health among the different social strata. The effects of general equilibrium and long-term endogenous growth, as well as inherent financial costs, have been omitted. This work is thus along the lines of the research developed by Selowsky (1979) and Foxley et al., (1980) for Latin America and by De Habich (1991) and Rodríguez (1992) for Peru, among others.

In this context, we assume that public spending in health is a sort of transfer that can be valued in monetary terms and is received solely and exclusively by households obtaining health care services. The assessment is therefore analogous to those made of social programs, such as the distribution of food or cash transfers (like pensions, for example).

The methodology combines the use of household surveys that provide information on the use of public services and consumption per household with the corresponding budgetary information. According to the World Bank (1992), this methodology is the best approach to the subject.

The household data used are from the May–July 1994 Living Standards Measurement Survey (LSMS 94) conducted by the Cuánto Institute and commissioned by the World Bank and the Inter-American Development Bank as part of the global “Living Standards Measurement Study” project. LSMS 1994 covered 3,623 households, with 18,000 people responding to the health section. The sample is multi-phased and random.

Observations have been limited to “household members,” as the section on health of this survey refers only to this group. The variable used to estimate the population’s level of well-being in LSMS 1994 was household per capita consumption. Studies in this field generally prefer to use per capita variables, given the need to adjust for differences in household size. Measuring by consumption, rather than income, is justified for practical reasons: it has often been noted that in surveys, many families indicate consumption levels that are far beyond what their incomes would allow and cannot be explained by the use of prior savings (Altimir and Sourrouille 1980). A measure of income is problematic as in many developing countries, income is more variable than consumption, particularly in the agricultural sector, and also because the income of the self-employed is difficult to measure.

4.2 Vaccination

As shown in an earlier survey (*Encuesta Nacional de Demografía y Salud*, ENDES, 1991–92), vaccination has achieved widespread coverage at the national level. Only 0.6 percent of children aged 2 to 5 receive no vaccinations, while 84 percent already have all their vaccinations. The percentage of children having received all vaccinations ranges from 93 percent in Lima to 69 percent in the rural forest area. The poor (lower income quintiles) show a vaccination level somewhat lower than higher income groups (see table 7).

The tuberculosis vaccine (*Bacillus Calmett-Guerin*, BCG) protects 98 percent of the children between the ages of 1 and 5. Coverage is even very high for children between the ages of 1 and 2. Coverage is nearly absolute in the coastal and highland cities (99 percent) and somewhat less, but still quite high, in the rural highlands and cities in the forest where it reaches 97.6 percent. It is in the rural forest where lack of vaccination is still relatively significant, with a coverage of 91 percent. There are differences in vaccination according to income levels, but these are not as marked as the differences among regions. The lowest income quintile has a tuberculosis vaccine coverage of 97 percent.

Measles vaccine coverage is somewhat lower (95 percent) than for BCG, particularly among children between the ages of 1 and 2 (90 percent). In this case, in addition to the rural forest area, the rural coastline also has a lower vaccination rate (92 percent). There is no clear differentiation among social sectors, and in fact the highest income quintile shows the lowest rate.

The completed series of the polio vaccine covers 85 percent of the population, and only 2 percent have received no dose at all. Coverage is very high in Lima, and outside of Lima it is relatively lower in the highlands and particularly so in the rural forest area. Again there are no clear differences among income levels. A similar trend is revealed with triple diphtheria-tetanus-pertussis (DTP), but with somewhat greater differences among income levels, with the poorest children lacking vaccinations more often.

Table 7. Children without Vaccination (as a percentage)

	Total	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
None	0.6	1.3	0.3	0.0	0.0	1.5
BCG	2.0	3.3	1.5	1.6	0.0	2.8
Measles	4.4	5.5	4.4	2.4	1.9	7.0
Polio	2.2	3.1	2.5	0.9	0.0	3.2
Triple DTP	3.1	4.8	3.0	1.7	0.0	3.6

In summary, vaccine coverage is quite widespread. However, deficiencies are particularly severe in the rural forest area. In the rural highlands and urban forest areas, there are deficiencies in coverage for some vaccines. Differences in coverage among income levels are not generally very significant, except perhaps for some vaccines, particularly the measles vaccine.

The distribution of vaccines is widely skewed in favor of the poor because households with lower income levels (recall that they are arranged according to per capita income) have more small children and also because there are slight differences in vaccination rates by stratum.

The 20 percent of households with the lowest per capita consumption represent 25 percent of the total population and 37 percent of the children between ages 1 and 5. This stratum represents 36.3 percent of the vaccinations (see table 12). The second quintile represents 22 percent of the population and receives 24.7 percent of the vaccinations. The quintile with the highest income represents 14.4 percent of the population, but only 8 percent of the children between the ages of 1 and 5. This group receives 8.2 percent of the vaccinations. These levels are quite similar for all vaccines.

Due to this trend, the concentration coefficients for vaccination are about -0.17 to -0.18, reflecting a significant level of progressivity for a universal (untargeted) social policy. The generalized Lorenz curve is above the line of equality. According to our terminology, this characteristic indicates that vaccination is progressive in absolute terms, i.e. the poorest households receive more.

It is necessary to keep in mind that these data do not allow us to discriminate where the vaccination occurred. Presumably there is a small percentage that is vaccinated privately, mainly among higher income populations. Thus, vaccination received at public institutions is probably even more progressive than indicated above.

4.3 Care for Pregnant Mothers

Only 56 percent of pregnant women have had some type of prenatal check-up. This percentage is much higher in Lima and urban coastal and highland areas, somewhat lower in the urban forest, and much lower in rural areas—only 27 percent in the rural highlands.

Differences among quintiles are quite significant, with 46 percent of pregnant women in the first quintile compared to 81 percent of pregnant women in the fifth quintile having had a check-up (see table 8). These differences are similar to those differences found between regions.

Table 8. Care for Pregnant Women

	Total	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
% with check-up	56.6	45.6	38.8	50.2	77.5	80.7
Average check-ups per month	0.31	0.15	0.15	0.30	0.48	0.67
% in hospital	48.8	48.6	50.1	58.8	42.6	48.4
% in health post	30.2	48.7	49.9	32.7	24.4	00.0

The number of check-ups per month is 0.65 in Lima, whereas it is between 0.1 and 0.2 in rural areas and between 0.3 and 0.4 in cities other than Lima.

By quintile, we find that the number of check-ups in the poor groups (first and second quintiles) is less than one-fourth the number of checks-ups in the fifth quintile.

The majority of check-ups occur at public health facilities—although the survey does not allow us to distinguish between MINSA and IPSS. Almost half of the prenatal check-ups are

performed in hospitals, and 30 percent in health posts. If the distribution of hospital care between MINSA and IPSS were similar to that of hospital visits, 17 percent of prenatal check-ups would be performed through the IPSS, and 62 percent through MINSA. Twenty-one percent of prenatal check-ups are private. This percentage is probably less than the percentage of hospital visits since in this case, a visit to a pharmacist is preferable to an “informal” visit.

Private prenatal check-ups represent a high percentage in Lima (37 percent) as well as in the fourth (33 percent) and fifth (52 percent) quintiles. There are practically no private prenatal check-ups among the poor groups.

Considering only public check-ups, there are many more public check-ups per pregnancy in the fifth quintile (0.26) than in the first quintile (0.12). The much higher rate of check-ups in general (without distinguishing between public and private check-ups) compensates for the fact that only half of these are carried out in public health facilities.

A greater proportion of public prenatal check-ups corresponds to the poorest (first quintile), middle, and high income groups (fourth and fifth quintiles). The relatively high percentage for the first quintile reflects the fact that there are many more pregnant women in this stratum, a phenomenon undoubtedly related to lack of knowledge of and access to contraceptive methods.⁴

Thus, in the first quintile, it is the higher number of pregnancies that leads to a relatively high number of check-ups as compared to other strata, although the percentage receiving check-ups and the number of check-ups per pregnant woman is lower. In the upper strata, the decisive factor is the higher average number of check-ups per pregnancy.

4.4 Medical Visits

The population had a higher percentage of medical visits in cities other than Lima (between 15 percent and 17 percent), a percentage somewhat lower in Lima (13 percent), and an even lower percentage in rural areas (between 10 percent and 12 percent). In this case, the differences among income levels are much more marked than differences among regions—while in the first quintile only 8 percent had a medical visit, in the fifth quintile 20 percent had one (see table 9). The same trend occurs in for the average number of visits per person. This number ranges from 1.5 in the lowest quintile to 1.8 in the highest quintile. Thus, the poor have a lower percentage of medical visits and on fewer occasions. The total number of medical visits amounts to more than 5 million per month.

⁴ For example, 29 percent of the women of child-bearing age in the first quintile demonstrate ignorance of contraceptive methods, whereas this percentage is between 1 percent and 2 percent in the fourth and fifth quintiles.

Table 9. Medical Visits and Disease

	Total	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
% with medical visit	13.4	8.4	13.0	15.2	16.1	19.9
Average no. of visits made	1.77	1.51	1.60	1.83	1.94	1.81
% of visits in MINSA Hospital	17.4	21.8	21.6	20.5	13.3	10.5
% of visits in health center or post	22.1	39.1	28.7	23.3	16.6	7.1
% sick	29.6	32.2	32.2	30.6	28.2	27.8

These differences are much more serious with respect to the health status of individuals. The prevalence of disease is not similar among the different income levels. Rather, the poor tend to have a higher incidence of disease, which is quite logical, given the greater number of negative environmental conditions (earthen floors, overcrowding, difficult access to potable water, straw walls) as well as educational and nutritional conditions. While 32 percent of those in the lowest income quintile experienced some symptom in the four weeks prior to the survey, only 28 percent in the highest income group reported symptoms.⁵

Of those who were ill, 64 percent sought medical care in Lima, while only 20 percent did so in the rural forest and only 15 percent consulted a medical facility in the rural highlands. Among those in the poorest group (first quintile) only 25 percent of those who were sick sought medical care, and of those who were bedridden for more than two days or unable to work, only 49 percent sought medical care. These same percentages were 62 percent and 81 percent, respectively, for those groups in the higher income quintiles. In this regard, the differences among social strata have probably increased compared to 10 years ago, given that the average percentage of medical visits among the sick poor was higher (28.5 percent) in 1985–86 but lower among the rich (52 percent). Problems of equity in access to health services have probably worsened in this regard.

There is also a significant deficit in care (preventive or otherwise) for children. Strong differences can also be found among children under the age of one, for whom check-ups while healthy are particularly important (Francke 1996). Twenty-one percent of children in the poorest quintile visited a health facility, a percentage which increased to 45 percent in the highest income quintile. There are also very strong regional differences, with 15 percent having visits in the rural highlands, as compared to 50 percent on the urban coast, an area which has a higher level of medical visits.

With respect to the locations of medical visits, it is interesting to note that private visits represent quite a high percentage of total visits (38 percent). This figure is higher not only in Lima but also in the forest areas. This is partly due to the inclusion of visits to non-specialists, such as pharmacists or healers. Visits to pharmacies represent 10 percent of the total and 28 percent of private visits. Visits to healers represent 4 percent of private visits.

⁵ However, a more precise analysis would need to note the differences among age groups. As there is a higher proportion of young children (under age 5) in the lower income groups, who have a much higher prevalence of disease (48 percent vs. 27 percent between the ages of 6 and 60), one of the causes for the higher prevalence of disease in these strata could be the higher concentration of children.

IPSS coverage, which is 21 percent of the total, is clearly concentrated in the urban areas, especially in cities other than Lima (between 24 percent and 34 percent of visits) than in Lima (19 percent). In the countryside, particularly in the highlands and the forest, IPSS coverage is very low. For its part, the Ministry of Health handles almost 40 percent of all medical visits—some 2 million medical visits per month or 25 million visits per year.⁶ Most of these visits are to health centers or posts, while hospitals account for slightly less than half.

The social strata demonstrate clearly differentiated trends with respect to the question of where people seek medical care. Among the poorest groups, 60 percent receive care from MINSA, while only 17 percent of those in the higher income stratum do so (see table 10). Visits to MINSA were not so differentiated by stratum in the period 1985–86, when 53 percent of the poorest groups used MINSA, and 39 percent of the high income strata did so.⁷ This result is similar to that found in education, where between 1985 and 1991, differences had grown among social strata in attendance at public versus private high schools, probably related to the diminished quality of public services resulting from spending cuts (Francke 1994). The differences among strata found for 1994 were even greater if we consider health posts and centers.

Table 10. Site of Medical Visit (as a percentage)

	Total	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
MINSA Subtotal	39.5	60.9	50.3	43.8	29.9	17.6
Hospital	17.4	21.8	21.6	20.5	13.3	10.5
Health Center or Post	22.1	39.1	28.7	23.3	16.6	7.1
IPSS Hospital	21.6	7.6	15	22.4	31.0	28.3
Armed Forces Hosp.	2.3	0.3	1.6	0.9	4.7	3.6
Private	36.6	31.2	33.2	32.8	34.3	50.5

Care provided by the IPSS, on the other hand, clearly trends upward until reaching the fourth quintile, the cut-off level up to which the IPSS will cover whatever care is not covered by MINSA, since up to that level, private visits remain relatively constant. Between the fourth and the fifth quintile, which we could call the comfortable middle and high income groups, private care increases markedly, from 36 percent to 51 percent, replacing MINSA while the IPSS retains a stable percentage. The interpretation of these facts is that from the first until the fourth quintile, which comprise the poor groups or those close to poverty level, medical visits take place where it is possible to obtain access at a lower cost, with the IPSS as preferable both in terms of lower costs and higher quality. Given the positive relationship between formal salaried positions and incomes, this means that higher incomes provide greater access to the IPSS. The fifth stratum would be the only level that would clearly opt for private service, obviously due to an interest in obtaining higher quality care.

⁶ This figure contrasts with that reported by The Development Group (1991), indicating 9.5 million MINSA visits in 1989. There is probably significant under-reporting of visits to health posts and centers in this report.

⁷ Again in this case there are methodological differences derived from the survey. Since LSMS 1985–1986 did not allow for precise identification of the institution providing the service, visits to public facilities were estimated as those provided in a hospital, health center, or health post by a physician, public health specialist, or outreach worker (De Habich 1991).

Regarding the total number of sick people, those who are bedridden for more than three days or are unable to work seek care at MINSA hospitals relatively more than at IPSS. The percentage that seeks medical attention at MINSA hospitals rises from 17 percent to 22 percent, while the percentage of those going to IPSS hospitals falls from 21 percent to 16 percent.

As a result of these rates and the number of visits, the distribution of visits is absolutely progressive in MINSA health posts and centers, relatively progressive in MINSA hospitals, practically neutral in the IPSS, and somewhat regressive in the Armed Forces facilities.

In the case of health posts or centers, the first and second quintiles account for 23 percent and 26 percent of medical visits, that is to say that together they represent almost half of all medical visits. In contrast, the upper quintile accounts for only 7 percent of medical visits. This yields a concentration coefficient of -0.05.

In the case of MINSA hospitals, the quintile with the least consumption is relatively under-served, since with 25 percent of the population it accounts for only 13 percent of medical visits. The higher concentration corresponds to the third and fourth quintiles, i.e., those who are not extremely poor or very close to the poverty line. Therefore, the concentration coefficient is slightly positive.

On the whole, MINSA health care visits are progressive in absolute terms (concentration coefficient of -0.048), as a higher proportion of funds goes to the lower income strata. In the year 1985–86, there was greater progressivity as the concentration coefficient was positive (0.0062), although lower than the Gini. Thus, the relative difference, but not the absolute differences, were reduced. This evolution of public spending for health towards increased progressivity was also found in public spending for education (Francke 1994), and probably reflects the predominance of greater social differentiation in the use of public vs. private services due to the lower quality of public services.

In the case of the IPSS, the first and second quintiles (or the poor) represent a significantly lower percentage of medical visits. This percentage becomes high for the third quintile, but the highest percentages correspond to the fourth and fifth quintiles (34 percent and 26 percent, respectively). The concentration coefficient is positive and high, or 0.37, almost the same as the consumption Gini (0.4).

4.5 Hospitalization

Of those surveyed, 0.5 percent indicate having been hospitalized during the last four weeks. In this case, MINSA facilities represent a greater percentage, with 40 percent in hospitals and 8 percent in health centers.⁸ The IPSS also holds a high percentage of hospitalizations at 32 percent, quite a bit greater than the percentage of hospital visits of the IPSS (21 percent).

⁸ The reduced importance of health centers in hospitalizations can be explained by the fact that they are limited to cases of rehydration and births. Health posts do not provide hospitalization.

Because of the low occurrence of this type of care (approximately 100 people surveyed), the analysis by social sector is more limited.⁹ Even so, what is shown is that there is a higher rate of hospitalization in the upper quintile. Considering hospitalizations as a portion of those unable to work for three or more days, since it is unlikely that hospitalization would be necessary for those who have not experienced these consequences, the differences among social strata are much higher with regard to having access to this type of health care. In the first quintile (those with the lowest incomes) less than 7 percent of those unable to work for three or more days were hospitalized, a percentage that more than doubles (15.6 percent) for the upper quintile.

The percentage of hospitalizations among those unable to work for three or more days is lower in the rural highlands, followed by the urban coast, and the percentage for the urban highlands is the highest.

A greater percentage of hospitalizations take place in MINSA facilities (48 percent), particularly in its hospitals (40 percent). Thirty-two percent of hospitalizations occur in the IPSS, while only 12 percent occur in private clinics. These figures indicate that public care is more important in hospitalization than the lower number of public medical visits might suggest, as more than one-third of medical visits are performed privately. This difference is probably due to the high cost of hospitalization in private clinics, unlike visits to pharmacies which are free but of poor quality, yet also included within the group of private visits.

Table 11. Site of Hospitalization (as a percentage)

	Total	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
MINSA	47.7	86.4	57.6	37.1	56.4	17.4
IPSS Hosp.	32.2	2.6	19.2	38.9	37.1	56.7
Armed Forces Hosp.	4.1	0.0	8.0	5.0	0.0	4.9
Clinic	12.0	5.3	15.2	7.2	6.5	20.9
Other	4.1	5.7	0.0	11.9	0.0	0.0

In effect, there is a clear preference for type of facility by stratum: while in the lowest quintile 86 percent are hospitalized in a MINSA facility (64 percent hospital, 23 percent health center), in the highest quintile only 17 percent are hospitalized in a MINSA facility and 57 percent in the IPSS. Private care is also clearly higher among the upper income strata.

In rural highland and forest areas, hospitalizations in private clinics are practically non-existent, with concentration in MINSA.¹⁰ The IPSS focuses its hospital activity in Lima, the coast and the urban highlands, with low coverage in rural and forest areas.

MINSA hospital care is focused on the poorest strata. Thirty-eight percent of those hospitalized in MINSA facilities belong to the first quintile (the extreme poor) and more than 80

⁹ De Habich (1991) encounters the same limitation.

¹⁰ In the rural highlands, "other," for site of hospitalization, is indicated with a high percentage, which probably refers to health posts (in makeshift fashion) or communal locations of healers or private homes of pharmacists, midwives or physicians.

percent to the first to third quintiles (poor or nearly so). Hospitalizations in the IPSS, in contrast, account for a higher percentage in the fifth quintile (57 percent), although there is also a high percentage in the third quintile (39 percent).

The concentration coefficients indicate that MINSA hospitalizations are strongly progressive (coefficient of -0.185), and the health centers more so (coefficient -0.280).

4.6 Overview of the Distribution of the Subsidy by Stratum

We present below an overview of the distribution of the public subsidy in health by stratum. Table 12 summarizes the data on distribution of care discussed in this chapter.

Table 12. Distribution of MINSA Health Care

	Quintiles					TOTAL
	1	2	3	4	5	
Vaccinations	36.3	24.7	17.2	13.6	8.2	100.0
Pregnancy check-ups	12.0	15.1	21.5	25.6	25.8	100.0
Hospital visits	12.9	19.5	24.0	22.7	20.8	100.0
Visits to centers and posts	22.7	26.4	26.2	17.7	7.0	100.0
Hospitalizations	38.0	23.4	19.8	9.7	9.1	100.0
Note: Distribution of Population	25.3	22.2	20.3	17.7	14.4	100.0
Distribution of Consumption	8.0	13.0	17.6	22.6	38.8	100.0

As we can see, there is a high absolute progressivity for vaccinations and hospitalizations—for this type of care, the lowest income groups receive a higher percentage of care than their representation in the population. Visits to primary care facilities (centers and posts) are concentrated to a greater extent in the second and third quintiles, which represent medium-low stratum, including a large part of the poor who are not extremely poor.

Hospital visits tend to be concentrated more in the third and fourth quintiles (medium-high strata), including a group that is slightly poor or close to being so. In the case of pregnancy check-ups, the pattern shows greater concentration of care in the upper income strata. However, as the total number is less than what the share would be for these two income groups (if consumption were divided equally among the quintiles), pregnancy check-ups can be considered relatively progressive.

To determine the distribution of total spending among the strata, we need to know how much the state spends in each of these areas of health care. For this purpose, a calculation has been made on the basis of the Ministry of Health study (MINSA 1997a) (see table 13).

Table 13. MINSA Spending by Type of Care, 1994

	Total Spending (Thousand soles)	Distribution of Spending
Preventive health, children	97,653	11.5
Preventive health, women	58,592	6.9
Hospital visits	195,306	23.0
Visits to centers and posts	123,977	14.6
Hospitalizations	280,221	33.0
Medications	93,407	11.0
TOTAL	849,155	100.0

As we can see in table 13, a relatively high weight is retained for spending on hospitalization, even though this type of care is relatively less cost-effective, while spending in preventive care amounts to one-fifth of total spending. However, it should be pointed out that a possible reason why there is less spending on prevention/health promotion is precisely because its costs are relatively low.

Table 14 shows the total distribution of spending by quintile, considering the share that each type of care receives from the budget for MINSA services. In this case, it has been assumed that spending on preventive care for children is distributed similarly to vaccinations, and that spending on preventive care for women is distributed similarly to care for pregnant mothers.¹¹ The distribution of spending in pharmacies should be considered tentative, in that we do not actually know to whom products are sold at a subsidized price. The data are calculated with the assumption that this spending is distributed similarly to the average for the other types of care.

Table 14. Distribution of MINSA Spending by Quintile

	Quintiles					TOTAL
	1	2	3	4	5	
As a %						
Preventive care, children	4.2	2.8	2.0	1.6	0.9	11.5
Preventive care, women	0.8	1.0	1.5	1.8	1.8	6.9
Hospital visits	3.0	4.5	5.5	5.2	4.8	23.0
Visits to centers and posts	3.3	3.9	3.8	2.6	1.0	14.6
Hospitalizations	12.5	7.7	6.5	3.2	3.0	33.0
Medications	2.8	2.5	2.4	1.9	1.4	11.0
Distribution of total	26.6	22.4	21.8	16.2	13.0	100.0
Distribution of total w/o pharmacy	26.8	22.4	21.7	16.1	13.0	100.0
In millions of soles	225.8	190.4	185.0	137.6	110.1	848.9
As % of private	6.0	3.1	2.3	1.3	0.6	1.8

Aggregation shows that public spending in health has a distribution similar to the distribution of the population, and can therefore be described as neutral in absolute terms, although it is progressive relative to the distribution of consumption. We can observe that hospitalization has the greatest effect on the progressive nature of spending, both due to the high percentage going to the poorest homes, and because it represents the most important item in MINSA spending.

As the distribution of spending in pharmacies is based on approximate estimates, calculations have been made excluding this expense. However, no significant differences are seen.

These expenditures have been estimated as a percentage of the total private consumption of these families. It is revealed that in terms of income distribution, the spending is quite high for the first quintile, on the order of 6 percent, and 3 percent for the second quintile, also quite high.

¹¹ Analyzing these assumptions, it is likely that care for children is not distributed as progressively as vaccinations, where a special effort is made to achieve broad coverage, free of charge. In the case of preventive health for women, it is likely that care is not as regressive as it is for pregnancy check-ups, because in this case the upper income strata have a higher concentration of care because they receive several check-ups, which is probably not the case or occurs less frequently in other types of care. Also, recall that in this case the measure is not so precise because check-ups at the IPSS are included, which also favors regressiveness in the calculation.

By way of comparison, a study on public education for 1991 showed that the poorest quintile received a subsidy on the order of 16.6 percent of its consumption for this item.

However, the Ministry of Health also charges for certain services it provides to the public. As we saw in the previous chapter, there are no mechanisms which permit the determination of fees, or the exemptions from fees, but they are calculated in search of a better targeting of spending.

Table 15 shows the distribution of fees charged by the Ministry of Health. The fees shown are averages, and even include those which are equal to zero. Logically, the distribution of charges depends both on the fees and on the number of people who pay them. It should also be pointed out that in the case of fee-based charges, we should consider them progressive if the payments are concentrated among the higher income groups, and the inverse—they should be considered regressive if concentrated on the poorest strata.

As we can see, the fees reveal a definite progressive profile for medical visits, both in hospitals as well as in health centers and posts. In the case of hospitalization, no clear profile can be seen. There is an unusually low level for the fourth quintile and a very high level for the fifth quintile, which could be a result of limitations in the size of the sample (there are very few cases of hospitalizations). However, if we take the average of these two quintiles, we find a value only slightly higher than that of the lower income quintiles. The figure for purchases of medications shows larger amounts among the poorest groups. This phenomenon is probably a result of the fact that groups in a better economic situation would stop buying more expensive remedies from MINSA, thinking that it would be a better investment to buy brand names.

Table 15. Fee Payments in MINSA Facilities

	1	2	3	4	5	Average
Hospital Visits						
Fees (soles)	4.8	5.9	6.6	6.0	8.6	62
Distribution of payments	14.9	24.8	27.9	15.2	17.2	100.0
Visits to Centers & Posts						
Fees (soles)	2.3	3.2	4.8	5.5	5.4	3.8
Distribution of payments	16.4	22.8	29.4	22.0	9.3	100.0
Hospitalization						
Fees (soles)	102.8	128.6	104.0	28.4	237.2	114.9
Distribution of payments	35.1	24.8	16.2	2.6	21.4	100.0
Medications						
Fees (soles)	10.3	15.0	20.0	7.2	9.3	12.5
Distribution of payments	28.4	38.8	20.0	8.5	4.4	100.0
Total Payment (thous. soles)	54,696	57,456	45,260	20,417	30,750	208,580
Distribution of payments	26.2	27.5	21.7	9.8	14.7	100.0
Payment without medication	41,694	39,672	36,082	16,533	28,755	162,737
Distribution of payments	25.6	24.4	22.2	10.2	17.7	100.0

Most of the fees charged by the Ministry of Health are paid by the lower income strata. This problem is particularly serious in the case of hospitalizations, which, as we have seen, are also the most progressive type of care, which is to say that the care is more concentrated among the

poorest groups. Payment for medicines provided by MINSA facilities is also highly concentrated among the poorest groups. This tendency would reflect the fact that, despite the cost-advantage aspect of MINSA, this strategy has not managed to displace the more commercial system for the distribution of medications.

Payments for medical visits, both in hospitals and in health centers and posts, tend to be concentrated on the second and third quintiles, which we could consider medium–low in terms of the distribution of income, and which, in terms of their level of poverty could be classified as not extremely poor.

Table 16 shows the significance of the different payments made by households for MINSA health services. We see that the poor, who comprise the first quintile, remit payments for hospitalization that make up more than half of the total payments, and pay the highest percentage of fees for medications. This trend shows the importance of revising the procedures relating to exemptions for this type of care. The hypothesis is that these findings result because the poorest households do not seek out health services, relying on self-medication except when they are seriously ill and must have specialized care, in which case they have to be hospitalized.

Table 16. Payments for Public Health Services

	Quintiles					Average
	1	2	3	4	5	
Distribution of Payments	100.0	100.0	100.0	100.0	100.0	100.0
Hospital Visits	12.1	19.2	27.3	33.0	24.8	21.3
Visits to Centers & Posts	10.4	13.8	22.5	37.4	10.5	16.6
Hospitalizations	53.8	36.1	29.9	10.5	58.2	40.1
Medicines	23.8	31.0	20.3	19.0	6.5	22.0
Total Payment as a % of Private Consumption	1.5	0.9	0.6	0.2	0.2	0.4

The other item of spending that appears to be important among the poor is for medications. In this case, the few exemptions granted and the perception on the part of the population and some physicians that the remedies provided by MINSA may be of inferior quality are factors responsible for this result. In the case of medical visits, one of the reasons why the poorest groups pay little is that they receive care more in primary care facilities where fees are lower.

In terms of total private consumption, the poorest households spend 1.5 percent in MINSA facilities. This figure is relatively low in comparison with what poor households spend for food: nearly 50 percent in Lima and 70 percent in more rural areas that poor. The problem is that this figure represents an average and, as we know, diseases are probability-linked events. One disease may require payments much higher than this percentage over a short period of time and then there may be several months when the household does not need to make any payments for this item. In addition, this figure should be compared with the 6 percent of consumption represented by the calculated value of the services received (see table 14).

Table 17 shows the distribution of the net subsidy for each type of MINSA care. In almost all cases, the distribution of the subsidy is similar to the distribution of spending. This tendency results because the fees are not a very high percentage of spending.

Table 17. Public Subsidies by Stratum and Type of Care						
	Quintiles					Total
	1	2	3	4	5	
Preventive Health						
Spending	42.5	33.0	29.4	28.3	23.1	156.2
Distribution (%)	27.2	21.1	18.8	18.1	14.8	100.0
Hospital Visits						
Spending	25.2	38.1	46.9	44.3	40.6	195.1
Distribution	12.9	19.5	24.0	22.7	20.8	100.0
Fees	6.6	11.0	12.4	6.7	7.6	44.4
Distribution	14.9	24.8	27.9	15.2	17.2	100.0
Net subsidy	18.6	27.0	34.5	37.6	33.0	150.7
Distribution	12.3	18.0	22.9	24.9	21.9	100.0
Visits to Centers and Posts						
Spending	28.1	32.7	32.5	21.9	8.7	123.9
Distribution	22.7	26.4	26.2	17.7	7.0	100.0
Fees	5.7	7.9	10.2	7.6	3.2	34.7
Distribution	16.4	22.8	29.4	22.0	9.3	100.0
Net subsidy	22.5	24.8	22.3	14.3	5.4	89.3
Distribution	25.2	27.8	25.0	16.0	6.1	100.0
Hospitalization						
Spending	106.5	65.6	55.5	27.2	25.5	280.1
Distribution	38.0	23.4	19.8	9.7	9.1	100.0
Fees	29.4	20.7	13.5	2.1	17.9	83.7
Distribution	35.1	24.8	16.2	2.6	21.4	100.0
Net subsidy	77.1	44.8	41.9	25.0	7.6	196.5
Distribution	39.2	22.8	21.4	12.7	3.9	100.0
Medicine						
Spending	23.5	21.1	20.8	15.8	12.2	93.4
Distribution	25.2	22.6	22.3	17.0	13.0	100.0
Fees	13.0	17.8	9.2	3.9	2.0	45.8
Distribution	28.4	38.8	20.0	8.5	4.4	100.0
Net subsidy	10.5	3.3	11.6	12.0	10.2	47.5
Distribution	22.1	6.9	24.4	25.2	21.4	100

In the case of hospital visits, payments are distributed more regressively than spending. This process aggravates the already regressive distribution of care. However, it should be recalled that the assumption used in calculating the distribution of public spending is that all visits are alike, an assumption needed due to the quality of the data available. It is likely, nonetheless, that the poorest homes only seek medical care for the most serious illnesses, and would thus have to pay higher amounts (it has been shown that many hospitals make a distinction between fees for specialized visits and fees for general medical visits).

In the case of visits to health centers and posts, however, we note that the charges have a progressive distribution, where the first two quintiles pay a lower percentage than the percentage

of care they receive. This means that the subsidy reaches the first quintile a little more, although most subsidies remain concentrated in the second and third quintiles.

Finally, in the case of hospitalization, although the payments are concentrated in the first quintile, they are less so than in the case of visits. This improves the progressivity of the subsidy, although again the figures should be considered carefully, given the assumption that treatments are homogeneous .

Table 18 shows a summary of the distribution of the subsidy with and without medications (as indicated, this has been done because of the weakness of the calculation for the distribution of spending in medications). As we can see, there are no large differences between the two calculations.

Table 18. Distribution of the Subsidy in Health, 1994

	Quintiles					Total
	1	2	3	4	5	
With Medications						
Spending by quintiles (million soles)	226	190	185	138	110	849
Distribution of spending	26.6	22.4	21.8	16.2	13.0	100.0
Total fees paid (million soles)	55	57	45	20	31	209
Fees as a % of costs	24.2	30.2	24.5	14.8	27.9	24.6
Distribution of payments	26.2	27.5	21.7	9.8	14.7	100.0
Spending minus fees (million soles)	171	133	140	117	79	640
Subsidy/Total private consumption	4.6	2.2	1.7	1.1	0.4	1.4
Distribution of subsidy	26.7	20.8	21.8	18.3	12.4	100.0
Without Medications						
Spending by quintiles (million soles)	202	169	164	122	98	756
Distribution of spending	26.8	22.4	21.7	16.1	13.0	100.0
Total fees paid (thous. soles)	42	40	36	17	29	163
Fees as a % of costs	20.6	23.4	22.0	13.6	29.4	21.5
Distribution of payments	25.6	24.4	22.2	10.2	17.7	100.0
Spending minus fees (million soles)	161	130	128	105	69	593
Subsidy/Total private consumption	4.3	2.1	1.6	1.0	0.4	1.3
Distribution of subsidy	27.1	21.9	21.6	17.7	11.7	100.0

As analyzed earlier, distribution in spending is similar to the distribution of the population, and is slightly progressive in absolute terms.

Fees as a percentage of spending do not show a clear pattern. There is a high level in the second quintile and a particularly low level in the fourth quintile. This trend is partially due to

statistical problems related to the limited number of observations for hospitalization. The percentage represented by fees as a percentage of costs seems particularly high, close to 21 percent (without medications), while studies like the MINSA study find figures on the order of half this figure. Perhaps part of the explanation is that the survey asks “how much did you pay in total for these visits” and some people may answer by including some medications or medical supplies purchased in other facilities, or they may include transportation costs. It may also be that they include the costs for earlier visits to private practitioners. Although they would not be including the costs of a visit in a public facility either, if the person later visited a private facility, it is likely that those cases are fewer, to the extent that the practice of self-medication as the first step in healing is widespread. In addition, it is quite clear that there is under-reporting of the revenues that hospitals and health centers receive from charging fees, due both to administrative confusion and advantage taken by staff. However, there is no estimate of the volume that this under-reporting might represent. The distribution of fees charged shows a concentration in the lower income strata. This is particularly serious in the second quintile, which makes a higher percentage of payments than the percentage it receives from spending. On the whole, fees do not seem to improve equity in the distribution of the subsidy, although at this level of analysis we do not see that they have a negative effect either. This could be the case, however, if as shown by Gertler et al. (1987), the demand for health services is more elastic than prices in the lower income groups. In this case, fees would be further reducing demand in these strata.

In sum the findings are that: (1) MINSA’s system of charging fees does not represent a contribution to better targeting of spending; (2) the most critical point in the charging of fees relates to hospitalizations, but despite this their subsidy has a very progressive distribution; (3) it is advisable to pay greater attention to the sale of medications and the possibility that charging for medications impedes access among some strata.

05. An Overview of the Diagnosis

If we wanted to sum up the diagnosis in a single sentence, we could say that many Peruvians do not have access to health services because the fees are too high and because the state does not give them priority in allocating public resources.

An analysis of the distribution of the public subsidy in health among income strata shows that spending is distributed similarly to the distribution of the population, so that there is no concentration of spending among the poorest members. Even when the poor do use health services, they do so more at Ministry of Health facilities (61 percent of visits in the poorest quintile compared to 18 percent in the least poor quintile). This is offset by the fact that they seek care less frequently (25 percent compared to 62 percent of patients). In the case of medical visits by pregnant mothers, the poorest groups have far fewer check-ups than those who are not poor (1.4 compared to 6).

Emphasis should be placed on what happens with the fees paid for visits and other services, which should be used as a targeting tool charging those who are able to pay. However, we find that these fees do not support better targeting of the subsidy. This is because the exemptions are not concentrated among the poorest groups, as they should be. Few exemptions are allowed, and those who benefit are both the poor and those who are not poor. For example, among totally exempt visits, only 16 percent of the poorest quintile receive an exemption, and 82 percent of those who receive an exemption do not belong to this group.

An analysis of spending among departments is still more serious. Health spending funded by regional budgets is higher in the departments where there are fewer poor and fewer health needs. For example, in 1995 in Cajamarca 21 soles were spent for every uninsured person; in Callao 148 soles were spent. The funds of the Basic Health for All program, although they do not share this problem, are not concentrated in the poorest and most needy departments. In the same example, the Basic Health for All program allocated 8 soles per uninsured person to Cajamarca and 10 soles to Callao. If we consider that MINSA's target population is not all the uninsured, but rather only the poor, the analysis does not change.

What explains the difference between the two analyses, the analysis by stratum and the analysis by department? There are two possible explanations. One relates to an assumption in the calculation by stratum. It is assumed that all the visits to centers, posts and hospitals are equivalent. It is likely that care is less expensive and of lesser quality in the poorest areas. Because of this, the analysis by stratum probably under-assesses the existing inequity. The second explanation is that the analysis by department assumes that all the uninsured in a department are cared for within that department. Particularly for somewhat complex treatment, it is likely that people go to the more developed departments that have hospitals with a higher level of care. This second explanation is probably not as important as the first, and in reality the distribution of the subsidy is even worse than that calculated according to stratum.

It is also important to gather other evidence regarding the effects that fees may be having on access to health services for the poorest groups. Surveys show that the reason why between 70

percent and 80 percent of those who do not make a medical visits, even though they believe it to be necessary, is that “they don’t have money” (Cortez 1996, INEI 1997). One study (Petrera 1997) shows that medications available free of charge is a very important determinant of the demand for health services among rural women.

The analysis of fees indicates that they respond to very varied criteria and have the potential to substantially affect the demand for health services. While medical visits have low fees, medications are sold at cost—which, despite the benefits of mass marketing of generic drugs, are still expensive for many households—and surgical interventions have prices beyond the reach of the majority. By way of example, an operation at the Andahuaylas hospital, located in one of the poorest regions of Peru, can cost patients between 300 and 500 soles.

This potential to affect demand among the poor depends on exemptions. The study shows that there is little standardization of objectives, criteria and procedures for exemptions. Exemptions are minimal for medications, and this is also true for hospitalization. The criteria used for granting an exemption are varied, including factors such as “physical appearance” in many cases, and there is practically no record of the information used for allowing an exemption.

The conclusion is clear: serious problems of inequity persist. The sources of this problem are the poor distribution of spending among departments, problems in access for the poor where fees weigh heavily, and a system of exemptions that does not support targeting.

06. Proposed Strategy for Targeting Public Spending in Health

Based on the conceptual framework and the health system's current situation in Peru, we deduce that a strategy for targeting the health spending of MINSA so as to improve equity should have the following characteristics:

6.1 Objectives

- ▲ Ensure access to health services for the poor and needy within a context of increased collection of fees.
- ▲ Improve the accessibility and quality of health services in poor areas.
- ▲ Improve the distribution of resources, reducing subsidies to sectors with the ability to pay so as to transfer them to the poor and needy.
- ▲ Create insurance incentives for informal and self-employed workers who have the ability to pay.

6.2 Instruments

- ▲ Determine what services should be the object of targeted policies and what services should be the object of universal policies.
- ▲ Adapt service delivery techniques to the cultural realities of the poor, removing barriers such as those relating to the language, myths and customs of those who speak Quechua and other indigenous populations.
- ▲ Establish mechanisms to equitably distribute the funds directed to untargetted types of care.
- ▲ Establish clear and simple criteria to be applied in determining who should pay for certain health services and who should not.
- ▲ Include within the strategy an integrated approach that considers all services and costs that must be met by users to regain their health.
- ▲ Avoid excessive administrative costs for the targeting system in a context where there are great obstacles to obtaining reliable information on income or consumption.

- ▲ Promote community participation.
- ▲ Reduce incentives for unethical staff conduct in determining exemptions.
- ▲ Establish an implementation strategy that is characteristically simple and avoid political conflicts from the outset so as to move ahead slowly in terms of complexity and precision.

6.3 Specific Mechanisms

Public health services, i.e., public goods or goods with high externalities, should not be individually targeted because of their collective nature. There should be geographic allocation of resources based on the prevalence of risk and the cost-effectiveness of interventions.

- ▲ Health services intended for children and pregnant mothers should not be individually targeted as they are investments in human capital and deal with the problem of the agent. The same prioritization system as for public goods should be applied.
- ▲ As long as there is not sufficient information to distribute funds on the basis of need and cost-effectiveness criteria by regions, general estimates based on health indicators may be used.
- ▲ Health services provided by primary care facilities, in rural areas, and preventive services should combine targeting levels with universal subsidy levels, establishing fees that do not represent total cost. There are reasons involving production efficiency (referral systems between centers and hospitals and recovery care services that cost more than preventive care) and equitable access (higher access costs due to transportation cost in rural areas) that justify establishing non-targeted subsidies. Services provided in urban areas or facilities at a higher level of complexity must combine targeting levels with the collection of fees that do represent greater cost recovery.
- ▲ Programs should be established to improve the relationship between the public health system and the providers of traditional services (midwives, healers) and to modify the method for handling childbirth so that it is compatible with the customs of the indigenous population.
- ▲ Targeting mechanisms should give higher priority to the objective of reducing under-coverage than to reducing leaks.
- ▲ It is necessary to control and reduce incentives for staff to charge the existing fees in the system through the introduction of new financing systems wherein the collection of fees from specific patients involves a simultaneous reduction in public funding (which would be restricted to the targeted population).
- ▲ The determination of exemption or non-payment of the fee should be applied to all health services, including medications, meals for hospitalized patients, supplementary

tests, etc. This involves a reformulation of mechanisms such as the revolving fund for medications (PAC-FARM).

In summary, the targeting strategy should combine mechanisms for:

- ▲ Selection by type of services (excluding public goods, children and mothers from charges, and modifying the type of care by adapting to the customs of indigenous peoples).
- ▲ Self-selection (through the existence of private care alternatives).
- ▲ Geographic allocation of spending (according to a “health needs map”).
- ▲ Individual selection through a “proxy means test” or socioeconomic characteristics that approximate a family’s ability to pay.

However, it should be pointed out that the geographic mechanism would be quite effective, and that studies of Latin America do not show any substantial gain in targeting when individual selection mechanisms are added (Grosh and Baker 1995).

Annex A: Public Expenditures on Uninsured By Department, 1992–1995

Public Expenditures in Health on Uninsured by Department, 1992-1995

	Budget of Origin				Basic Health for All		Total			
	1992	1993	1994	1995	1994	1995	1992	1993	1994	1995
Huancavelica	8	12	19	22	3	18	8	12	22	40
Apurímac	6	12	22	29	5	24	6	12	27	53
Ayacucho	15	21	26	34	4	23	15	21	30	57
Cusco	9	15	21	28	3	11	9	15	24	39
Huánuco	9	14	20	25	2	12	9	14	22	37
Puno	11	16	22	30	1	6	11	16	23	37
Cajamarca	4	7	9	13	2	13	4	7	11	25
Pasco	14	22	33	39	4	29	14	22	37	69
Amazonas	8	13	18	26	3	11	8	13	20	37
Loreto	9	16	26	34	3	10	9	16	28	45
Piura	7	11	16	21	2	13	7	11	18	34
Junín	14	21	29	38	2	10	14	21	31	48
Ancash	12	19	28	35	2	9	12	19	30	44
Ucayali	14	25	45	53	3	18	14	25	48	71
Madre de Dios	23	41	64	84	14	60	23	41	78	145
San Martín	11	18	25	31	2	10	11	18	27	42
La Libertad	11	19	33	37	1	7	11	19	34	45
Lambayeque	11	16	22	28	3	8	11	16	25	36
Tumbes	16	24	33	47	5	22	16	24	39	69
Moquegua	34	53	74	95	5	27	34	53	79	122
Arequipa	20	32	46	62	2	13	20	32	48	75
Ica	26	41	57	73	2	13	26	41	59	86
Tacna	29	44	67	102	5	30	29	44	72	132
Lima	20	38	49	77	1	6	20	38	50	83
Callao	32	65	91	137	2	10	32	65	93	148
<i>SUBTOTAL</i>	14	24	33	46	2	11	14	24	35	57
TOTAL*	20	32	47	78	2	11	20	32	47	78

*For the total, Basic Health for All is included only in the portion not distributed by departments.

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