

PA-ABF-950

HOUSEHOLD DEMAND FOR HEALTH CARE IN EL SALVADOR

VOLUME II:

DETERMINANTS OF HOUSEHOLD DEMAND FOR
CURATIVE AMBULATORY MEDICAL CARE

**Resources for
Child Health
Project**

REACH



John Snow, Inc.
1100 Wilson Boulevard, 9th Floor
Arlington, VA
22209 USA
Telex: 272896 JSIW UR
Telephone: (703) 528-7474

PA 115-950

15A 68000

HOUSEHOLD DEMAND FOR HEALTH CARE
IN EL SALVADOR

VOLUME II:

DETERMINANTS OF HOUSEHOLD DEMAND FOR
CURATIVE AMBULATORY MEDICAL CARE

Ricardo A. Bitran
REACH Consultant
through a subcontract with Abt Associates
February 1990

The Resources for Child Health Project
1100 Wilson Blvd., Ninth Floor
Arlington, VA 22209
USA

AID Contract Number: DPE-5927-C-00-5068-00

FOREWORD

Growing economic pressures throughout the developing world have made it increasingly difficult to generate the financial resources needed to meet the needs and demands for health care services. In response to these pressures, many countries have initiated a process of assessment of current financing strategies and exploration of opportunities to generate additional financial support. In this process, it is often clear that too little is known about current patterns of use of services to assess adequately the potential of new health care financing initiatives.

This report and its companion, Volume I, are a response to this lack of knowledge for the country of El Salvador. These two reports present the results of the study, Household Demand for Health Care in El Salvador. Volume I, written by Luis Carlos Gomez, provides an extensive description of the household survey methodology and a comprehensive presentation of the results of the survey. The survey identified all curative and preventive health services provided in both inpatient and ambulatory settings for an extensive sample of households in urban, and rural areas. It describes use of services of the full range of providers including, doctors, nurses, midwives, traditional healers, and pharmacists. That report provides an extensive description of the forms and patterns of health services utilization and provides significant insights as to the importance of different sources of care in responding to the demand for services.

While descriptive information is essential for exploring health care financing options, additional analyses of these data can provide much additional information about the relationships among the characteristics of the sample population and their patterns of utilization. Understanding these relationships can provide a better basis for "predicting" the responses in terms of use of services which might occur as a result of changes in the financing of care.

This report, Volume II of the study, written by Ricardo Bitran presents the results of such analyses. It is concerned only with curative ambulatory care provided by physicians, a critical component of the care-giving system. For these services, it examines patterns of utilization in greater depth than in Volume I and, additionally, explores the factors associated with differences in the demand for services. In particular, the influence of economic characteristics such as prices and patients' income on the use of outpatient services are examined to provide some insight into the sensitivity of utilization to changes in the costs of care to patients.

Of importance is the great difference in the patterns of utilization between ambulatory care and inpatient care. For the former, patients exercised a wide range of choices with private sector and Social Security providers favored by many users. For inpatient services, however, even those with access to other providers significantly preferred publicly provided care. A recognition of such patterns of utilization and consumer preference needs to be incorporated into the process of developing and strengthening the financial basis of the health care delivery system. This study and its companion volume were developed to contribute to that important end.

Gerald Rosenthal, Ph.D.
Associate Director for Health Care Financing
REACH Project

ACKNOWLEDGEMENTS

I am grateful to Keith McInnes for his excellent research assistant-ship. I also thank Matilde Pinto de la Piedra, from the Resources for Child Health Project, for her logistical support throughout the research process. I thank Luis Carlos Gomez and Alvaro Lopez for providing me with a high quality, well documented data set. This report has greatly benefitted from comments by Matilde Pinto de la Piedra, Luis Carlos Gomez, Philip Musgrove, Gerald Rosenthal, and Kevin Armstrong. Finally, I am grateful to Beth Griffin for her excellent assistance in typing this report. As always, I am solely responsible for any remaining errors.

Ricardo Bitran

Cambridge, Massachusetts

GLOSSARY

AMSS	San Salvador Metropolitan Area (Area Metropolitana de San Salvador)
ISSS	El Salvador Social Security Institute (Instituto Salvadoreño de Seguridad Social)
MOH	Ministry of Health

TABLE OF CONTENTS

FOREWORD	i
I. EXECUTIVE SUMMARY	1
II. INTRODUCTION.	4
III. STUDY GOALS AND METHODOLOGY. . . . .	.5
A. Goals and Objective.	5
B. Individual Decision Making and Health Care Demand.	6
C. Usefulness of Demand Determinants Analyses	6
D. Household Utilization Survey	7
E. Behavioral Assumptions	7
F. Limitations of Descriptive Analyses and Advantages of Multiple Regression Techniques.	8
IV. HEALTH CARE UTILIZATION PATTERNS. . . . .	.11
A. The Decision to Seek Care Outside the Home . . . . .	.11
B. The Choice of Subsector. . . . .	.17
C. Intensity of Use . . . . .	.28
V. DETERMINANTS OF HEALTH CARE DEMAND. . . . .	.29
A. How to Read the Tables of the Chapter. . . . .	.29
B. Interruption of Main Activity and Bed Confinement by Region. . . . .	.30
C. Accidents by Region. . . . .	.32
D. Social Security Beneficiary Status by Region . . . . .	.32
E. Patient's Age by Region. . . . .	.35
F. Patient's Education by Region. . . . .	.35
G. MOH Prices by Region . . . . .	.38
H. Private Facilities' Price and Patients' Income Level . . . . .	.40
I. MOH Price and Patient's Income Level . . . . .	.40
J. Private Facilities' Price and Patient's Income Level . . . . .	.42
K. Social Security Beneficiary Status and Patients' Income Level . . . . .	.42
L. Travel Time to the Facility by Region. . . . .	.44
M. Implicit Perceived Quality Differentials, by Region and Gender . . . . .	.44
N. Regional Differences in Demand . . . . .	.44
VI. POLICY IMPLICATIONS . . . . .	.48
A. Improving the Quality of MOH Services. . . . .	.49
B. Changing MOH Prices. . . . .	.49
C. Expanding the Role of the Private Sector . . . . .	.50
D. Expanding ISSS Coverage and Improving ISSS Service Quality. . . . .	.51

TABLE OF CONTENTS (continued)

Appendix A: Behavioral Model. . . . .	.52
Appendix B: Statistical Results . . . . .	.59
Appendix C: Additional Results. . . . .	.64
Bibliography . . . . .	.69

LIST OF TABLES

III.1	Utilization and Average Price (in \$) by Subsector, Hypothetical Example	9
III.2	Utilization and Average Patient Travel Time (in minutes) Hypothetical Example. . . . .	.9
IV.1	Number and Distribution of People Who Reported a Health Problem and Decision to Seek Curative Ambulatory Care from a Doctor, by Area.	12
IV.2	Decision to Seek Ambulatory Care from a Doctor, By Area, According to Gender. . . . .	.14
IV.3	Decision to Seek Ambulatory Care from a Doctor, By Area, According to People's Age Group. . . . .	.14
IV.4	Decision to Seek Ambulatory Care from a Doctor, by Area, According to People's Education. . . . .	.15
IV.5	Decision to Seek Ambulatory Care from a Doctor, by Area, According to Self-Reported Health Problem. . . . .	.15
IV.6	Decision to Seek Ambulatory Care from a Doctor, by Area, According to Household's Annual Income . . . . .	.16
IV.7	Decision to Seek Ambulatory Care from a Doctor, by Area, According to People's Beneficiary Status . . . . .	.16
IV.8	Number and Distribution of Curative Ambulatory Doctor Patients by Subsector and by Income. . . . .	.18
IV.9	Number and Distribution of Curative Ambulatory Doctor Patients by Subsector and by Income. . . . .	.19
IV.10	Average and Distribution of Patient Waiting Time at the Provider's Facility by Subsector and by Area . . . . .	.20
IV.11	Average and Distribution of Patient Travel Time to the Provider's Facility by Subsector and by Area . . . . .	.20
IV.12	Number and Distribution of Curative Ambulatory Doctor Patients by Subsector and by Age . . . . .	.22
IV.13	Number and Distribution of Curative Ambulatory Doctor Patients by Subsector and by Gender. . . . .	.24
IV.14	Number and Distribution of Curative Ambulatory Doctor Patients by Subsector and by Education . . . . .	.24

IV.15	Number and Distribution of Individuals Who Sought Curative Ambulatory Care from a Doctor by Subsector Used, All Areas. . . . .	.25
IV.16	Direct Payment for Curative Ambulatory Care from a Doctor by Subsector Used, All Areas. . . . .	.25
IV.17	Average and Distribution of Patient Total Out-of-Pocket Expenditures Per Illness Episode Including Consultations, Exams, and Drugs Purchased both from the Provider and from the Market. . . . .	.26
IV.18	Average and Distribution of Patient Total Out-of-Pocket Expenditures Per Illness Episode Including Consultations, Exams, and Drugs Purchased from the Provider . . . . .	.26
IV.19	Number and Distribution of Patient Total Out-of-Pocket Expenditure Per Illness Episode Including Consultations, Exams, and Drugs Purchased from the Provider . . . . .	.27
V.1	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Interruption of Main Activity and/or Bed Confinement Due to Illness, by Region . . . .	.31
V.2	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Accident by Region . . . . .	.33
V.3	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Social Security Beneficiary Status by Region . . . . .	.34
V.4	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Age by Region. . . . .	.36
V.5	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Education by Region. . . . .	.37
V.7	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Private-for-profit Facility Price by Region. . . . .	.39
V.8	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of MOH Facility Price and Household Annual Income (San Salvador Metropolitan Area) . . . . .	.41
V.9	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Private Facility Price and Household Annual Income (San Salvador Metropolitan Area) .	.43
V.10	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Social Security Beneficiary	

	Status and Household Annual Income (San Salvador Metropolitan Area) . . . . .	.45
V.11	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Travel Time to MOH Facility by Region. . . . .	.46
V.12	Decision to Seek Outpatient Curative Care and Choice of Provider When Price, Travel Time, and Waiting Time are the Same Across Subsectors by Gender and by Region . . .	.47
B.1	Curative Ambulatory Medical Care, Nested Logit Estimated Coefficients and t-Statistics Choice of Subsector and Decision to Seek Care. . . . .	.60
B.2	Curative Ambulatory Medical Care Hedonic Price Regressions, OLS Estimates. . . . .	.61
B.3	Curative Ambulatory Medical Care Hedonic Travel Time Regressions, OLS Estimates . . . . .	.62
B.4	Curative Ambulatory Medical Care Hedonic Waiting Time Regressions, OLS Estimates . . . . .	.63
C.1	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Gender and Interruption of Main Activity and/or Bed Confinement Due to Illness . . . . .	.65
C.2	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Gender, by Region. . . . .	.66
C.3	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Travel Time to Private-for-profit Facility by Region . . . . .	.67
C.4	Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Travel Time to Social Security Facility by Region . . . . .	.68

I. EXECUTIVE SUMMARY

This report presents the results of a study of health care demand determinants in El Salvador. Health care is defined as curative ambulatory care provided by a medical doctor. Methodological problems encountered in previous studies of health care demand (Bitran, 1989a) dissuaded us from conducting a study of demand determinants for in-patient care. Thus the results and recommendations provided in this report apply only to the case of curative ambulatory care and should not be extrapolated to the case of hospital care. As shown in Gomez (1989) the patterns of utilization of hospital services in El Salvador differ significantly from those of outpatient care.

The study uses data collected by the research team in El Salvador in January and February 1989. The survey gathered data from a total of about 13,896 people, in 2,885 households from the San Salvador Metropolitan Area (AMSS), other urban areas, and rural areas.

A study of demand determinants is one that seeks to measure the effect on health care demand of a series of variables believed to influence or explain demand. Three types of explanatory variables were included in the analysis: those that characterize the individuals, like gender, age, education, social security beneficiary status, and income; and those that jointly characterize the individuals and the providers, such as region (i.e., urban, other urban, or rural), price, travel time, and waiting time.

In order to assess the effect of the explanatory variables on demand, a theoretical model of consumer behavior was developed and state-of-the-art econometric techniques were used. The statistical results were used to analyze the separate effect of each demand determinant variable on people's decisions to seek care outside the home and to choose a particular provider.

For the purposes of the study, health care providers were clustered into three groups: those who belong to the Ministry of Health (MOH), those who belong or are associated with the El Salvador Social Security Institute (ISSS), and those that are private. Private providers were further subdivided into for-profit and non-profit providers.

The report presents two types of results: those that are purely descriptive and which tabulate survey data to illustrate the patterns of health care use; and those that are analytic, derived from the econometric study of demand determinants, which show the extent to which prices, income, social security status, demographic, and other explanatory variables influence demand. The remainder of this summary discusses the study's main results focusing first on the observed patterns of utilization and second on the demand determinants analysis.

Utilization Patterns

Approximately 53% of the country's population, or about 2.2 million people, reported a self-perceived non-dental health problem during the survey's two-week recall period. Of these, only 14.9% sought curative ambulatory care from all types of health care providers. Approximately 81% of those seeking care, or about 12% of the people with a non-dental health problem, saw a medical doctor.

The proportion of those seeking medical ambulatory care outside the home was highest in AMSS and lowest in rural areas. Females sought care in a greater proportion than men, and children under one year of age constituted the age group with the highest proportion of people seeking care, followed by children aged 2 through 5 years. More educated people, people from higher income households, and those with either ISSS or private insurance coverage were more likely to seek outside care.

A critical finding emanating from the descriptive chapter of the study is that the private sector played a major role as a provider of health care services to all population groups, including the rich and the poor, in urban and rural areas. This is an interesting finding in light of the fact that private sector prices were, on average about 12 times higher than the MOH prices, and about 20 times as high as the ISSS average price. In AMSS, 58% of the total utilization took place in private facilities while only 26% occurred in MOH facilities and 16% in ISSS facilities. In other urban areas, the private sector and the MOH captured similar shares of total utilization, with about 43% of the market each. Finally, in rural areas, MOH providers accounted for the largest market share, with 58% of total utilization, although the private sector still played a major role capturing about 43% of all patients.

People covered by private health insurance represented only 0.6% of those with a health problem. ISSS beneficiaries were 6.5% of all those ill or injured and people with both private insurance and ISSS coverage constituted only 0.3% of all those with a health problem. Approximately 2.4% were covered by some other type of government health system. People without any type of coverage represented over 90% of those ill or injured.

In contrast with most other Latin American countries, where MOH ambulatory services are provided virtually free of charge, in El Salvador about 83% of the MOH patients made payments for the care received. Most social security users, whether they were beneficiaries or not, were given care free of charge in ISSS facilities. Finally, about 47% of the patients with private insurance made some direct payment for their services and about 21% of the uninsured patients who went to private providers were given free care. Approximately 77% of all private patients made some payment for the care received. Overall, about 72% of all subsector patients made some payment.

The average total patient expenditure associated with an illness episode treated in an MOH facility was 14.4 colones of January, 1989 (US\$ 2.88), of which about 5 colones constituted payments made by the patient directly to MOH

providers for the visits, medications, and exams, and approximately 9.4 colones represented patient expenditure on drugs outside the MOH facility. The comparable figures for ISSS users were 0.2 and 1.1 colones, for a total associated expenditure of 1.3 colones (US\$ 0.26) and for users of private for-profit facilities they were 29.4 and 43.9 colones, for a total of 73.3 colones (US\$ 14.66). MOH patients' average total expenditure associated with an illness episode represented about 4.3% of their annual average per capita income. The corresponding figure for patients of the private for-profit sector was 11.7%, a very high percentage considering that many individuals may have to treat multiple episodes of illness in any given year.

Determinants of Demand

One of the most important findings arising from this analysis is that curative ambulatory MOH facilities were perceived by the population as being of very poor quality. In contrast, private for-profit providers were perceived as providing services of the highest quality. Social security services were perceived as being of medium quality. For example, if everyone had access to ISSS facilities and all subsectors charged the same out-of-pocket price and had the same associated patient travel and waiting times as those of MOH facilities, over two-thirds of all patients would choose private for-profit providers, about 30% would go to ISSS facilities, and less than 3% would choose MOH care. These patients perceived quality differentials are so strong that, in spite of the fact that the private sector prices are about 12 times as high as MOH prices, the private sector captured almost 60% of total utilization in AMSS, and more than 40% in other urban and rural areas.

The analysis also helped to explain differences in health care seeking patterns across regions. The results implied that differences in the likelihood of seeking care outside the home and in choosing a particular subsector can be attributed to the fact that, relative to people in AMSS or other urban areas, rural dwellers (a) had the lowest educational level; (b) had to travel greater distances to reach private facilities; (c) had lower incomes; (d) perceived ISSS facilities as being of poorer quality; and (e) perceived MOH and private for-profit facilities as being of better quality.

The demand determinants analysis also showed that, across all regions and population groups, income, years of education, and health problems that resulted in bed confinement or work interruption, all had a positive and important effect on the likelihood that a given person would seek care outside the home and would choose the private for-profit sector.

Finally, the study assessed the effect of patient out-of-pocket prices on demand. As in other studies, it was found that, other things being equal, the price of a given subsector had a negative effect on the likelihood both that a person would seek outside care and choose that subsector if seeking care. At the observed private sector average out-of-pocket price, the price elasticity of demand was -0.40, implying that, other things being the same, a 1% increase (decrease) in the private price would result into a 0.4% decrease (increase) in demand for private for-profit care. The analysis also revealed that lower income people were more affected in their health care seeking

behavior by prices than the more affluent, although this effect was not important.

Policy Implications

The following recommendations are made for policy makers in El Salvador:

- (a) If the MOH wishes to expand the volume of services it provides, it must look for solutions to improve the quality of its services. As a first step, the MOH should conduct small-scale studies of consumer quality perceptions.
- (b) MOH price increases could be used to finance quality improvements in MOH care. However, to insure that higher fees would effectively result in higher quality care, the government should first identify existing deficiencies in the management of its facilities, focusing in particular on management systems and control and employee motivation.
- (c) If the government's goal is to promote greater use of curative ambulatory medical care, regardless of who provides that care, the most efficient solution appears to be to promote greater use of private sector services. This can be done through service agreements between the government and selected private providers or through government stimulation of greater private involvement in health care delivery. Both measures would require government subsidies to private sector providers.
- (d) Finally, the social security institute should also seek to improve the quality of its services. Furthermore, it could analyze the alternative of expanding coverage to other population groups, particularly to lower income employees and independent workers. While this study provides the basis for assessing the population's response, the feasibility analysis requires an assessment on the extent to which costs, both investment and recurrent, would increase with coverage. This would allow the ISSS to determine monthly affiliate contributions needed to achieve higher coverage.

II. INTRODUCTION

Developing countries have set ambitious health goals for their populations. To achieve those goals, most governments have decided to establish and operate a country-wide network of health facilities which provide care at low prices (relative to cost). By charging low prices, governments express their belief that prices have an important effect on health care demand and that lower prices will result in higher demand.

In recent years, several studies of health care demand have been conducted in developing countries (Gertler, Locay and Sanderson, 1987; Biham, 1989). These have shown that prices indeed have an important effect on demand. Nevertheless, the studies have also shown that price is not the only factor affecting demand but that other variables, such as consumers' health care quality perceptions, also have a critical impact on demand. Thus,

maintaining prices at low levels may not be an effective measure for boosting demand if consumers perceive the services as being of poor quality.

This study of demand analyzes consumer behavior in El Salvador by identifying and measuring the effect of variables that characterize consumers and providers on demand. The study is intended to provide policy makers in El Salvador with an improved understanding of consumer health care seeking behavior. It is hoped that the insight gained from this study will ultimately help the Salvadoran people to have access to better quality health care and, therefore, to higher standards of living.

III. STUDY GOALS AND METHODOLOGY

A. Goal and Objectives

The goal of this study is to provide decision makers in El Salvador with information that will allow them to design policies that will ultimately contribute to improve the population's health status. The study objective is to explain consumer behavior with regard to the consumption of curative ambulatory health services provided by doctors in El Salvador, with particular emphasis on behavioral differences among urban, other urban, and rural inhabitants.

Consumer behavior is studied by analyzing individual decision making. Individuals who have a health problem face two types of decisions. First, they have to decide whether or not to seek care outside the home, and second, those who decide to seek care outside the home must decide what provider to visit.¹

For the purposes of this study, providers, whether they are institutions or individuals, have been clustered into three groups: those who belong to the Ministry of Health (MOH), those who belong to or are affiliated with the El Salvador Social Security Institute (ISSS), and those in private practice.

The decisions to seek care and to choose a provider are presumably affected by a number of variables such as the individual's income, education, age, gender, type of health problem, affiliation to private insurance or to ISSS, the distance between the individual's home and the provider's location, provider's prices, and the person's perception of the quality of care of different providers. Variables like those listed above, which are believed to influence people's health care seeking decisions, are interchangeably referred to in this study as demand determinants or explanatory variables.

¹It is assumed here that the decision process is sequential, or done at two levels, i.e., people first decide whether or not to seek care and the, conditional upon seeking care, they choose a provider. Other authors, e.g., Mwabu (1984), have assumed that the two types of decision are made at the same level. The two-stage approach used in this study is more general and enables the researcher to test the validity of the two-stage assumption.

B. Individual Decision Making and Health Care Demand

The demand for health care is the amount of health services that people are willing to obtain as a function of the services' prices, given people's socioeconomic and demographic characteristics, their perception of the services' quality, the people's geographic location relative to the location of providers, and other factors which characterize the people, the providers, and the environment.

The demand for health care from a given provider can be inferred if one knows how many people would seek care outside the home if they had a health problem, how many of those would choose the given provider, and how much care each would obtain from the provider. For example, the El Salvador health utilization survey conducted for this study, showed that 53% of the country's population, or about 2.2 million people, had a health problem during the survey's two-week recall. Approximately 12% of those people, or 272,000 individuals, sought care from a doctor and about 39% of those seeing a doctor, or 105,000 persons, did so at MOH facilities. Finally, most people seeing an MOH doctor made only one visit during the reference period. Thus, the demand for curative health care from MOH doctors during the survey's two-week recall period can be calculated by multiplying the studied population of 4.2 million (equal to 80-90% of the total population) by 0.53 (proportion of people with a health problem) times 0.12 (proportion of those with a health problem seeing care from a doctor) times 0.39 (proportion of those seeing a doctor who went to MOH facilities) times 1.0 (average number of visits per person). The result of the above calculation is 105,000 visits which corresponds roughly to the demand for MOH health services. Thus, if one knows the population's average illness incidence and accident occurrence rate, one can infer people's demand by knowing about peoples' decisions to seek care outside the home and to choose a particular provider, and about the typical quantity of services demanded per illness episode.

C. Usefulness of Demand Determinants Analyses

Understanding the determinants of demand is important to policy makers. By showing the extent to which household and provider characteristics influence individual behavior, this study can help decision makers to determine what policies to adopt to achieve desired public health goals. For example, this study can show how prices affect health care demand (i.e., people's demand price elasticity) at any given price level and across income groups. With such information, government officials can anticipate the likely impact on demand for health care of measures such as expanding social security or private insurance coverage or subsidizing private provider prices for the poor.

Many variables that are determinants of demand cannot be influenced by decision makers in the short term. For example, household income has been

shown to be an important determinant of demand.² Nevertheless, public health authorities can do little to modify the population's income distribution to achieve desired health goals. Yet understanding how a person's income affects his or her health care seeking behavior is extremely important from a public policy viewpoint, for it allows decision makers to better target their policies to certain population strata.

D. Household Utilization Survey

In order to analyze the determinants for health care demand, a household survey was conducted in El Salvador in January and February 1989. In total, about 13,896 people in 2,885 households were interviewed, 3,200 people from the San Salvador Metropolitan Area (AMSS), 5,084 from other urban areas, and 5,612 from rural areas. Households were chosen using a probabilistic sampling procedure described in detail in Gomez (1989). Information about all individuals was gathered within each household. The questionnaire gathered data about people's occupation, income, age, sex, health insurance coverage and affiliation to social security or other welfare systems, health status, the occurrence of health problems in the two-week recall period, use of ambulatory services in the preceding two and six weeks, and use of inpatient health care services in the last two years. Respondents were also required to identify the different health care providers seen, if any, and to specify the amount of money spent with each provider as well as the travel to and waiting time at the provider's facility.

Based on actual utilization of health services, as provided by the survey, this study used statistical techniques to assess the individual effect of the explanatory variables on demand including those cases where people did not go to a provider. These techniques are described in Appendix A.

E. Behavioral Assumptions

In order to decide which variables to incorporate in the analysis and how to incorporate them, a model of consumer behavior has been developed and is formally presented in Appendix A. The basic assumptions behind the behavioral model of Appendix A are explained below.³

An assumption often made in economic theory, and adopted here, is that people make consumption decisions to maximize their utility. Utility is not a

² See, for example, Gertler, Locay, and Sanderson (1987) and Bitran (1989).

³ For the purposes of this study, an explanatory variable is considered important if changes in the variable result in changes in demand that are either proportionally comparable, or greater than the change in the variable. A variable is considered statistically significant if the statistically estimated coefficient associated with that variable is significant at the 5% level.

measure of wealth or income, but is rather a measure of the value that a person places on the consumption of goods and services or, in other terms, the satisfaction that an individual draws from consumption. The process whereby people assign utility to consumption varies among individuals. Thus, different people may obtain different utility from consuming the same good or service (e.g., one visit to the same doctor). Demographic traits, the nature of the health problem, differences in perceptions and tastes are therefore expected to result in different utility and, thus, in different health care service (e.g., one visit to the same doctor). Demographic traits, the nature of the health problem, differences in perceptions and tastes are therefore expected to result in different utility and, thus, in different health care seeking decisions by individuals, even when facing the same options.

A second assumption made in this type of analysis is that individuals must make consumption decisions under a budget constraint. In this case, the budgetary constraint is the household income. The budget constraint simply states that a person cannot spend more money purchasing goods and services than he or she has available. In this study, household monthly income was assumed to be the budget constraint.

The final and key assumption underlying the behavioral model is that people are rational decision makers. Their problem is to decide how much health care and other goods and services to consume in order to maximize their utility and stay within their budget constraint. In simple terms, the assumption of rationality means that, other things being the same, people will choose the alternative that maximizes their utility. For example, a person who visits a doctor will prefer to pay less rather than more for the visit simply because by paying less he or she will have more money left to buy more health care or other goods. Similarly, it is expected that a person who must choose among two identical doctors, one being around the corner and the other being 10 kilometers away, will choose the former unless he or she draws utility from travelling. Of course, if the doctors were not identical in the mind of the patient (i.e., things other than travel time are not the same), then it would be rational for the patient to choose the doctor who is farther away if the individual believes that the more distant doctor charges a lower price or provides better quality care.

F. Limitations of Descriptive Analyses and Advantage of Multiple Regression Techniques

The demand for health care is influenced by a multitude of variables, as discussed earlier. In order to isolate the effect on demand of each of these variables, it is necessary to use multiple regression statistical techniques. Studies that present data on demand patterns through two-dimensional tables can only provide a description of what people do; those studies can say little about which factors affect demand and their relative importance. This limitation of descriptive analyses is illustrated through a hypothetical example below.

Table III.1
 Utilization and Average Price (in \$)
 by Subsector
 Hypothetical Example

	Government Subsector	Social Security Subsector	Private Subsector	Total
Utilization (%)	30%	10%	60%	100%
Average price of a visit (\$)	5	2	80	---

Table III.2
 Utilization and Average Patient Travel Time (in minutes)
 Hypothetical Example

	Government Subsector	Social Security Subsector	Private Subsector	Total
Utilization (%)	30%	10%	60%	100%
Average travel time (minutes)	60	120	20	---

Suppose that a researcher obtained from a survey the hypothetical results shown in Table III.1. The naive researcher would be tempted to infer that there exists a positive correlation between price and utilization and, thus, to increase utilization of government facilities, the government should increase its price. If, however, the researcher tabulated some additional results, such as average patient travel time to the health facility by subsector (Table III.2) his conclusion could be different. In isolation, Table III.2 would suggest that there is a negative relationship between travel time to the facility and utilization, e.g., the private subsector, which has the lowest travel time, has the highest utilization. By looking at both tables simultaneously, the researcher could conclude that both price and travel time have a negative effect on utilization and that the private sector's travel time was low enough to translate into the highest utilization despite its high price. Of course, the researcher could not say anything about the relative explanatory importance of price and travel time.

Other interpretations of the above results would be possible and would all be equally arbitrary. The conclusion that one can reach from the above example is that one cannot draw behavioral inferences by looking at the correlation between pairs of variables when other variables, believed to affect the phenomenon studied, are left out of the analysis. Multiple regression techniques allow the researcher to measure the independent effect that each variable has on the phenomenon studied (e.g., health care utilization).

IV. HEALTH CARE UTILIZATION PATTERNS

The purpose of this chapter is to present a description of utilization patterns of curative ambulatory services provided by doctors in El Salvador, by geographic strata or region (i.e., urban, other urban and rural), based on the survey's results. The tables of this chapter show the number of people seeking care outside the home and the number of those going to a particular subsector (i.e., MOH, ISSS, or private) according to some variables which are thought to be important determinants of demand.

A. The Decision to Seek Care Outside the Home

Table IV.1 shows that approximately 53% of the country's population, or about 2.2 million people, reported a self-perceived non-dental health problem during the survey's two-week recall period. The above figure includes both the people with illness onset during the reference period as well as those whose illness started prior to the recall period. Thus, the 53% value provides a measure of self-perceived illness prevalence in El Salvador. The perception of illness prevalence in the San Salvador Metropolitan Area (AMSS) of 48% was lower than that in other urban or rural areas.

Among those who reported a non-dental health problem, only 14.9% sought curative ambulatory care from all types of health care providers, including medical doctors, nurses, pharmacists, and traditional healers (not shown in the table). This figure contrasts with a much higher percentage of 31.3% observed in a similar survey conducted in Santo Domingo, Dominican Republic (see Gomez, 1988 and Bitran, 1989a).

Approximately 81% of those seeking care, or about 12% of those with a health problem, saw a medical doctor as shown at the bottom of Table IV.1. The percentage of people obtaining care from a doctor was much larger in AMSS (17%) than in other urban (13%) or rural (9%) areas.

Tables IV.2 through IV.7 show, among those who had a health problem the proportion of people seeking curative ambulatory care from the doctor according to the person's gender, age, education, nature of the self-reported health problem, household's annual income, and the person's private insurance and ISSS beneficiary status, respectively.

Table IV.2 indicates that females were more likely to seek care than men both in AMSS and in rural areas. This difference, however, was not large. The last column of Table IV.2 shows that those seeking care were not evenly split between sexes; about 56% of all patients were females and 44% were males reflecting both the fact that women had a higher rate of self-perceived health problems and also that women sought care more often than men. The corresponding figures obtained in the Santo Domingo study cited above were essentially the same, or 58% and 42% for females and males, respectively.

Children under one year of age constituted the age group with the highest proportion of people seeking care, followed by children aged 1 through 4 years, as shown in Table IV.3. In contrast, people in the 5-14 years age

Table IV.1

Number and Distribution of People Who Reported a Health Problem and Decision to Seek Curative Ambulatory Care from a Doctor, by Area

(Totals in thousands)

	San Salvador Metropolitan Area		Other Urban Areas		Rural Area		Total	
	Total	%	Total	%	Total	%	Total	%
People who did not report a health problem	542	52%	700	46%	742	46%	1,984	47%
People who reported a health problem	503	48%	835	54%	886	54%	2,224	53%
Total number of people interviewed	1,045	100%	1,535	100%	1,628	100%	4,208	100%

People who did not seek curative ambulatory care from a doctor	417	83%	730	87%	805	91%	1,952	88%
People who sought curative ambulatory care from a doctor	86	17%	105	13%	81	9%	272	12%
Total number of people who reported a health problem	503	100%	835	100%	886	100%	2,224	100%

category constituted the age group least likely to seek care. These results corroborate findings from previous studies, including the study in Santo Domingo and the studies in Peru (Gertler, Locay, and Sanderson, 1987) and Zaire (Bitran, 1989b). Relative health care seeking patterns within age groups were similar across areas, as shown in the table.

Table IV.4 suggests that, within each geographic area, more educated people were more likely to seek care. The last column of the table also shows the education structure of those who had a health problem. Only 4% of those with a health problem had studies beyond secondary and about three-quarters did not have studies beyond primary.⁴

The nature of the perceived health problem has been shown to influence the decision to seek care as well as the choice of provider (Bitran, 1989a-b). Table IV.5 seems to confirm the findings of previous studies which have shown that injured people are much more likely to seek curative care than those with other health problems. People with only a respiratory illness represented almost half of all the people ill or injured and were the least likely to seek care. About 16% of all those ill or injured claimed to have had simultaneously a respiratory and an intestinal problem and, after those injured, constituted the second group most likely to seek health care.

Table IV.6 suggests that, overall, people from higher-income households were more likely to seek care than poorer individuals, although the trend is not as clear within each of the three geographic areas. The average household income of those seeking care was, within each area, higher than that of those who did not seek care. Also, the table reveals that average household annual income in rural areas (7,300 colones or US\$ 1,460) was only about 40% of the comparable figure in AMSS and approximately 64% of the average household income in the other urban areas.⁵ As will be shown later, although incomes are lower in rural than in other urban areas or in AMSS, the out-of-pocket prices of health care were approximately the same across areas. This suggests that, on average, people in other urban and rural areas had to spend a much higher proportion of their income to pay for health care. This may in part explain their lower propensity to seek care, particularly from the private sector.

Finally, Table IV.7 shows that, in general, people who were either ISSS or private insurance beneficiaries, or both, were much more likely to seek care outside the home than people who were not beneficiaries of either. This

⁴ Health care seeking decisions concerning children are usually made by the parents or guardians. Since the aim of this study is to analyze health care decision making, for children under the age of fifteen years, the education of the most educated person in the household was used instead of the children's.

⁵ The official exchange rate at the time of the survey, i.e., in January of 1989, was approximately 5 colones to the US dollar.

Table IV.2

Decision to Seek Ambulatory Care
From a Doctor, by Area, According
to Gender

(percentages)

Gender	San Salvador Metropolitan Area		Other Urban Areas		Rural Area		Total		Gender composition of all those with a health problem
	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	
Male	83.2%	16.7%	86.8%	13.2%	91.8%	8.2%	88.2%	11.8%	44.4%
Female	82.5%	17.5%	87.0%	13.0%	89.5%	10.5%	86.9%	13.1%	55.6%
TOTAL	82.8%	17.2%	86.9%	13.1%	90.6%	9.4%	87.5%	12.5%	100.0%

Table IV.3

Decision to Seek Ambulatory Care
From a Doctor, by Area, According
to People's Age Group

(percentages)

Age Group	San Salvador Metropolitan Area		Other Urban Areas		Rural Area		Total		Age composition of all those with a health problem
	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	
Less than one	62%	38%	71%	29%	76%	24%	72%	28%	3%
1 - 4	81%	19%	85%	15%	91%	9%	87%	13%	12%
5 - 14	90%	10%	92%	8%	94%	6%	93%	7%	23%
15 - 44	81%	19%	87%	13%	90%	10%	87%	13%	38%
45 or more	83%	17%	85%	15%	90%	10%	86%	14%	23%
TOTAL	83%	17%	87%	13%	91%	9%	88%	12%	99%

Note: Total percent may differ from 100% due to rounding

Table IV.4

Decision to Seek Ambulatory Care
From a Doctor, by Area, According
to People's Education (*)

(percentages)

People's Education (years)	San Salvador Metropolitan Area		Other Urban Areas		Rural Area		Total		Education composition of all those with a health problem
	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	
0 - 6	85%	15%	87%	13%	91%	9%	89%	11%	76%
7 - 12	81%	19%	85%	14%	89%	11%	85%	15%	20%
13 or more	73%	27%	87%	13%	100%	0%	80%	20%	4%
TOTAL	83%	17%	87%	13%	91%	9%	88%	12%	100%

(*): For children under the age of 15 years, the highest education achieved in the household was considered.

Table IV.5

Decision to Seek Ambulatory Care
From a Doctor, by Area, According
to Self-Reported Health Problem

(percentages)

Self-Reported Health Problem	San Salvador Metropolitan Area		Other Urban Areas		Rural Area		Total		Self-reported health problem composition of all those with a health problem
	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	
Respiratory	86%	14%	90%	10%	92%	8%	90%	10%	46%
Intestinal	79%	21%	88%	12%	89%	11%	87%	13%	7%
Accident	61%	39%	84%	16%	74%	26%	73%	27%	1%
Combination of two	79%	21%	83%	17%	90%	10%	85%	15%	16%
All three	84%	16%	78%	22%	100%	0%	89%	11%	1%
Other problems	83%	17%	85%	15%	89%	11%	86%	14%	29%
TOTAL	83%	17%	87%	13%	91%	9%	88%	12%	100%

Table IV.6
Decision to Seek Ambulatory Care
From a Doctor, by Area, According
to Household's Annual Income

(percentages)

Household's Annual Income (Colones of March, 1989)	San Salvador Metropolitan Area		Other Urban Areas		Rural Area		Total		Household income composition of all those with a health problem
	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	
4,000 or less	82%	18%	90%	10%	92%	8%	91%	9%	28%
4,001 - 7,500	83%	12%	90%	10%	91%	9%	90%	10%	23%
7,501 - 15,000	82%	18%	82%	18%	93%	7%	85%	15%	24%
15,000 or more	81%	19%	83%	17%	89%	11%	84%	16%	25%
TOTAL	83%	17%	86%	14%	91%	9%	87%	13%	100%
Mean Inc. (thsds)	15.6	18.5	10.2	11.4	6.9	7.3	9.8	12.3	10.3
Median Inc. (thsds)	12.1	12.6	6.2	7.3	4.2	4.6	5.5	7.8	6.0

Table IV.7

Decision to Seek Ambulatory Care
From a Doctor, by Area, According
to People's Beneficiary Status

(percentages)

Individual is Beneficiary of:	San Salvador Metropolitan Area		Other Urban Areas		Rural Area		Total		Beneficiary composition of all those with a health problem
	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	Did not seek care	Sought care	
Social Security only	73%	27%	73%	27%	71%	29%	73%	27%	6.2%
Private insurance only	90%	10%	67%	33%	73%	27%	78%	22%	0.6%
Social Security and private insurance	76%	24%	52%	48%	100%	0%	65%	35%	0.3%
No Social Security and no private insurance	84%	16%	89%	11%	91%	9%	89%	11%	90.5%
Other (*)	87%	13%	73%	27%	91%	9%	81%	19%	2.4%
TOTAL	83%	17%	87%	13%	91%	9%	88%	12%	100.0%

(*): Beneficiaries of other government health systems.

is a sensible result since uninsured people who are not ISSS beneficiaries have to pay full prices in the private sector and, in principle, do not have access to ISSS services. The last column of the table shows that over 90% of the country's population who was ill or injured was uninsured and did not belong to ISSS. Social security beneficiaries constituted 6.5% of the countries population (6.2% + 1.3%) and people covered by private insurance represented only 1.9% (0.6% + 0.3%) of the total. One-third of the privately insured were also ISSS beneficiaries, accounting for 1.3% of the total population with a health problem.

B. The Choice of Subsector

Table IV.8 shows that 46% of the people seeking care chose private health facilities; 42% chose MOH facilities, and 12% went to ISSS providers. Several conclusions emerge from the table. First, since fewer than 1% of the country's population had private insurance, the vast majority of those using the private sector were uninsured people most of whom had to pay full prices for their care (more about prices later). Second, even though MOH services charge relatively low fees and are available to all citizens, they accounted for less than half of the total utilization. Third, there were important differences in subsector utilization among areas. In AMSS, the private sector accounted for 58% of all patients, while the MOH captured only 26%, followed by 16% of ISSS. In other urban and rural areas, the private sector still played an important role as a provider, although MOH facilities in those areas captured the largest share of patients. Finally, ISSS facilities were one-fourth as likely to be chosen by patients in rural areas as they were in AMSS, capturing only 4% of rural utilization.

The patients' household annual income distribution is shown in Table IV.9. Average income was lowest among MOH patients (8,000 colones) while private sector patients' income was almost double that amount. Users of ISSS facilities had the highest household income, or 18,000 colones annually. The lower portion of Table IV.9 shows that as the peoples' income goes up, so does the proportion of people seeking care from private and ISSS providers, away from MOH facilities.

Travel to and waiting time at the facility have been shown to influence health care demand.⁶ Tables IV.10 and IV.11 show, respectively, patient waiting and travel time by subsector. People using MOH facilities had to wait over two-and-a-half hours to get care, more than those going to facilities of the two other subsectors (Table IV.10). In contrast, private sector patients waited an average of only one hour. Table IV.11 shows that there were no important differences in travel time among patients from the different subsectors, with travel time varying from 45 minutes to about one hour. Of course, this does not imply that the facilities from the three subsectors were, on average, equidistant from people's homes. Previous studies of health care demand have shown that, other things being equal, people tend to choose

⁶ See, for example, Mwabu, 1984, Dor, Gertler, and van der Gaag, 1987, Gertler, Locay, and Sanderson, 1987, and Bitran, 1989a.

Table IV.8
 Number and Distribution of Curative
 Ambulatory Doctor Patients by Subsector
 and by Area

Area	Ministry of Health	Social Security	Private	Total
NUMBER OF PATIENTS (Thousands)				
San Salvador M.A.	20	12	45	77
Other Urban Areas	45	15	44	104
Rural Areas	43	3	34	80
TOTAL	108	30	123	261
DISTRIBUTION OF PATIENTS (%)				
San Salvador M.A.	26%	16%	58%	100%
Other Urban Areas	43%	14%	42%	99%
Rural Areas	54%	4%	43%	101%
TOTAL	42%	12%	46%	100%

Note: Total percent may differ from 100% due to rounding.

Table IV.9

Number and Distribution of Curative
Ambulatory Doctor Patients by Subsector
and by Income

Ann. Income (Colones of March, 1989)	Ministry of Health	Social Security	Private	Total
NUMBER OF PATIENTS (thousands)				
1-500	0.5	0.0	1.3	1.8
501-4000	32.9	0.6	16.7	50.2
4001-7500	25.1	2.0	20.8	47.9
7501-15000	27.0	12.0	35.2	74.2
15000-more	14.4	14.0	35.5	63.9
TOTAL	99.9	28.6	109.5	238.0 (*)
DISTRIBUTION OF PATIENTS (%)				
1-500	28%	0%	72%	100%
501-4000	66%	1%	33%	100%
4001-7500	52%	4%	43%	100%
7501-15000	36%	16%	47%	100%
15000-more	23%	22%	56%	100%
TOTAL	42%	12%	46%	100%
Mean Inc. (thsds)	8.0	18.0	15.1	12.3
Median Inc. (thsds)	5.4	13.7	9.6	7.8

Note: Total percent may differ from 100% due to rounding.
 (*) Total here is less than the 261 thousand patients reported elsewhere due to unreported incomes.

Table IV.10

Average and Distribution of Patient
Waiting Time at the Provider's Facility
by Subsector and by Area

Waiting Time (Minutes)	Ministry of Health	Social Security	Private
DISTRIBUTION (%)			
0 - 30	19%	29%	57%
31 - 60	15%	26%	20%
61 - 240	47%	39%	21%
241 or more	19%	7%	2%
TOTAL	100%	101%	100%
AVERAGE (Minutes)			
San Salvador M.A.	158	124	62
Other Urban Areas	157	95	57
Rural Areas	169	71	62
TOTAL	162	104	61

Note: Total percent may differ from 100% due to rounding.

Table IV.11

Average and Distribution of Patient
Travel Time to the Provider's Facility
by Subsector and by Area

Travel Time (Minutes)	Ministry of Health	Social Security	Private
DISTRIBUTION (%)			
0 - 20	35%	36%	46%
21 - 40	24%	26%	20%
41 - 60	25%	27%	17%
61 or more	17%	12%	17%
TOTAL	101%	101%	100%
AVERAGE (Minutes)			
San Salvador M.A.	40	47	40
Other Urban Areas	51	42	53
Rural Areas	69	55	82
TOTAL	56	45	56

Note: Total percent may differ from 100% due to rounding.

the nearest facility. Thus, it is likely that the average travel times shown in the table, which reflect people's decisions, understate the travel times that people faced prior to making their decision. The lower portion of Table IV.11 reveals that people who chose private facilities in rural areas had to travel twice as much as those who did so in AMSS. This suggests that private facilities may be less accessible in rural than in other urban or urban settings.

Patients' age distribution by subsector is shown in Table IV.12. Children under the age of one year (19,500, in the last column of the table) accounted for about 7.5% of all patients (260,500). With a country-wide crude birth rate of 3.6%, children under one were largely over-represented among all patients.⁷ This is due to the fact that children under one are almost twice as likely to seek care as people in other age categories (see Table IV.3) and, also, children under one are more likely to become ill than the average individual. The lower half of Table IV.12 shows that children under one, and between one and four years of age were more likely to go to MOH facilities than to the other subsectors, which may reflect a preference on the part of parents for MOH pediatric services over those of the private sector or of ISSS. In contrast, people aged 15-44 and those older than 45 showed a preference for the private sector. Most social security users were people in the 15-44 age group, possibly working people affiliated with ISSS. Although ISSS beneficiaries represented about 6% of the country's population, children under one of ISSS affiliates account for only 1% of utilization within that age group, due to the fact that ISSS covers dependent children up to 3 months of age.

Table IV.13 suggests that women had a preference for MOH services relative to men. This may reflect women's preference for MOH's obstetric services over those of ISSS and the private sector. MOH maternal and child health programs are well organized and well funded in El Salvador.

People's education has been shown to be an important demand determinant. Table IV.14 shows that MOH users were on average less educated than private sector patients. Also, ISSS users constituted the most educated group. To the extent that income and education are generally highly correlated, the results of this table are a reflection of those of Table IV.9.

Beneficiary status is supposed to be an important demand determinant since it reflects whether the individual had access to the subsector or whether he or she can get services at a lower price than non-beneficiaries. The choice of subsector according to patients' beneficiary status is shown in Table IV.15. All citizens are by definition MOH beneficiaries as shown in the table. Despite the fact that ISSS services are not supposed to be provided to non-ISSS beneficiaries, the table shows that only 79% of ISSS patients were beneficiaries and a high 21% were not. A similar finding emerged from the Santo Domingo study. The third row of the table indicates that the vast majority (97%) of private sector patients were uninsured as pointed out earlier.

⁷ Source: The World Bank, World Development Report 1989.

Table IV.12

Number and Distribution of Curative
Ambulatory Doctor Patients by Subsector
and by Age

Age	Ministry of Health	Social Security	Private	Total
NUMBER OF PATIENTS (thousands)				
less than 1 yr.	10.7	0.1	8.5	19.5
1-4 years	18.4	0.0	15.0	33.4
5-14 years	15.3	0.0	20.8	36.1
15-44 years	40.6	24.1	42.8	107.5
more than 45 yrs.	22.8	5.5	35.7	64.0
TOTAL	107.7	29.9	122.9	260.5
DISTRIBUTION OF PATIENTS (%)				
less than 1 yr.	55%	1%	44%	100%
1-4 years	55%	0%	45%	100%
5-14 years	42%	0%	58%	100%
15-44 years	38%	22%	40%	100%
more than 45 yrs.	36%	9%	56%	101%
TOTAL	41%	11%	47%	99%
Mean Yrs. of Age	25	36	29	28
Median Yrs. of Age	19	34	26	25

Note: Total percent may differ from 100% due to rounding.

In contrast with the policy in the Dominican Republic, where MOH services are, for the most part, provided free of charge, in El Salvador over 80% of MOH patients had to pay for their care, as shown in the left-hand portion of Table IV.16. Virtually all ISSS beneficiaries were given free care while about half of the insured private patients had to make some payments for their care, suggesting that these patients may have had to pay a co-payment or that they visited providers not covered by their insurance plan. The right-hand side of Table IV.16 shows whether or not payment were made by the people who were not beneficiaries of the subsector they visited. Most non-beneficiary users of ISSS services were exempted from payment. Another interesting finding emerging from the right side of this table is that about one-fifth of non-insured private sector patients were given free care. Further analysis of the data showed that this reflected charitable behavior on the part of certain private doctors toward poor patients.

The survey questionnaire was designed to capture direct treatment payments made by patients to the doctor for the visit, drugs, and exams (referred to as internal payments), as well as complementary treatment expenditures made by patients outside of the doctor's office to purchase drugs (referred to as external payments). Patients' total expenditures (internal plus external) are shown in Table IV.17, while patients' internal expenditures are shown in Table IV.18. A comparison of the last row of the two tables reveals that MOH patients had to incur an average total treatment expenditure of 14.4 colones, their external expenditure of 9.4 colones (14.4 - 5.0) being almost twice as much as their internal payment of 5.0 colones. Private patients also had to incur high external payments relative to their internal expenditures. On average, private patients spent 43.9 colones with the provider and an additional 29.4 colones (73.3 - 43.9) outside of the doctor's office. In absolute terms, external payments of private patients were much larger than those of MOH users (29.4 colones versus 9.4 colones, respectively). In percentage terms, private patients' external payments represented a lower share of their total expenditure than those of MOH users. ISSS users also incurred external payments although these were very low when compared with other subsectors. The typical MOH patient's total expenditure of 14.4 colones was equivalent to about US\$ 2.88 and represented around 4.3% of his or her average annual per capita income. The corresponding figure for patients of the private sector was about 11.7%, a very high percentage considering that individuals may have to treat multiple episodes of illness in any given year.⁸

⁸ The calculation of percentages has been made by dividing the patient total expenditure of Table IV.17 by the average subsector income provided at the bottom of Table IV.9 times the average household size of 4.8 members. The high percentage obtained for private sector users suggests that (i) income was systematically under-reported; (ii) households with high ambulatory care expenditures may be forced to go into debt; (iii) the occurrence of multiple illness episodes in a short period of time within a household may hinder the ability of some household members to seek care in the private sector.

Table IV.13

Number and Distribution of Curative
Ambulatory Doctor Patients by Subsector
and by Gender

Gender	Ministry of Health	Social Security	Private	Total
NUMBER OF PATIENTS (thousands)				
Male	42	13	54	109
Female	66	16	69	151
TOTAL	108	30	123	261
DISTRIBUTION OF PATIENTS (%)				
Male	38%	12%	50%	100%
Female	44%	11%	45%	100%
TOTAL	41%	11%	47%	99%

Note: Total percent may differ from 100% due to rounding.

Table IV.14

Number and Distribution of Curative
Ambulatory Doctor Patients by Subsector
and by Education

Education (years)	Ministry of Health	Social Security	Private	Total
NUMBER OF PATIENTS (thousands)				
0-6	88.5	17.2	77.2	182.9
7-12	15.6	10.3	36.2	62.1
13 or more	3.6	2.4	9.5	15.5
TOTAL	107.7	29.9	122.9	260.5
DISTRIBUTION OF PATIENTS (%)				
0-6	48%	9%	42%	99%
7-12	25%	17%	58%	100%
13 or more	23%	15%	61%	99%
TOTAL	41%	11%	47%	99%
Mean Yrs. Education	3.7	6.8	5.7	4.8
Med. Yrs. Education	3.0	6.0	5.0	4.0

Note: a) Total percent may differ from 100% due to rounding.
b) for children under 15 years, highest education achieved in the household was considered.

Table IV.15

Number and Distribution of Individuals
Who Sought Curative Ambulatory Care From
a Doctor by Subsector Used, All Areas

(numbers in thousands)

Subsector Used	Beneficiary of subsector used		Non-beneficiary of subsector used		Beneficiaries and non-beneficiaries		Percent of all subsector users
	Total	%	Total	%	Total	%	
Ministry of Health	107.7	100%	n.a.	n.a.	107.7	100%	41.3%
Social Security	23.6	79%	6.3	21%	29.9	100%	11.5%
Private	3.5	3%	119.4	97%	122.9	100%	47.2%
TOTAL	134.8	52%	125.7	43%	260.5	100%	100.0%

n.a.: Not applicable.

Table IV.16

Direct Payment for Curative Ambulatory Care
From a Doctor by Subsector Used, All Areas

Subsector Used	Beneficiary of subsector used			Non-beneficiary of subsector used		
	Direct payment made		Total (thousands)	Direct payment made		Total (thousands)
	No (%)	Yes (%)		No (%)	Yes (%)	
Ministry of Health	17%	83%	107.7	n.a.	n.a.	n.a.
Social Security	99%	1%	23.6	85%	15%	6.3
Private	53%	47%	3.5	21%	79%	119.4
TOTAL	32%	68%	134.8	25%	75%	125.7

n.a.: Not applicable.

Table IV.17

Average and Distribution of Patient Total
Out-of-Pocket Expenditure Per Illness Episode
Including Consultations, Exams, and Drugs
Purchased Both From the Provider and From the Market

Expenditure (Colones of March, 1989)	Ministry of Health	Social Security	Private
DISTRIBUTION (%)			
0	16%	88%	19%
1 - 5	42%	5%	10%
6 - 20	21%	4%	14%
21 - 100	15%	2%	31%
101 or more	0%	0%	26%
TOTAL	100%	99%	100%
AVERAGE (Colones)			
San Salvador M.A.	10.3	2.7	79.9
Other Urban Areas	19.4	0.4	71.5
Rural Areas	10.8	n.a.	67.3
TOTAL	14.4	1.3	73.3

Note: Total percent may differ from 100% due to rounding.

Table IV.18

Average and Distribution of Patient Total
Out-of-Pocket Expenditure Per Illness Episode
Including Consultations, Exams, and Drugs
Purchased From the Provider

Expenditure (Colones of March, 1989)	Ministry of Health	Social Security	Private
DISTRIBUTION (%)			
0	15%	96%	19%
1 - 5	68%	3%	8%
6 - 20	12%	1%	29%
21 - 100	4%	0%	34%
101 or more	0%	0%	10%
TOTAL	100%	100%	100%
AVERAGE (Colones)			
San Salvador M.A.	3.6	0.3	52.5
Other Urban Areas	6.4	0.2	37.6
Rural Areas	4.1	n.a.	40.4
TOTAL	5.0	0.2	43.9

Note: Total percent may differ from 100% due to rounding.

Table IV.19

Number and Distribution of Curative
Ambulatory Doctor Patients by Number
of Visits per Episode of Illness,
and by Subsector

(Totals in thousands)

Number of Visits	Ministry of Health		Social Security		Private		Total	
	Total	%	Total	%	Total	%	Total	%
1	92.9	86%	25.2	84%	101.3	82%	219.4	84%
2	13.1	12%	4.0	13%	15.8	13%	32.9	13%
3 or more	1.7	2%	0.8	3%	5.8	5%	8.3	3%
Total Number of Patients	107.7	100%	30.0	100%	122.9	100%	260.6	100%
Mean Number of Visits	1.16		1.19		1.23		1.19	

C. Intensity of use

The intensity of health care services use is measured here by the number of visits made by patients during the survey's two-week reference period. Table IV.19 shows that, overall, 84% of the patients of the three subsectors made only one visit during the two weeks covered by the survey; 13% made two visits and 3% made three or more visits. It is not surprising to find that such a large proportion of all patients made only one visit. First, many episodes of acute illness are resolved after the first visit to the doctor. Second, while it is conceivable that a proportion larger than 16% (13% + 3%) of the patients may have made more than one visit throughout their illness episode, many of those subsequent visits may have been made after the survey took place and, therefore, were not recorded. It must be noted that patients were asked to report only those visits made during the two weeks surveyed and, thus, the visits made prior to the two weeks were also unrecorded. The average number of visits during the two weeks, by subsector, was as follows (see bottom of Table IV.19): 1.16 for MOH patients, 1.19 for users of ISSS, and 1.23 for private patients; the overall average was 1.19 visits.

V. DETERMINANTS OF HEALTH CARE DEMAND

The tables in Chapter IV provided a descriptive presentation of patterns of health care use according to those variables believed to be determinants of demand. The descriptive tables did not lend themselves to an analysis of demand determinants. In contrast, this chapter provides an analysis of demand determinants; it isolates the effect that each explanatory variable had on demand, i.e., on both the decision to seek care outside the home and the decision to choose provider.

A. How to Read the Tables of the Chapter

The output of the statistical analysis consists of two equations that relate the decisions to seek care and to choose a provider with the variables thought to be demand determinants through a series of numerical coefficients associated with each variable. The resulting equations can be found in Appendix B.⁹

The straight results of the statistical analysis shown in Appendix B are hard to interpret. In order to facilitate their interpretation, this chapter uses the statistical results to provide several tables which show the influence of each explanatory variable, on demand. To isolate a variable's effect on demand it is necessary to fix, or maintain constant, all the other variables. For example, if one wants to assess the extent to which gender influences demand, one must keep constant all the other demand determinant determinants such as education, age, prices, travel and waiting time, income, beneficiary status, etc. By fixing those variables, one can prevent them from contaminating the analysis through their own effect on demand. Throughout the chapter, the value at which all the other variables have been fixed is shown at the bottom of each table.

The following example illustrates how the results provided in the subsequent tables should be interpreted. Table V.I shows how curative ambulatory care demand varies depending on whether or not the ill person had to interrupt his or her main activity due to the health problem, or had to stay in bed due to the problem, or both.

The table provides two types of information. First, it shows the probabilities that the person would or would not seek care outside the home depending on whether or not the main activity was interrupted or the person was bedridden or both. (Columns (c) and (a), respectively). Column (c) indicates that a person who did not interrupt work and was not bed ridden and lived in the San Salvador Metropolitan Area had a 17.5% probability of seeking care outside the home and an 82.5% (100.0% - 17.5%) probability of not

⁹ The technical reader can assume Simple Random Sample Design (SRSD) to interpret the statistical significance of the asymptotic t-statistics.

seeking outside care.¹⁰ In contrast, column (a) shows that if the person's main activity was interrupted and the person stayed in bed, or both, the probability of seeking care outside the home would have been much higher, or 39.5%, whereas the probability of not seeking care outside the home would have been much lower, or 60.5% (100% - 39.5%).

Second, the table shows the probability that the person would choose a particular subsector given that he or she had decided to seek care outside the home. These probabilities are shown in columns (d) and (b). Column (d) indicates that if the person neither interrupted his or her main activity nor stayed in bed due to the health problem, the probability of choosing an MOH facility would have been 43.8%; ISSS 5.5%; private-for-profit 44.9%; and private non-profit 5.9%. Column (b) shows the corresponding probabilities if the person had either interrupted work, stayed in bed, or both. As can be seen, the probability of choosing an MOH facility would go down to 32.2% from 43.8%. In contrast, the probability of choosing

B. Interruption of Main Activity and Bed Confinement, by Region

The interruption of a person's main activity or the person's confinement to bed due to an illness are events which are thought to increase the likelihood that the person will seek care outside the home for several reasons. First, many working adults, particularly those who are paid on an hourly basis, are forced to forego their regular income while they are in bed or disabled at home as a result of an illness. Thus, being ill is a costly event to them and it is expected that they would be more likely to seek medical treatment than someone who is ill but not forced to stop working. Second, those people who do not have a paid job, such as housewives or students, also perform activities that provide welfare to the household. A seriously ill housewife may be unable to cook or look after her children and ill children who have to stay home miss valuable education. (Needless to say, many young students may disagree with this statement and may prefer to be bedridden over going to school. However, the decision maker is often not the student but his or her parents.) Thus, these people will also be more likely to seek care than those who do not have to interrupt their main activity. Finally, those illnesses that force the individual to stay in bed or to be away from work, are usually perceived by the person as a serious condition, especially if it lasts several days. A perception of high severity may also lead individuals to seek care more often than those who can continue to work or who are not forced to remain in bed.

Table V.1 shows how demand is influenced by main activity interruption or bed confinement due to an illness. For example, an ill man living in AMSS who did not have to interrupt work or stay in bed was 17.5% more likely to seek

¹⁰ Probabilities can also be interpreted as proportions or as the number of people out of one hundred making a certain decision. For example, the probability of seeking outside care of 17.5% can be interpreted as follows: Between 17 and 18 people out of a 100 who interrupted work or were bedridden due to the health problem sought care outside the home.

Table V.1

Decision to Seek Outpatient Curative Care and
Choice of Provider as a Function of Interruption of Main
Activity and/or Bed Confinement Due to Illness, by Region

Region	Main Activity Interrupted, or Bed Confinement, or Both			
	Yes		No	
	Decision to Seek Care (a)	Provider Choice (b)	Decision to Seek Care (c)	Provider Choice (d)
SAN SALVADOR METROPOLITAN AREA	60.5%		82.5%	
No medical care				
Medical care	39.5%		17.5%	
Min. of Health		32.2%		43.8%
Social Security		3.8%		5.5%
Private-for-prof.		62.5%		44.9%
Private-non-prof.		1.5%		5.9%
OTHER URBAN AREAS				
No medical care	65.4%		85.4%	
Medical care	34.6%		14.6%	
Min. of Health		36.1%		49.6%
Social Security		3.5%		5.1%
Private-for-prof.		60.0%		43.6%
Private-non-prof.		0.4%		1.8%
RURAL AREAS				
No medical care	66.7%		86.3%	
Medical care	33.3%		13.7%	
Min. of Health		33.5%		47.4%
Social Security		1.3%		2.0%
Private-for-prof.		64.6%		48.3%
Private-non-prof.		0.6%		2.4%

ASSUMPTIONS

Accident : no	MCH	SS	Private for prof	Private nonprofit	
SS Benef. : no	Price	5	0.2	76.5	11.7
Age : 25-44	Trav Time	56	45	52	44
Gender : male	Wait Time	162	104	56	94
Education : 3 years					
Income : 6016 colones (yearly)					

care outside the home (see the upper right-hand portion of the table.) In contrast, if the same person were forced to stay in bed or away from work, he would be more than twice as likely (39.5%) to seek care, a substantial increase. The choice of subsector is also affected by whether the person is bedridden or prevented from working. The same AMSS resident would choose the private for profit sector with a probability of 44.9% if he did not have to be bedridden or away from work as a result of his condition. If he had to be in bed and/or away from work, however, he would have a much higher probability (62.5%) of choosing the private sector at the expense of all other subsectors. This result suggests that the private sector may be perceived as a better alternative for treating severe problems. Similar behaviors are observed for people living in other urban or rural areas, as shown in the lower portions of Table V.1. Table C.1 in Appendix C compares health care seeking behavior vis-a-vis work interruption or bed confinement between males and females. No important differences emerge from the comparison.

C. Accidents by Region

Table V.2 reveals that those people who have an accident (as opposed to an illness) are slightly more likely to seek care outside the home but much more likely to go to the MOH facilities than people with an illness. For example, the lower portion of the table shows that a male rural dweller with an accident would be 17.3% likely to seek care outside the home versus only 13.7% if he had an illness. In addition, if he had an accident, he would be highly likely to choose an MOH facility for treatment (82.7%) over facilities from any other subsector whereas he would be about equally likely to choose MOH (47.4%) or private facilities (48.3%) if ill. These results reflect the fact MOH facilities are better equipped to treat emergencies arising from accidents and are able to provide prompter treatment than private facilities.

D. Social Security Beneficiary Status by Region

Chapter IV demonstrated that not all ISSS users were its beneficiaries. In addition, Gomez (1989) shows that not all ISSS beneficiaries went to ISSS facilities when ill or because of an accident. How important is the patient's ISSS beneficiary status in influencing the patient's decisions to seek care and to choose a subsector? This question is addressed in Table V.3. The left-hand side of the table shows that people who are ISSS beneficiaries are much more likely --over twice as likely in AMSS and in other urban areas-- to seek care when ill than those who are not (right-hand side of the table). This reflects the fact that, relative to most non-beneficiaries, beneficiaries have ISSS facilities as one additional option for health care. ISSS beneficiaries are also much more likely (over 80% in AMSS and other urban areas and about 64% in rural areas, versus less than 5% for non-beneficiaries) to seek care from ISSS facilities than those not covered by ISSS. This, of course, is not a surprising finding. What is somewhat odd is that about 5% of the non-beneficiaries seeking care outside the home in AMSS and other urban areas would go to ISSS facilities, accounting for about 6% of all ISSS users in those areas, and for approximately 3% in rural areas. This finding implies that ISSS facilities do not strictly enforce ISSS rules which prevent non-

Table V.2

Decision to Seek Outpatient Curative Care and
Choice of Provider as a Function of Accident
by Region

Region	Accident			
	Yes		No	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice
SSMA	No medical care	78.1%		82.5%
	Medical care	21.9%		17.5%
	Min. of Health		78.4%	43.8%
	Social Security		9.2%	5.5%
	Private-for-prof.		9.1%	44.9%
	Private-non-prof.		3.2%	5.9%
OTHER URBAN	No medical care	81.1%		85.4%
	Medical care	18.9%		14.6%
	Min. of Health		82.9%	49.6%
	Social Security		8.0%	5.1%
	Private-for-prof.		9.3%	43.6%
	Private-non-prof.		0.9%	1.8%
RLRAL	No medical care	82.7%		86.3%
	Medical care	17.3%		13.7%
	Min. of Health		85.5%	47.4%
	Social Security		3.3%	2.0%
	Private-for-prof.		7.9%	48.3%
	Private-non-prof.		1.3%	2.4%

ASSUMPTIONS

	MCH	SS	Private for prof	Private nonprofit
Bed/Intern: no				
SS benef. : no				
Age : 25-44	Price	5	0.2	76.5
Gender : male	Trav Time	56	45	52
Education : 3 years	Wait Time	162	104	56
Income : 6016 colones (yearly)				94

Table V.3

Decision to Seek Outpatient Curative Care and
Choice of Provider as a Function of Social
Security Beneficiary Status, by Region

Region	Social Security Beneficiary Status			
	Yes		No	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice
SSMA	No medical care	62.8%	82.5%	
	Medical care	37.2%	17.5%	
	Min. of Health		7.8%	43.8%
	Social Security		83.1%	5.5%
	Private-for-prof.		8.0%	44.9%
	Private-non-prof.		1.1%	5.9%
OTHER URBAN	No medical care	68.3%	85.4%	
	Medical care	31.7%	14.6%	
	Min. of Health		9.4%	49.6%
	Social Security		81.9%	5.1%
	Private-for-prof.		8.3%	43.5%
	Private-non-prof.		0.3%	1.8%
RURAL	No medical care	75.2%	86.3%	
	Medical care	23.8%	13.7%	
	Min. of Health		18.0%	47.4%
	Social Security		52.8%	2.0%
	Private-for-prof.		18.3%	43.3%
	Private-non-prof.		0.9%	2.4%

ASSUMPTIONS

Bed/Interr: no
Accident : no
Age : 25-44
Gender : male
Education : 3 years
Income : 6016 colones (yearly)

	MOH	SS	Private for prof	Private nonprofit
Price	5	0.2	76.5	11.7
Trav Time	56	45	52	44
wait Time	162	104	56	94

beneficiaries from gaining access to ISSS services. The table also shows that rural dwellers who are ISSS beneficiaries have less of a preference for ISSS services than those from AMSS or other urban areas. Finally, the table indicates that a non-negligible portion of ISSS beneficiaries --about 18% in AMSS and other urban areas and around 27% in rural settings-- choose to obtain care in non-ISSS facilities. About half of those individuals renounce free ISSS care and go to the private sector where they will probably pay for their services, and half go to MOH facilities, where care is provided at relatively low prices.

E. Patient's Age and Gender, by Region

Previous studies have demonstrated that the patient's age has an important influence on both the likelihood of seeking care and the probability of choosing a given subsector. The results of Table V.4 confirm the latter but not the former finding in the Salvadoran case. Three age categories have been included in the table to illustrate this phenomenon. Although an attempt was made to preserve the more desegregated age groups used in Chapter IV, technical reasons, namely the lack of ISSS patients in the 5 to 24 age range, prevented the use of narrower age categories in this chapter. Nonetheless, the results shown in the table reveal that although the probability of seeking care outside the home does not vary in an important way across age groups, the likelihood of choosing private providers does go up with age in an important way. This result concurs with the findings of the Santo Domingo study cited earlier. It is noteworthy that the increase with age in the probability of going to the private sector is greater in rural and other urban areas than in AMSS.

The effect of gender on demand is shown in Table C.2 of Appendix C. As can be seen, the likelihood of seeking care outside the home does not vary in an important way as a function of gender. In contrast, gender appears to have an important effect on the choice of subsector, since women are more likely to go to private-non-profit facilities than men. This puzzling result, however, may not reflect actual behavior by women in the population since, as shown in Table B.1 of Appendix B, not all the coefficients associated with gender are statistically significant.

F. Patient's Education by Region

Previous studies (e.g. Bitran 1989...) have shown that education has a positive influence both in seeking outside care and choosing a private provider. The information on Table V.5 supports the latter but not the former finding for the case of El Salvador. As can be seen from the table, the probability that a person will seek care outside the home remains virtually unchanged with changes in a person's years of education. Thus, the study does not find that schooling affects the likelihood of seeking care. As education goes up, however, so does the person's preference for private providers, mainly at the expense of MOH facilities. This result can be interpreted as follows: more educated people can take better advantage of the treatment provided by private providers to improve their health status whereas less

Table V.4

Decision to Seek Outpatient Curative Care and
Choice of Provider as a Function of Age
by Region

Region	Age					
	0-24		25-44		44 and older	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice
SSMA	No medical care	83.2%		82.5%		81.6%
	Medical care	16.8%		17.5%		18.4%
	Min. of Health		57.3%		43.8%	41.6%
	Social Security		1.4%		5.5%	1.7%
	Private-for-prof.		34.0%		44.9%	46.7%
	Private-non-prof.		7.3%		5.9%	9.9%
OTHER URBAN	No medical care	85.9%		85.4%		84.8%
	Medical care	14.1%		14.6%		15.2%
	Min. of Health		64.0%		49.6%	48.5%
	Social Security		1.3%		5.1%	1.6%
	Private-for-prof.		32.6%		43.6%	46.8%
	Private-non-prof.		2.2%		1.8%	3.1%
RURAL	No medical care	86.7%		86.3%		85.5%
	Medical care	13.3%		13.7%		14.5%
	Min. of Health		60.7%		47.4%	45.0%
	Social Security		0.5%		2.0%	0.6%
	Private-for-prof.		35.9%		48.3%	50.3%
	Private-non-prof.		2.9%		2.4%	4.0%

ASSUMPTIONS

	MCH	SS	Private for prof	Private nonprofit
Bed/Interr: no				
Accident : no				
SS Benef. : no				
Gender : male				
Education : 3 years				
Income : 6016 colones (yearly)				
Price	5	0.2	76.5	11.7
Trav Time	56	45	52	44
Wait Time	162	104	56	94

Table V.5

Decision to Seek Outpatient Curative Care and
Choice of Provider as a Function of Education
by Region

Region		Education							
		1 year		3 years		5 years		9 years	
		Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to See Car	Provider Choice
SSMA	No medical care	82.9%		82.5%		81.8%		81.0%	
	Medical care	17.1%		17.5%		18.2%		19.0%	
	Min. of Health		47.6%		43.8%		38.3%		33.0%
	Social Security		4.7%		5.5%		6.7%		8.2%
	Private-for-prof.		42.3%		44.9%		48.5%		51.7%
	Private-non-prof.		5.4%		5.9%		6.5%		7.1%
OTHER URBAN	No medical care	85.7%		85.4%		84.0%		84.2%	
	Medical care	14.3%		14.6%		15.2%		15.8%	
	Min. of Health		53.3%		49.6%		43.9%		38.4%
	Social Security		4.4%		5.1%		6.3%		7.8%
	Private-for-prof.		40.7%		43.6%		47.8%		51.6%
	Private-non-prof.		1.6%		1.8%		2.0%		2.2%
RURAL	No medical care	86.6%		86.3%		85.8%		85.2%	
	Medical care	13.4%		13.7%		14.2%		14.8%	
	Min. of Health		51.0%		47.4%		42.0%		36.7%
	Social Security		1.7%		2.0%		2.4%		3.0%
	Private-for-prof.		45.1%		48.3%		52.9%		57.3%
	Private-non-prof.		2.2%		2.4%		2.7%		3.0%

ASSUMPTIONS

Bed/intern: no
Accident : no
SS Benef. : no
Age : 25-44
Gender : male
Income : 5016 colones (yearly)

	MOH	SS	Private for prof	Private nonprofit
Price	5	0.2	76.5	11.7
Trav Time	56	45	52	44
Wait Time	162	104	56	94

educated people cannot benefit as much from this advantage. Equivalently, it can be stated that more educated people perceive the private sector as being of better quality. It is also noteworthy that non-ISSS beneficiaries who are more educated are more likely to use ISSS facilities, possibly because it is easier for them to gain access to ISSS facilities while not being beneficiaries.

G. MOH Prices by Region

In order to assess the effect of MOH prices on demand, the average MOH total expenditure associated with one visit has been varied from 0 to 10 colones, and its effect on demand has been analyzed while, again, keeping everything else constant (Table V.6). The sample MOH average patient expenditure was 5 colones or about one US dollar. MOH price effects are as expected: people who face higher (lower) MOH prices are less (more) likely to seek care outside the home, and less (more) likely to choose MOH services. The first effect, a lower or higher probability of seeking care outside the home, is modest, and this makes sense: people always have the option of shifting away from (or toward) MOH services as MOH prices change.

Higher MOH prices are, therefore, unlikely to deter many people from seeking care outside the home, particularly given the presence of a private non profit sector that charges low prices, even by MOH standards.¹¹ In contrast, changes in MOH prices have an important effect on the choice of subsector as subsector shifting takes place among patients. For example, if average MOH charges were increased from the current 5 colones to 10 colones, the patient share of MOH in AMSS would go down from 45.3% to 38.9% (top third of the table). This, combined with a small drop in the proportion of people seeking care outside the home, from 17.2% to 16.5%, would result in a net reduction of MOH patients from 7.79% ($17.2\% \times 45.3\%$) of all the people who are ill or injured to 6.42% ($16.5\% \times 38.9\%$).

It is interesting to explore the financial implications of a measure such as the price increase of the above example. A rough calculation suggests that, if all the patients were like the one characterized in Table V.6, this price increase of 5 colones would reduce utilization of MOH facilities but would increase MOH revenue by 6.85 colones ($[7.79 - 6.42] \times 5$) for each 100 people ill or injured, or by an annual 3,918,000 colones (US\$ 784,000), countrywide, based on an illness prevalence figure of 53% (see Chapter IV, Section A).¹² A price increase in MOH facilities not accompanied by improvements in quality and/or accessibility may not be a politically

¹¹ Of course, this argument would collapse if the MOH price increased substantially to, say the private sector average price of about 80 colones.

¹² Of course, not all the people with a health problem are like the one characterized in Table V.6 (see characterization at the bottom of the table). To perform a more exact calculation, it would be necessary to reflect the population's socioeconomic and demographic composition in the exercise. However, for illustrative purposes, the approximation is acceptable.

Table V.6

Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of MOH Facility Price by Region

REGION	MOH Facility Price (April 1989 Colones)									
	0		2.5		5 (*)		7.5		10	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice
SAN SALVADOR METROPOLITAN AREA										
No medical care	81.9%		82.3%		82.8%		83.2%		83.5%	
Medical care	18.1%		17.7%		17.2%		16.8%		16.5%	
Min. of Health		52.2%		48.7%		45.3%		-2.1%		39.9%
Social Security		5.0%		5.3%		5.7%		6.0%		6.4%
Private-for-prof.		37.5%		40.3%		42.9%		-5.5%		-8.0%
Private-non-prof.		5.3%		5.7%		6.0%		6.4%		6.7%
OTHER URBAN AREAS										
No medical care	84.7%		85.2%		85.6%		86.0%		86.3%	
Medical care	15.3%		14.8%		14.4%		14.0%		13.7%	
Min. of Health		58.1%		54.7%		51.3%		-7.9%		-11.7%
Social Security		4.5%		4.9%		5.3%		5.6%		6.0%
Private-for-prof.		35.8%		38.8%		41.6%		-4.5%		-7.3%
Private-non-prof.		1.6%		1.7%		1.8%		1.9%		2.1%
RURAL AREAS										
No medical care	85.7%		86.1%		86.5%		86.9%		87.2%	
Medical care	14.3%		13.9%		13.5%		13.1%		12.8%	
Min. of Health		56.0%		52.6%		49.2%		-5.9%		-22.6%
Social Security		1.8%		1.9%		2.0%		2.2%		2.3%
Private-for-prof.		40.1%		43.2%		46.3%		-9.4%		-52.3%
Private-non-prof.		2.1%		2.3%		2.5%		2.6%		2.8%

ASSUMPTIONS

Bed/Intern: no
 Accident : no
 SS Benef. : no
 Age : 25-44
 Gender : male
 Education : 3 years
 Income : 2876 colones (yearly)
 (*)=Overall sample average

	MOH	SS	Private for prof	Private nonprofit
Price	see table	0.2	76.5	11.7
Trav Time	56	45	52	44
Wait Time	162	104	56	94

Table V.7

Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Private-for-profit Facility Price by Region

REGION	Private-for-profit Facility Price (April 1989 Colones)							
	0		38		77 (*)		115	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice
SAN SALVADOR METROPOLITAN AREA								
No medical care	63.0%		77.7%		82.8%		84.1%	
Medical care	37.0%		22.3%		17.2%		15.9%	
Min. of Health		4.9%		22.9%		45.6%		55.2%
Social Security		0.6%		2.9%		5.7%		6.9%
Private-for-prof.		93.8%		71.2%		42.6%		30.5%
Private-non-prof.		0.7%		3.0%		6.1%		7.3%
OTHER URBAN AREAS								
No medical care	68.1%		81.3%		85.6%		86.7%	
Medical care	31.9%		18.7%		14.4%		13.3%	
Min. of Health		5.7%		26.2%		51.5%		62.0%
Social Security		0.6%		2.7%		5.3%		6.4%
Private-for-prof.		93.5%		70.1%		41.4%		29.4%
Private-non-prof.		0.2%		0.9%		1.8%		2.2%
RURAL AREAS								
No medical care	69.7%		82.1%		86.6%		87.7%	
Medical care	31.3%		17.9%		13.4%		12.3%	
Min. of Health		5.0%		23.9%		49.4%		60.9%
Social Security		0.2%		1.0%		2.0%		2.5%
Private-for-prof.		94.6%		74.0%		46.0%		33.5%
Private-non-prof.		0.2%		1.2%		2.5%		3.0%

ASSUMPTIONS

Sec/Intern: no
 Accident : no
 SS Benef. : no
 Age : 25-44
 Gender : male
 Education : 3 years
 Income : 2876 colones (yearly)
 (*)=Overall sample average

	MOH	SS	Private for prof	Private nonprofit
Price	5	0.2	see table	11.7
Trav Time	56	45	52	44
Wait Time	162	104	56	94

viable option although it would certainly improve the financial situation of the MOH. This issue is discussed further in Chapter VI.

H. Private For-Profit Facilities' Price by Region

Price changes in private for-profit facilities would have analogous effects, in terms of the direction of consumers' response, on private sector utilization and revenue as MOH price changes would have on MOH facilities. Table V.7 illustrates the effect of private for-profit price changes on health care demand. The first column of the table, that with a price of zero, reflects the situation of those individuals who are insured and who do not have to make any co-payments when receiving private care. As can be seen from the table, around one third of all the people in this category would seek care if they had a health problem and the large majority, about 94%, would choose private for-profit facilities. These results are very similar across all three geographic areas, as can be seen when reading the first two columns of the table.

The vast majority of the country's population does not have private health insurance, however. Average private-for-profit patient expenditure associated with a visit was approximately 77 colones, or about US\$ 15. Relative to the fully insured, people who face that price level are about half as likely to seek outside care, and also about half as likely to go to the private for-profit sector than those who are fully insured. In contrast to the results obtained from the study in Santo Domingo, Dominican Republic, the Salvadoran people appear to be much more responsive to prices, or, in technical terms, have higher demand price elasticities within the observed market price ranges. The policy implications of this finding are explored below and in Chapter VI.

I. MOH Price and Patient's Income Level

People's price responses tend to vary with their income. For example, an anticipated expenditure of 77 colones in a private facility will, other things being equal, be more of a demand deterrent for a person whose monthly household income is 100 colones than for someone with an income of 10,000 colones. This is so because, by paying the 77 colones, the poor person has to forego a lot more utility (see Chapter III) than the rich person by sacrificing consumption of other goods and services worth 77 colones. The poor person may be prevented from buying needed food which could bring him or her a high utility; the wealthier individual, instead, may have to give up consumption that is less indispensable which would bring him or her less utility.

Table V.8 illustrates how MOH price changes would affect demand across income groups. If the table is read vertically, it can be seen that as a person's income goes up, so do his or her probabilities of seeking care and of choosing a private provider. It is worthwhile reminding the reader that this finding does not stem from the fact that higher income people are more likely to be insured, since it is assumed that, other than the MOH price and the

Table V.8

Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of MOH Facility Price and Household Annual Income (San Salvador Metropolitan Area)

Annual Household Income Quintile (April 1989 colones)	MOH Facility Price (April 1989 Colones)									
	0		2.5		5 (*)		7.5		10	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice
I: 0-2876 COLONES										
No medical care	82.0%		82.5%		82.9%		83.3%		83.7%	
Medical care	18.0%		17.5%		17.1%		16.7%		16.3%	
Min. of Health		53.1%		49.6%		46.2%		42.9%		39.7%
Social Security		5.1%		5.4%		5.8%		6.2%		6.5%
Private-for-prof.		36.5%		39.2%		41.9%		44.5%		47.0%
Private-non-prof.		5.3%		5.7%		6.1%		6.5%		6.9%
II: 5181-7800 COLONES										
No medical care	81.6%		82.1%		82.5%		82.9%		83.2%	
Medical care	18.4%		17.9%		17.5%		17.1%		16.8%	
Min. of Health		50.4%		47.0%		43.7%		40.5%		37.5%
Social Security		4.8%		5.1%		5.5%		5.8%		6.1%
Private-for-prof.		39.6%		42.3%		45.0%		47.5%		50.0%
Private-non-prof.		5.2%		5.5%		5.9%		6.2%		6.5%
III: 14901-176400 COLONES										
No medical care	80.1%		80.5%		80.8%		81.1%		81.3%	
Medical care	19.9%		19.5%		19.2%		18.9%		18.7%	
Min. of Health		40.9%		38.0%		35.3%		32.7%		30.2%
Social Security		3.9%		4.1%		4.3%		4.5%		4.6%
Private-for-prof.		50.7%		53.2%		55.5%		57.8%		59.9%
Private-non-prof.		4.5%		4.7%		4.9%		5.1%		5.3%

ASSUMPTIONS

Bed/intern: no
 Accident : no
 SS Benef. : no
 Age : 25-44
 Gender : male
 Education : 3 years
 Region : SSMA
 (*)=Overall sample average

	MOH	SS	Private for prof	Private nonprofit
Price	see table	0.2	76.5	11.7
Trav Time	55	45	52	44
Wait Time	162	104	56	94

person's income, all other things are kept constant in the analysis of Table V.8. Higher income people may be more likely to seek care because they may be more informed about the benefits of health care. Wealthier people may also be able to take more advantage of the care provided by private doctors in order to improve their health status. Finally, as discussed above, people with a higher income will have a greater capacity to pay for health care at any price level. For example, at the sample average MOH price of 5 colones, a household belonging to the lowest income quintile will seek care in 17.1% of the cases. In contrast, the equivalent probability for a person whose household belongs to the highest income quintile is 19.2%. Given the survey sample size, this small difference in probability may prove to be not statistically significant.

Although differences in the likelihood of seeking care outside the home are small among income groups, more important differences exist in the choice of subsector, as shown in the table. Relative to the poorest, higher income people show a preference for private providers at the expense of MOH facilities. For example, at the same price of 5 colones, people from the lowest income quintile seeking care will choose MOH facilities in 46.2% of the cases and private providers in 41.9% of the instances. The comparable figures for people in the highest income group are 35.3% for MOH providers and 55.5% for private facilities.

J. Private Facilities' Price and Patients' Income Level

Table V.9 shows how private sector prices affect demand across income groups. This analysis is similar to the one provided in Table V.8 in the case of MOH prices. Findings arising from Table V.9 for the private sector care parallel those derived from Table V.8 in the case of MOH prices. First, at any given price level, poorer individuals are less likely to seek care outside the home than the more affluent. Second, those who belong to lower income groups are less likely to go to private facilities than those with higher incomes. Note, however, that if both the poor and the rich were fully insured in the private sector (i.e., if all faced an out-of-pocket private price of zero, as shown in the first two columns of Table V.9), virtually no differences in health care seeking behavior would arise among the poor and the rich: approximately 37% of all those ill or injured would seek care and about 94% of those seeking care would go to private providers.

K. Social Security Beneficiary Status and Patients' Income Level

Table V.3 showed how a patient's beneficiary status affects his or her decision to seek care and to choose a subsector. It was shown that ISSS beneficiaries living in AMSS and other urban areas were both twice as likely to seek care outside the home than the non beneficiaries and over 80% likely to go the ISSS facilities when seeking care, compared with about 5% for non beneficiaries. Large, although less dramatic contrasts in health care seeking behavior among beneficiaries and non beneficiaries are also observed in rural areas.

Table V.9

Decision to Seek Outpatient Curative Care and Choice of Provider as a Function
of Private Facility Price and Household Annual Income
(San Salvador Metropolitan Area)

Annual Household Income Quintile (April 1989 colones)		Private-for-profit Facility Price (April 1989 Colones)							
		0		38		77 (*)		115	
		Decision to Seek Provider Care Choice		Decision to Seek Provider Care Choice		Decision to Seek Provider Care Choice		Decision to Seek Provider Care Choice	
I:	0-2376 COLONES	63.0%		77.9%		83.0%		84.2%	
	No medical care								
	Medical care	37.0%		22.1%		17.0%		15.8%	
	Min. of Health	4.9%		23.2%		46.4%		56.3%	
	Social Security	0.6%		2.9%		5.8%		7.1%	
	Private-for-prof.	93.8%		70.8%		41.6%		29.1%	
	Private-non-prof.	0.6%		3.1%		6.2%		7.5%	
II:	5181-7800 COLONES	62.9%		77.5%		82.5%		83.8%	
	No medical care								
	Medical care	37.1%		22.5%		17.5%		16.2%	
	Min. of Health	4.9%		22.2%		43.9%		53.0%	
	Social Security	0.6%		2.8%		5.5%		6.6%	
	Private-for-prof.	93.8%		72.0%		44.7%		33.3%	
	Private-non-prof.	0.7%		3.0%		5.9%		7.1%	
V:	14801-176400 COLONES	62.9%		76.0%		80.8%		81.8%	
	No medical care								
	Medical care	37.1%		24.0%		19.2%		18.2%	
	Min. of Health	5.1%		19.2%		35.4%		40.5%	
	Social Security	0.6%		2.3%		4.3%		4.9%	
	Private-for-prof.	93.6%		75.8%		55.4%		49.0%	
	Private-non-prof.	0.7%		2.7%		4.9%		5.7%	

ASSUMPTIONS

Bed/Intern: no
 Accident : no
 SS Benef. : no
 Age : 25-44
 Gender : male
 Education : 3 years
 Region : SSMA
 (*)=Overall sample average

	MOH	SS	Private for prof	Private nonprofit
Price	5	0.2	see table	11.7
Trav Time	56	45	52	44
Wait Time	162	104	56	94

Table V.10 shows how behavior among these two groups of individuals differs by income group. The main results from the tables are that higher income ISSS beneficiaries are slightly more likely to seek care outside the home and also less likely to choose ISSS facilities. For example, the table shows that beneficiaries who belong to the lowest income quintile have a 37.1% probability of seeking care outside the home and an 84.0% probability of going to an ISSS facility. The corresponding figures for beneficiaries in the highest income quintile are 37.7% and 79.1%, respectively.

L. Travel Time to the Facility, by Region

As expected, travel time has a negative effect on both the probability of seeking care and the probability of choosing the given subsector, as shown on Table V.11 in the MOH case. For example, the table shows that people who have an MOH facility next door (travel time of zero minutes in the table) have a probability of seeking care of 19.2% and are 56.0% likely to choose MOH. In contrast, those who have to travel 112 minutes to reach the nearest MOH facility would seek care slightly less often (16.3%) but would be much less likely to choose an MOH facility. This effect is similar across regions as shown in the table. Equivalent effects are observed when varying the travel time to private providers and to ISSS facilities, as shown in Tables C.3 and C.4 of Appendix C.

M. Implicit Perceived Quality Differentials, by Region

Table V.12 shows what health care demand would be if all four subsectors had the same price, waiting time, and travel time as those of the MOH subsector and if all people were ISSS beneficiaries. As can be seen from the table, demand for each subsector's services would not be the same. The principal reason for the wide differences observed in subsector demand is the fact that people's perception of the quality of care vary among subsectors. In particular, the private for-profit subsector is perceived as being of overwhelmingly higher quality than any other subsector while MOH care is perceived as being of very poor quality. ISSS is perceived as providing services of intermediate quality, although it is perceived as providing relatively lower quality services in rural than in either other urban or urban areas. The table also shows that relative to men, women perceive ISSS facilities as being of better quality at the expense of private for-profit providers.

N. Regional Differences in Demand

Several tables in this chapter showed actual health care utilization in urban, other urban, and rural regions. In all such tables, demand, i.e., the likelihood of seeking care outside the home and the likelihood of choosing a particular subsector, varied across regions. In particular, residents were more likely to seek outside care and more likely to go to either the ISSS or to private providers than either other urban or rural dwellers. The latter had the lowest probability of seeking care and choosing the private sector or ISSS providers.

Table V.10

Decision to Seek Outpatient Curative Care and Choice of Provider as a Function
of Social Security Beneficiary Status and Household Annual Income
(San Salvador Metropolitan Area)

Annual Household Income Quintile (April 1989 colones)	Social Security Beneficiary			
	Yes		No	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice
I: 0-2876 COLONES				
No medical care	62.9%		82.9%	
Medical care	37.1%		17.1%	
Min. of Health		7.9%		46.2%
Social Security		84.0%		5.8%
Private-for-prof.		7.1%		41.9%
Private-non-prof.		1.0%		6.1%
III: 5181-7800 COLONES				
No medical care	62.8%		82.5%	
Medical care	37.2%		17.5%	
Min. of Health		7.8%		43.7%
Social Security		83.0%		5.5%
Private-for-prof.		8.1%		45.0%
Private-non-prof.		1.1%		5.9%
V: 14801-176400 COLONES				
No medical care	62.3%		80.8%	
Medical care	37.7%		19.2%	
Min. of Health		7.7%		35.3%
Social Security		79.1%		4.3%
Private-for-prof.		12.1%		55.5%
Private-non-prof.		1.1%		4.9%

ASSUMPTIONS

Bed/Interr: no
Accident : no
Age : 25-44
Gender : male
Education : 3 years
Region : SSMA
(*):Overall sample average

	MCH	SS	Private for prof	Private nonprofit
Price	5	0.2	76.5	11.7
Trav Time	56	45	52	44
Wait Time	162	104	56	94

Table V.11

Decision to Seek Outpatient Curative Care and Choice of Provider as a Function of Travel Time to MOH Facility by Region

REGION	Travel Time (minutes)									
	0		28		56 (*)		84		112	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice	Percent	Provider Choice
SAN SALVADOR METROPOLITAN AREA										
No medical care	80.8%		81.7%		82.5%		83.2%		83.7%	
Medical care	19.2%		18.3%		17.5%		16.8%		16.3%	
Min. of Health		56.0%		49.9%		43.8%		37.9%		32.3%
Social Security		4.3%		4.9%		5.5%		6.0%		6.6%
Private-for-prof.		35.2%		40.0%		44.9%		49.6%		54.0%
Private-non-prof.		4.6%		5.2%		5.9%		6.5%		7.1%
OTHER URBAN AREAS										
No medical care	83.7%		84.6%		85.4%		86.0%		86.6%	
Medical care	16.3%		15.4%		14.6%		14.0%		13.4%	
Min. of Health		61.6%		55.7%		49.6%		43.5%		37.6%
Social Security		3.9%		4.5%		5.1%		5.7%		6.3%
Private-for-prof.		33.2%		38.3%		43.6%		48.8%		53.9%
Private-non-prof.		1.3%		1.5%		1.8%		2.0%		2.2%
RURAL AREAS										
No medical care	84.8%		85.6%		86.3%		86.9%		87.4%	
Medical care	15.2%		14.4%		13.7%		13.1%		12.6%	
Min. of Health		59.5%		53.5%		47.4%		41.3%		35.6%
Social Security		1.5%		1.7%		2.0%		2.2%		2.4%
Private-for-prof.		37.2%		42.7%		48.3%		53.8%		59.1%
Private-non-prof.		1.8%		2.1%		2.4%		2.7%		2.9%

ASSUMPTIONS

Bed/Intern: no
 Accident : no
 SS Benef. : no
 Age : 25-44
 Gender : male
 Education : 3 years
 Income : 6016 colones (yearly)
 (*)=Overall sample average

	MOH	SS	Private for prof	Private nonprofit
Price	5	0.2	76.5	11.7
Trav Time	see table	45	52	44
Wait Time	162	104	56	94

Table V.12

Decision to Seek Outpatient Curative Care and Choice of Provider
When Price, Travel Time, and Waiting Time
Are the Same Across Subsectors
by Gender and by Region

REGION	GENDER			
	MALE		FEMALES	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice
SAN SALVADOR METROPOLITAN AREA				
No medical care	49.3%		47.0%	
Medical care	50.7%		53.0%	
Min. of Health		2.42%		2.51%
Social Security		26.80%		36.41%
Private-for-prof.		70.32%		60.19%
Private-non-prof.		0.46%		0.89%
OTHER URBAN AREAS				
No medical care	55.1%		52.9%	
Medical care	44.9%		47.1%	
Min. of Health		2.86%		2.98%
Social Security		25.88%		35.43%
Private-for-prof.		71.12%		61.31%
Private-non-prof.		0.14%		0.28%
RURAL AREAS				
No medical care	58.0%		56.7%	
Medical care	42.0%		43.3%	
Min. of Health		2.98%		3.36%
Social Security		10.85%		16.06%
Private-for-prof.		85.96%		80.13%
Private-non-prof.		0.21%		0.45%

ASSUMPTIONS

	MOH	SS	Private for prof	Private nonprofit
Bed/Interr: no				
Accident : no				
SS Benef. : yes				
Age : 25-44				
Gender : see table				
Education : 3 years				
Income : 7800 colones (yearly)				
Price	5	5	5	5
Trav Time	56	56	56	56
Wait Time	162	162	162	162

The analysis presented here suggests that these differences in demand can be attributed primarily to the fact that, relative to people in either urban or other urban areas, rural dwellers (a) have the lowest average educational level; (b) have to travel farther to reach private facilities; (c) have lower incomes; (d) perceive the ISSS facilities as being of poorer quality; and (e) perceive the MOH facilities as being of slightly better quality. subsector,

VI. POLICY IMPLICATIONS

Chapter IV, provided a description of health care utilization patterns in El Salvador. A main finding was that, in spite of the presence of MOH facilities that provide health services at relatively low prices, a large proportion of the country's uninsured population opted to use the private for-profit sector and thus incurred relatively high treatment expenditures. In San Salvador, 58% of total utilization took place in private facilities while only 26% occurred in MOH facilities. In other urban areas, the private sector and the MOH captured similar shares of total utilization, with about 43% of the market each. Finally, in rural areas, MOH providers accounted for the largest market share, with 58% of total utilization, although the private sector still played a major role capturing about 43% of the patients.

Some may wonder why the MOH fails to capture a much greater share of all patients, particularly in light of the fact that the MOH service price is, on average, less than one tenth the price of private sector services. This document has demonstrated that, in order to understand consumer demand for health care, one must keep in mind the fact that price is only one among several factors that influence demand. Thus, lower MOH prices alone will not necessarily translate into a higher demand for MOH services. Factors other than prices, such as consumers' quality perceptions, are crucial in explaining consumer preferences.

Chapter V showed that non-price variables, such as age, education, and type of health problem affected individual demand in an important way. In particular, it was shown that consumers' perceptions of health care quality varied widely among subsectors and had an important effect on demand. For example, the analysis revealed that, if all subsectors had the same price, travel, and waiting times as the MOH subsector and if everyone in AMSS had access to ISSS services, over 60% of the people in AMSS would choose the private sector, about 36% would go to ISSS facilities, and only around 3% would go to MOH providers. This implies that the private sector is perceived by the population as providing services of the highest quality, the MOH as providing services of very low quality, and ISSS facilities as having services of intermediate quality.

The analysis of Chapter V also revealed that the price of health care played an important role as a determinant of demand. For example, the analysis showed that those who have full private insurance coverage are much more likely to seek care outside the home and to choose private providers than those who are not insured. Finally, it was also shown that price had an effect of a different magnitude on demand depending upon the income level of

the individual, the demand of lower income people being more affected by price variations than that of more affluent people.

In light of the above findings, the remainder of this concluding chapter discusses some of the study's policy implications. The discussion focuses on the following policy options: (a) improving the quality of MOH services; (b) changing MOH prices; (c) expanding the role of the private sector; and (d) expanding ISSS coverage and improving ISSS service quality.

A. Improving the Quality of MOH Services

The governments of most developing countries have adopted the policy of organizing and providing low-priced health care services through a country-wide network of health facilities. By selling services at low prices (relative to cost), governments express their belief that price is an important determinant of demand and that low prices will result in high demand for government services. Several studies of health care demand, including the present one, have shown that prices of health services indeed have an important effect on demand. However, this and other studies have also shown that government services tend to be perceived by the population as being of low quality when compared to the services of private providers. Thus, in such cases, lower prices do not translate into important demand increases for government services. If the government of El Salvador wishes to increase the volume of service at MOH facilities, it will have to improve service quality.

While this study has shown that MOH services are perceived as being of poor quality, it has not identified exactly which features of its services are responsible for such a perception on the part of consumers. It is likely, though, that the factors which intervene in consumers' quality valuation include the availability of drugs in MOH facilities, the attitude of the staff, and the general condition of the premises. Conducting studies of health care quality can help to fully understand consumer behavior and to allow MOH officials to improve quality.

Studies of health services quality should attempt to understand the process whereby consumers assess quality and should avoid the futile exercise of trying to assess quality only as measured by MOH providers. Consumers' quality perceptions are the only thing that matter since consumption decisions are made by the consumers, not the providers.

B. Changing MOH Prices

Many studies of health care demand have recommended the adoption of higher user fees in government facilities, the argument being that the resulting increased revenue can be used to improve service quality.¹³ Such a recommendation is not always warranted. Though higher MOH prices are likely

¹³ See, for example, Bitran (1988a). Higher fees for health have also been recommended to promote efficiency in consumption of health services. A discussion of this point can be found in Akin et al. (1987).

to result in higher revenue, it is questionable that a price increase will automatically translate into better quality. In fact, government facilities often operate in an inefficient way for several reasons, including poor employee motivation and inadequate control of operations. Thus, higher user-fee revenue can easily be absorbed by the system's inefficiencies without bringing about any improvements in service quality. A conclusion of the foregoing discussion is that measures to improve management of government facilities must accompany if not precede measures to revise upwards government prices if, in fact, higher prices are deemed essential. Further, clear policies for quality improvements, which would stem from studies of consumer quality perceptions, should be delineated prior to embarking on a policy of higher MOH prices.

If higher MOH net revenue is needed to help finance quality improvement measures, the government of El Salvador will have to make decisions about the pricing systems it should adopt. Defining a pricing policy entails, among other things, determining price levels for different services and deciding whether fees should vary according to patient characteristics, such as income, in order to address equity concerns. Decisions would also have to be made about the mechanisms whereby user fees would be collected and spent, particularly whether facilities would be allowed to retain and spend locally all, or a portion of the proceeds.

While several studies of health care demand have recommended price increases in government facilities, as discussed above, few, if any, have recommended government price reductions. This study has shown that, other things being equal, a price reduction in MOH facilities would translate into a higher demand for MOH services. Thus, some readers who would like to promote greater use of MOH services may be tempted to propose cuts in MOH prices. Such a measure, however, is not recommended for the following reasons. First, while lower prices could result in higher demand, the increase in demand would only be very modest, as shown in Tables V.6 and V.8. Second, the increase in demand would not be large enough to offset the price reduction and, thus, MOH revenue would go down. This would not solve the principal problem which is the poor quality of MOH care.

C. Expanding the Role of the Private Sector.

This study shows that the people of El Salvador have a strong preference for private sector services. Such a preference holds across urban and other urban dwellers, and among all socioeconomic groups. The primary reason for this preference is the relatively superior quality of private care as perceived by consumers.

If the goal of the government of El Salvador is to improve accessibility of health care services, that goal can be achieved through the private sector. For example, the government could establish contracts with private providers to deliver services to the population and reimburse the providers through prospective reimbursement agreements. The government could also set policies for promoting a greater role of the private sector in service delivery. Such policies could include ensuring that capital be made available for start-up costs of private practitioners. In sum, to achieve its goal of higher

coverage of health services, the government may find it more efficient, from a social viewpoint, to do so through the private sector as opposed to doing so through government facilities. Pilot projects of private-public collaboration could be undertaken to study the feasibility of adopting such policies on a larger scale.

D. Expanding ISSS Coverage and Improving ISSS Service Quality

This study has shown that about 20% of all ISSS beneficiaries in urban and other urban areas and approximately 37% in rural areas used either private or MOH facilities. As discussed in Chapter V, this behavior was explained partly by a relatively longer travel time to ISSS facilities (see Table C.4). Chapter V also showed that people's preferences for ISSS services varied according to socioeconomic and demographic variables. Finally, and more importantly, the analysis revealed that, on the average, ISSS providers were perceived as being of lower quality than private providers.

As in the case of government services, the social security institute should seek to identify and solve deficiencies in service, particularly in rural areas, where lower quality perceptions appear to be the chief cause of low use.

The descriptive analysis of Chapter IV showed that ISSS users have the highest average income among the three subsectors studied. In addition to looking for ways for improving service quality, ISSS should also explore the option of expanding its coverage to other population groups, especially to other workers and to self-employed individuals. To explore the option of expanding coverage, the social security institute need to assess the extent to which its costs would go up as a result of expanding its coverage. If excess capacity currently exists in ISSS facilities, then it is likely that the incremental cost would be modest on a per capita basis. Thus, ISSS could afford to enroll people with lower income who would make a smaller monthly contribution to the ISSS fund than the current affiliates.

APPENDIX A

This Appendix provides a detailed description of the behavioral model used in the study as well as the statistical estimation techniques.

Behavioral Model

The behavioral model used in this study follows closely that developed by Gertler, Locay and Sanderson (1987).¹⁴ It is assumed that individuals derive utility from their health status and from the consumption of non-health goods and services. Individuals' health status is negatively affected by illnesses or injuries. Individuals with a health problem must decide whether or not to purchase health care. If purchased, the ability of individuals to transform health care into an improved health status depends on many factors such as the persons's age, sex, education, and type of health problem. In order to obtain health care services people have to incur both monetary and non-monetary costs. Monetary costs are the out-of-pocket payments made to the provider and the payments made for transportation to the health care facility. Non-monetary costs are the time spent by individuals traveling to and from the provider's facility and the time spent waiting at the facility.

Out-of-pocket costs affect people's utility since they reduce the amount of income available to purchase non-health goods and services. Time costs also affect utility negatively since they reduce a person's time available for leisure or for other income-producing activities.

More formally, let us denote by U_{ij} the utility obtained by individual i when consuming provider's j health services given that the individual has a health problem. Let H_{ij} be an individual's expected health status after receiving care, R_{ij} the goods and services consumed by person i after paying provider j , and T_{ij} the time spent by individual i when obtaining care from provider j .

Thus,

$$U_{ij} = U (H_{ij}, R_{ij}, T_{ij}) \quad (1)$$

Individuals are assumed to have limited monetary resources. Their total expenditures on health and non-health goods and services must not exceed available income. Let Y_i' be income available to individual i , P_{ij}' the price that individual i must pay provider j per unit of health care, M_{ij} the quantity of health care services purchased, W the unit price of a composite of non-health goods and services, and R_{ij} the amount of these goods and services consumed by individual i . The following budget constraint must hold:

¹⁴ This appendix matches with minor differences in Appendix B of Bitran(1989a)

$$Y_i' = P_{ij}' \cdot M_{ij} + W \cdot R_{ij} \quad (2)$$

An individual with a health problem must choose provider j and the amount of medical care M_{ij} which will maximize utility as specified in (1) subject to the budget constraint in (2).

In order to simplify the model, it is assumed that the quantity of care to be consumed (M_{ij}) is determined by the provider and unknown at the time of the first visit. Further, it is assumed that the quantity of care that patients expect to obtain is fixed across providers and close to one (visit). In order to simplify the notation one can normalize the budget constraints in prices using as denominator the price of non-health goods and services.

Thus, (2) becomes

$$Y_i = P_{ij} + R_{ij}$$

where $P_{ij} = P_{ij}'/W$ and $Y_i = Y_i'/W$.

It is important to point out that this model allows for price discrimination on the part of the provider. In other words, a provider who produces a homogeneous health service may charge different prices to different individuals. This feature of the model reflects a common practice among doctors in El Salvador.

If the quantity of medical care were an endogenous variable, individuals with a health problem would face two decisions: which provider to choose, and how much care to obtain from the chosen provider, given its price and time costs. However, since the amount of care has been assumed to be approximately equal to one, ill people must only decide from which provider to obtain care.

The substitution of (3) into (1) yields an indirect utility function shown in (4), that relates utility to the person's income, to the prices of goods and services, and to the health status and leisure time.

$$V_{ij} = V_{ij}(H_{ij}, Y_i - P_{ij}, T_{ij}) \quad (4)$$

As in Gertler et al. (1987), quality of health care can be defined by establishing a relationship between a person's health status before obtaining care, H_{i0} , and after getting care from provider j , H_{ij} . For example, quality can be defined as the difference between health status after and before treatment

$$Q_{ij} = H_{ij} - H_{i0} \quad (5)$$

Solving for H_{ij} in (5), one can obtain a relationship between after-treatment health status, pre-treatment health status, and quality of care.

$$H_{ij} = H_{i0} + Q_{ij} \quad (6)$$

Health care quality, Q_{ij} , is assumed to be a function of individual's and provider's characteristics. Thus,

$$Q_{ij} = Q_{ij}(X_i, Z_j) \quad (7)$$

where X_i and Z_j denote individual and provider characteristics, respectively. Expression (6) can therefore be re-written as follows:

$$H_{ij} = H_{i0} + Q_{ij}(X_i, Z_j) \quad (8)$$

Substituting for H_{ij} , as defined in (8), into (4), above, and after completing the specification, one obtains an expression for individuals' indirect utility which can be tested empirically.

Empirical Specification

An indirect utility function quadratic in consumption was used in the empirical analysis.

$$V_{ij} = H_{ij} + a \cdot (Y_i - P_{ij}) + b \cdot (Y_i - P_{ij})^2 + c \cdot T_{ij} + \beta \quad (10)$$

where β represents a random error and accounts for unobserved explanatory variables. Substituting for H_{ij} from (8) into (9) one gets the following expression for individuals' utility:

$$V_{ij} = H_{i0} + Q_{ij}(X_i, Z_j) + a \cdot (Y_i - P_{ij}) + b \cdot (Y_i - P_{ij})^2 + c \cdot T_{ij} + \beta \quad (11)$$

Finally, if we let quality be a linear function of individual and provider characteristics, expression (11) becomes:

$$V_{ij} = a \cdot P_{ij} + b \cdot (P_{ij}^2 - 2Y_i \cdot P_{ij}) + c \cdot T_{ij} + D_i \cdot X_i + E_j \cdot Z_j + \beta \quad (12)$$

where D_i and E_j are vectors of parameters and X_i and Z_j are vectors of individual and provider attributes, respectively.

Estimation

People with a health problem face two types of decisions. First, they must decide whether or not to seek care. Second, conditional upon seeking care, they must decide from which provider to seek care. The two-step decision-making process can be estimated using nested logit (MacFadden, 1981). Nested logit does not suffer from the independence from irrelevant alternatives (IIA) problem and is a more general formulation of MacFadden's conditional logit.

Nested logit can be estimated using full information maximum likelihood. However, the likelihood function is highly non linear, and programming a maximization algorithm can be a difficult and time-consuming process.

An alternative to the full information maximum likelihood method is a two-step procedure. The disadvantage of FIML over the two-step procedure is that any misspecification at one stage also contaminates the estimated parameters at the other stage. The distributional assumptions of the error term are also stronger for FIML than for the two-step procedure.

Two-step estimation is done as follows: In the first step, only those individuals who sought care are considered in order to estimate the parameters of expression (12). Using the estimated parameters, the "inclusive value" is calculated, which represents an exponentially weighted sum of the utilities that could be obtained from each alternative provider. In the second step, the inclusive value is used as an additional variable in the indirect utility expression.

It must be noted that V_{ij} in (12) is unobserved. What is actually observed is the decision made by people, i.e., the provider chosen. Thus, the dependent variable is a dichotomous variable which takes on two values depending on the choice made. Traditionally, dichotomous variables are arbitrarily labelled 1 and 0, the former value being used if the choice is made and the latter if not. Of course, any other labelling is equally valid. The independent variables are those specified on the right-hand side of equation (12).

As explained in Chapter III, the focus of this analysis is the individual's choice of health care subsector. In principle, each person who is ill can obtain care from providers in any of three subsectors: the Ministry of Health (MOH), the El Salvador Social Security Institute (ISSS), or the private sector. Using the nested logit formulation, the probability that an individual who decides to seek care chooses subsector j is given by the expression

$$P_j = \frac{e^{C_j \cdot d / (1-g)}}{e^{C_M \cdot d / (1-g)} + e^{C_I \cdot d / (1-g)} + e^{C_P \cdot d / (1-g)}} \quad (13)$$

where g is the correlation coefficient among the error terms of the indirect utility functions associated with each alternative, d is a vector containing the parameters (a, b, c, D_i, E_j) specified in expression (12), above, C is a vector containing the independent variables $(P_{ij}, P_{ij}^2, -2Y_i \cdot P_{ij}, T_{ij}, X_i, Z_j)$ of expression (12), and the subindices M , I , and P denote the subsectors of MOH, ISSS, and private, respectively.

Expression (13) can be used to compute the probability of choosing MOH ($j=M$). In that case, the numerator in (13) would be $e^{C_M \cdot d / (1-g)}$. Similar expressions can be used to compute the probability of choosing ISSS or PRIVATE. Note that the denominator in all three expressions is the same.

The product of probability expressions as specified in (13) constitutes the likelihood function whose maximization yields the estimated vector of parameters $d/(1-g)$. The inclusive value for MOH, ISSS, and PRIVATE is defined as follows:

$$S_{SIP} = \ln \left(e^{C_M \cdot d / (1-g)} + e^{C_I \cdot d / (1-g)} + e^{C_P \cdot d / (1-g)} \right) \quad (14)$$

where \ln denotes natural logarithm.

Once the inclusive value has been calculated, probability expressions for the CARE/NO CARE options are defined as follows:

$$\text{Prob}_{\text{NO CARE}} = \frac{e^{C_N \cdot h}}{e^{C_N \cdot h} + e^{S \cdot (1-g)}} \quad (15)$$

$$\text{Prob}_{\text{CARE}} = \frac{e^{S \cdot (1-g)}}{e^{C_N \cdot h} + e^{S \cdot (1-g)}} \quad (16)$$

where Prob denotes probability, S is the inclusive value of expression (14), C_N is the vector of variables characterizing the NO CARE alternative, and h is the corresponding vector of parameters.

In summary, the parameters $d/(1-g)$ are calculated in the first step and used to compute the inclusive value. These parameters show how individual and provider characteristics influence the choice of subsector once the decision to seek care has been made. In the second step, the inclusive value is used as a variable characterizing the CARE option in order to estimate the vector of parameters h .

After estimation, probability calculations can be done by solving the following system of equations:

$$\frac{\text{Prob}_{\text{NO CARE}}}{\text{Prob}_{\text{CARE}}} = \frac{e^{C_N \cdot h}}{e^{S \cdot (1-g)}} = k1 \quad (17)$$

$$\frac{\text{Prob}_{\text{MOH}}}{\text{Prob}_{\text{ISSS}}} = e^{(C_M - C_I) \cdot d / (1-g)} = k2 \quad (18)$$

$$\frac{\text{Prob}_{\text{MOH}}}{\text{Prob}_{\text{PRIVATE}}} = e^{(C_M - C_P) \cdot d / (1-g)} = k_3 \quad (19)$$

$$\text{Prob}_{\text{NO CARE}} + \text{Prob}_{\text{MOH}} + \text{Prob}_{\text{ISSS}} + \text{Prob}_{\text{PRIVATE}} = 1 \quad (20)$$

Equations (17) through (20) constitute a system of four equations with unknowns $\text{Prob}_{\text{NO CARE}}$, Prob_{MOH} , $\text{Prob}_{\text{ISSS}}$, and $\text{Prob}_{\text{PRIVATE}}$.

Solving for these four unknowns one obtains the following recursive solution for probability expressions:

$$\text{Prob}_{\text{ISSS}} = \frac{1}{(1+k_1) \cdot (1+k_2+k_2/k_3)} \quad (21)$$

$$\text{Prob}_{\text{MOH}} = k_2 \cdot \text{Prob}_{\text{ISSS}} \quad (22)$$

$$\text{Prob}_{\text{PRIVATE}} = (k_2/k_3) \cdot \text{Prob}_{\text{ISSS}} \quad (23)$$

$$\text{Prob}_{\text{NO CARE}} = k_1 \cdot (\text{Prob}_{\text{MOH}} + \text{Prob}_{\text{ISSS}} + \text{Prob}_{\text{PRIVATE}}) \quad (24)$$

Hedonic Price and Travel Time Equations

An individual who has a health problem and who decides to seek care, faces three choices: to go to MOH facilities, to go to ISSS facilities, or to go to private facilities. Each choice is characterized by a price, travel, and waiting time. Individuals make the subsector choice based on the ex-ante expected price, travel and waiting times. For estimation purposes, it is necessary to impute a price, a travel, and a waiting time to each of the three options faced by people with a health problem. Unfortunately, the only information available is the ex-post price actually paid to the provider in the subsector chosen, the distance actually travelled, and the actual time spent waiting in the facility.

A price, a travel time, and a waiting time are imputed to each of the three options faced by an individual using hedonic predicted values. A hedonic price equation is an equation which has as dependent variable the out-of-pocket price paid by the patient to the provider, and as independent variables those variables which affect the price, such as the insurance status

of the patient and the type of medical problem. A hedonic travel time equation has as dependent variable the travel time to the provider's facility, and as independent variables those variables which are presumed to affect travel time, such as the age of the patient and the number of facilities of the corresponding subsector in the patient's neighborhood. A hedonic waiting time equation is similarly defined.

Appendix Tables B.2 through B.4 present the results from the hedonic regressions.

APPENDIX B

STATISTICAL RESULTS

TABLE B.1

Curative Ambulatory Medical Care
Nested Logit Estimated Coefficients and t-Statistics
Choice of Subsector and Decision to Seek Care

	Subsector Choice						Decision to Seek Care Outside the Home	
	Ministry of Health		Social Security		Private for Profit		No Care	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	1.06	1.84	-3.27	4.27	4.11	6.82	2.69	14.12
Price	-0.57×10^{-1}	4.17	-0.57×10^{-1}	4.17	-0.57×10^{-1}	4.17	-	-
Price squared	0.22×10^{-3}	1.90	0.22×10^{-3}	1.90	0.22×10^{-3}	1.90	-	-
Price times income	0.36×10^{-3}	3.92	0.36×10^{-3}	3.92	0.36×10^{-3}	3.92	-	-
Travel time	-0.87×10^{-2}	1.34	-0.87×10^{-2}	1.34	-0.87×10^{-2}	1.34	-	-
Waiting time	0.69×10^{-2}	1.15	0.69×10^{-2}	1.15	0.69×10^{-2}	1.15	-	-
Age: 1-24 years	0.63	1.72	0.13	0.21	-0.64×10^{-2}	0.02	0.26	2.38
25-44 years	0.58	1.16	1.68	2.72	0.48	0.98	0.31	2.30
Sex	0.63	1.74	0.36	0.75	0.82	2.41	0.40	4.62
Years of education	-0.80×10^{-1}	2.05	0.34×10^{-1}	0.64	-0.89	0.24	-0.33×10^{-1}	3.37
Bed confinement or work interruption	1.05	1.94	0.98	1.37	1.69	2.84	-0.49	2.89
Accident	1.18	0.39	1.12	0.87	-0.99	1.04		
San Salvador Metro- politan Area	-0.98	2.40	0.13	0.18	-0.97	2.33	-0.71	6.37
Other urban areas	0.35	0.80	1.26	1.81	0.20	0.46	0.68	0.69
Social Security beneficiary dummy	-	-	4.44	12.29	-	-	-0.22	2.52
Inclusive value	-	-	-	-	-	-	0.47	5.08
Log-likelihood			-734.7				-2,417.5	
Degrees of Freedom			1,121				10,650	

TABLE B.2

Curative Ambulatory Medical Care
Hedonic Price Regressions
OLS Estimates

	Ministry of Health		Social Security		Private for Profit		Private Non-Profit	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	9.77	3.80	0.57	1.00	91.43	5.94	11.61	1.27
Accident	-1.67	0.50	-0.30	0.77	-14.65	0.45	0.65	0.07
Respiratory illness	-0.52	0.25	0.28	0.86	-9.39	0.81	-9.49	1.05
Intestinal illness	2.46	1.24	0.17	0.60	13.35	1.07	1.96	0.23
Acute illness	-2.36	0.98	-0.35	1.02	-10.22	0.80	9.52	1.21
Sex	2.25	1.28	0.04	0.18	-1.42	0.14	-5.46	0.75
Age: Less than 1 year	-4.34	1.26	-0.33	0.30	6.10	0.27	-13.63	0.65
2-44 years	-1.87	0.84	0.14	0.48	-9.43	0.82	-0.60	0.08
Bad confinement or work interruption	1.32	0.50	-0.22	0.62	28.2	2.13	-9.49	0.90
Private insurance beneficiary	-	-	-	-	4.20	0.15	-	-
Social Security beneficiary	-7.88	1.33	-0.58	1.92	-	-	-	-
San Salvador Metro- politan Area	3.17	1.29	0.33	0.88	-6.91	0.54	3.83	0.54
Other urban areas	2.78	1.49	-0.10	0.26	6.60	0.54	5.27	0.51
Adjusted R-squared	0.03		0.00		0.01		0.00	
Degrees of Freedom	336		88		269		40	

TABLE B.3

Curative Ambulatory Medical Care
 Hedonic Travel Time Regressions
 OLS Estimates

	Ministry of Health		Social Security		Private for Profit		Private Non-Profit	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	76.04	8.66	44.99	3.46	89.53	9.13	87.24	
Accident	5.80	0.48	10.84	0.71	-34.45	1.85	-19.73	
Acute illness	0.40	0.06	8.95	1.08	-18.69	2.54	-13.29	
Sex	4.51	0.71	-6.12	0.75	12.99	1.86	3.88	
Age: Under 1 year	-8.75	0.77	-	-	24.75	1.70	-	
1-4 years	-31.79	3.23	-	-	7.47	0.63	-	
5-14 years	-3.76	0.39	-	-	-10.15	1.00	-	
15-44 years	-12.49	1.61	-	-	4.49	0.53	-	
Under 15 years	-	-	0.91	0.03	-	-	-4.74	
Bed confinement or work interruption	-20.14	2.17	19.07	1.62	-7.52	0.80	2.01	
San Salvador Metro- politan Area	-22.87	2.78	1.42	0.12	-52.98	6.41	-49.03	
Other urban areas	-22.15	3.48	-13.76	1.12	-39.62	4.85	-50.3	
Number of sector facil- ities in person's municipality	-0.41	0.44	-4.97	1.27	-0.86	0.91	-	
Adjusted R-squared	0.07		0.07		0.14			
Degrees of Freedom	304		68		307			

TABLE B.4

Curative Ambulatory Medical Care
 Hedonic Waiting Time Regressions
 OLS Estimates

	Ministry of Health		Social Security		Private for Profit		Private Non-Profit	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	154.11	6.22	54.65	1.59	65.34	5.80	85.62	
Accident	-47.32	1.40	18.04	0.45	12.90	0.60	142.70	
Acute illness	35.16	1.87	30.21	1.37	-5.01	0.59	9.57	
Sex	-21.24	1.19	-16.93	0.78	-2.33	0.29	-4.78	
Age: Under 1 year	-25.06	0.78	-	-	0.49	0.02	-	
1-4 years	-39.70	1.43	-	-	9.75	0.72	-	
5-14 years	-10.91	0.40	-	-	2.05	0.18	-	
15-44 years	2.24	0.10	-	-	1.66	0.17	-	
Under 15 years	-	-	-30.00	0.33	-	-	21.97	
Bed confinement or work interruption	-1.70	0.07	19.88	0.64	14.56	1.34	42.58	
San Salvador Metro- politan Area	6.15	0.27	40.97	1.26	-1.58	0.17	-22.45	
Other urban areas	0.19	0.01	28.58	0.88	-11.70	1.24	-23.41	
Number of subsector facilities in per- son's municipality	1.75	0.66	-6.51	0.63	-1.19	1.10	-	
Adjusted R-squared	0.00		-0.04		0.14			
Degrees of Freedom	304		68		307			

APPENDIX C

Additional Results

Table C.1

Decision to Seek Outpatient Curative Care and
Choice of Provider as a Function of Gender and Interruption
of Main Activity and/or Bed Confinement Due to Illness

Gender		Main Activity Interrupted, or Bed Confinement, or Both			
		Yes		No	
		Decision to Seek Provider Care Choice		Decision to Seek Provider Care Choice	
MALES	No medical care	60.5%		82.5%	
	Medical care	39.5%		17.5%	
	Min. of Health		32.2%		43.8%
	Social Security		3.8%		5.5%
	Private-for-prof.		62.5%		44.9%
	Private-non-prof.		1.5%		5.9%
FEMALES	No medical care	52.9%		81.0%	
	Medical care	41.1%		19.0%	
	Min. of Health		35.2%		44.2%
	Social Security		5.4%		7.2%
	Private-for-prof.		56.3%		37.4%
	Private-non-prof.		3.1%		11.1%

ASSUMPTIONS

	MOH	SS	Private for prof	Private nonprofit
Accident : no				
SS Benef. : no				
Age : 25-44				
Education : 3 years				
Income : 6016 colones (yearly)				
Region : San Salvador Metropolitan Area				
Price	5	0.2	76.5	11.7
Trav Time	56	45	52	44
Wait Time	162	104	56	94

Table C.2

Decision to Seek Outpatient Durable Care and
Choice of Provider as a Function of Gender, by Region

Region	Gender			
	Male		Female	
	Decision to Seek Care	Provider Choice	Decision to Seek Care	Provider Choice
SSMA				
No medical care	82.78%		81.21%	
Medical care	17.2%		18.8%	
Min. of Health		45.36%		45.56%
Social Security		5.70%		7.50%
Private-for-prof.		42.91%		35.59%
Private-non-prof.		6.04%		11.35%
OTHER URBAN				
No medical care	85.61%		84.48%	
Medical care	14.4%		15.5%	
Min. of Health		51.28%		53.43%
Social Security		5.28%		7.21%
Private-for-prof.		41.63%		35.83%
Private-non-prof.		1.81%		3.53%
RURAL				
No medical care	86.53%		85.53%	
Medical care	13.5%		14.5%	
Min. of Health		49.20%		51.94%
Social Security		2.04%		2.82%
Private-for-prof.		46.30%		40.37%
Private-non-prof.		2.46%		4.87%

ASSUMPTIONS

Bed/Interr: no
Accident : no
SS Benef. : no
Age : 25-44
Education : 3 years
Income : 2876 colones (yearly)

	MOH	SS	Private for prof	Private nonprofit
Price	5	0.2	76.5	11.7
Trav Time	56	45	52	44
Wait Time	162	104	56	94

Table 4.3

Decision to Seek Outpatient Curative Care and Choice of
Provider as a Function of Travel Time to Private-for-profit Facility
by Region

REGION	Travel Time (minutes)									
	0		25		50 (*)		75		100	
	Decision to Seek Care	Provider Choice								
METROPOLITAN AREA										
No medical care	80.9%		81.8%		82.5%		83.1%		83.7%	
Medical care	19.1%		18.2%		17.5%		16.9%		16.3%	
Min. of Health		34.6%		39.2%		43.8%		48.2%		52.4%
Social Security		4.4%		4.9%		5.5%		6.0%		6.5%
Private-for-prof.		56.2%		50.5%		44.7%		39.3%		34.1%
Private-non-prof.		4.7%		5.3%		5.9%		6.5%		7.0%
OTHER URBAN AREAS										
No medical care	84.0%		84.8%		85.4%		85.9%		86.4%	
Medical care	16.0%		15.2%		14.6%		14.1%		13.6%	
Min. of Health		39.6%		44.6%		49.6%		54.4%		58.9%
Social Security		4.1%		4.6%		5.1%		5.6%		6.0%
Private-for-prof.		54.9%		47.2%		43.6%		38.1%		32.9%
Private-non-prof.		1.4%		1.6%		1.8%		1.9%		2.1%
RURAL AREAS										
No medical care	84.9%		85.6%		86.3%		86.9%		87.3%	
Medical care	15.1%		14.4%		13.7%		13.1%		12.7%	
Min. of Health		37.1%		42.2%		47.4%		52.5%		57.5%
Social Security		1.5%		1.7%		2.0%		2.2%		2.4%
Private-for-prof.		59.5%		54.0%		48.3%		42.7%		37.2%
Private-non-prof.		1.9%		2.1%		2.4%		2.6%		2.9%

ASSUMPTIONS

Bed/Intern: no
Accident : no
SS Benef. : no
Age : 25-44
Gender : male
Education : 3 years
Income : 6016 colones (yearly)
(*)=Overall sample average

	MCH	SS	Private for prof	Private nonprofit
Price	5	0.2	76.5	11.7
Trav Time	56	45	see table	44
Wait Time	162	104	56	94

Table 3.4

Decision to Seek Care and Provider Choice as a Function of Travel Time to Social Security Facility by Region

Region	Travel Time (minutes)									
	0		33		45 (*)		68		90	
	Decision to Seek Provider Care		Decision to Seek Provider Care		Decision to Seek Provider Care		Decision to Seek Provider Care		Decision to Seek Provider Care	
	Choice	Choice	Choice	Choice	Choice	Choice	Choice	Choice	Choice	Choice
METROPOLITAN AREA										
No medical care	59.1%		61.0%		62.8%		64.6%		66.2%	
Medical care	40.9%		39.0%		37.2%		35.4%		33.8%	
Min. of Health		5.6%		6.7%		7.8%		9.2%		10.7%
Social Security		87.9%		85.6%		83.1%		80.1%		76.9%
Private-for-profit		5.7%		6.3%		8.0%		9.5%		11.0%
Private-non-profit		0.8%		0.9%		1.1%		1.2%		1.4%
OTHER URBAN AREAS										
No medical care	64.3%		66.6%		68.3%		69.9%		71.3%	
Medical care	35.3%		33.4%		31.7%		30.1%		28.7%	
Min. of Health		6.8%		8.0%		9.4%		11.1%		12.9%
Social Security		87.0%		84.6%		81.9%		78.8%		75.4%
Private-for-profit		6.0%		7.1%		8.3%		9.8%		11.3%
Private-non-profit		0.2%		0.3%		0.3%		0.4%		0.5%
RURAL AREAS										
No medical care	73.9%		75.1%		76.2%		77.2%		78.1%	
Medical care	26.1%		24.9%		23.3%		22.8%		21.9%	
Min. of Health		13.8%		15.9%		18.0%		20.3%		22.6%
Social Security		71.4%		67.1%		62.8%		58.0%		53.2%
Private-for-profit		14.1%		16.2%		18.3%		20.7%		23.0%
Private-non-profit		0.7%		0.8%		0.9%		1.0%		1.1%

ASSUMPTIONS

Sex/Intern: no
 Accident : no
 SS Benef. : yes
 Age : 25-44
 Gender : male
 Education : 3 years
 Income : 6016 colones (yearly)
 (*)=Overall sample average

	MOH	SS	Private for profit	Private nonprofit
Price	5	0.2	76.5	11.7
Trav Time	56	n.a.	52	44
Wait Time	162	104	56	94

BIBLIOGRAPHY

- Akin, J., N. Birdsall, and D. De Ferranti, "Financing Health Services in Developing Countries: An Agenda for Reform," The World Bank, 1987.
- Bitran, R., "Household Demand for Medical Care in Santo Domingo, Dominican Republic," HCF/LAC Research Report No. 9, Stony Brook, New York: HCF/LAC, March, 1989.
- _____, "Household Health Care Demand Study in the Bokoro and Kisantu Zones of Zaire. Volume 2: Patterns of Utilization," Resources for Child Health Project, Arlington, VA, June, 1989.
- Dor, A., P. Gertler, and J. van der Gaag, "Non-Price Rationing and the Choice of Medical Care Providers in Rural Côte d'Ivoire," Journal of Health Economics 6:291-304, 1987.
- Gertler, P., L. Locay, and W. Sanderson, "Are User Fees Regressive? The Welfare Implications of Health Care Financing Proposals in Peru," Journal of Econometrics 36: 67-88, 1987.
- Gómez, L.C., "Estudio de Demanda por Servicios de Salud en El Salvador. Volumen I. Encuesta de Hogares: Metodología y Resultados," Resources for Child Health Project, Arlington, VA, July 1989.
- Gómez, L.C., "Household Survey of Health Services Consumption in Santo Domingo, Dominican Republic: Methodology and Preliminary Findings," HCF/LAC Research Report No. 8, Stony Brook, New York: HCF/LAC, September, 1988.
- McFadden, D., "Econometric Models of Probabilistic Choice," in C. Manski and D. McFadden (eds.): Structural Analysis of Discrete Data with Econometric Applications, Cambridge, MA: MIT Press, 1981.
- World Bank, World Development Report 1989, New York: Oxford University Press, 1989