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Health Care Utilization, Expenditures, and Insurance: Household Survey Findings from Suez Governorate, Egypt

February 2005

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- ▲ *Implementation of appropriate health system reform.*
- ▲ *Generation of new financing for health care, as well as more effective use of existing funds.*
- ▲ *Design and implementation of health information systems for disease surveillance.*
- ▲ *Delivery of quality services by health workers.*
- ▲ *Availability and appropriate use of health commodities.*

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Abstract

This report examines how the health sector in Suez governorate, Egypt, responds to overall health policy objectives: equity in access to and financing of health care, and satisfaction with quality of care received. The analysis focuses on the insurance effectiveness of the Health Insurance Organization (HIO) by evaluating its effect on service use, patterns of treatment seeking behavior, out-of-pocket payments, satisfaction with care, and willingness to insure. The analysis uses household survey data collected in Suez governorate in 2004. Results indicate that the uninsured tend to be those who are economically worse off; within households, it is the weaker family members who are uninsured. Overall HIO does not accomplish its insurance function: it does not decrease barriers in access to basic health care, as the richer are more likely to use care than poorer individuals. Also, the way the Ministry of Health and Population provides and finances health care in its outpatient and inpatient facilities does not contribute to the three major health policy goals stated above. It is thus not surprising that the private sector is the preferred choice for patients, independent of whether they are insured or not, and despite the fact that they incur higher out-of-pocket expenditures in that sector. Hence, any attempts to expand insurance in Suez through the HIO would therefore have to be seriously examined and may result in the need to dramatically reorganize the HIO bureaucracy, split the insurer and provider function, and open up the provider network to private providers. Recommendations are made for an insurance design that sets incentives to ensure equity in access to and financing of health care, and efficiency, quality, and financial sustainability of the health care system.

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Acronyms

CAPMAS	Central Agency for Population Mobilization and Statistics
HCI	Health Care International
HIO	Health Insurance Organization
HSRP	Health Sector Reform Program
MOHP	Ministry of Health and Population
NGO	Nongovernmental Organization
OOP	Out-of-pocket
PHR<i>plus</i>	Partners for Health Reform <i>plus</i>
SHIP	School Health Insurance Program
USAID	United States Agency for International Development

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Executive Summary

Introduction

In 1997, the Egyptian Ministry of Health and Population (MOHP) developed a comprehensive Health Sector Reform Program (HSRP) that has been supported by several development partners, including the World Bank, the United States Agency for International Development (USAID), and the European Commission. The objective of the HSRP is to develop a national health system, with social insurance that ensures the population equity in access to and financing of health care, and efficiency, quality, and financial sustainability of the health care system operations. This requires improving the delivery of primary health care and health promotion, developing equitable and sustainable health financing systems to ensure service use based on need for medical care rather than on ability to pay, and improving integration and collaboration between the private and public sector within the Egypt health system.

The Suez governorate was chosen by the MOHP and Partners for Health Reform *plus* (PHR*plus*) to pilot-test health financing reform in the context of the health sector reform. In 2004, PHR*plus* in collaboration with the MOHP and Health Care International (HCI) conducted a household survey in Suez governorate to examine the performance of the current health care system with respect to health care policy goals, primarily equity in access to care as well as in financing and quality of care, and – in light of the debate about health insurance – to analyze how socio-demographic and economic characteristics are determinants of insurance membership.

This report presents to the MOHP and Suez authorities information based on the analysis of household survey data, and, more specifically:

- ▲ Describes differences in socio-demographic and economic characteristics of insured and uninsured individuals and households in Suez and, where possible, identifies where these characteristics differ from Egypt as a whole;
- ▲ Analyzes the insurance effectiveness of the current system by focusing on the demand for medical care, and equity in utilization and financing of medical care for insured and uninsured individuals;
- ▲ Evaluates patients' satisfaction with care with respect to their socio-economic background and insurance status, and the ownership of provider; and
- ▲ Evaluates individuals' willingness to insure.

Findings of the household survey presented in this report can contribute to design of health insurance that fulfills the equity, sustainability, and quality of care objectives outlined in the HSRP.

Socio-demographic, Economic, and Insurance Status of Suez

Like the rest of Egypt, Suez has a pluralistic health care system with multiple sources of financing and provision of care (Berman, Nandakumar, and Yip, January 1998). It includes an extensive network of government owned and operated in- and outpatient facilities. Services are mostly free, with minimal user fees. Health insurance is compulsory for specific groups: the Health Insurance Organization (HIO) covers formal sector employees and school children. The HIO not only administers the enrollment and other payer functions but also provides inpatient and outpatient services to the insured persons through a dedicated network of providers throughout Egypt. Private insurance is rare.

Based on socio-demographic and economic characteristics, the sample for the household survey is representative of the Suez population. The survey includes data of 1047 completed household questionnaires containing data about 4734 individuals of all ages. They reflect approximately 1 percent of the Suez population of 473,967. HCI carried out data collection and management.

In terms of socio-demographic and economic characteristics, the four districts of the Suez governorate differ from each other in important ways. The population of the Suez district is older. Households in the Al-Ganayen district are poorer; household heads there report lower household expenditures, a higher proportion of households in the lowest income quartile, larger household size, fewer years of schooling, and fewer number of assets compared to household heads living in the other three districts.

Three key findings emerge from the analysis on the socio-demographic and economic determinants of insurance membership:

First, approximately 60 percent of the Suez population has health insurance. The uninsured most likely live in Al-Ganayen district; are a female relative of the household head (spouse, mother-in-law, sister-in-law, grandmother, daughter-in-law); and are 16 years and older.

Second, uninsured household heads tend to be female, most likely live in Al-Ganayen district, have less than five years of schooling, and belong to lower socio-economic groups. Much employment is part-time or seasonal. Most household heads work in sales (93 percent), services (53 percent), agriculture and fishery (82 percent) or are self-employed (70 percent). And the large majority of them work in their family business (84 percent), in small private enterprises (90 percent), as construction workers (92 percent), or are unemployed (74 percent).

Third, there is a highly significant relationship between the proportion of household members with insurance and socio-demographic and economic characteristics of the household head. Households with no one insured are likely headed by a female who is younger than 29 years of age; had less than five years of schooling; is disabled, a housewife, or retired; works as an agricultural worker or is self-employed; and is classified in the lowest or highest per capita expenditure quartile.

Hence, the uninsured tend to be those who are economically worse off; within households, it is the weaker family members who are uninsured.

Treatment Seeking Behavior

The survey shows that many HIO enrollees do not actually get their care through HIO facilities, but instead pay out of pocket (OOP) to utilize private providers. The analysis on treatment seeking behavior had expected to show that the HIO insured would seek care predominantly from HIO network providers,

whereas the richer uninsured persons would go to the private sector, and the uninsured persons in lower socio-economic groups would seek care in the public sector.

But findings from this survey show a much different picture of the role of insurance in Suez. First, being insured does not affect service usage rates; insured and uninsured individuals groups report the same levels of use of outpatient facilities, of inpatient hospital care, and of pharmacy products. Most important, the current health insurance does not diminish barriers to access to basic health care; richer individuals are more likely to use care than are poorer individuals; this raises serious equity concerns about the Egyptian health care system.

There are important and unexpected differences in provider choice for outpatient care. Despite the fact that public services are provided almost free of charge in MOHP facilities, these facilities are **not** the preferred option for outpatient care. Across the entire Suez population, only 36 percent of all patients go to MOHP and 6 percent to HIO facilities for outpatient care. Only 11 percent of HIO insured patients go to HIO facilities to get outpatient care. The majority of patients (about 58 percent) seek outpatient care in the relatively more expensive private sector.

There also are significant differences in where patients are hospitalized with respect to their socio-demographic, economic, and insurance background. Overall 40 percent of patients are hospitalized in MOHP hospitals and 27 percent in private hospitals. Not unexpectedly, patients are most likely hospitalized in a MOHP facility are those who live in Al-Ganayen and are not insured, female, below the age of 30, and classified in the lowest socio-economic group. Only 38 percent of HIO insured patients who needed hospitalization went to HIO hospitals, and these are mainly the poorer insured individuals. Richer insured patients who can afford it use inpatient care in the private sector.

These results show that HIO insurance does not effectively meet the goal of insurance coverage, that is, to improve access to outpatient and inpatient care. Rather, care seeking depends on patients' socio-economic background, with insured and uninsured groups who can afford it seeking care in the private sector.

Satisfaction with Care

Individuals who reported an episode of inpatient or outpatient service use were asked about their satisfaction with specific components of the care process, for example, the way that health care personnel communicate with patients or the price the respondents had to pay for services.

Findings show that only about 66 percent of all patients are satisfied with outpatient care. Lowest satisfaction rates are reported in HIO facilities. There is no difference in satisfaction with care between insured and uninsured patients and across gender and expenditure quartiles. Satisfaction relates significantly to patients' district of residence, where they seek care, how long they have to wait for the provider, and the length of time the provider spends with them. Patients report longest waiting times in HIO facilities; providers in MOHP and HIO facilities spend significantly shorter service time with patients than do providers in private facilities. This may explain why only 30 percent of the HIO patients and only 53 percent of the MOHP patients were satisfied with outpatient care.

Satisfaction with inpatient care is highest in private hospitals and public non-MOHP hospitals. Generally, HIO network and MOHP hospitals are rated as less satisfactory with respect to the professionalism of personnel and doctor/patient communication. Most insured and uninsured individuals rated out-of-pocket costs as high in private hospitals though this doesn't appear to prevent them from seeking care there.

Out-of-Pocket Payments for Care

Low out-of-pocket costs for health care are usually seen for persons who are insured, and for low-income persons who are forced to access free services provided in government facilities. This is not entirely the case in Suez.

Though the insured in Suez report somewhat lower OOP spending than the uninsured, the difference is not significant. Highest OOP amounts are paid in the private sector where the majority of all patients – insured and uninsured – seek care, and where care is not covered by HIO insurance. Generally, patients classified in higher per capita expenditure quartiles (used here as a proxy for income) report higher OOP payments than patients in lower expenditure quartiles, who are also less likely to afford paying for better-quality care in the private sector.

Clearly, these findings show that the HIO does not accomplish its insurance function of lowering OOP payments at the time of service use and of improving access to quality care by lowering financial barriers in access to care. In addition, the way the MOHP provides and finances health care in its outpatient facilities does not contribute to the three major health policy goals: equity in access to care and in health financing, and satisfactory quality of care. It is thus not surprising that most patients, regardless of insurance status, seek care in the private sector. This makes it rather questionable why individuals would want to insure as long as care in the private sector is not covered by insurance.

Willingness to Insure

The 2002 Egyptian household survey (MOHP, 2002) found that the majority of uninsured households (54 percent) preferred to remain uninsured. In this Suez household survey, only 21 percent of all household heads prefer not to be insured. Among those least willing to insure are individuals who are currently insured with HIO or through work insurance, live in Al-Ganayen district, or are classified in the highest socio-economic group.

When asked about the reasons why they prefer **not** to insure, 48 percent of the household heads attributed their opinion to the unsatisfactory or bad quality of care received in HIO and public sector facilities; 17 percent said they don't see the benefit of insurance; and an additional 15 percent replied they prefer to pay for care in the private sector. Also, the large majority of individuals prefer to have free choice of provider in an insurance system. These responses are not surprising and support the previously discussed findings that insured and uninsured patients are willing to incur high OOP payment in order to access better-quality care in the private sector.

Households that are willing to insure were asked about the amount they would be willing to pay per person for insurance premium. Juxtaposing these stated premium amounts with household income shows that these premium levels would result in inequitable health financing. Households with lower incomes would spend a higher percentage of their total monthly expenditure on insurance premiums than would higher income households. This leads to the recommendation to charge income-dependent premium levels; better-off groups would pay higher percentages of their income. Such progressivity in premium levels would contribute to equity in health financing.

Conclusion

Five key findings emerge from this household survey analysis:

First, the current health insurance system leads to the exclusion of socio-economically weaker society members from a common risk-sharing pool.

Second, HIO does not achieve the two basic insurance functions, namely, to improve individuals' access to care by lowering financial barriers generally and, in particular, to decrease OOP expenditures at the time of service use. In addition, lowest satisfaction with care is reported in HIO facilities, followed by MOHP facilities.

Third, the way the MOHP provides and finances health care in its outpatient and inpatient facilities does not contribute to three major health policy goals: equity in access to care, equity in health financing, and good quality of care. Poorer patients are also most likely to seek care in MOHP facilities because they cannot afford paying higher fees for better-quality care

Fourth, based on these findings it is not surprising that the private sector is the preferred choice for patients, regardless of their insurance status, and the higher OOP expenditures incurred in that sector.

Fifth, the degree to which an eventual insurance design in Suez governorate will respond to the HSRP health policy goals will affect the willingness of Suez inhabitants to enroll – and to pay premiums. It would require substantial quality improvements in HIO and public sector facilities and expanding insurance coverage to private sector providers. In light of current dissatisfaction with HIO quality, expanding insurance in Suez through HIO would therefore have to be seriously examined and could result in the need to completely reorganize the HIO bureaucracy, split the HIO's insurer and provider function, and open the provider network to include private providers.

Based on survey findings and overall health policy goals, the recommendation section proposes an insurance design with incentives to ensure equity in access and financing of health care, and efficiency, quality, and financial sustainability of the health care system.

1. Introduction

In 1997, the Egyptian Ministry of Health and Population (MOHP) developed a comprehensive Health Sector Reform Program (HSRP) that has been supported by several development partners, including the World Bank, the United States Agency for International Development (USAID), and the European Commission. The objective of the HSRP is to develop a national health system, with social insurance to ensure equity in access and financing of health care, efficiency, quality, and financial sustainability of the health care system. This requires improving the delivery of primary health care and health promotion, developing equitable and sustainable health financing systems to ensure service use based on need for medical care, and improving integration and collaboration within the Egypt health system.

The MOHP and the USAID-funded Partners for Health Reform *plus* project (PHR *plus*) identified Suez governorate as the site to pilot-test a sustainable model of health reform. This study presents results from a household survey conducted in Suez in 2004 to examine how the Suez health sector responds to overall health policy objectives before the introduction of health sector reform.

1.1 Health Insurance in Egypt

As described in an earlier report, by the Partnerships for Health Reform project (Berman, Nandakumar, and Yip, 1998), Egypt has a pluralistic health care system with multiple sources of financing and provision of care. It includes an extensive network of in- and outpatient facilities that are owned and operated by the MOHP and other governmental bodies, such as the Ministry of Education's teaching hospitals. Services are mostly free, with minimal user fees.

About 30 percent of the population is covered by the Health Insurance Organization (HIO), a public organization set up in 1964 to provide health insurance for industrial workers and civil servants. It is now compulsory for all formal sector employees,¹ HIO also administers the school health insurance program (SHIP) that provides public health insurance to school children to the age of 18 and to all children below the age of 7. SHIP is financed by annual premiums paid by the parents, general government revenues, a cigarette tax, and co-payments (Yip and Berman, 2001). The HIO not only administers the enrollment and other payer functions but also provides inpatient and outpatient services to the insured persons through a dedicated network of providers throughout Egypt.

Individuals who do not have compulsory insurance through an employer (e.g., informal sector groups, household members of insured workers) have the option of voluntary enrollment with HIO. The uninsured are assumed to seek care in the public sector. Private insurance is rare in Egypt.

¹ Large companies can opt out of this plan by paying a fee to HIO and as long as their employees are insured somewhere else.

1.2 Suez Socio-economic and Health Profile

The Suez governorate is one of the least populous governorates in Egypt, with an estimated 473,967 inhabitants in 2003, 0.68 percent of Egypt's total population (Central Agency for Population Mobilization and Statistics [CAPMAS], 2003). The governorate comprises four districts – Suez, El Arbaeen, Ataquia, and El Ganayen. Nearly half of the population (47 percent) resides in El Arbaeen district whereas only 11 percent live in Suez, the urban district. About 25 percent of the population is employed in the formal sector. Most of the formal sector workforce (40 percent) works in mining and manufacturing, followed by 11 percent working in retail and wholesale trade. Women constitute about 20 percent of the labor force, and work mainly in the education sector (CAPMAS, 2003).

Health outcome indicators in Suez are similar to those in the rest of Egypt, with the exception of rates for safe deliveries and child mortality. Nearly 85 percent of the deliveries are deemed safe in Suez, compared to 56 percent in Egypt; and Suez reports a considerably lower under 5 mortality rate (6.11/1000 children) compared to Egypt (39/1000 children in 2002) (World Health Organization, 2004).

Each of the four districts in Suez has a health department that manages its public health services. Financing sources for medical care include: the government, donors, out-of-pocket (OOP) payments made by patients, and insurance payments through HIO and SHIP. There is no shortage in health care facilities and hospital beds in Suez governorate; there are a sufficient number of health care providers of different levels of care. Medical care is delivered in HIO, public, private, and nongovernmental (NGO) facilities. The governorate has eight public hospitals with 1247 beds and 16 non-public hospitals with 219 beds. Of these 24 hospitals, 15 are located in urban Suez district. The population per bed ratio is 323 inhabitants per hospital bed in the entire governorate, and 43 inhabitants per bed in the urban Suez district. In addition, there are 77 government-owned outpatient clinics, with most of them providing preventive services in a variety of facilities. On top of that, the non-public sector in the governorate counts about 413 outpatient clinics (private, NGOs, and private company clinics) and 158 pharmacies,² with most of them situated in El-Arbaeen district, where few public providers offer care.

It is expected that HIO insured seek care in HIO facilities and their OOP expenditures at the time of service use is reduced due to their insurance coverage. The uninsured are assumed to receive care at no charge or very low prices in the public sector, though the better-off among them might prefer paying higher OOP fees for care in the private sector. Although this might result in equity in service use and financing and satisfied patients, it was found that the system has weakness, including the oversupply of public and private providers, and exclusion of the uninsured from quality care. The government of Egypt has thus articulated as its long-term goal, the achievement of universal coverage of basic health services for all its citizens, and to reform the health sector to reach this goal. One of the priority objectives is to target vulnerable population groups.

1.3 Background on Egypt's Health Sector Reform Program

The MOHP Sector for Technical Support and Programs currently leads policy development and implementation of health sector reforms in Egypt. The HSRP proposes an integrated package of strategies addressing the ways in which health care is financed, delivered, organized, and managed.

Health care financing: The “family” will become the basic unit for expanding social health insurance coverage. An affordable and cost-effective package of basic health services based on the priority health

² Suez Health directorate information center

needs of the population will be provided. It has been suggested to direct all sources of funding – private, government, and public to the National Health Insurance Fund, thereby ensuring equitable and sustainable financing of the health services packages.

Service delivery: Public and private providers will become integrated into one network of accredited family practice providers organized into family health units, family health centers, and district hospitals to provide the basic benefit package. District management teams will manage service provision. A referral system within these three facility levels and to higher specialized levels of health care will be developed, with the family physician acting as a gatekeeper to the system. Provision of the benefit package would be based upon competition and choice among the different public and private service providers, under the single National Health Insurance Fund, using incentive-based provider payment mechanisms.

Organization and management: Structures will be created, including capacities, regulatory framework, and institutional relationships, that support the reform. The emphasis is on decentralization. The MOHP role will be strengthened in strategic planning and overall coordination of the health sector.

A phased approach has been selected to implement the comprehensive and rather complex HSRP. An HSRP initial pilot phase took place from 1997 until 2002. The focus of this first pilot phase was on primary health care delivery and financing of health care. Specific steps undertaken included the following:

- ▲ Updating the health insurance benefits package and HIO scheme;
- ▲ Restructuring financing by separating the financing and purchasing organizations in HIO;
- ▲ Reorganizing coverage and service delivery at the level of the MOHP as well as other levels, to obtain greater efficiency and quality; and
- ▲ Strengthening existing organizational structures.

Some aspects of this phase, particularly the health financing activities, continue to be implemented past its designated timeframe.

1.4 Background and Purpose of the Household Survey

Suez governorate was chosen by the MOHP and PHR*plus* to pilot-test health financing reform in the context of the health sector reform. Selection criteria included: geographic, socio-economic, and demographic characteristics favorable to implementing and testing universal enrollment; few HIO providers, making it conducive to separate payer and provider functions; supportive MOHP and governorate officials; and easy geographical access from Cairo.

The first step towards designing health finance reform in Suez was to conduct a baseline market analysis in order to understand strengths and weaknesses of the health system there, and the needs of health care providers and consumers. The market study collected comprehensive information on hospitals and clinics; consumer behavior and perceptions; firms and insurance organization behavior and perceptions; health problems and priorities; and the private sector's role in the districts. Data were gathered through secondary reports, focus group discussions, expert interviews, and a household survey containing cross-sectional data on insured and uninsured individuals. Health Care International (HCI) carried out data collection for all surveys. The results of the household survey are presented in this report.

The report aims to provide to the MOHP and Suez authorities the following information:

- ▲ Describe differences in socio-demographic and economic characteristics of insured and uninsured individuals and households in Suez and where possible identify differences compared to Egypt;
- ▲ Analyze the insurance effectiveness in the current system by focusing on the demand for medical care, and equity in utilization and financing of medical care for insured and uninsured individuals;
- ▲ Evaluate patients' satisfaction with care with respect to their socio-economic background and insurance status, and ownership of their health care provider; and
- ▲ Evaluate individuals' willingness to insure.

Results serve to derive a health insurance design that addresses equity, sustainability and quality of care objectives as outlined in the HSRP. Findings from this household survey will be combined with results from the other surveys conducted for the market analysis and presented in a final health policy report.

The remainder of this report is organized as follows: The second chapter describes the methodology used to collect and analyze survey data. The socio-demographic, economic, health and insurance characteristics of the sample group are described in Chapter 3. Chapter 4 documents care seeking behavior for outpatient, inpatient, and pharmacy care. Chapter 5 examines satisfaction with care. The impact of out-of-pocket payments on households is presented in Chapter 6. Chapter 7 examines individuals' willingness to insure, and Chapter 8 presents conclusions and recommendations.

2. Methods

2.1 Data Collection and Analysis

Before piloting health sector reform in Suez governorate, the Ministry of Health and Population and governorate authorities decided to conduct a market analysis to assess the impact of current health financing on the health sector. Eventually, a follow-up survey may serve to evaluate the impact of the reform on the demand for insurance and health care in Suez by comparing the situation before and after the pilot.

The sample frame for this household survey was the database generated from a census carried out by the Suez MOHP directorate in early 2004 to establish a Family Health Program. A systematic random sampling strategy was used, which does not require weighting the data set. The sample is representative on a district level.

Data were collected through this household survey conducted in all four districts in the governorate. HCI conducted fieldwork in April/May 2004. Overall, 40 surveyors, eight field supervisors, eight survey reviewers from CAPMAS, and data management personnel (cleaning/entry) were recruited and trained during a two-day workshop on the survey and the data collection. Prior to fieldwork, the questionnaires were pre-tested and adjusted. Interviews were conducted by 20 teams. Each team consisted of two surveyors and one supervisor, who facilitated contact with the selected household after confirming the address, organized logistics, and supervised the quality of work. Questionnaire information was verified by HCI and entered in SPSS. HCI cleaned the data and sent the data set to *PHRplus* for analysis. SPSS10 and STATA7 were used to analyze the data sets.

The analysis evaluates the impact of current health financing by district and by insured and uninsured individuals. The sample population is thus divided into insured and uninsured groups, to examine how the two groups differ with respect to: (1) socio-demographic and economic characteristics, (2) care seeking behavior, (3) satisfaction with medical care, (4) the socio-economic impact of out-of-pocket payment, and (5) willingness to insure. The unit of analysis is the household or individual.

The analytical framework is based on means comparison between the two groups. However, since various factors are likely to influence the choice of service, two-way cross tabulations do not conclusively establish the relationship between insurance status and treatment seeking behavior. Therefore, a multinomial logistic regression analysis is conducted to examine the effect of insurance status and factors such as household socio-demographic and economic characteristics on health service use in outpatient facilities or pharmacies.

2.2 Data Collection Instruments

The household survey includes four structured, pre-coded questionnaires for data collection: (1) a household questionnaire, (2) outpatient care questionnaire, (3) inpatient care questionnaire, and (4) pharmacy questionnaire (see Annex A). HCI designed the questionnaires in English and translated them

into Arabic, the language in which interviews were conducted. *PHRplus* provided input to the questionnaires.

The household questionnaire, which was administered to the head of the household, includes a roster of members of the household; each individual's relationship to the head of the household; socio-demographic, health, insurance, and economic characteristics of the household; and availability to the household of durable goods, employment and expenditure on consumption. The other three questionnaires apply to all household members who sought outpatient care during the two weeks prior to the interview, inpatient care the year before the interview, or visited a pharmacy the week prior to the interview. Data for these latter three questionnaires were collected from the individual him/herself and include information on illness and health service utilization, out-of-pocket payments made for services and drugs, choice of provider, and satisfaction with care received.

2.3 Sample Description

Overall 1051 households were selected for interviews. The response rate was 100 percent, as the selected households were friendly and welcomed interviewers who could convince households by the importance of the survey and their role in assessing and improving health services in Suez. Of the 1051 questionnaires from households interviewed, 1047 (99.6 percent) were valid.

Table 1 presents an overview on the household survey sample by district in the governorate of Suez. The final data includes 1047 completed household questionnaires containing 4734 individuals of all ages. They reflect about 1 percent of the Suez population of 473,967 inhabitants.

Table 1: Number of Household Heads and Individuals in Sample, by District

Sample universe	District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	Total Suez Gov.
Household head	480	127	295	145	1047
	22.2%	24.1%	22.1%	20.5%	22.1%
Total household population	2165	528	1335	706	4734
	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2 shows all individuals who responded to the gender and insurance question. The insurance status variable was computed based on individuals' response on their insurance companies, age and school enrollment status. Almost 60 percent of the sample population is insured either with HIO, SHIP, or a private insurance company organized through the employer.

Table 2: Distribution of Sample, by Gender and Insurance Status, All Individuals

Characteristic	District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	Total Suez Gov.
Gender, count and percent per district					
Male	1100	254	659	376	2389
	50.8%	48.1%	49.4%	53.3%	50.5%
Female	1065	274	676	330	2345
	49.2%	51.9%	50.6%	46.7%	49.5%
Total	2165	528	1335	706	4734
	100.0%	100.0%	100.0%	100.0%	100.0%
Insurance status, count and percent per district					
Not insured	926	147	520	325	1918
	42.8%	27.8%	39.0%	46.0%	40.5%
Insured with HIO, SHIP or private	1239	381	815	381	2816
	57.2%	72.2%	61.0%	54.0%	59.5%
Total	2165	528	1335	706	4734
	100.0%	100.0%	100.0%	100.0%	100.0%

The general feature of survey data is that the total number of visits in a given period is collected and may include multiple or incomplete episodes of illness and care seeking. The questionnaires used in this survey collected information on health care usage occurring during different time periods prior to the interview. Table 3 shows the number of individuals who used outpatient, inpatient, or pharmaceutical services within the respective timeframe, and by district. Out of the total sample of 4734 individuals, 8.7 percent used outpatient care during the two weeks prior to the interview, 4.6 percent used inpatient care during the year prior to the interview, and 4.8 percent visited a pharmacy in the week before the interview.

Table 3: Individuals Interviewed for Outpatient, Inpatient, and Pharmacy Care Surveys

Individual interviewed in care survey	District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	Total Suez Gov.
Outpatient care in 2 weeks prior to interview	161	54	133	63	411
	7.4%	10.2%	10.0%	8.9%	8.7%
Inpatient care in 12 months prior to interview	85	41	62	30	218
	3.9%	7.8%	4.6%	4.2%	4.6%
Pharmacy service in week prior to interview	74	46	72	34	226
	3.4%	8.7%	5.4%	4.8%	4.8%

The behavior of these individuals is analyzed in this report. Health services are classified in two ways: by service type (outpatient, inpatient, and pharmacy) and by ownership type (public or non-public facility). This study does not examine self-medication or no action when ill. HIO and SHIP insurance benefits are accessible at HIO and public facilities.

2.4 Robustness of Per Capita Expenditure as Socio-Economic Indicator

This household survey does not contain any information on individuals' income or detailed household monetary and non-monetary consumption expenditure that could serve as a proxy for their socio-economic status. The 2002 Egypt household survey (MOHP, 2002) constructed an asset index

based on factor analysis of all 24 household effects included in the questionnaire. The Suez survey identified only 16 assets, which would result in an incomplete index. Also, the asset index approach lacks an underlying theory to motivate either the choice of variables or the appropriateness of the weights (Deaton, 1998). In this survey household monetary expenditure serves as a proxy for household living standard. It includes the total amount the household spends per month on consumption including health, food, and tuition, resulting in an average of 644 LE³ consumption expenditure per household per month.

Total household consumption amount was divided by the household size, resulting in an average of 158 LE per capita expenditures per month. This variable was categorized in quartiles in order to distribute the 1047 households into four expenditure groups. Table 4 shows there are considerable differences between the average values reported for monthly per capita expenditures for households classified in the four different quartiles. While a person classified in the poorest quartile spends about 57 LE per month, this amount is considerably higher (314 LE) for a person classified in the highest expenditure quartile. There is also a clear distinction across the four expenditure quartiles with respect to other relevant socio-economic characteristics such as age, total years of education, and the number of rooms a household lives in. Those classified in the highest quartile report for the head of household on average a higher age, more years of education, more rooms, and a smaller household size compared to households classified in lower expenditure quartiles.

Table 4: Socio-demographic Characteristics by Expenditure Quartiles, Mean Values

Characteristics of household head	Mean Values by Expenditure Quartile				
	Lowest	2nd	3rd	4th	All
Total household expenditure per month (LE)	310.2	519.2	678.1	1072.8	644.5
Per capita expenditure per month (LE)	57.1	106.6	154.8	313.9	158.2
Total years of education	6.1	7.6	8.7	8.3	7.6
Number of rooms in the house	3.1	3.2	3.4	3.4	3.3
Household size	5.4	4.9	4.4	3.4	4.5
Age	46.7	46.8	46.1	52.5	48.1
N (total household heads)	271	257	252	267	1047

The robustness of monthly household expenditures as a socio-economic indicator is further tested by comparing household asset characteristics across per capita expenditure quartiles. Per capita expenditure per month will be considered as robust if a clear and consistent gradient can be identified across expenditure groups. Table 5 shows the percentage of household heads who own an asset or qualify for other characteristics within each group. With the exception of the variable “house ownership,” there is a clear and significant gradual increase in ownership of selected assets across expenditure quartiles. A larger proportion of households classified in the poorest quartile is headed by a man (84 percent) compared to households in the highest quartile (76 percent), suggesting that male-headed households tend to be poorer than households headed by a woman. The percentage of insured household heads significantly increases from 45 percent in lowest to 61 percent in highest expenditure quartile. The highly significant Chi-square test results suggest that households in the four quartiles differ markedly with respect to these characteristics.

³ US\$ 1 = 6.18 LE (Egyptian pounds), July 2004

Table 5: Household Demographic and Asset Characteristics, by Expenditure Quartile, in %

% of household heads, who are or who own	Expenditure Quartile					P value
	Lowest	2nd	3rd	4th	All	
Male	84.1%	92.6%	85.7%	76.0%	84.5%	< 0.001
Insured	45%	54%	55%	61%	54%	< 0.001
Owns home	46.5%	46.7%	50.0%	49.6%	48.2%	< .088
Public sewage disposal network	90.6%	92.8%	99.2%	98.1%	95.1%	< 0.001
Fixed phone	57.9%	78.2%	76.6%	81.6%	73.4%	< 0.001
Cellular phone	10.3%	22.2%	31.0%	38.2%	25.3%	< 0.001
Owns black/white TV	31.4%	21.0%	13.1%	16.5%	20.6%	< 0.001
Color TV	65.3%	80.2%	90.9%	88.8%	81.1%	< 0.001
Video	13.7%	20.6%	29.0%	33.7%	24.2%	< 0.001
Satellite receiver	14.0%	24.1%	27.4%	31.8%	24.3%	< 0.001
Electric fan	78.2%	90.3%	92.5%	94.4%	88.7%	< 0.001
Gas stove	91.1%	98.8%	98.4%	98.5%	96.7%	< 0.001
Refrigerator	86.7%	94.2%	97.6%	95.9%	93.5%	< 0.001
Half automatic washing machine	75.6%	75.5%	70.6%	59.6%	70.3%	< 0.001
Full automatic washing machine	13.7%	24.9%	36.5%	49.1%	30.9%	< 0.001
Air conditioner	2.2%	5.4%	7.1%	10.5%	6.3%	< 0.001
Private car	2.6%	4.3%	10.3%	16.9%	8.5%	< 0.001
Total households	271	257	252	267	1047	

Pearson Chi-Square tests were performed to test hypothesis of independence between expenditure quartiles and assets.

Comparing in Table 6 the proportion of households classified in the four expenditure quartiles across the four districts shows that Al-Ganayen and Arbaeen districts report a significantly higher percentage of poor households than Suez and Ataq. In Suez district, most households are classified in the highest quartile.

Table 6: Percent Distribution of Households in Expenditure Quartiles, by Districts

Expenditure Quartile	District of Residence				Total
	Arbaeen	Suez	Ataq	Al-Ganayen	
Poorest	29.0%	11.8%	18.3%	43.4%	25.9%
2nd	27.1%	18.9%	22.7%	24.8%	24.5%
3rd	23.8%	22.0%	27.8%	19.3%	24.1%
4th	20.2%	47.2%	31.2%	12.4%	25.5%
Total households	480	127	295	145	1047

Pearson Chi-Square(9) = 84.216; p< .0001

The above comparison between household characteristics and monthly household expenditure spent on food, health, and tuition suggest that per capita expenditure can be used as a proxy for socio-economic status in this survey sample. However, because expenditure is an imperfect proxy, findings are interpreted by comparing results with relevant other socio-economic indicators, such as district of residence, school years, and occupation of the household head.

2.5 Methodology and Variable Description

This section presents the dependent and independent variables used in the multinomial logistic regression analysis that examines the effect of insurance status and other factors such as socio-economic and demographic characteristics on health service use in outpatient facilities or pharmacies.

The dependent variable is discrete and takes one of three unique values (i.e., no outpatient or pharmacy visit; outpatient visit; pharmacy visit). We model the individual's decision to seek care as a multinomial logit problem in which no action is used as the reference group. Compared to the bivariate logit estimator, this multinomial approach allows estimating more than two courses of action within the same equation, and hence more actually represents real choices.

We assess the impact of insurance membership on outpatient or pharmacy use through the incorporation of a dichotomous explanatory variable based on whether or not the person was a member of HIO at the time of the survey. In addition, the health status of an individual, proxied by whether or not the person has been hospitalized during the year prior to the interview, is also included as an explanatory variable in the model. Among other explanatory variables included is monthly monetary expenditure per capita in its logarithmic form and whether the person owns a color TV; both serve as proxies for economic status. Other control variables are gender, age, household size, and district of residence. Descriptive statistics for all the variables in the model are reported in Table 7.

Table 7: Descriptive Statistics

Independent Variable	Variable	Mean	Std. Dev.
Health insurance (0=no; 1=yes)	ins_stat	0.595	0.491
Resident of Al-Ganayen district (0=other districts)	AlGanayen	0.597	1.425
Male (0=female; 1=male)	sex	0.505	0.500
Age (years)	age	26.962	18.829
Household size (nbr of individuals)	hhsiz	5.219	1.733
Used inpatient care (0=no; 1=yes)	useinpat	0.046	0.210
Owns color TV (0=no; 1=yes)	tvcolor	0.179	0.384
Log monetary expenditure per capita in LE	logpcexp1	4.696	0.872

3. Characteristics of Households and Individuals

This chapter describes the main socio-demographic and economic characteristics among the Suez sample population and compares them with findings described in the Egyptian 2002 household survey (MOHP, 2002). There are two unit of analysis: the household head and individuals included in the sample. The objective is to identify the extent to which the Suez population differs from the Egyptian average household, and across the four districts within Suez governorate.

3.1 Characteristics of Household Head

Table 8 describes the socio-demographic characteristics of the heads of household by district. Most heads of household are male, 40-49 years old, married, and have 1-5 years of schooling.

Table 8: Socio-demographic Characteristics of Household Heads, % distribution by District

Household Head	District of Residence				
	Arbaeen	Suez	Ataga	Al-Ganayen	All 4 Districts
Age group					
16-29	6.3%	6.3%	5.8%	7.6%	6.3%
30-39	22.3%	11.0%	23.5%	26.9%	21.9%
40-49	26.5%	29.9%	29.6%	29.7%	28.2%
50-59	24.2%	29.9%	24.5%	16.6%	23.9%
60+	20.8%	22.8%	16.7%	19.3%	19.7%
Gender					
Male	82.7%	83.5%	84.4%	91.7%	84.5%
Female	17.3%	16.5%	15.6%	8.3%	15.5%
Marital status					
Single	2.1%	3.9%	1.7%	.7%	2.0%
Married	79.2%	81.1%	82.7%	86.9%	81.5%
Widow	16.3%	15.0%	13.9%	9.7%	14.5%
Divorced/separated	2.1%	0.0%	1.7%	1.4%	1.6%
Education					
No education	.2%	0	0	0	.1%
1-5 school years	49.4%	20.5%	41.5%	61.4%	45.3%
6-11 school years	16.3%	14.2%	14.6%	13.1%	15.1%
12+ school years	34.2%	65.4%	43.9%	25.5%	39.5%
Total N	480	127	295	145	1047

Table 9 shows household size and monetary expenditure by district. The mean household size in the four districts reflects the Egyptian urban average of 4.5 individuals per household (see Table 3.3 in MOHP, 2002). Al-Ganayen has a higher proportion of larger households. Annual per capita expenditures range from an average of US\$ 222 in Al-Ganayen to US\$ 496 in Suez district. This is considerably less than the Egyptian per capita gross domestic product of \$1,470 (in 2002).

Table 9: Household Size and Monetary Expenditures, by District

Households	District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	All 4 Districts
Household size					
1 person	4.8%	4.7%	2.0%	2.8%	3.7%
2	9.2%	15.0%	11.9%	6.2%	10.2%
3	14.0%	11.0%	14.2%	15.2%	13.8%
4	22.5%	26.8%	22.0%	18.6%	22.3%
5	20.8%	20.5%	21.4%	21.4%	21.0%
6	16.5%	18.1%	16.6%	19.3%	17.1%
7	7.3%	2.4%	7.5%	9.7%	7.1%
8	3.5%	.8%	3.7%	1.4%	3.0%
9	1.0%	.8%	.3%	4.1%	1.2%
10	.2%	0.0%	0.0%	1.4%	.3%
11	.2%	0.0%	0.0%	0.0%	.1%
13	0.0%	0.0%	.3%	0.0%	.1%
Average household size	4.51	4.16	4.53	4.88	4.52
Monthly per capita expenditure quartile (in LE)					
Poorest	58	58	58	53	57
2 nd	107	108	107	103	107
3 rd	155	159	155	148	155
4 th	290	408	281	296	314
Monthly average per capita, LE	141	255	166	114	158
Annual average per capita, LE	1698	3064	1986	1369	1899
Annual average per capita, US\$	\$274.8	\$495.8	\$321.4	\$221.5	\$307.3

Exchange rate: US\$ 1 = 6.18 LE (July 2004)

The distribution of household expenditure on different items among Suez households cannot be compared to that of the Egyptian household survey because of different methodologies. Households interviewed in the Suez survey estimate that they spend in an average month about 43 percent of their expenditures on food, 20 percent on tuition, and 38 percent on health. This very high share for health is surprising, considering that the government health care system is supposedly free of charge to patients. It suggests that patients seek care in the private sector and purchase medicines in pharmacies.

Comparing the percentage of households who own assets in Suez governorate with the Egyptian average suggests that Suez households are economically better-off than the Egyptian urban average household as reported in the 2002 household survey (see Table 3.4 in MOHP, 2002). Table 10 shows that households living in Al-Ganayen are constantly less likely to own assets compared to those living in the other three districts.

Table 10: Household Asset Ownership, by District

% of Households with:	District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	All 4 Districts
Fixed phone	69.8%	89%	80%	58.6%	73.4%
Cellular phone	18.8%	49.6%	33.6%	9%	25.3%
Black/white TV	21.5%	7.9%	18.6%	33.1%	20.6%
Color TV	79.2%	96.1%	85.1%	66.2%	81.1%
Video player	20.8%	34.6%	26.8%	20.7%	24.2%
Satellite dish	18.3%	47.2%	30.5%	11%	24.3%
Electric fan	88.8%	94.5%	89.5%	82.1%	88.7%
Gas stove	97.5%	97.6%	97.6%	91%	96.7%
Refrigerator	94.6%	96.9%	93.9%	86.2%	93.5%
Half automatic washing machine	77.1%	34.6%	72.9%	73.8%	70.3%
Full automatic washing machine	21.7%	72.4%	35.9%	15.2%	30.9%
Air-conditioner	4.4%	21.3%	4.4%	3.4%	6.3%
Other appliances	51.7%	66.9%	62%	35.9%	54.3%
Private car	4%	24.4%	10.2%	6.2%	8.5%

Based on the above, households living in Al-Ganayen appear to be poorer than other households living in Suez governorate. Al-Ganayen household heads report lowest per capita monetary expenditures, highest proportion of households classified in lowest quartile, largest household size, fewest years of schooling, fewest assets compared to household heads living in the other three districts.

3.2 Education of Adult Population

Education is commonly seen as an indicator for socio-economic background. Table 11 shows, for each district, the average number of school years for the adult population in Suez, by socio-demographic and economic characteristics. Education differs across districts, gender, and insurance status. Individuals living in Al-Ganayen report less education than those in the other three districts. Also, women and uninsured adults are significantly less well educated than the insured adults and men; there also is less education among individuals who work in less qualified positions or who belong to households classified in lower socio-economic quartiles. Comparing these Suez data to the 2002 Egypt household survey (see Table 3.2 in MOHP, 2002) suggests that the Suez population is on average considerably better educated than the average individual of age 15 and older in Egypt, implying that the Suez governorate population fares better economically than the average Egyptian household.

Table 11: Average Years of Schooling of Adult Population (15+), by District, Socio-demographic, and Economic Characteristics

Individual Characteristic	Average Years of Schooling, by District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	Total
Age group					
16-29	8.6	11.7	9.6	6.8	8.9
30-39	7.2	12.4	8.6	6.0	8.2
40-49	5.3	10.3	5.9	3.6	6.0
50-59	4.3	6.2	3.9	4.2	4.5
60+	8.1	11.1	8.8	6.6	8.5
Gender					
Male	8.6	11.7	9.4	6.9	8.9
Female	7.6	10.5	8.2	6.3	8.0
Insurance status					
Not insured	7.6	9.8	8.1	6.2	7.7
Insured	8.9	11.9	9.7	7.4	9.5
Main occupation					
Professional	12.9	15.3	13.7	10.0	13.3
Managerial	11.3	13.4	12.0	8.1	11.9
Clerical	9.9	12.0	12.3	8.2	10.7
Sales	5.5	10.1	9.2	5.5	6.8
Services	6.8	7.4	6.5	6.3	6.7
Worker	7.2	9.3	7.4	7.5	7.5
Agriculture	6.9	7.4	9.7	4.0	6.1
Owner	8.0	10.2	8.2	6.3	8.1
Per capita expenditure quartile					
Poorest	6.9	9.8	7.7	5.7	6.9
2nd	8.4	10.6	8.3	6.9	8.3
3rd	9.1	11.4	9.8	8.5	9.6
4th	8.6	11.4	9.1	7.3	9.4
Total 15+	8.1	11.1	8.8	6.6	8.5
N	1486	394	935	474	3289

3.3 Characteristics of Individuals

This section provides additional information on the 4734 individuals who constitute the households described in the previous section.

The gender and age distribution within the Suez sample households reflect the age distribution of the Egyptian household population as identified in the Egypt 2002 household survey (see Table 3.1 in MOHP, 2002). Table 12 describes socio-demographic characteristics of individuals interviewed in the four districts. Overall, sample individuals in the four districts show similar characteristics. The sample consists

of an equal proportion of female and male respondents, and a large proportion of young individuals below the age of 30. Almost half of the sample group has less than six years of schooling. The Suez district reports an older age structure than the other three districts, with 20 percent of the sample population being 50 years and older, and a slightly higher share of females.

Table 12: Socio-demographic Characteristics of Individuals, % by District

Individuals	District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	Total
Age group					
<5	10.0%	6.8%	9.5%	10.6%	9.6%
5-15	23.6%	20.8%	21.8%	24.6%	23.0%
16-29	29.0%	28.6%	28.8%	30.2%	29.0%
30-39	11.9%	10.2%	12.4%	12.5%	11.9%
40-49	11.3%	13.8%	12.8%	9.8%	11.8%
50-59	8.0%	10.8%	8.3%	6.4%	8.2%
60+	6.2%	8.9%	6.5%	5.9%	6.6%
Total	2165	528	1332	706	4731
Gender					
Male	50.8%	48.1%	49.4%	53.3%	50.5%
Female	49.2%	51.9%	50.6%	46.7%	49.5%
Total	2165	528	1335	706	4734
Marital status					
Single	23.9%	27.8%	24.3%	22.7%	24.3%
Married	36.4%	39.6%	38.4%	36.4%	37.3%
Widow	4.8%	4.9%	5.1%	2.8%	4.6%
Divorced	1.0%	.2%	.7%	.6%	.8%
Below legal age	34.0%	27.3%	31.4%	37.3%	33.0%
Total	2165	528	1335	706	4734
Education level if age 6+					
No education	1.6%	.2%	.8%	2.0%	1.2%
1-5 years	44.8%	26.2%	40.9%	58.0%	43.5%
6-11 years	20.3%	22.1%	19.1%	16.8%	19.7%
12+ years	33.3%	51.5%	39.2%	23.2%	35.6%
Total	1897	485	1176	607	4165

In sum, the socio-demographic and economic characteristics of the 4734 individuals included in this survey reflect the characteristics of the Suez population. While the individuals show similar demographic characteristics across districts, with the exception of the older age structure in Suez district, the comparison of household heads across districts suggests that households living in Al-Ganayen districts are economically less well off than households living in the other three districts.

If there is a relationship between socio-economic background and health status, then it could be expected that the household population living in the Al-Ganayen district will report worse health status. Given the older age structure in Suez districts, the elderly may be less healthy.

3.4 Perceived Health Status and Morbidity

3.4.1 Absence of Chronic Diseases

This survey uses the absence of chronic disease as a proxy for being healthy. The 4734 individuals interviewed were asked whether they suffer from any chronic diseases. Overall 84 percent responded negatively. Table 13 shows as could be expected by the age structure, individuals living in Suez district more likely report ill health, whereas individuals living in Al-Ganayen have the highest proportion of healthy individuals. Women are more likely to suffer from chronic disease than men, and the occurrence of chronic diseases increases with age group and households' classification in higher socio-economic quartile. It is common that poorer households self-assess their health as less critical than wealthier households. Uninsured individuals report a significantly higher probability of chronic diseases than insured individuals, suggesting that adverse selection of sick individuals into insurance may not be a serious of an issue in the governorate.

Table 13: Percent of Healthy Individuals, by District and Individual Characteristics

Individuals	District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	Total
Age group, % of healthy					
<5	93.1%	100.0%	96.0%	100.0%	95.6%
5-15	93.6%	93.6%	95.2%	97.7%	94.7%
16-29	94.9%	93.4%	96.6%	96.7%	95.5%
30-39	86.4%	85.2%	87.9%	89.8%	87.2%
40-49	69.0%	68.5%	70.6%	76.8%	70.4%
50-59	50.0%	52.6%	51.8%	60.0%	52.1%
60+	44.0%	31.9%	35.6%	54.8%	41.3%
Gender, % of healthy					
Male	86.2%	81.1%	84.7%	90.4%	85.9%
Female	81.1%	78.5%	83.6%	88.8%	82.6%
Insurance status, % of healthy					
Not insured	80.3%	70.7%	81.9%	88.3%	81.4%
Insured	86.2%	83.2%	85.5%	90.8%	86.2%
Per capita expenditure quartile, % of healthy					
Poorest	88.8%	89.3%	88.4%	91.3%	89.3%
2nd	84.7%	86.3%	85.3%	87.8%	85.5%
3rd	81.1%	83.2%	85.3%	88.0%	83.4%
4th	74.1%	72.0%	76.9%	88.4%	75.6%
Total Individuals	2165	528	1335	706	4734

Most (72 percent) of the non-healthy individuals reported only one chronic disease, and half of the individuals with chronic diseases suffer either from hypertension or diabetes mellitus.

3.4.2 The Influence of Housing on Health

The quality of housing may affect the health of household members. Table 14 shows the percentage of households with access to public sewage or with a refrigerator, and the mean numbers for other characteristics (household size and number of rooms). In Al-Ganayen, households tend to live in less healthy circumstances: they are less likely to have access to a public sewage disposal network or own a refrigerator, which is in support of the above finding that Al-Ganayen is the poorest district.

Table 14: Percent of Households with Housing Characteristics that Influence Health Status, by District

Housing Characteristics	District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	All 4 Districts
Sewage disposal					
Public network	99.8%	98.4%	99.7%	67.6%	95.1%
Disposal tank	0.2%	1.6%	0.3%	32.4%	4.9%
Household owns refrigerator	94.6%	96.9%	93.9%	86.2%	93.5%
Nbr of rooms, mean	3.1	3.6	3.3	3.4	3.3
Household size, mean	4.5	4.1	4.5	4.9	4.5

3.5 Insurance Status: Characteristics and Influencing Factors

In Suez, health insurance is compulsory for specific groups: all children of pre-school age and school children up to the age of 18 are automatically insured through SHIP. All private or public companies are required by law to insure their employees through HIO. However, some large companies can pay HIO and opt out of this plan as long as they insure their employees elsewhere. Therefore, most formal sector employees, but not necessarily their family members, are insured through HIO or private health insurance.

This section presents the socio-demographic and economic characteristics of insured and uninsured groups to identify whether insurance coverage can be linked to these characteristics. Because employees and children are most likely to be insured, it is of interest to identify the percentage of household members who are insured or not and whether disadvantaged groups have fewer household members insured. Therefore, the focus is on three groups. First, households are examined based on the proportion of household members insured; second, characteristics of insured and uninsured household heads are analyzed; and lastly, the same characteristics are evaluated for insured and uninsured individuals within a household.

3.5.1 Proportion of Household Members Insured

Tables 15 and 16 classify households into five groups based on the proportion of household members insured. Only about 20 percent of households have all members insured. About 85 percent of the sample households have at least one person insured. This proportion is considerably higher than the national average of 77 percent of households with at least one member covered by insurance (see Table 7.1 in MOHP, 2002).

There is a highly significant relationship between the proportion of household members with insurance and several socio-demographic and economic characteristics of the household head.

Households with all members insured most likely live in Suez or Ataqa district, have a household head who is male, in age group 40-49, with at least 12 years of schooling, is employed, works in a managerial or clerical position, or is classified in the highest per capita expenditure quartile. These are all characteristics that mirror a higher socio-economic status.

Households with nobody insured mostly likely have a household head who is female; younger than 29 years of age; had less than five years of schooling; is disabled, a housewife or retired; works as an agricultural worker or is self-employed; and is classified in the lowest or highest per capita expenditure quartile. These are all indicators of poorer socio-economic status with the exception of the inconsistent fourth per capita expenditure quartile that dominates in both extreme groups (nobody and all insured). Low expenditure group households may have a high proportion of insured household members if they include several children who are enrolled through SHIP.

Table 15: Proportion of Household Members Insured by Socio-Demographic Characteristics

Characteristics of Household Head	Proportion of household members with insurance					Total 100%
	Nobody insured	1 of 4 insured	Half insured	3 of 4 insured	All insured	
District of residence						
Arbaeen	14.2%	20.2%	36.9%	14.6%	14.2%	480
Suez	12.6%	11.8%	21.3%	10.2%	44.1%	127
Ataqa	15.6%	15.3%	30.2%	15.3%	23.7%	295
Al-Ganayen	15.9%	21.4%	37.2%	17.9%	7.6%	145
Pearson Chi-Square = 78.11; p<0.001						
Gender of household head						
Male	10.4%	18.0%	34.8%	16.3%	20.6%	885
Female	37.7%	17.9%	24.1%	6.2%	14.2%	162
Pearson Chi-Square =86.7; p<0.001						
Age group of household head						
16-29	25.8%	19.7%	36.4%	6.1%	12.1%	66
30-39	7.0%	14.4%	37.6%	22.7%	18.3%	229
40-49	5.8%	10.5%	34.9%	22.4%	26.4%	295
50-59	21.6%	22.0%	31.2%	9.2%	16.0%	250
60+	23.8%	26.7%	27.2%	4.4%	18.0%	206
Pearson Chi-Square = 133.219; p<0.001						
Education of household head						
No education		100%				1
1-5 years	22.2%	20.7%	36.3%	9.7%	11.2%	474
6-11 years	14.6%	19.6%	37.3%	15.2%	13.3%	158
12+ years	6.1%	13.8%	28.1%	20.3%	31.7%	413
Pearson Chi-Square = 123.593; p<0.001						

Table 16: Proportion of Household Members Insured by Socio-Economic Characteristics

Characteristics of Household Head	Proportion of household members with insurance					Total
	Nobody insured	1 of 4 insured	Half insured	3 of 4 insured	All insured	
Employment status of household head						
Self-employed	14.7%	24.4%	49.3%	6.7%	4.9%	225
Employed	7.0%	11.7%	29.9%	22.7%	28.7%	515
Not employed	35.7%	28.6%	28.6%		7.1%	14
Disabled	63.6%		18.2%	9.1%	9.1%	11
Retired	11.6%	31.0%	31.8%	7.0%	18.6%	129
Housewife	38.1%	19.0%	22.4%	6.8%	13.6%	147
Pearson Chi-Square = 253.93; p<0.001						
Occupation of household head						
Professional	4.2%	9.5%	23.2%	27.4%	35.8%	95
Managerial	1.1%	11.7%	30.0%	18.9%	38.3%	180
Clerical		4.5%	22.7%	27.3%	45.5%	22
Sales	23.9%	23.9%	42.3%	7.0%	2.8%	71
Services	12.8%	22.4%	40.0%	13.6%	11.2%	125
Industrial workers	11.0%	19.7%	39.3%	15.3%	14.7%	346
Agriculture/fishery	28.9%	28.9%	28.9%	5.3%	7.9%	38
Self-employed	40.1%	19.1%	21.7%	6.4%	12.7%	157
Pearson Chi-Square =254.9; p<0.0001						
Per capita expenditure quartile of household head						
Poorest	15.5%	18.1%	36.5%	21.8%	8.1%	271
2 nd	11.3%	17.5%	36.2%	17.9%	17.1%	257
3 rd	11.5%	20.6%	33.3%	13.1%	21.4%	252
4 th	19.9%	15.7%	26.6%	6.0%	31.8%	267
Pearson Chi-Square = 80.76; p<0.001						
% of all households	14.6%	17.9%	33.2%	14.7%	19.6%	100%
N	152	187	345	152	205	1041

Pearson Chi-Square is highly significant for each of the above variables (p<0.001).

3.5.2 Insurance Status of Household Head

Household heads tend to be the ‘breadwinner’ of the household, which makes her/his health highly valuable to household members. Table 17 shows the percent of household heads without insurance, and with insurance by distinguishing between HIO and health insurance coverage organized through the employer. Almost half of the head of households in the sample are not insured. Uninsured household heads tend to be female, most likely live in Al-Ganayen district, have less than five years of schooling, and they most likely belong to lower socio-economic groups. Employment is often part-time or seasonal. Most household heads work in sales (93 percent), services (53 percent), agriculture and fishery (82 percent) or are self-employed (70 percent). And the large majority of them works in their family business (84 percent), in small private enterprises (90 percent), as construction workers (92 percent), or are unemployed (74 percent). These findings suggest that the uninsured households tend to be those that are economically worse off.

Table 17: Percent of Household Heads, by Insurance Provider

Characteristic of household head	Insurance provider of household head			Total 100%
	Not insured	HIO	Work insurance	
District of residence				
Arbaeen	50.6%	24.0%	25.4%	480
Suez	32.3%	28.3%	39.4%	127
Ataqa	40.7%	32.9%	26.4%	295
Al-Ganayen	55.9%	26.2%	17.9%	145
Pearson Chi-Square = 29.865; p < 0.001				
Gender				
Male	42.7%	27.9%	29.4%	885
Female	66.0%	24.1%	9.9%	162
Pearson Chi-Square = 36.59; p < 0.001				
Education				
No education	0%	100.0%	0%	1
1-5 school years	57.6%	20.5%	21.9%	474
6-11 school years	49.4%	29.7%	20.9%	158
12+ school years	32.2%	34.1%	33.7%	413
Pearson Chi-Square = 62.934; p < 0.001				
Owns color TV				
No	66.7%	17.2%	16.2%	198
Yes	41.6%	29.7%	28.7%	849
Pearson Chi-Square = 40.651; p < 0.001				
Per capita expenditure quartile				
Poorest	54.6%	23.2%	22.1%	271
2 nd	46.3%	27.6%	26.1%	257
3 rd	44.8%	30.6%	24.6%	252
4 th	39.3%	28.1%	32.6%	267
Pearson Chi-Square = 15.698; p < 0.015				
% of all	46.3%	27.3%	26.4%	100.0%
Total N	485	286	276	1047

3.5.3 Insurance Status of Household Population

Table 18 identifies the uninsured individuals within a household. Forty percent of the sample population is uninsured. The uninsured most likely live in Al-Ganayen district; are a female relative of the household head (spouse, mother-in-law, sister-in-law, grandmother, daughter-in-law); and 16 years and older. Thus, within households, it is the weaker family members who are less likely insured.

Table 18: Proportion of Individuals, by Insurance Coverage

Individual Characteristic	Insurance provider of Individuals			Total Individuals
	Not insured at all	HIO	Work insurance	
District of residence				
Arbaeen	42.8%	45.6%	11.6%	2165
Suez	27.8%	39.8%	32.4%	528
Ataqa	38.7%	45.4%	15.9%	1335
Al-Ganayen	46.0%	47.5%	6.5%	706
Relationship to household head				
Household head	46.2%	27.4%	26.4%	1047
Spouse	71.1%	14.9%	14.0%	855
Son	30.0%	59.4%	10.7%	1462
Daughter	24.8%	64.6%	10.6%	1160
Grandmother	68.0%	28.0%	4.0%	25
Granddaughter	13.5%	86.5%		74
Sister-in-law	66.7%	26.7%	6.7%	15
Daughter-in-law	84.6%	15.4%		26
Mother-in-law	65.5%	27.6%	6.9%	29
Brother	85.7%	7.1%	7.1%	14
Gender of individuals household member				
Male	34.9%	47.6%	17.5%	2389
Female	46.1%	42.7%	11.2%	2345
Age group				
<5	0%	90.6%	9.4%	456
5-15	2.7%	90.0%	7.4%	1087
16-29	63.8%	23.6%	12.7%	1374
30-39	62.6%	17.7%	19.7%	564
40-49	51.9%	28.5%	19.6%	557
50-59	54.9%	18.9%	26.2%	386
60+	50.3%	29.4%	20.3%	310
Total %	40.5%	45.2%	14.4%	100.0%
Total Count	1915	2138	681	4734

4. Treatment Seeking Behavior

This chapter examines whether there is an association between insurance status and treatment seeking behavior. The focus is first on individuals' utilization of outpatient, inpatient, and pharmaceutical services; and second, on the place of service use. It is hypothesized that the HIO insured predominantly seek care with HIO providers, whereas the richer uninsured go to the private sector and the insured classified in lower socio-economic groups seek care the public sector, where fees are considerably lower.

4.1 Health Care Utilization

4.1.1 Outpatient Care

The following three tables (19-21) show mean values for service use per individual for outpatient care, hospitalization, and pharmacy use. Of the 4734 individuals included in this sample, 91 percent did not seek outpatient care during the two weeks prior to the interview. Among those who did seek care, there is an insignificant difference among insured and uninsured. While insured individuals with care report on average 2.6 outpatient visits per year, for the uninsured this number is 2.26 visits ($t = 1.347$; $p < 0.178$).

Table 19 presents the average number of outpatient visits for the entire sample population including those who did not seek care, by comparing insured and uninsured individuals. Insured and uninsured display similar outpatient use rates independent of their district of residence and socio-economic background. Higher use rates are reported by women, individuals in older age groups, and individuals with an increasing number of chronic diseases.

Table 19: Average Number of Outpatient Visits per Individual in Two Weeks Prior to Interview, by Insurance Status, Individual Characteristics

Characteristic	Insurance status		Total
	Not insured	Insured	
District of residence			
Arbaeen	.07	.08	.08
Suez	.10	.11	.11
Ataqa	.11	.12	.11
Al-Ganayen	.09	.10	.09
Gender			
Male	.05	.09	.07
Female	.12	.11	.12

Age group			
5-15	.03	.08	.07
16-29	.07	.05	.06
30-39	.10	.10	.10
40-49	.11	.10	.11
50-59	.08	.07	.08
60+	.14	.18	.16
Number of chronic diseases			
None	.06	.09	.08
At least 1	.20	.19	.19
Per capita expenditure quartile			
Poorest	.07	.07	.07
2nd	.08	.11	.10
3rd	.11	.10	.11
4th	.11	.12	.12
Total	.09	.10	.09
N (individuals)	1915	2819	4734

4.1.2 Inpatient Care

Overall 4.6 percent of insured and uninsured individuals reported to have been hospitalized during the year prior to the interview. The average length of inpatient stay is 6.4 days. Insured and uninsured patients report similar average length of hospital stays (5.8 days vs. 6.8 days for uninsured and insured, respectively) ($t=0.83$; $p<0.5$). Table 20 shows similar hospitalization rates independent of individuals' insurance status. Higher hospitalization rates are reported by individuals living in Suez, with chronic diseases, who also use outpatient care, and who are classified in highest socio-economic groups.

Table 20: Mean values for Use of Hospitalization, by Insurance Status, Individual Characteristics

Characteristic	Insurance status		All Individuals
	Not insured	Insured	
District of residence, average number of hospitalization per year			
Arbaeen	.05	.04	.04
Suez	.12	.08	.09
Ataqa	.05	.05	.05
Al-Ganayen	.04	.05	.05
Gender			
Male	.04	.05	.04
Female	.06	.05	.06

Age group			
5-15	.00	.02	.02
16-29	.04	.03	.04
30-39	.02	.04	.03
40-49	.06	.10	.08
50-59	.12	.11	.12
60+	.11	.12	.11
Number of chronic diseases			
None	.03	.03	.03
At least 1	.13	.17	.15
Used outpatient care			
No	.04	.04	.04
Yes	.15	.12	.13
Per capita expenditure quartile			
Poorest	.03	.03	.03
2nd	.04	.05	.04
3rd	.05	.05	.05
4th	.10	.08	.09
Total	.05	.05	.05

4.1.3 Pharmacy Visits

Table 21 shows the average number of pharmacy visits per individual during the week prior to the interview. Pharmaceutical service use is similar for insured and uninsured individuals. As with outpatient and inpatient care, it is individuals' district of residence, the number of chronic diseases, and socio-economic background, not insurance status, that affects the use of pharmacy services.

Table 21: Mean Values for Use of Pharmacy, by Insurance Status, Individual Characteristics

Characteristic	Insurance status		All Individuals
	Not insured	Insured	
District of residence, average number of pharmacy visit per week			
Arbaeen	.04	.03	.03
Suez	.11	.08	.09
Ataqa	.05	.06	.06
Al-Ganayen	.06	.04	.05
Gender			
Male	.04	.04	.04
Female	.06	.06	.06

Age group			
5-15	.03	.02	.02
16-29	.02	.02	.02
30-39	.05	.07	.06
40-49	.08	.06	.07
50-59	.10	.10	.10
60+	.13	.11	.12
Number of chronic diseases			
None	.03	.03	.03
At least 1	.17	.15	.16
Used outpatient care			
No	.05	.05	.05
Yes	.09	.06	.07
Per capita expenditure quartile			
Poorest	.03	.02	.03
2nd	.06	.04	.04
3 rd	.07	.06	.06
4 th	.07	.09	.08
Total	.05	.05	.05

Table 22 examines eventual differences in a combination of service use between insured and uninsured and across districts. There is no significant difference in the percent of insured and uninsured individuals who sought either outpatient or inpatient care. Nor does the percent of individuals who reported either outpatient or pharmacy care differ with respect to insurance status. Rather, combined service use is affected by the district of residence, with Suez district inhabitants reporting higher visit rates.

Table 22: Percent of Individuals Who Sought Care, by District and Insurance Status

Insurance Status	District of Residence				
	Arbaeen	Suez	Ataqa	Al-Ganayen	Total
Individuals who sought outpatient or inpatient care, % within district					
Not insured	10.0%	15.0%	13.5%	12.3%	11.7%
Insured	10.8%	15.2%	14.6%	12.9%	12.8%
Individuals who sought outpatient or pharmacy care. % within district					
Not insured	10.5%	17.0%	14.4%	12.9%	12.5%
Insured	10.3%	17.8%	15.7%	12.3%	13.1%

In sum, the above comparison of service use shows that insured and uninsured individuals report similar use of outpatient, inpatient, and pharmacy services – individuals' demand for care is related to health and socio-economic factors and not to their insurance status.

Because various factors are likely to influence choice of service, two-way cross tabulations do not conclusively establish the relationship between insurance status and treatment seeking behavior. Therefore, a multinomial logistic regression analysis is conducted to examine the effect of insurance status and factors such as socio-economic and demographic characteristics on health service use in

outpatient facilities or pharmacies. The dependent variable takes one of three unique values (i.e., no outpatient or pharmacy visit; outpatient visit; pharmacy visit). “No visit” is used as the reference group. Estimates of the multinomial logit model are shown in Table 23.

Improved access through insurance coverage would express itself in the form of insured individuals having a higher probability of service using outpatient care, covered by insurance. This is not the case in Suez governorate. In support of the above findings, results from the econometric model show that being insured does not have an effect on whether someone seeks no care, outpatient care, or goes to a pharmacy. Rather, results show that service use is significantly affected by gender, health status as expressed by the use of inpatient care, and patients’ socio-economic background proxied by monetary per capita expenditures. Demand for care at an outpatient facility and at a pharmacy increases with log monetary expenditures, which is for higher socio-economic groups. Women are significantly more likely to use outpatient and pharmacy services than men. And younger individuals are significantly more likely to use outpatient care than the elderly, though age does not affect pharmacy use. Individuals who had used inpatient care are also significantly more likely to use services from both outpatient facilities and pharmacies.

Other factors such as district of residence, household size, and insurance status do not affect the probability of service use in outpatient facilities or pharmacies.

Table 23: Multinomial Logit Estimates of the Probability of No Service Use, Used Outpatient Care, or Went to Pharmacy, Suez Governorate

Independent Variable	Parameter	Std. Err.	z	P> z
Used outpatient care				
Hainsurance coverage	0.036	0.131	0.280	0.782
Resident of Al-Ganayen district	0.041	0.037	1.100	0.269
Male	-0.479	0.116	-4.130	0.001
Age (years)	-0.045	0.010	-4.580	0.001
Age squared	0.001	0.000	5.170	0.001
Household size	-0.051	0.033	-1.560	0.119
Used inpatient care	1.009	0.184	5.490	0.001
Owns color TV	0.111	0.184	0.600	0.546
Log monetary expenditure per capita	0.215	0.074	2.890	0.004
Intercept	-2.488	0.450	-5.530	0.001

Went to pharmacy				
Has insurance coverage	0.065	0.168	0.390	0.697
Resident of Al-Ganayen district	0.023	0.055	0.410	0.684
Male	-0.535	0.172	-3.110	0.002
Age (years)	0.001	0.014	0.050	0.963
Age squared	0.000	0.000	1.650	0.099
Household size	-0.038	0.045	-0.850	0.397
Used inpatient care	0.593	0.268	2.220	0.027
Owns color TV	0.142	0.228	0.620	0.534
Log monetary expenditure per capita	0.358	0.112	3.190	0.001
Intercept	-4.830	0.685	-7.050	0.001
Log likelihood ratio	-2111.492			
Observations	4731			
LR Chi-squared (18)	173.56			

Note: outpatient service use in any facility, including MOHP, HIO, private, and other public.

Most important, these findings show that the current health insurance program does not decrease barriers in access to basic health care, as the richer are more likely to use care than poorer individuals, which raises serious equity concerns about the Egyptian health care system.

4.2 Where Do Individuals Seek Outpatient Care?

Sick individuals have several options, public and private, from which to seek outpatient care. Table 24 shows the percent of patients who went to different outpatient providers during the two weeks prior to the interview. There are significant differences in where patients seek outpatient care with respect to their socio-demographic and economic background and insurance status ($p < 0.001$). Despite the fact that public services are provided almost free of charge, they are not the preferred option for outpatient care. More than half of the patients who sought outpatient care went to the relatively more expensive private sector. Overall, only 36 percent went to MOHP and 6 percent to HIO facilities. The decision where to seek outpatient care is related to socio-demographic and economic factors such as district of residence, gender, age group, insurance status, and the household's expenditure quartile classification. More than 60 percent of uninsured patients go to private outpatient clinics and more than half of those with company insurance seek private outpatient care facilities. Being HIO insured does not mean that outpatient care is sought in HIO clinics: only 11 percent of HIO insured patients went to HIO facilities, while equal – and much higher – percentages went either to private or MOHP facilities (both 44 percent).

Patients who most likely go to the MOHP facilities are those living in Al-Ganyan district, the HIO insured, children younger than 15 years, and those who come from households classified in the lowest per capita expenditure quartile. Patients most likely go to the private sector if they live in Suez district, are female, 16 years and older, uninsured, and classified in the 3rd and 4th per capita expenditure quartile.

Table 24: Place of Outpatient Care, by Patient Characteristics, in %

Patient Characteristic	% of Patients who Seek Outpatient Care in :						Sign. Level
	MOHP	HIO	Public (other government)	Public companies	Private providers	Total	
District of residence							
Arbaeen	29.8%	6.8%	2.5%	1.2%	59.6%	161	P<0.001
Suez	16.7%	1.9%	11.1%	-	70.4%	54	
Ataqa	38.6%	10.6%	3.8%	3.8%	43.2%	132	
Al-Ganayen	63.5%	-	-	1.6%	34.9%	63	
Patients' insurance status							
Not insured	32.7%	.7%	4.7%	.7%	61.3%	150	P<0.0001
HIO	44.8%	10.9%	.5%	-	43.8%	192	
Work insured	19.1%	5.9%	10.3%	10.3%	54.4%	68	
Gender							
Male	33.9%	10.1%	5.4%	4.8%	45.8%	168	P<0.001
Female	37.6%	3.7%	2.5%	-	56.2%	242	
Age group							
<5	48.1%	2.6%	2.6%	-	46.8%	77	P<0.0001
5-15	50.0%	16.3%	-	-	33.8%	80	
16-29	32.9%	-	8.2%	-	58.9%	73	
30-39	29.4%	2.0%	-	-	68.6%	51	
40-49	29.1%	7.3%	7.3%	5.5%	50.9%	55	
50-59	30.0%	3.3%	6.7%	-	60.0%	30	
60+	16.3%	11.6%	2.3%	11.6%	58.1%	43	
Per capita expenditure quartile							
Poorest	60.4%	6.3%	3.1%	-	30.2%	96	P<0.0001
2 nd	35.1%	5.3%	6.1%	.9%	52.6%	114	
3 rd	29.0%	6.5%	.9%	1.9%	61.7%	107	
4 th	20.4%	7.5%	4.3%	5.4%	62.4%	93	
Total %	36.1%	6.3%	3.7%	2.0%	52.0%	100%	
N (patients)	148	26	15	8	213	410	

The two main findings are: first, insurance does not affect individuals' overall service use, and second, independent of insurance, the majority of patients seeks outpatient care with the private sector where care is not covered by insurance. Thus, insurance does not protect individuals from paying for outpatient care and the majority of uninsured prefers to pay out-of-pocket fees and seek outpatient care in private outpatient clinics instead of using lower priced MOHP facilities.

4.3 Where Do Individuals Seek Inpatient Care?

Overall 216 of the sample population reported a hospitalization episode during the year prior to the interview. While inpatient care is not likely to occur, a hospital stay tends to be expensive, a reason that would lead risk-averse individuals to insure.

Table 25 presents the percent of patients who went to different hospitals during the year prior to the interview. Similarly to outpatient care, there are significant differences in where patients are hospitalized with respect to their insurance, and socio-demographic and economic background ($p < 0.001$). Overall 40 percent of patients are hospitalized in MOHP and 27 percent in private hospitals. Patients are most likely hospitalized in a MOHP facility if the patient lives in Al-Ganayen, is not insured, female, below the age of 30, and classified in the lowest per capita expenditure quartile. With the exception of patients living in Al-Ganayen, men, and the elderly, more than 20 percent of all other sub-groups of patients go to private hospitals.

Only 38 percent of hospitalized HIO insured patients went to HIO hospitals. More than half of uninsured patients were hospitalized in MOHP and one-third of them in private hospitals. The proportion of patients hospitalized in private facilities was slightly lower for insured (25 percent) than uninsured (31 percent), again suggesting that the uninsured are willing to pay higher out-of-pocket fees for care in the private sector.

Table 25: Place of Inpatient Care, by Patient Characteristics, in %

Characteristics	Ownership of hospital					Total	Sign Level
	MOHP	HIO	Public (other govt)	Public companies	Private and NGO		
District of residence, percent of hospitalized patients within district							
Arbaeen	42.2%	21.7%	6.0%	3.6%	26.5%	83	P<0.001
Suez	22.0%	12.2%	14.6%	24.4%	26.8%	41	
Ataqa	40.3%	14.5%	6.5%	3.2%	35.5%	62	
Al-Ganayen	53.3%	16.7%	13.3%	3.3%	13.3%	30	
Insurance status							
Not insured at all	54.4%	3.3%	7.8%	3.3%	31.1%	90	P<0.001
HIO	31.6%	38.2%	3.9%	1.3%	25.0%	76	
Work insured	24.0%	10.0%	18.0%	24.0%	24.0%	50	
Gender							
Male	34.7%	24.2%	12.6%	10.5%	17.9%	95	P<0.01
Female	43.0%	11.6%	5.8%	5.0%	34.7%	121	
Age group							
<5	42.9%	19.0%	4.8%		33.3%	21	P<0.01
5-15	43.5%	26.1%	4.3%		26.1%	23	
16-29	45.7%	13.0%		4.3%	37.0%	46	
30-39	37.5%	12.5%	6.3%		43.8%	16	
40-49	34.1%	17.1%	22.0%	4.9%	22.0%	41	
50-59	38.5%	23.1%	15.4%	12.8%	10.3%	39	
60+	33.3%	10.0%	3.3%	23.3%	30.0%	30	

Per capita expenditure quartile							
Poorest	47.6%	19.0%	4.8%	2.4%	26.2%	42	P<0.01
2 nd	44.2%	15.4%	9.6%	1.9%	28.8%	52	
3 rd	41.2%	27.5%	3.9%	3.9%	23.5%	51	
4 th	29.6%	9.9%	14.1%	16.9%	29.6%	71	
Total %	39.4%	17.1%	8.8%	7.4%	27.3%	100.0%	
Total N	85	37	19	16	59	216	

5. Satisfaction with Care

Individuals in this survey who reported an episode of inpatient or outpatient service use were asked about their satisfaction with specific components of the care process, for example health worker/patient communication or the price they (the respondent) had to pay for services. This chapter presents findings on satisfaction with care during the first contact with a health provider during the interview period.

5.1 Satisfaction with Outpatient Care

This section presents results for those who sought outpatient care and tries to establish a link between satisfaction, and waiting and service time with the provider.

Overall, satisfaction with outpatient care appears to be rather low; only about 66 percent of all patients are satisfied with outpatient care (Table 26). There is no difference in satisfaction reported by insured and uninsured patients and across gender and socio-economic quartiles. But satisfaction with care is significantly related to patients' district of residence, where they seek care, how much time they have to wait for the provider, and the time the provider spends with them. Patients living in Al-Ganayen are significantly more likely to be satisfied with care. A considerably higher share of patients who visited a private provider was satisfied with outpatient care – explaining why the majority of patients seek outpatient care in the private sector, as reported above – compared to patients who went to MOHP and HIO providers. In fact, the least satisfactory care is reported in HIO insurance network facilities.

Because satisfaction is significantly related to the time patients spend waiting for providers and the time providers spend taking care of patients, the survey asked about these times for various providers (Table 27). Patients were markedly more satisfied if they had short waiting periods, or if they spent 15-60 minutes of service time with the provider. Findings show that waiting time varies significantly by provider ownership. Patients report longest waiting times in HIO facilities, and significantly shorter service times with providers in MOHP and HIO facilities compared to private facilities. This may explain why only 30 percent of the HIO patients and half of the MOHP patients were satisfied with care received. Other variables, such as patients' insurance status, gender, socio-economic background or education level are not related to patients' waiting and service time for outpatient care.

Table 26: Satisfaction with Outpatient Care, by Patient Characteristics, in %

Patient Characteristics	Percent of patients who judge outpatient visit as:				Sign. Level
	Satisfactory	Moderate	Not satisfied	Total	
District of residence					
Arbaeen	75.3%	22.2%	2.5%	158	P < 0.001
Suez	74.1%	22.2%	3.7%	54	
Ataqa	42.3%	53.8%	3.8%	130	
Al-Ganayen	82.5%	15.9%	1.6%	63	
Gender					
Male	62.7%	33.1%	4.2%	166	P < 0.4
Female	67.8%	30.1%	2.1%	239	
Insurance status					
Uninsured	66.7%	31.3%	2.0%	147	P < 0.8
Insured	65.1%	31.4%	3.5%	258	
Ownership of facility					
MOHP	53.1%	44.9%	2.0%	147	P < 0.001
HIO	30.8%	53.8%	15.4%	26	
Public other	40.0%	60.0%	0.0%	15	
Public companies	75.0%	25.0%	0.0%	8	
Private providers	80.4%	17.2%	2.4%	209	
Per capita expenditure quartiles					
Poorest	62.5%	35.4%	2.1%	96	P < 0.08
2 nd	64.3%	34.8%	.9%	112	
3 rd	69.8%	28.3%	1.9%	106	
4 th	65.9%	26.4%	7.7%	91	
Waiting time before seeing provider					
< 30 minutes	76.0%	21.6%	2.4%	167	P < 0.001
30 - 60 minutes	60.0%	39.4%	.6%	170	
1 - 3 hours	55.9%	35.6%	8.5%	59	
3 - 5 hours	42.9%	42.9%	14.3%	7	
> 5 hours	0.0%	0.0%	100.0%	1	
Service time with provider					
< 15 minutes	52.9%	42.8%	4.3%	208	P < 0.001
15 - 30 minutes	78.9%	19.4%	1.7%	180	
31 - 60 minutes	85.7%	14.3%		14	
> 1 hour	50.0%	50.0%		2	
Total %	65.7%	31.4%	3.0%	100.0%	
Total N (patients)	266	127	12	405	

Table 27: Average Waiting and Service Time, by Provider Ownership

Time	Ownership of Provider					Total
	MOHP	HIO	Public (other government)	Public companies	Private providers	
Waiting time						
< 30 minutes	43.2%	19.2%	20.0%	50.0%	42.9%	40.8%
30 - 60 minutes	41.2%	23.1%	53.3%	37.5%	43.4%	41.6%
1 - 3 hours	15.5%	46.2%	20.0%		10.4%	14.7%
3 - 5 hours		7.7%	6.7%	12.5%	1.4%	1.7%
>5 hours		3.8%			1.9%	1.2%
Pearson Chi-Square = 49.773; p< 0.001						
Service time spent with provider						
< 15 minutes	74.3%	69.2%	66.7%	25.0%	32.5%	51.1%
15 - 30 minutes	23.6%	30.8%	26.7%	75.0%	60.8%	44.5%
31 - 60 minutes	2.0%	0.0%	0.0%	0.0%	6.1%	3.9%
>1 hour	0.0%	0.0%	6.7%	0.0%	.5%	.5%
Pearson Chi-Square = 82.923; p< 0.001						
N (patients)	148	26	15	8	212	409

5.2 Satisfaction with Inpatient Care

Table 28 shows satisfaction with several components of inpatient care by distinguishing between insured and uninsured patients and the provider ownership status. Overall, 61 percent of the insured, as opposed to 30 percent of the uninsured, judged their hospital stay as good. Satisfaction with inpatient care is highest in private hospitals and public non-MOHP hospitals.

Whether hospital cost is perceived as high or low depends on where patients seek care. Most insured and uninsured individuals think out-of-pocket costs are high in private hospitals, though this doesn't appear to deter them from seeking care there. The majority of insured and uninsured find the level of professionalism of personnel good in private hospitals, better than in public facilities, particularly HIO hospitals. Most patients evaluate the doctor communication as good, though again, HIO insured report weaker results for their doctors.

Table 28: Satisfaction with Hospitalization, by Insurance Status, Ownership

Evaluate		Ownership of hospital					
		MOHP	HIO	Public (other govt)	Public companies	Private and NGO	Total
Overall hospital stay							
Not insured	Good	26.7%	33.3%	71.4%	33.3%	48.1%	37.6%
	Average	60.0%	66.7%	14.3%	66.7%	37.0%	49.4%
	< average	13.3%		14.3%		14.8%	12.9%
Insured	Good	45.5%	50.0%	60.0%	91.7%	76.7%	60.7%
	Average	45.5%	40.6%	40.0%	8.3%	20.0%	33.3%
	< average	9.1%	9.4%			3.3%	6.0%
Out-of-pocket expenditures							
Not insured	low	47.7%	33.3%			3.7%	27.4%
	medium	38.6%	33.3%	14.3%	33.3%	37.0%	35.7%
	high	13.6%	33.3%	85.7%	66.7%	59.3%	36.9%
Insured	low	45.5%	53.3%	27.3%	63.6%	6.5%	37.1%
	medium	39.4%	36.7%	45.5%	27.3%	51.6%	41.4%
	high	15.2%	10.0%	27.3%	9.1%	41.9%	21.6%
Professionalism of personnel							
Not insured	Good	55.3%	33.3%	100.0%	66.7%	74.1%	64.4%
	Average	40.4%	66.7%		33.3%	18.5%	31.0%
	< average	4.3%				7.4%	4.6%
Insured	Good	69.4%	56.3%	90.9%	69.2%	76.7%	69.7%
	Average	27.8%	40.6%	9.1%	30.8%	20.0%	27.9%
	< average	2.8%	3.1%			3.3%	2.5%
Doctor/patient communication							
Not insured	Good	75.0%	33.3%	100.0%	100.0%	84.6%	79.3%
	Average	22.9%	66.7%			15.4%	19.5%
	< average	2.1%					1.1%
Insured	Good	80.6%	69.7%	81.8%	100.0%	87.1%	81.5%
	Average	16.7%	24.2%	18.2%		9.7%	15.3%
	< average	2.8%	6.1%			3.2%	3.2%
Total N uninsured		45	3	7	3	27	85
Total N insured		33	32	10	12	30	117

6. Out-of-Pocket Payments for Care

This chapter compares out-of-pocket payments made by insured and uninsured individuals for various types of care received. Because health insurance is a mechanism that aims to lower individuals OOP payments at the time of service use, it is expected that insured patients will report OOP at a negligible level. Similarly, uninsured patients who seek low priced care in public facilities are assumed to incur low OOP expenditures; this will not, of course, be the case if patients seek care in the private sector, where insurance coverage does not apply.

6.1 Out-of-pocket Payments for Outpatient Care

Table 29 shows the amount patients paid out-of-pocket for outpatient care during the two weeks prior to the interview. These amounts should differ depending on whether a person is insured, where he/she seeks care, and his/her socio-economic background. Results show that, overall, uninsured patients spend significantly more (55LE) than insured ones (32LE) ($t=2.9$; $p<0.01$). Highest OOP amounts are paid in the private sector by insured and uninsured patients. Generally, wealthier patients report higher OOP expenditures than patients in lower expenditure quartiles.

Table 29: Average OOP Payments for Drugs and Total Outpatient Care Received during Two Weeks Prior to Interview, by Insurance Status, Quartiles, and Provider, in LE

Per capita expenditure quartiles		LE paid OOP for Outpatient Care					Total LE*
		MOHP	HIO	Public (other govt)	Public companies	Private providers	
Poorest	Not insured	19.6 LE		12.8 LE		47.1 LE	28.0 LE
	Insured	10.1	1.8			33.5	16.0
	Total	13.7	1.8	12.8		39.1	20.6
2 nd	Not insured	28.8	232.0	19.0		50.1	47.1
	Insured	4.7	5.3	9.6	.0	65.6	33.4
	Total	11.3	43.1	12.3	.0	59.1	38.1
3 rd	Not insured	54.7		2.0		69.6	63.9
	Insured	14.7	2.8		.0	38.3	26.2
	Total	30.2	2.8	2.0	.0	52.5	41.4
4 th	Not insured	30.5		153.0	68.0	89.4	83.4
	Insured	28.9	5.4	14.7	11.8	78.6	50.4
	Total	29.2	5.4	49.3	23.0	83.4	61.8
All Patients	Not insured	31.2	232.0	33.1	68.0	67.0	54.9
	Insured	12.3	3.8	11.5	6.7	56.3	31.7
	Total LE	18.5	12.6	21.6	14.4	61.0	40.2

*The total OOP amount includes payments made for transportation, tips, clinical examination, laboratory, drugs, and other services.

Table 30 shows that insured and uninsured patients pay a similar share on drugs, about 35 percent of their total OOP for outpatient care. This proportion is slightly higher in the private sector.

Table 30: Percent of Total OOP Payments Made for Drugs

Insurance Status	Drugs in Percent of total OOP					Total
	MOHP	HIO	Public (other government)	Public companies	Private providers	
Not insured	32%	34%	28%	44%	39%	36%
Insured	31%	23%	9%	-	41%	34%
Total	31%	24%	18%	11%	40%	35%

6.2 Out-of-pocket Payments for Inpatient Care

Insurance covers inpatient care, though not in private hospitals, and hospital care tends to be expensive. Table 31 shows total OOP payments made for inpatient care during the year prior to the interview by insured and uninsured patients who sought care in different hospitals. Results are shown across patients' socio-economic background. Although insured patients report overall lower OOP amounts for inpatient care (571 LE) than the uninsured (1304LE), the difference between the two amounts is statistically insignificant ($p < 0.06$).

Table 31: Average OOP Payments Made for Drugs and Services Received during Hospitalizations, One Year Prior to Interview, by Insurance Status, Quartiles, and Provider Category, in LE

Per capita expenditure quartile		LE paid OOP for Inpatient Care					Total
		MOHP	HIO	Public (other government)	Public companies	Private and NGO	
Poorest	Not insured	39.0			90.0	824.3	340.6
	Insured	61.4	131.8	105.0		496.7	154.5
	Total	48.0	131.8	105.0	90.0	734.9	247.5
2 nd	Not insured	120.9	155.0	750.0		1208.0	417.8
	Insured	108.0	160.0	56.7	20.0	2609.4	945.5
	Total	114.7	159.4	334.0	20.0	2235.7	752.7
3 rd	Not insured	144.7	790.0			1409.6	678.6
	Insured	164.9	41.4	190.0	175.0	1296.0	297.5
	Total	155.3	148.4	190.0	175.0	1362.3	439.5
4 th	Not insured	368.8		11512.2	1387.5	2609.4	2882.3
	Insured	88.2	235.7	370.6	901.5	1239.8	698.1
	Total	288.6	235.7	5941.4	982.5	1826.7	1651.8
All Patients	Not insured	181.6	578.3	8437.3	955.0	1599.2	1303.7
	Insured	111.7	127.1	217.8	721.9	1662.9	570.6
	Total LE	152.0	163.7	3246.0	765.6	1632.7	876.0

Note: the average amount of L.E. 11512 paid by uninsured patients in 4th quartile for inpatient care received in public non-MOHP facility may include catastrophic payments or reflect measurement errors.

Insured and uninsured patients pay significantly higher OOP amounts when hospitalized in the private sector ($p < 0.01$) than in the public sector. Also, richer insured patients report significantly higher hospital expenditures than those classified in lower expenditure quartiles ($p < 0.001$). These results imply that insurance does not protect patients against high inpatient cost, making it questionable why individuals would want to insure.

6.3 Pharmacy Out-of-Pocket Payments

Table 32 shows the amounts paid by insured and uninsured individuals for drugs purchased in pharmacies during the week prior to the interview. Overall, the difference between insured and uninsured is insignificant ($t = 0.5$; $p < 0.6$). Also, for both insured and uninsured groups, there is no significant difference in pharmacy payments made between those classified in the lowest and highest quartiles, between men and women, and across districts.

Table 32: Average OOP Payments Made for Drugs Purchased in Pharmacies during Week Prior to Interview, by District of Residence, in LE

Insurance Status		LE paid in Pharmacy by District of Residence				
		Arbaeen	Suez	Ataqa	Al-Ganayen	Total
Per capita expenditure quartile						
Poorest	Not insured	11	18	15	30	19
	Insured	3	11	12	9	8
2 nd	Not insured	11	16	56	31	26
	Insured	79	3	64	11	64
	Not insured	63	48	13	16	33
	Insured	26	69	10	43	32
3 rd	Not insured	18	38	377	53	123
	Insured	24	53	59	19	46
4 th	Not insured	23	34	119	29	52
	Insured	40	53	40	20	40
Gender						
Male	Not insured	32	29	139	26	51
	Insured	47	52	39	7	39
Female	Not insured	19	36	113	31	52
	Insured	33	54	40	33	41
Total	Not insured	23	34	119	29	52
	Insured	40	53	40	20	40

6.4 Total Out-of-Pocket Payments by Insured and Uninsured Patients

Table 33 sums up all the OOP expenditures presented above for insured and uninsured individuals, for outpatient care during the two weeks prior to being interviewed, for hospitalization during the year before the interview, and for pharmacy services received during the week before the interview. Although the uninsured report overall higher OOP expenditures, the difference with the insured patients is not significant ($t = 1.4$; $p < 0.15$). Similarly there is no significant difference with respect to how much men or

women pay and across district of residence. However, insured individuals classified in the highest quartile report significantly higher OOP than insured individuals in the lowest quartile ($t=3.2$; $p<0.01$).

Table 33: Average OOP Payments Made for All Services (outpatient, inpatient, pharmacy) Used Prior to Interview, by Insurance Status and Individuals Characteristics, in LE

Characteristics	Amount paid OOP for All Care, by Insurance status		
	Uninsured (LE)	Insured (LE)	Total (LE)
District of residence (in LE)			
Arbaeen	249 LE	156 LE	196 LE
Suez	2192	244	827
Ataqa	250	247	248
Al-Ganayen	173	99	135
Gender			
Male	833	149	335
Female	298	240	269
Per capita expenditure quartile			
Poorest	146	51	94
2 nd	146	299	241
3 rd	202	110	148
4 th	1315	276	666
Total OOP amount, LE	447LE	195LE	296LE
Total N (individuals)	295	440	735

Clearly, these findings show that HIO does not accomplish its insurance function: it neither improves access to care for the insured nor does it significantly lower the OOP price for care at time of service use.

6.5 The Impact of Out-of-pocket Payment on Income

Whether HIO at least protects the income of insured households against financial shocks caused by utilization of health care is further examined in Table 34. The proportion of household income spent on health care for outpatient, inpatient, and pharmacy services is compared for insured and uninsured households. As mentioned above in Chapter 2 (Methods), income is proxied by per capita monetary expenditure. To compute these percentages, the above OOP health expenditures and per capita monthly expenditures had to be annualized.

Table 34 shows that uninsured individuals spend a significantly higher percentage of their income on health care (17 percent) than the insured (11 percent) ($p<0.05$). There is no significant difference in the percentages reported by residents of the different districts and by gender. The only significant difference is within the insured group, between individuals classified in the lowest (5.6 percent) and the highest quartiles (10.7 percent) ($p<0.05$). The finding that higher income insured pay a higher percentage of their income on health (i.e., that there is progressivity) could be interpreted as equity in health financing; however, this is misleading. As shown in Chapter 4, the richer insured seek the better quality care offered in the more expensive private sector, which causes their health expenditures to be higher, implying that the HIO insurance function is not effective.

Table 34: Percent of Income Spent on Health per Year per Capita for All Services (outpatient, inpatient, pharmacy), by Insurance Status and Individuals Characteristics

Characteristics	Percent of Income Spent on Health Care		
	Uninsured	Insured	All Individuals
District of residence			
Arbaeen	12.2 %	9.8 %	10.8 %
Suez	25.4%	15.8%	18.5%
Ataqa	22.5%	12.8%	16.6%
Al-Ganayen	18.8%	6.7%	12.3%
Gender			
Male	13.0%	8.7%	10.2%
Female	20.3%	14.0%	16.9%
Expenditure quartiles			
Poorest	14.7%	5.6%	9.6%
2 nd	14.8%	19.1%	17.4%
3 rd	17.3%	9.0%	12.2%
Highest quartile	24.4%	10.7%	16.1%
Total %	17.1%	11.0%	13.5%
Total N (individuals)	1918	2816	4734

7. Willingness to Insure

In light of the survey findings discussed so far, it would be expected that Suez inhabitants might only be willing to insure in a health insurance program that covers care in the private sector, where the majority of patients currently seeks care, where most of their OOP payments occur, and where they receive better quality care. This is further explored in this chapter.

7.1 Willingness to Insure

The 2002 Egyptian household survey found that 54 percent of uninsured households preferred to remain uninsured. When the present study asked household heads about their willingness to insure, 79 percent replied positively, 21 percent preferred to remain uninsured. Twenty-three percent of HIO insured prefer not to insure. This is even higher among household heads currently insured through work. Table 35 shows considerably higher willingness to insure among the uninsured household heads in Suez governorate. Household heads least willing to insure are those who are currently insured with HIO or through work insurance who live in Al-Ganayen district, and who are classified in the highest socio-economic group.

Table 35: Willingness to Insure by Insurance Status and Characteristics of Household Head

Characteristics of household head	Willing to Insure, by Current Insurance Status		
	Not insured at all	Insured with HIO	Work insurance
District of residence			
Arbaeen	84.2%	77.2%	70.3%
Suez	80.5%	81.8%	84.6%
Ataqa	86.4%	82.9%	73.2%
Al-Ganayen	73.8%	61.1%	53.8%
Gender			
Male	84.0%	77.8%	69.6%
Female	78.1%	71.4%	69.2%
Education level			
No education		100.0%	
1-5 school years	81.0%	76.7%	77.6%
6-11 school years	88.5%	86.5%	67.9%
12+ school years	82.6%	73.9%	62.3%
Per capita expenditure quartile			
Poorest	81.1%	74.1%	77.1%
2 nd	83.8%	85.0%	74.5%
3 rd	90.2%	80.3%	77.5%
4 th	75.7%	67.9%	50.0%
Total % Yes	82.7%	77.0%	69.6%
N (househod heads)	479	235	181

The uninsured household heads who would like to insure do not differ across socio-demographic characteristics, such as district of residence, gender, age group and education level of household head, and health status of household head as expressed by the presence of chronic diseases. However, and as indicated in Table 35, households in the highest socio-economic quartile have a considerably lower willingness to insure than poorer socio-economic groups ($p < 0.05$). This finding raises the question whether a lower willingness to insure among richer households could hamper the goal of a common risk-sharing pool for the rich and poor in Egypt. To prevent that, compulsory insurance coverage through the same national insurance pool may be needed.

When asked about the reason why they prefer not to insure, 48 percent of the household heads attributed their opinion to the unsatisfactory or bad quality care received in the public sector; 17 percent said they don't see the benefit of insurance; and an additional 15 percent replied they rather pay for care in the private sector. These responses follow from the aforementioned findings of preference for private sector care due to unsatisfactory care in MOHP and HIO facilities, and relatively high OOP costs despite insurance. It is thus recommended that before introducing insurance, substantial quality improvements should take place in public sector facilities and insurance should cover care in the private sector. In addition, insurance should set a financial incentive to providers to deliver high quality care and exclude from the contract providers that do not reach quality standards that are common in the private sector.

7.2 Choice of Provider

Household heads were asked whether in their insurance plan, they would prefer to have free choice of provider or be assigned (enumerated) to providers. Two-thirds prefer to have free choice of provider. There is no significant difference among household socio-economic characteristics (e.g., gender, education level, occupation, employer, and per capita expenditure quartile of household head) with respect to this response. Households living in Ataq district and younger household heads are significantly more interested in free choice.

Table 36: Provider Choice by Socio-demographic and Economic Household Characteristics

Characteristic	Choice of Provider			Sign Level
	No Free Choice	Free Choice	Total N	
District of residence				
Arbaeen	40.9%	59.1%	445	Chi2 = 37.955 P < 0.0001
Suez	45.4%	54.6%	119	
Ataq	20.7%	79.3%	270	
Al-Ganayen	41.1%	58.9%	124	
Age group of household head				
16-29	29.0%	71.0%	62	Chi2 = 10.161 P < 0.038
30-39	31.1%	68.9%	209	
40-49	34.7%	65.3%	274	
50-59	36.0%	64.0%	225	
60+	44.9%	55.1%	187	
Total %	35.8%	64.2%	100.0%	
N (households)	343	615	958	

7.3 Amount Willing to Pay for Insurance

Households heads willing to insure were asked about the amount they would be willing pay per person for an insurance premium. The amount differs and depends on household socio-economic characteristics: it ranges from 4.2 LE per month per person for poorest households to 5.2 LE per month per person for households in the highest socio-economic group. On average, household heads are ready to pay about 5 LE per month per person to insure. At an average household size of 4.5 individuals, this would amount to about 270 LE per household per year for insurance premium.

Table 37 looks at premium amounts that household heads stated they are willing to pay and compares these amounts by per capita expenditure quartiles. Results show if these premium levels were charged to households and everybody had to insure, inequitable health financing would result, as poorer households, with low incomes and larger families to support, would spend a higher percentage of their total monthly expenditure on insurance premium (7.8 percent) than would those in higher socio-economic groups (2 percent).

Table 37: Insurance Premiums in % of Monthly Expenses, by Socio-Economic Group

Monthly Household Expenses	Per Capita Expenditure Quartiles				Total
	1 st	2 nd	3 rd	4 th	
Total monthly expense, mean	310.2	519.2	678.2	1072.8	644.5
Amount willing to pay for premium per month per household	24.1	23.6	24.6	18.68	23.0
Premium in % of expenses	7.81%	4.53%	3.56%	1.95%	4.67%
N (households)	186	177	171	136	670

Note: See Table 4 for average size of household by quartile.

If premium payments are to contribute to progressivity in health financing, then income-dependent levels have to be set, with higher income groups paying higher percentages of their income for premiums. For example, increasing premium levels might range from 1 percent of monthly household expenditures for the lowest income quartile to 4 percent for highest quartile (Table 38) Calculating premiums by using these percentages in terms of household income results in monthly premium amounts per household per socio-economic quartile, ranging from 3 LE per month for the lowest quartile to 43 LE per month for those classified in the highest quartile. With these income-dependent, increasing premium levels, compulsory enrollment would be needed to prevent richer households from not insuring.

Table 38: Equitable Insurance Premiums, by Socio-Economic Group

Monthly Household Expenses	Per Capita Expenditure Quartile				Total
	1 st	2 nd	3 rd	4 th	
Total monthly expense	310.2	519.2	678.2	1072.8	644.5
Progressive premium in % of household expenditures	1%	2%	3%	4%	2.5%
Progressive premium amount per household per month	3.1	10.4	20.3	42.9	19.2
N (households)	271	257	252	267	1047

Setting premiums depending on income requires identifying household income in the four categories at lowest administrative costs. For those working in the formal sector, this is known and premium levels can be deducted directly from salaries as is currently done with HIO. Informal sector groups and the poor can be classified based on proxy indicators for income, such as employment status, occupation, education level, area of residence, etc.

8. Conclusion and Recommendations

8.1 Conclusion

Over the past decade, the government of Egypt has promoted health sector reform and specifically focused on reforming the way health care is financed, with the objective of improving quality of care, sustainability, and equity in service use and health financing. So far, the focus has been on developing and implementing new organizational structures among providers and financing agents, and the design for health insurance.

The present household survey was conducted in Suez governorate to examine the performance of the current health insurance system by comparing insured and uninsured groups. The household survey contains information on 4734 individuals, 40.5 percent of them insured. Analysis sought to identify eventual differences between insured and uninsured groups with respect to five points: socio-demographic and economic characteristics; care seeking behavior; satisfaction with care; out-of-pocket contributions to health, and their willingness to insure.

Five key findings emerge from this analysis. They were discussed with respect to four health policy goals: risk-sharing in a common pool; equity in access to care; quality of care; and equity in health financing.

First, individual health insurance is mandatory for certain groups, which leads to the exclusion of the socio-economically weaker society members. Uninsured household heads tend to be female, live in Al-Ganayen district, have less than five years of schooling, and belong to lower socio-economic groups. A large proportion of the population is partially or seasonally employed. Most work in sales (93 percent), services (53 percent), agriculture and fishery (82 percent) or are self-employed (70 percent); they are employed in their family business (84 percent), in small private enterprises (90 percent), as construction workers (92 percent), or are unemployed (74 percent). Within a household, the weaker family members are not insured, including female relatives of the household head (spouse, mother-in-law, sister-in-law, grandmother, daughter-in-law); and individuals who are 16 years and older. Thus, the current insurance system excludes those who are economically worse off from a common solidarity pool that would share the financial risk related to ill health between the rich and poor society members.

Second, insured and uninsured individuals have similar utilization rates for outpatient care, hospitalization, and pharmacy. Health insurance does not decrease barriers in access to basic health care, as the richer are still more likely to use care than poorer individuals, which raises serious equity concerns about the Egyptian health care system. Also, there are significant differences in where patients seek outpatient and inpatient care with respect to their insurance, socio-demographic, and economic background. Despite the fact that public services are being provided almost free of charge and HIO providers are covered by HIO insurance, they are not the preferred option for outpatient care. Independent of insurance status the majority of patients seeks outpatient care with the private sector, where care is not covered by insurance. Uninsured patients are more likely to be hospitalized in private clinics than the insured.

Third, satisfaction with inpatient care is highest in private hospitals. Satisfaction with outpatient care is significantly higher among patients who went to a private provider, had short waiting periods at the provider, and spent 15-60 minutes service time with the provider. Patients report longest waiting times in HIO facilities and significantly shorter service times with providers in public MOHP and HIO facilities compared to private facilities. This may explain why insured and uninsured patients in all socio-economic groups seek care with private providers, where care is not covered by insurance.

Fourth, though the insured report somewhat lower OOP spending, the difference with uninsured patients is not significant. Richer individuals, who can afford to pay, seek better care in the private sector causing their OOP health expenditures to be higher.

Fifth, although a larger proportion of survey participants are willing to insure than in the 2002 Egypt households survey, the main reasons not to insure is unsatisfactory quality of care provided in the public sector. This explains why the large majority of individuals prefer to have free choice of provider in an insurance system. Richer households show a lower willingness to insure and, compared to their income, are willing to pay relatively lower premium levels than poorer households.

These findings show that the current HIO provider-insurance network does not accomplish its insurance function. It neither improves access to care for the insured by lowering financial barriers, nor does it significantly lower the OOP price for care at time of service use. Hence, whether an eventual insurance design in Suez governorate will respond to the above-mentioned four health policy goals will most likely affect the willingness of Suez inhabitants to enroll in health insurance and pay premiums. Any attempts to expand insurance in Suez through HIO would therefore have to be seriously examined and result in the need to completely restructure HIO, split the insurer and provider function, and open up the provider network to include private providers.

Based on these findings and in order to respond to overall health policy goals, the recommendation section proposes an insurance design and describes the five major insurance features.

8.2 Recommendations for a Health Insurance Design

From a policy perspective, the findings for this household survey are of substantial interest. The Egyptian Health Sector Reform Program aims to develop a national health system, with social insurance to ensure equity in access and financing of health care, and efficiency, quality, and financial sustainability of the health care system. None of these goals are currently achieved through HIO and government subsidized provision of care in public facilities.

To reach these objectives, and address the concerns highlighted in this household survey, health insurance in Egypt will have to be designed accordingly. Table 39 presents an insurance design with five insurance features. Each feature is described in terms of how it would have to be designed to contribute to equity and sustainability goals.

First, to ensure equity in health financing and financial sustainability, **progressive premium rates** should be charged, with higher income groups paying a larger share of their income on health than poorer households. Formal sector workers could pay premiums in the form of payroll deductions. Means testing would have to be implemented to identify the resource capacity and premium levels of informal sector groups. Poorest households may have to be exempted from paying premiums and their enrollment be subsidized by the government.

Table 39: Recommendations for a Health Insurance Design

Insurance function	Feature in Suez	Equity goal	Sustainability goal
Financial contribution	Progressive premium rates depending on household socio-economic background	Equity in health financing with solidarity from rich to poor	Financially sustainable insurance fund may need additional funding, e.g., from government
Risk pooling	Compulsory enrollment	To prevent the poor from pooling their risk only among themselves	High premium revenue contributes to financial sustainability
Providers/Benefit package	Free choice of provider in public and private sector Cover care in private sector	Equity in access to care	Patients “voting by feet” supports financial sustainability among better provider
Provider payment	Provider payment with quality bonus for better quality providers	Equity in access to quality care	Financial incentive to provide better quality care contributes to financial sustainability
Provider contracting	Monitor and evaluate provider performance Exclude “low” performing providers from contract	Equity in access to quality care	Excluding inefficient providers contributes to financial sustainability of insurance

Second, equity in financing implies pooling in one insurance fund on a national level. Because richer households show a lower willingness to insure, risk pooling should be made compulsory for all residents, to prevent the poor pooling their only risk among themselves. **Compulsory enrollment** would also contribute to the system’s financial sustainability through higher revenue from premiums.

Third, patients already “vote with their feet” in the current system, seeking better quality and more expensive care in the private sector. To accommodate this preference and to reach quality objectives, and equity in access and financing of health care, it is recommended that insurance **cover care in the private sector** and insurance members have **free choice of providers**.

Fourth, the provider payment needs to include a performance-based component that sets **financial incentives to providers to improve quality and efficiency in delivery of care**. This requires routine monitoring and evaluation of quality of care among providers to prevent them from delivering below quality standard care.

Fifth, the **contract** between providers and insurance needs to define explicit criteria, to exclude providers who provide sub-standard quality care. Excluding providers who waste scarce resources sets an incentive to providers to reach quality standards and contributes to the quality reputation of the health plan and the systems financial sustainability.

One question to explore in future analysis is the extent to which the current HIO insurance design can be changed to reflect the above design or whether Egypt would be better off by completely abandoning the ineffective HIO system to implement a national social health insurance system that effectively contributes to equity, quality, efficiency, and sustainability objectives.

Annex A. Questionnaires for Suez Health Care Utilization, Expenditures, and Insurance Survey

Market Analysis in Suez Governorate

Household Survey Questionnaire

Version 1.4

Currently enrolled in education		Total Years of education	Employment Status ⁴	Main Occupation	Employer	Additional job	Employer (work for)
Yes	No						

⁴ Employment Status:

- self Employed
- Family Business
- Employee
- Unemployed(Nuver employed)
- Un employed (Recently)
- Retired
- Unable to work
- Under age
- Studeut
- Un willing to work
- housewife

Household Serial No.

--	--	--	--	--	--

Second: Basic data for household as a whole:

1. Residence:

Owned Rented Other (specify)

Number of rooms:

Forms of sewage disposal: Disposable tank Public Network

2. Equipment:

	Yes	No
1. Telephone Set
2. Mobile Telephone (No.)
3. T.V. Black & White
4. T.V. Color
5. Video
6. Satellite Receiver
7. Electric fan
8. Gas stove
9. Refrigerator
10. Ordinary Washing Machine
11. Automatic Washing Machine
12. Air-conditioner
13. Car Private
14. Taxi
15. Truck
16. Other vehicle

Third: Health Care Aspects:

3. Is there any household member having a continuous treatment due to chronic reason or illness:

Yes No

Individual Serial	Chronic disease or cause	Monthly expenditure on the treatment in LE			
		Medicine	Physicians fees	Lab. Test	Other (specify)

4. For uninsured persons (not insured and not covered by special care systems). (To be filled for each non-insured individual):

a- Are you willing to subscribe to a health insurance scheme?

Yes No

b- If Yes: Which premium are you willing to pay in L.E?

--	--	--

For which services?.....

c- If No: why are not you willing to subscribe?

.....

d- (For all) if you are participated in HI system, do you prefer to have a specific source for service or having the freedom for choice?

.....

5. Were there any outpatient visits to any health care facility (including pharmacies for non-prescribed drugs) during the two weeks prior to the interview?

Yes ¹ No ²

Name:	Day/Month/Year	Day/Month/Year

If Yes the form (B) is filled for each outpatient visit and (C) for pharmacy visit.

Household Serial No.

--	--	--	--	--	--

6. Were there any hospital admissions during the time period from 1/1/2003 till now?

Yes ¹ No ²

Name:	Date of Admissions & Source Day/Month/Year

If Yes, a form (D) will be filled for each admission.

Fourth: Health Status:

7. Estimate for average monthly expenditure in L.E:

--	--	--	--

..... Estimated % Food & beverage

--	--

..... Estimated % Health care & medicine

--	--

Private tuition fees are to be investigated thoroughly in L.E:

.....

8. Do you prefer to listening to Radio or watching T.V (Radio / T.V)

Which Radio stations & programs?

Which T.V channels & programs?

**SUEZ MARKET ANALYSIS
FOR HEALTH CARE
2004**

Form B

Outpatient Visit

(Reference Period 2 Weeks Prior to the Interview)

Individual Serial:

1- Name of facility:

.....

In Suez: Outside Suez:

2- Cause of visit:

3- Is this the regular source of care?

Yes No

4- How did you go there (transportation)?.....

5- Who accompanied you?.....

6- Travel Time:.....

Hours	Minutes

7- Back home Time:.....

Hours	Minutes

8-Travel Cost (including accompanying persons) in L.E:.....

9- Waiting Time:.....

Hours	Minutes

10-Service Time:.....

Minutes

11- Cost of visit (different Items including tips) in L.E:.....

**SUEZ MARKET ANALYSIS
FOR HEALTH CARE
2004**

Form C

Pharmacy Visit Form

(Without medical prescription & for buying medicines & nothing else, during one week prior to the interview)

1. Pharmacy Code:

.....

2. Why did you choose this pharmacy?

.....

3. What is the cause of visit?

.....

4. On what basis did you determine the medicine you needed?

- | | |
|---|--------------------------|
| Repetition of previous medical prescription | <input type="checkbox"/> |
| Advice from others | <input type="checkbox"/> |
| Advice from the pharmacists | <input type="checkbox"/> |
| Self-determination.. | <input type="checkbox"/> |
| Others | <input type="checkbox"/> |

5. The cost of each medicine you bought in L.E (or the whole cost in L.E if you are not able to remember each?.....

.....

6. Did you get benefit from that medicine?

Household
Serial No.

--	--	--	--	--	--

**SUEZ MARKET ANALYSIS
FOR HEALTH CARE
2004**

**Form D
Hospital Admission Form
(Reference Period since January 2003)**

Individual Serial:

1. Cause of admission:

2. Days of stay at hospital:

3. Name and address of hospital (hospital categorization):

In Suez: Outside Suez:

4. Why did you choose this hospital?
.....

5. Who referred you to this hospital (or advised you to go there)?
.....

6. How many times did you go to the hospital before actual admission (for inquiry, administrative procedures, investigations, etc.,)?

7. Admission cost in Egyptian Pounds L.E (itemized)?

Transport (including accompanying person)	L.E	<input type="checkbox"/>
Accommodations (including accompanying person)	L.E	<input type="checkbox"/>
Investigations (Specify)	L.E	<input type="checkbox"/>
Medical Procedures (Specify)	L.E	<input type="checkbox"/>
Physician fees	L.E	<input type="checkbox"/>
Other fees	L.E	<input type="checkbox"/>
Operation theatre	L.E	<input type="checkbox"/>
Pharmaceuticals	L.E	<input type="checkbox"/>
Tips (Specify)	L.E	<input type="checkbox"/>
Miscellaneous (Specify)	L.E	<input type="checkbox"/>

8. Did you pay all these expenses out of pocket?

Yes No

9. How would you rate the following aspects of the admissions?

	1	2	3
Cost	Lower	Moderate	Higher
Physician attitude	Best	Moderate	Worst
Personnel attitude (Nurses and others)	Best	Moderate	Worst
Professional competence	Highest	Moderate	Lowest
Accommodation (not including food)	Best	Moderate	Worst
Food	Best	Moderate	Worst
Cleanliness	Best	Moderate	Worst

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