Healthcare/Pharmaceutical Spending
and
Pharmaceutical Reimbursement Policy in Turkey

# Healthcare and Pharmaceutical Spending in Turkey

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# FOREWORD

The main objective of the healthcare system is to improve the health status of the Turkish community. In order to achieve this, it is necessary to ensure equity, increase productivity, improve the quality of services provided and guarantee patient satisfaction, as well as ensure the continuity of healthcare service provision. For this purpose, there is always a need for evidence based information so as to use available sources effectively and efficiently to attain improved healthcare outcomes.

The Turkish people have waited for several years for equitable and improved access to quality health care services. Within this context, the government's Transformation in Health Program is a momentous policy initiative and is expected to set things in motion in the desired direction of sickness fund consolidation, improved access and equity. It is obvious that all stakeholders in this sector should contribute to this process through constructive dialogue and evidence-based study. Non-governmental organizations also have an important role to play in this issue.

Within this context, the Hope in Health Foundation (SUVAK) has conducted a comprehensive study on "Healthcare and Pharmaceutical Spending in Turkey" with the participation of and contribution from national and international experts. This study analyzes the level and structure of healthcare/pharmaceutical spending in Turkey, compared to other countries. Its objective is to contribute to the health care policy determination process by expanding the available evidence base and provide scientifically documented analysis. We hope that this study will offer a toolkit for policy makers and will contribute to the reform discussions currently under way in Turkey.

I would like to gratefully acknowledge the assistance of senior government officials in providing their time and their technical support and expertise in every stage of this study.

In this study, Prof. Dr. Patricia Danzon has been the Principal Technical Coordinator; Prof. Dr. Mehmet Tokat and Prof. Dr. Mehtap Tatar have been the members of the Review Committee. Prof. Dr. Peter Berman has contributed significantly in different stages of the study. I would like to express my sincere thanks to all of them.

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Prof. Dr. A. Murat Tuncer

Chairman of the Board
Hope in Health Foundation (SUVAK)

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## ABBREVIATIONS

| | |
|---|---|
| Bağ-Kur | Social Insurance Agency for Merchants, Artisans and Self-employed |
| CPI | Consumer Price Index |
| DALE | Disability Adjusted Life Expectancy |
| DIE | State Institute of Statistics |
| DPT | State Planning Organization |
| EU | European Union |
| FA | Financing Agent |
| GDP | Gross Domestic Product |
| GDPP | General Directorate of Pharmaceuticals and Pharmacies |
| GERF | Government Employees Retirement Fund |
| GIS | Geographical Information System |
| GNP | Gross National Product |
| HTP | Health Transformation Program |
| IEIS | Pharmaceutical Manufacturers' Association of Turkey |
| IMF | International Monetary Fund |
| MCH-FP | Maternal and Child Health-Family Planning |
| MDGs | Millennium Development Goals |
| MoF | Ministry of Finance |
| MoH | Ministry of Health |
| MoLSS | Ministry of Labor and Social Security |
| NBD-CE | National Burden of Disease and Cost Effectiveness Study |
| NHA | National Health Accounts |
| OECD | Organization for Economic Cooperation and Development |
| OOP | Out-of-Pocket (payment) |
| OTC | Over the Counter |
| PPP | Purchasing Power Parity |
| SHA | System of Health Account |
| SPO | State Planning Organization |
| SSK | Social Security Agency |
| TDHS | Turkey Demographic and Health Survey |
| TL | Turkish Lira |
| TMA | Turkish Medical Association |
| UK | United Kingdom |
| UNDP | United Nations Development Program |
| US$ | United States Dollar |
| VAT | Value Added Tax |
| WB | World Bank |
| WHO | World Health Organization |
| WPI | Wholesale Price Index |

# EXECUTIVE SUMMARY

Our study on Healthcare and Pharmaceutical Spending in Turkey is about analyzing the level and structure of healthcare/pharmaceutical spending in Turkey, compared to other countries.

We have found no strong evidence to suggest that the overall level of health spending in Turkey is inadequate – either too high or too low by international comparison. Health spending level is found to be closely related to a country's income level. The estimates from System of Health Accounts (SHA)-based studies indicate that Turkey spends 6.6% of its GDP on health in 2000. This is on par with other countries with similar per capita GDP levels. For example, Thailand, a country with similar population size and per capita GDP, also spent 6.1% of its GDP on health in 2000.

For the country as a whole, there seems to be no strong reason for concern about any eminent "out of control" cost escalation in drug expenditure. After all, the per capita spending on drugs is significantly lower than the OECD countries' average.

Our analysis of spending structure revealed that expenditure on pharmaceuticals constitutes a significant proportion of total expenditures on health in Turkey (about 24.8% in 2000). This share is higher than in many OECD countries. Per capita spending on drugs seems to have increased more significantly in Turkey than per capita spending on health in general. This is particularly true with social security schemes, some of which (GERF and Bag-Kur) spent as high as 60% of their total health expenditures on pharmaceuticals. Some possible explanations of this situation can be listed as follows:

- To a certain extent, the higher proportion of total spending on pharmaceuticals is due to the fact that domestic prices of pharmaceuticals reflect international market prices, whereas labor costs are normally based on national wage structures. This feature of pharmaceutical spending levels has an implication on the overall functional structure of health expenditure, with lower-income countries such as Turkey and Thailand tending to spend greater shares of their health expenditure on pharmaceuticals. Nonetheless, Turkey may want to closely monitor the trends through conducting regular National Health Accounts (NHA) studies.
- In the Turkish Health Care System there is a subsidy phenomenon for public facilities. According to the NHA Study 35% of MoH hospital revenue comes from general budget. This means that social security organizations have been paying less on hospital services than the actual service costs. Pharmaceutical spending is not subsidized so

pharmaceutical spending would artificially stand higher as a proportion of total health care budget of the social security organizations.

- In the light of the fact that Turkey has many fewer physicians and hospital beds than the comparison countries, one simple reason for Turkey's relatively high percent of health dollar spent on pharmaceuticals might be that Turkey has fewer hospitals and physicians per capita, so that has less chance to spend on services than on drugs and medical goods. There is evidence that self medication practice widely exist in Turkey. According to the NHA Household Survey 30% of the people who were ill choose to purchase drugs and other medical goods without prescription. This makes pharmaceuticals the most easily accessible good as they can be bought without a prescription. In contrast to this in OECD countries with well established health care systems and rules patients can have drugs only with prescription.

- Another possible explanation of Turkey's relatively high percentage of pharmaceuticals in total health expenditure compared to OECD countries could be related to the methodology of the SHA. In the SHA under the category only the retail sale of pharmaceuticals i.e. pharmaceuticals sold in pharmacies are included. Pharmaceuticals used during an inpatient or outpatient status in a hospital are classified under either 'inpatient' or 'outpatient' category. In Turkey there is evidence from the NHA Household Survey that patients, while in the hospital as an inpatient, are directed to buy drugs from pharmacies. According to the NHA Household Survey 29.7% of the people purchased their inpatient medicines in this way. This in turn would artificially increase the ratio of pharmaceutical expenditure category in the SHA. It should also be noted that in the comparison countries the majority of health care spending occurs for inpatient services. In contrast the mode of spending in Turkey is intensive for outpatient care. This indicates that for the comparator OECD countries the pharmaceuticals used in the inpatient mode are not reflected in the pharmaceutical category.

We also found some evidence indicating that health resources and pharmaceuticals may not have been utilized efficiently in Turkey. A disproportionately high percentage of hospital expenditure is devoted to outpatient (rather than inpatient) care, indicating the need to strengthen primary care facilities and develop a viable referral system. The drug spending pattern in Turkey does not appear to correspond closely to the disease pattern, and there seems to be excessive use of antibiotics. Given the potential problem of drug resistance resulting from inappropriate use of antibiotics, there is a need for policy makers to consider effective organizational and financial mechanisms to address the issue of rational drug use. This can be done using various policy instruments; including strengthening patient education

and information, developing better clinical guidelines, and redesigning basic benefit packages and payment methods under social insurance programs to create incentives for both consumers and providers to rationalize drug utilization.

The most remarkable characteristic of the Turkish health spending patterns and health system structure is the fact that different social security funds performed so differently, both in terms of per capita drug expenditure and drug expenditure as share of total health spending. The average drug spending level among the GERF beneficiaries is the highest, followed by active civil servants, Bag-Kur, SSK, and Green Card holders. Without detailed data on the membership characteristics (e.g. their age structure and health status, etc.), we cannot ascertain the extent to which the differences can simply be explained by the differential in the underlying healthcare needs. However, given the significant differences in average drug expenditure, in addition to rate of increase in drug expenditure as share of total health expenditure, we suspect that the differences can be at least partially explained by different demand-side and supply-side constraints, which are related to the different financing and organizational structure of the different social security schemes.

Covering more than 35 million people (about 50% of the Turkish population), in terms of overall social security coverage but not health care coverage (which is reported to be around 67% of the total population according to recent studies), SSK is the largest social security fund. What is interesting about SSK is its ability to keep the average drug expenditure relatively low. Several factors may help explain this. SSK operates under the Ministry of Labor and Social Security and serves principally private sector employees and blue-collar workers of the public sector. Besides operating a drug manufacturing facility, SSK used to have its own hospitals and pharmacies within hospitals and directly purchases from manufacturers, importers and wholesalers via tenders. The majority of SSK outpatient dispensing used to be done at hospital pharmacies, before this was changed from February 2005 onwards, and SSK members are now able to fill their prescriptions in community pharmacies. SSK tenders are subject to the public procurement law, and the tenders are published on SSK's website daily. In essence, SSK is operating under a global budgeting mechanism. Its comprehensive system of procurement and provider payment, as well as extensive network of healthcare delivery and distribution of pharmaceuticals, all contributed to its lower level of health expenditure in general and drug expenditure in particular.

On the other hand, there is a concern that SSK may have achieved cost savings at the expense of providing inferior access to and sub-standard quality of services for its members. As Turkey is transforming its health system and thinking of developing a universal health insurance system, it would be critically important to examine the pros and cons of Turkey's

existing social insurance schemes, to draw on international best-practice examples and Turkey's own good experiences to develop new policies to improve health system performance on equity, quality and efficiency under the universal health insurance system.

Beside geographical inequalities, problems with inequalities in financial access and financial burden of health expenditures are found to exist through our household data analysis. Depending on different results of different studies Turkey still has 16.9% -35.7% of the population who are uninsured. Many of the poor people did nothing when they were sick, because they cannot afford to pay. Depending on the benefit packages, people who are insured may still have different access to healthcare services. 30% of the hospitalized patients have to buy drugs outside the hospital. This percentage is higher among the uninsured and low-income groups than their insured and high-income counterparts. Moreover, the poor have to pay higher amount for pharmaceuticals than their rich counterparts.

One approach to solve this problem would be to expand the Green Card program. Alternatively, Turkey may want to think of drawing on successful experiences from Thailand, which adopted a universal health insurance system in 2002, as its universal health coverage scheme will be in effect at the beginning of 2006.

It should be noted, however, that adopting a universal health insurance system would not mean that the equity in access problems will be solved once and for all. Even among the insured people, there is evidence indicating significant inequalities in healthcare and drug utilization. Moreover, user fees in the form of paying into the "revolving funds" at the public facilities, coupled with "informal payments", may pose a serious burden for low-income people in Turkey. A recent study by Tatar, et al. (2003) has found that out of the total payments made to the public sector, 62% was formal and 38% was "informal". Drugs comprised of the majority of formal and informal payments. Furthermore, even Green Card holders, who represent the poorest segment of the population, paid for informal payments in supposedly "free" public facilities. Worse still, in the public sector, the poor paid more informal payments per capita than the wealthier segments of the population; the elderly paid more informal payments per capita than the young, and the unemployed also paid more informal payments per capita in the public sector than their counterparts.

Clearly, equity-oriented policy makers in Turkey need to seriously consider monitoring more carefully what has really happened to the vulnerable population in terms of changes in their financial and cultural access to healthcare and drugs.

# 1. Introduction

## *1.1. Objectives of this Study*

The study on Healthcare/Pharmaceutical Spending and Pharmaceutical Financing/Reimbursement Policy in Turkey is intended to provide a comprehensive understanding of levels and structure of Turkey's healthcare and pharmaceutical spending as well as related financing and reimbursement policies. These understandings, combined with relevant international perspectives, can further help inform the process of developing sound policies to improve health system performance in Turkey. According to the term of reference for this study, we are given the following main tasks:

- To document actual levels of total health care spending and its subsets with special reference to pharmaceutical spending in Turkey with international comparisons (how Turkey compares with other countries);
- To analyze how differentials between Turkey and other countries be explained (factors);
- To explore policy recommendations that will address the question of how and to what extent can these differentials (especially imbalances if any) be addressed?

## *1.2. Approach and Structure of this Report*

Our main task is comparing Turkey's healthcare and pharmaceutical spending to other countries. This task is consisted of 3 sub-tasks: a. descriptive analysis of the level and structure of Turkey's healthcare/pharmaceutical spending, b. evaluative analysis of Turkey's level and structure of spending, and c. explanatory analysis of the factors affecting the spending patterns in Turkey. We will use two basic evaluative criteria in our analysis: efficiency and equity in financing (WHO, 2000a; Hsiao and Liu, 2001). On the efficiency ground, we will mainly examine the question of whether healthcare and pharmaceutical expenditures can be allocated more efficiently than the current pattern. On the equity ground, we will mainly examine the extent, to which inequalities exist in access to healthcare/pharmaceuticals and in financial burden of medical and pharmaceutical expenditures. Our explanatory analysis will be guided by a classical economic model of demand and supply for healthcare.

To situate our analysis of Turkey's healthcare and pharmaceutical spending in larger socioeconomic and health system context, we will first provide some descriptive information about the country in Sections 1-3. The remainder of this chapter will cover major achievement and challenges in Turkey's health sector. Section 2 will provide some background information about the country. Section 3 will describe Turkey's population health status and health system structure.

Sections 4-6 constitute the main analysis conducted for this study. Section 4 examined the level and structure of Turkey's health spending based mainly on the latest National Health Account (NHA) studies. While other studies, which did not use the NHA framework, also generated useful and interesting information, we focused on the NHA data, because they can be compared to other countries' data using the same framework. Section 5 compares Turkey's health spending level and structure to other countries (mainly OECD countries and Thailand, a country with similar population size and economic development level).

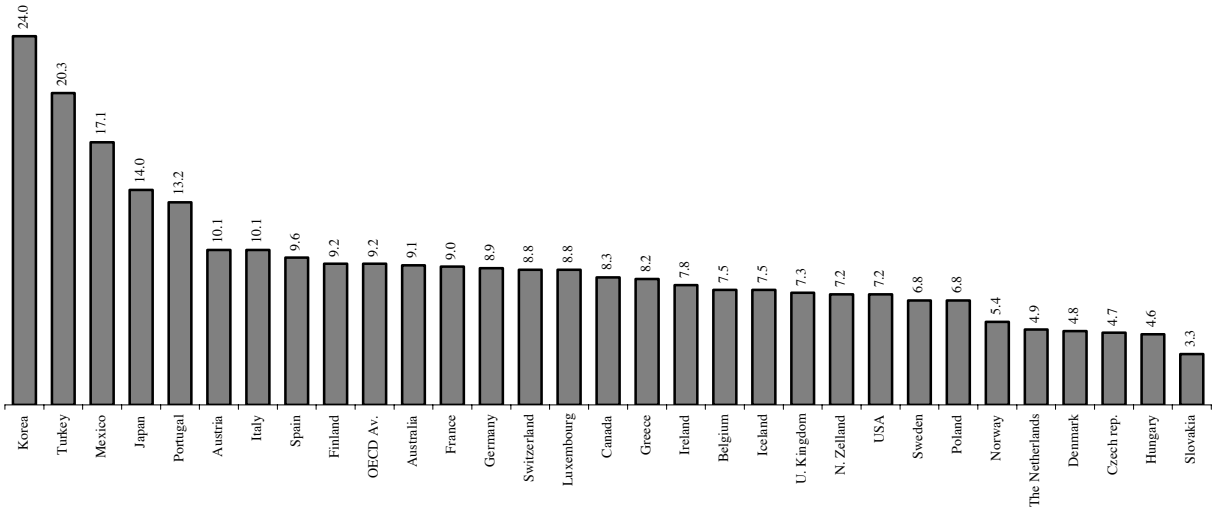
For purposes of assessing the effects of health and pharmaceutical policies and spending in Turkey, ideally we should select those comparator countries, which are similar to Turkey in other factors that affect health spending and health outcomes, but which *differ* in their health and pharmaceutical policies. Ideally, this means selecting countries that are similar in mean and distribution of GDP per capita, age, education, cultural, environmental and lifestyle factors that affect health, such as climate, nutrition, smoking etc, in addition to urban/rural mix or population density that affects access to facilities. If the comparison countries were similar in all these other determinants of health spending and outcomes, then differences between them and Turkey in health spending and health outcomes would reflect the effects of health policies and systems. However, all countries differ in some of these relevant dimensions, so that bivariate analysis is imperfect. Given Turkey's potential membership of the EU, it makes sense to focus on other EU members, even though Turkey's per capita GDP is much lower. Data limitations in selecting "perfect" comparator countries not withstanding, examining healthcare/pharmaceutical spending in different countries with different levels of socioeconomic development can help shed light on the relationship between the former and latter variables.

Section 6 provides some further analysis on some major issues and likely reasons for Turkey's different health care spending level compared to other countries revealed by analysis in Sections 4 and 5. Lastly, Section 7 discusses policy implications of our study results.

### *1.3. Turkey's Health Achievements and Health System Performance in the Past*

Turkey has good reasons to be proud of its accomplishments in improving health. A child born in Turkey in 2000 can expect to live almost 20 years longer, on average, than someone born in 1960. During 1960-2000, the average life expectancy at birth increased by nine years, on average, among OECD countries. Therefore, Turkey stands out as one of the highest achievers among OECD countries in terms of significantly increasing people's longevity (Figure 1.1).

**Figure 1.1. Gains in Life Expectancy at Birth, Total Population, 1960-2002**




Note: Differences across countries in method used to calculate life expectancy can affect the comparability of reported life expectancy estimates, as different methods can change a country's estimates by a fraction of a year. Life expectancy at birth for the total population is estimated by the OECD Secretariat for all countries, using the unweighted average of male and female life expectancy.

Source: OECD, 2004.

**Table 1.1. Health System Attainment and Performance Ranking in 1997**

| Country | Attainment of Goals | | | | | | Health expenditure per capita in int. dollars | Performance | |
|---|---|---|---|---|---|---|---|---|---|
| | *Health* | | *Responsiveness* | | *Fairness in financial contribution* | *Overall goal attainment* | | *On level of health* | *Overall health system perf.* |
| | Level (DALE) | Dist. | Level | Dist. | | | | | |
| Australia | 2 | 17 | 12-13 | 3-38 | 26-29 | 12 | 17 | 39 | 32 |
| Austria | 17 | 8 | 12-13 | 3-38 | 12-15 | 10 | 6 | 15 | 9 |
| Canada | 12 | 18 | 7-8 | 3-38 | 17-19 | 7 | 10 | 35 | 30 |
| Czech Rep. | 35 | 19 | 47-48 | 45-47 | 71-72 | 30 | 40 | 81 | 48 |
| Denmark | 28 | 21 | 4 | 3-38 | 3-5 | 20 | 8 | 65 | 34 |
| Finland | 20 | 27 | 19 | 3-38 | 8-11 | 22 | 18 | 44 | 31 |
| France | 3 | 12 | 16-17 | 3-38 | 26-29 | 6 | 4 | 4 | 1 |
| Germany | 22 | 20 | 5 | 3-38 | 6-7 | 14 | 3 | 41 | 25 |
| Greece | 7 | 6 | 36 | 3-38 | 41 | 23 | 30 | 11 | 14 |
| Hungary | 62 | 40 | 62 | 58 | 105-106 | 43 | 59 | 105 | 66 |
| Iceland | 19 | 24 | 15 | 3-38 | 12-15 | 16 | 14 | 27 | 15 |
| Ireland | 27 | 13 | 25 | 3-38 | 6-7 | 25 | 25 | 32 | 19 |
| Italy | 6 | 14 | 22-23 | 3-38 | 45-47 | 11 | 11 | 3 | 2 |
| Japan | 1 | 3 | 6 | 3-38 | 8-11 | 1 | 13 | 9 | 10 |
| Korea | 51 | 37 | 35 | 43 | 53 | 35 | 31 | 107 | 58 |
| Mexico | 55 | 65 | 53-54 | 108-109 | 144 | 51 | 55 | 63 | 61 |
| Netherlands | 13 | 15 | 9 | 3-38 | 20-22 | 8 | 9 | 19 | 17 |
| Norway | 15 | 4 | 7-8 | 3-38 | 8-11 | 3 | 16 | 18 | 11 |
| Poland | 45 | 5 | 50 | 65 | 150-151 | 34 | 58 | 89 | 50 |
| Portugal | 29 | 34 | 38 | 53-57 | 58-60 | 32 | 28 | 13 | 12 |
| Russia | 91 | 69 | 69-72 | 86-87 | 185 | 100 | 75 | 127 | 130 |
| Slovakia | 42 | 39 | 60 | 63-64 | 96 | 39 | 45 | 88 | 62 |
| Spain | 5 | 11 | 34 | 3-38 | 26-29 | 19 | 24 | 6 | 7 |
| Sweden | 4 | 28 | 10 | 3-38 | 12-15 | 4 | 7 | 21 | 23 |
| Switzerland | 8 | 10 | 2 | 3-38 | 38-40 | 2 | 2 | 26 | 20 |
| Thailand | 99 | 74 | 33 | 50-52 | 128-130 | 57 | 64 | 102 | 47 |
| Turkey | 73 | 109 | 93 | 66 | 49-50 | 96 | 82 | 33 | 70 |
| U. Kingdom | 14 | 2 | 26-27 | 3-38 | 8-11 | 9 | 26 | 24 | 18 |

Source: WHO, 2000a.

The WHO 2000 report ranked member states by their relative health system performance, using several performance criteria including level and distribution of health status, health expenditure, responsiveness, and fairness in financing (WHO, 2000a). Turkey" health system did not perform badly according to the WHO report. For example, while

Turkey's per capita health spending ranked 82nd among the WHO member states, it's overall health system performance ranked 70th, implying that Turkey did get the value for the buck, compared to other countries (Table 1.1).

### *1.4. The Vibrant Pharmaceutical Sector*

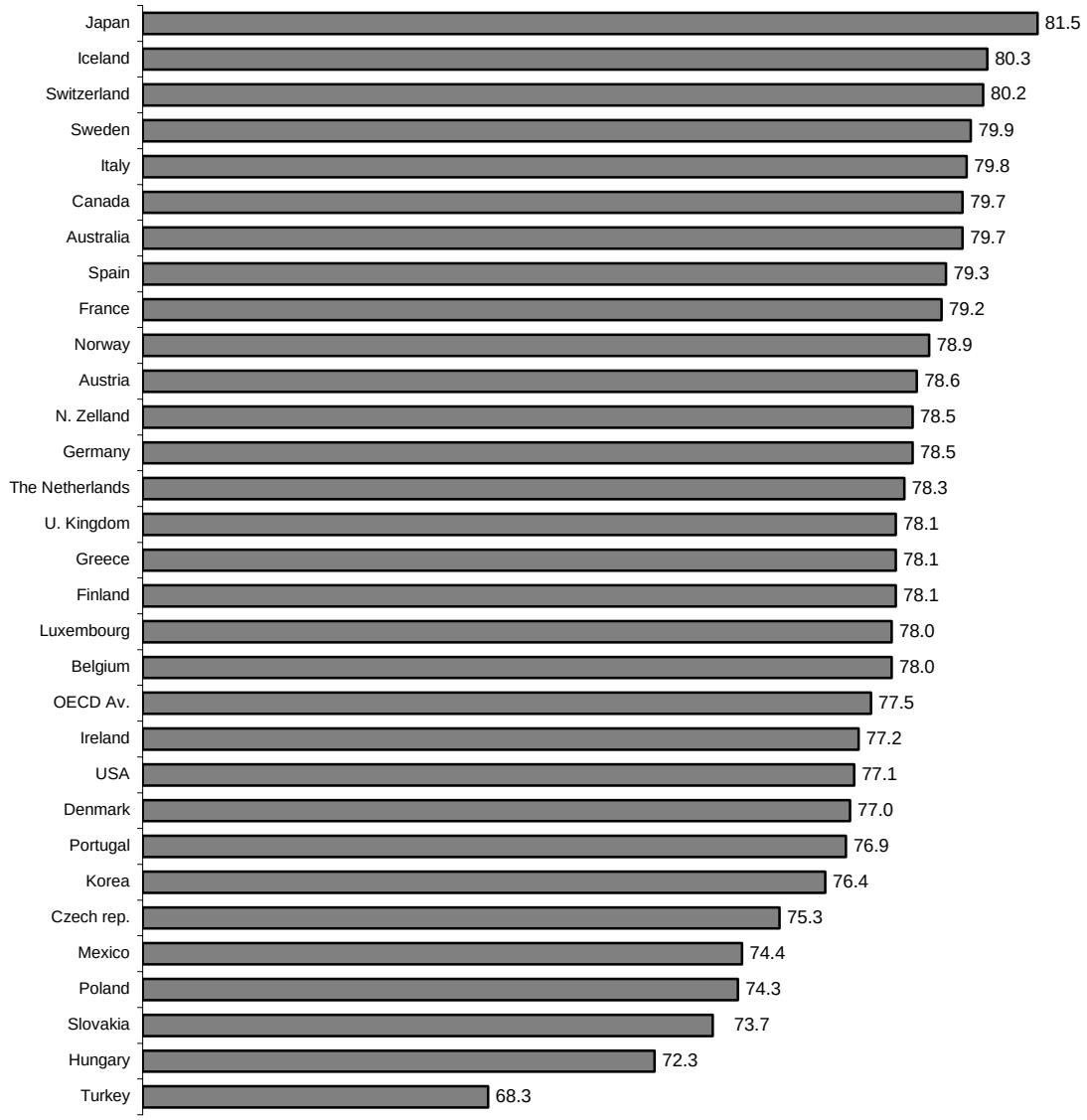
Consumption of pharmaceuticals is fuelled by the strong production capabilities in Turkey; there are 33 multinational companies some with owned manufacturing capacity while others predominantly utilizing local generic facilities as toll manufacturers. The 167 generic and mostly domestically owned companies focus on the generic market either as manufacturers or importers. Turkey ranked 16th among the world's 35 leading pharmaceutical producing countries (IEIS, 2003). Moreover, Turkey has more than 22,922 pharmacists and 20,848 pharmacies, largely private, serving the needs of people in wide geographical locations. As of 2003, the population per pharmacist was 2,957 (Ministry of Health, 2003).

Given Turkey's viable pharmaceutical industry and relatively adequate supply of pharmaceuticals, one may suspect that access to widely available medicines can be an important factor contributing to the remarkable health improvement in Turkey. Many of the world's illnesses, especially those suffered by people in developing countries, can be treated and prevented by existing cost-effective medicines (Banta, 2000; Chaudhury and Bapna, 1997). Therefore, access to essential medicines has become part of the Millennium Development Goals (UN, 2002). According to the WHO's statistics, 100 countries have a national drug policy in place or under development, 156 countries have national or provincial essential medicines lists, and 135 countries have turned the essential medicines concept into clinical practice with national treatment guidelines and/or formulary manuals. Most importantly, the number of people estimated to have regular access to essential drugs has risen from 2.1 billion in 1977 to over 4 billion today (WHO, 2000b; WHO, 2002).

### *1.5. Potential for Better Health System Performance and Other Challenges*

Despite its past achievements, Turkey is facing some major challenges for its health system as current level of health status is still very low relative to other OECD countries (Figure 1.2).

**Figure 1.2. Life Expectancy at Birth, 2001**




Note: Each country calculates its life expectancy according to methodologies that can vary somewhat. These differences in methodology can affect the comparability of reported life expectancy estimates, as different methods can change a country's life expectancy estimates by a fraction of a year.

Source: OECD, 2004.

As indicated by Table 1.2, significant gaps remain in other health indicators such as infant mortality rate, medical resource supply, and general economic and human development indicators. As indicated by Table 1.2, significant gaps remain in other health indicators such as infant mortality rate, medical resource supply, and general economic and human development indicators. To continuously improve people's health status in Turkey; arguably more investment (in healthcare and non-healthcare goods and services) is called for. Spending more is not necessarily a problem, if the marginal benefits exceed the marginal costs.

However, since about 60% of Turkey's health spending comes from the public purse, government budgets are feeling the pinch. As is indicated by Figure 1.3, per capita health expenditure for three social security funds (more detailed information about the funds* is provided in Section 3) increased remarkably.

**Table 1.2. Relevant Economic, Demographic and Health Related Characteristics of Turkey Compared with Other Countries (Latest Available Data)**

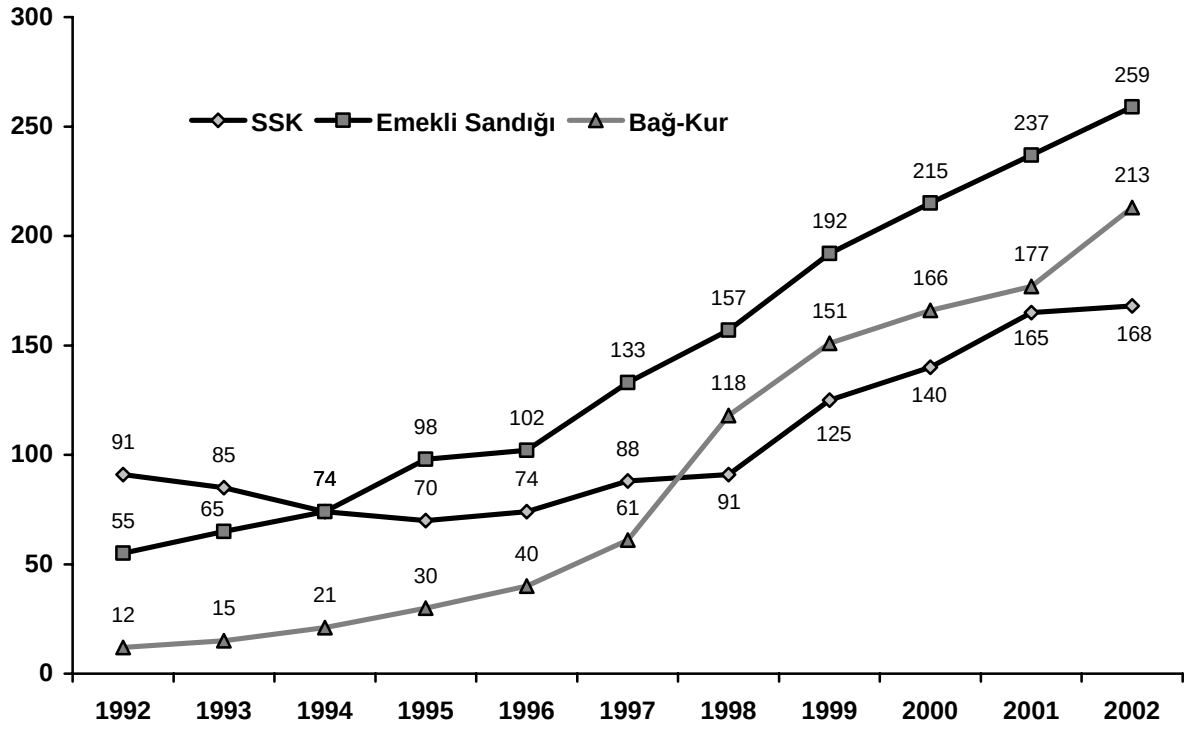
| Characteristic | UK | Ger | Fra | Spa | Ita | Gre | Pol | Czech | Tur | Mex |
|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy – male | 75.90 | 75.69 | 79.35 | 76.28 | 77.11 | 76.34 | 70.25 | 72.12 | **67.00** | 72.00 |
| Life expectancy – female | 80.60 | 81.59 | 83.15 | 83.32 | 83.22 | 81.66 | 78.48 | 78.66 | **72.10** | 77.00 |
| Infant mortality[a] | 5.48 | 4.31 | 4.38 | 4.08 | 4.67 | 5.05 | 7.67 | 3.97 | **29.00** | 24.00 |
| Human Development Index | 0.93 | 0.92 | 0.93 | 0.92 | 0.92 | 0.89 | 0.84 | 0.86 | **0.74** | 0.80 |
| Inflation rate | 1.80 | 2.00 | 2.40 | 3.20 | 2.70 | 3.00 | 5.50 | 4.70 | **54.40** | 6.01 |
| GDP/capita (US $) | 24,219 | 22,422 | 22,129 | 14,150 | 18,788 | 11,063 | 4,561 | 5,554 | **2,540** | 8,979[e] |
| Health spending per cap (US$ PPP) | 2,012 | 2,735 | 2,588 | 1,567 | 2,107 | 1,670 | 629 | 1,083 | **443**[d] | 583[f] |
| Health spending as % of GDP | 7.50 | 10.80 | 9.40 | 7.50 | 8.30 | 9.40 | 6.00 | 7.30 | **6.60**[d] | 6.10 |
| TPE as % Health Expenditure | 83.00 | 78.60 | 75.90 | 71.30 | 76.00 | 53.10 | 71.90 | 91.40 | **62.90**[d] | 46.40 |
| Pharma spend as % of health spend | 15.80 | 14.30 | 20.90 | 21.20 | 22.40 | 15.60 | 9.20 | 21.90 | **24.80**[d] | 21.40 |
| Pharma spend per capita (US$ PPP) | - | 402 | 537 | 209 | 493 | 211 | - | 242 | **110.00** | 60.73[g] |
| Cancer prevalence (%) | - | - | 1.34 | - | 2.40 | - | - | 3.03 | **0.04** | - |
| Chronic pulmonary diseases (%) | - | 0.24 | 0.20 | - | 0.30 | 0.29 | - | - | **0.23** | - |
| Traffic accidents[c] | 391.48 | 455.85 | 196.37 | 247.19 | 366.92 | 186.35 | 139.23 | 254.56 | **97.95** | - |
| Smoking rates % | 27,00 | 34.50 | 27,00 | 34.40 | 24.10 | 37.60 | 32,00 | 23.30 | **35,00** | 26.40 |
| Hospital beds per 100,000 | 417.10 | 901.06 | 793.17 | 394.35 | 446.81 | 487.80 | 549.45 | 857.55 | **235.52** | 100 |
| Physicians per 100,000 | 220.16 | 330.70 | 329.67 | 324.34 | 612.08 | 453.28 | 224.13 | 344.50 | **127.16** | 153 |
| % Private in-patient hospital beds | 4.51 | 22.82 | 34.45 | 32.81 | 23.13 | 29.40 | 1.17 | 10.38 | **7.48** | - |
| Bed occupancy (%) | 80.80 | 80.10 | 77.40 | 76.10 | 76,00 | - | - | 70.50 | **58.80** | - |
| Hospital spend as % of THE | - | 36.10 | 41.70 | 27.90 | 41.50 | - | - | 36.60 | **36.38**[d] | 19.45 |

Note: [a] Infant deaths per 1,000 live births, TDHS 2003.
[b] Maternal deaths per 100,000 live births.
[c] Road traffic accidents with injury per 100,000 populations.
[d] Year 2000.
[e] International $
[f] US $
[g] Pesos.

Source: Hacettepe University Institute of Population Studies, 2003.
World Health Organization, 2003a.
OECD Health Data, 2004.
Kartal, et al., 2004.
Sağlık Bakanlığı, 2004.

* *Sosyal Sigortalar Kurumu* (SSK) is a social insurance program for public sector workers and private sector employees. The Government Employees Retirement Fund is called GERF (or *Emekli Sandığı*), and *Bağ-Kur* is the social security scheme for self-employed people.

**Figure 1.3. Per Capita Health Expenditure by Public Payers ($US, PPP )**




Note: Per capita health expenditures were calculated by using administratively reported health expenditures and insured population by three main public payers in the figure. Category "GERF" includes both active and retired civil servants together with their dependents.

Source: Sağlık Bakanlığı, 1997, 2001a, 2001b.
Emekli Sandığı (www.emekli.gov.tr)
Sosyal Sigortalar Kurumu, 2001, 2002, 2003.
Bag-Kur, 2001, 2002, 2003.
State Planning Organization, 2005 ( www.dpt.gov.tr)

Furthermore, there are perceived problems in equity and efficiency of resource allocation in Turkey's health sector. Therefore, policy makers in Turkey have recently embarked on a road towards comprehensive health system reforms, establishment of a universal health insurance program, in order to provide a more equitable access to healthcare for all citizens while controlling medical cost increase, particularly controlling government health budgets.

### *1.6. Health System Reform Initiatives*

The 1961 "Socialization of Health Services" (Law No: 224) and the "Population Planning" Law (Law No: 554) marked a significant progress in Turkey's health system development. The main aim of the 1961 Socialization of Health Services was to socialize health services. It was during these years that General Health Insurance, which would be discussed for years to come, was first mentioned. A draft law for general health insurance was prepared in 1967 but was never handed over to the Cabinet. In the second five-year development plan, in 1969, General Health Insurance was again foreseen. In 1971 a draft General Health Insurance law was presented to the Parliament, but was rejected. In 1974 it was re-presented to the Parliament but was not debated.

Turkey's 1982 Constitution embodies the right of citizens to social security as well as the State's responsibility to realize this right (Article 60). The Constitution also calls for the establishment of general health insurance (Article 58). The Turkish Parliament passed the Basic Health Services Act in 1987. The 1982 Constitution contains parallel regulations to the 1961 Constitution, whose 60th Article lays out a universal right to social security. The 58th Article of the 1982 Constitution states that "general health insurance could be established".

In 1990, a master plan study for the health sector was prepared by PriceWaterhouse commissioned by State Planning Organization (SPO), leading to the first and second National Health Congresses in 1992 and 1993, which initiated the national health reform process. The health reform program in the 1990s consisted of the following main provisions: Health Financing Reform; Hospital and Health Enterprises Reform; Family Physician and Primary Care Reform; Organization and Management Reform; Human Resources Reform; and Health Information Systems. Three major draft laws (Health Financing Institution Law, Hospitals and Health Enterprises Law, Primary Care and Family Physician Services Law) were submitted to Parliament. These draft laws were prepared by the MoH with contributions from interested parties, which include the MoF, the SPO, Treasury, and the Ministry of Labor and Social Security (MoLSS).

After Turkey's general election in 2002, the Government prepared an urgent action plan. This plan explicitly calls for a social security system that covers the entire population, and confirms that the State has the obligation to provide basic health services to all citizens. As part of the implementation of the urgent action plan, the Ministry of Health launched the

Health Transformation Program (HTP). The main principles of the urgent action plan and the HTP are as follows:

- Revision of Turkey's Code of Patient Rights in accordance with international standards.
- A transformation of health information systems enabling a computer-based national monitoring system.
- Establishment of an efficient general health care insurance system to cover all citizens.
- Strengthening of the actuarial structure and financial status of the public and social security insurance programs, including the Social Insurance Organization (*Sosyal Sigortalar Kurumu* – SSK), the Government Employees Retirement Fund (GERF – or *Emekli Sandigi*), and *Bağ-Kur*, the social security scheme for self-employed.
- Provision of incentives and encouragement for private health and life insurance companies.
- Positioning of the Ministry of Health as the central planner and regulator for the health system, with a variety of public and private health care providers.
- Separation of retirement and health insurance within the existing social security programs.
- Establishment of an information system with a unique number ascribed to all Turkish citizens and used to track health insurance coverage and healthcare utilization.
- Establishment of a national quality and accreditation institution to develop systems for the measurement of health outcomes and indicators for best practices.
- Establishment of an independent "National Drug Agency", responsible for facilitating and supporting regulations concerning the authorization, production, and marketing of medicines and the management of research and development activities.
- Similarly, the establishment of an independent "National Medical Device Agency".

# 2. The Country Profile of Turkey

## *2.1. Geography and Demographic Situation*

Turkey occupies a surface area of 774,815 square kilometers. About three percent of the total area lies in Southeastern Europe and the remainder in Southwestern Asia (Anatolia or Asia Minor). Turkey has borders with Greece, Bulgaria, Syria, Iraq, Iran, Georgia, Armenia, and Azerbaijan. In addition to a large landmass, Turkey has the advantage of accessing sea ports from four sides: from the north, the Black Sea; from the northwest, the Sea of Marmara; from the west, the Aegean Sea; and from the south, the Mediterranean.

According to the 2000 census data, Turkey has a total population of 67.8 million. Turkey is among the world's 20 most populous countries. From 1990 to 2000, the total population in Turkey increased by 15%. Turkey has a young population structure as a result of the high fertility and high growth rates of the recent past. However, in recent decades, Turkey has witnessed dramatic declines in fertility rates. In the early 1970s, the total fertility rate was around 5 children per woman, whereas the estimates in the early 1990s put the total fertility rate at less than 3 children. During the next 20 years, the size of the age group 20-54 will double, and the population of the elderly will still be less than 10%. Depending on the employment rate in the years to come, this may give Turkey a rather favorably low dependency ratio (Ministry of Health, 2004).

There is migration from underdeveloped to developed regions, from rural to urban areas, from Turkey to abroad and also external migration especially from east neighbors as refugees, war victims, etc. The share of the population living in urban areas increased and reached the level of 64.9% in 2000 while there was a decreasing trend in population living in rural areas in the past ten years (Ministry of Health, 2004).

## *2.2. Economic Situation*

The Turkish economy has been characterized by fluctuations and minor or major crises. After the financial crisis of 2001, the economy is slowly rebounding as a result of a strict economic program. All economic indicators and expectations have undergone a perceivable improvement. In 2004 the economy has grown by 9.7% (compared to 5.9% in the previous year) in real terms. Price movements were also brought under control and the 12-month average inflation rate in consumer prices has receded from 29.7% in 2002 to 9.3% in

2004. However, given the country's increasing large foreign trade in-balance (-US$153 billion in 2004), negative current account balance (Current Account balance/GNP is –5.3% in 2004), and high unemployment rate 10.0% in 2004), Turkey's macroeconomic outlook is far from worry-free. Table 2.1 documents the main macro indicators of the Turkish economy under close IMF supervision.

**Table 2.1. Turkey's Key Macroeconomic Indicators**

| | 2002 | 2003 | 2004 |
|---|---|---|---|
| **GNP Growth Rate** | 7.8 | 5.9 | 9.7[1] |
| **GNP (Billions $)** | 181.7 | 238.9 | 283.9[1] |
| **Inflation (CPI, 12 months averages)** | 29.7 | 18.4 | 9.3 |
| **Inflation (WPI, 12 months averages)** | 50.1 | 25.5 | 11.1 |
| **Consolidated Budget Debt Stock (Billions $)** | 148.5 | 202.7 | 226.8[2] |
| **Domestic Debt (Billions $)** | 91.7 | 139.3 | 159.1[2] |
| **Foreign Debt (Billions $)** | 56.8 | 63.4 | 67.7[2] |
| **Total Debt Stock (Billions $)** | 130.3 | 145.8 | 153.2[1] |
| **Foreign Trade Balance (Billions $)** | -15.6 | -22.2 | -34.5 |
| **Exports (Billions $)** | 35.9 | 47.1 | 62.7 |
| **Imports (Billions $)** | 51.5 | 69.3 | 97.2 |
| **Current Account Balance (Billions $)** | -1.5 | -8.1 | -15.6 |
| **Current Account Balance /GNP (%)** | -0.8 | -2.8 | -5.3 |
| **Unemployment Rate (Open, %)** | 10.3 | 10.5 | 10.0 |

[1] 2004, Quarter 3.
[2] 2004 November.

Source: TR Central Bank (www.tcmb.gov.tr); Undersecretariat of Treasury (www.treasury.gov.tr)

The share of agriculture in GDP has been declining steadily since 1960 and is around 15% today. On the other hand, the share of industry and services is increasing, as in other developing countries. The shares of several major sectors in the GDP as of 2003 are as follows: agriculture 12.4%, industry 29.3% and service sector 58.3% (Turkey-European Union Pre-Accession Joint Program, 2003).

### *2.3. Administrative Structure*

Since the founding of the Republic, three Constitutions (1924, 1961, and 1982) have shaped the Turkish administrative structure. These three Constitutions proclaimed Turkey to be a Republic with a parliamentary system and specified that the will of the people be vested in the Turkish Grand National Assembly. All three Constitutions adopted basic individual, social and political rights, and accepted the principle of separation of powers. Turkey's national administration is centralized, with all crucial decision-making powers given to capital city-based ministries. The country is now administratively divided into 81 provinces.

The Ministry of Interior Affairs appoints the provincial governor and the district administrator. They represent the State at the provincial and district levels, where they coordinate and administer state policy. Provinces are subdivided administratively into districts, towns and villages. The head of the province is the governor, as the highest-level administrative and political officer in the province, represents not only the Ministry of Internal Affairs but also the State as a whole, the Government, and each Minister individually. The governor, carries out the policies of the central government, supervises the overall administration of the province, coordinates the work of the various ministry representatives appointed by the central authority in the capital Ankara, and maintains law and order within his/her jurisdiction.

Locally elected assemblies include the general provincial assembly, the municipal assembly and the village council of elders. The mayors of cities, district centers and towns are also directly elected, as are village heads.

Numerous elections and governments have characterized Turkey's political life, especially in the last two decades. Political instability has prevented stable, long term strategies and policies, as new administrations have tended to put a stop to the policies of their predecessors and adopt a different approach.

### *2.4. Social Conditions*

Regarding health coverage there are conflicting figures from official statistics and other studies (see table 6.3). According to SPO about 87% of the population has some kind of social security coverage (www.ssk.gov.tr). But it does not mean that about 87% of the population is covered by health insurance. The results of the household survey conducted for

the Turkey NHA Study in 2003 estimated that around 67% of the population was covered by any type of health insurance. Based on this finding SPO had the number of health cards count and announced that the health insurance coverage in Turkey was similar to the number reported by NHA Study, and this rate has been used in developing General Health Insurance program (Sağlık Bakanlığı, 2004).

Education is free and compulsory for children until the end of primary school of 8 years. The literacy rate is about 85.9% in 1999; schooling rates are 96.3% for primary school, 81.0% for high school, and 35.8% for higher education (Ministry of Health, 2004).

# 3. Health and Health System in Turkey

## *3.1. Population Health Status*

Life expectancy during the 65 years period of 1935-2002 increased by 21.3 years for women and 15.5 years for men while both crude birth and mortality rates steadily decreased, by 22.4 and 24.7%, respectively.

The latest estimates show life expectancy for women is 71 years and for men 66 years. However, this is well below the life expectancy in other OECD countries in 2001. Maternal mortality rate was about 207 per 100,000 live births in 1970, which decreased to 130 maternal deaths per 100,000 live births in the 1980s and 1990s (Ministry of Health, 2004).

While Turkey has achieved significant success in reducing infant mortality rate (IMR) in the last few decades, during which IMR has fallen from over 150 per 1,000 live births (in 1970) to under 40 per 1,000 live births (in 1998) and 29 per 1,000 live births in 2003 (Ministry of Health, 2004; Hacettepe University Institute of Population Studies, 2003). The reduction in IMR became more gradual in the 1990s. Nevertheless, infant mortality rates in Turkey remain significantly above the European Union average (8 per 1,000 live births).

The country-wide infant mortality rate masks considerable variation across urban and rural Turkey and across regions (Table 3.1).

**Table 3.1. Early Childhood Mortality Rates by Residential Area and Regions, 2003**

| | Neonatal mortality | Post neonatal mortality | Infant mortality | Child mortality | Under-five mortality |
|---|---|---|---|---|---|
| **Residence** | | | | | |
| Urban | 15 | 8 | 23 | 7 | 30 |
| Rural | 21 | 18 | 39 | 11 | 50 |
| **Region** | | | | | |
| West | 15 | 7 | 22 | 8 | 30 |
| South | 19 | 10 | 29 | 2 | 30 |
| Central | 10 | 10 | 21 | 12 | 33 |
| North | 20 | 14 | 34 | 14 | 48 |
| East | 23 | 18 | 41 | 7 | 49 |

Source: Hacettepe University Institute of Population Studies, 2003.

When the distribution of main death rates among the population segment between 0-14 years old was investigated, it can be seen that the majority of the deaths occurred because of diseases under Group I (communicable, maternal causes, prenatal causes and nutritional deficiencies) (Table 3.2) Factors such as inadequate access to health care services, lower utilization of health services, poor nutritional levels and lack of environmental hygiene (availability of safe drinking water and sanitation) contribute to these differences in infant and under-five mortality rates across wealth quintiles.

**Table 3.2. Distribution of Death Rates According to Age Groups, Disease Groups and Gender at National Level in Turkey, (Death/1000), (NBD-CE Project, 2000, Turkey)**

| **Males** | **0-4** | **5-14** | **15-29** | **30-44** | **45-59** | **60-69** | **70-79** | **80+** |
|---|---|---|---|---|---|---|---|---|
| Group I | 7.2 | 0.2 | 0.2 | 0.2 | 0.4 | 1.0 | 2.2 | 8.1 |
| Group II | 1.5 | 0.3 | 0.6 | 1.8 | 7.7 | 25.9 | 62.6 | 172.8 |
| Group III | 0.2 | 0.2 | 0.7 | 0.4 | 0.5 | 1.0 | 1.1 | 3.8 |
| **Females** | | | | | | | | |
| Group I | 7.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.6 | 2.0 | 7.3 |
| Group II | 1.3 | 0.2 | 0.4 | 1.3 | 4.8 | 16.6 | 46.9 | 156.9 |
| Group III | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.5 | 0.4 | 2.3 |
| **Males** | 8.9 | 0.7 | 1.5 | 2.4 | 8.5 | 27.9 | 65.8 | 184.7 |
| **Females** | 8.5 | 0.5 | 0.7 | 1.6 | 5.3 | 17.7 | 49.4 | 166.4 |

Group I: Communicable, Maternal Causes, Prenatal Causes and Nutritional Deficiencies.
Group II: No communicable diseases; Cardiovascular System Diseases, Respiratory System Diseases, Digestive System Diseases, Endocrine, Nutritional and Metabolic Diseases, Sense Organ Disorders, Genitourinary System Diseases, Malign Neoplasms, Musculoskeletal Diseases and Neurological Disorders, Neuropsychiatric Disorders and Mouth and Dental Health Disorders.
Group III: Injuries; intentional and unintentional injuries.

Source: Ministry of Health and Başkent University, 2004 (www.hm.saglik.gov.tr).

According to the TDHS, 78.2% of all deliveries took place at a health facility and antenatal care was received by 80.9% of pregnant women, which leaves about 22% of the births taking place at home and 19% of pregnant women without any antenatal care (Hacettepe University Institute of Population Studies, 2003).

The MoH requires mandatory reporting of certain diseases such as the vaccine preventable childhood illnesses. As Table 3.3 indicates, dysentery accounts for almost a fifth of all reportable diseases, followed by typhoid fever (19.3%), tuberculosis (13.1%), and measles (6.3%) in 2002. Examination of the modes of transmission of these infectious diseases points to the need for improved water sanitation, food safety, and preventive services such as immunization.

**Table 3.3. Reportable Diseases in Turkey (2000-2002)**

| | 2000 | | 2001 | | 2002 | |
|---|---|---|---|---|---|---|
| **Diseases** | **Number of Cases** | **% of Total** | **Number of Cases** | **% of Total** | **Number of Cases** | **% of Total** |
| Typhoid fever | 25,731 | 20.1 | 25,626 | 16.9 | 24,158 | 19.3 |
| A. Dysentery | 23,723 | 18.5 | 25,756 | 17.0 | 26,447 | 21.2 |
| Tuberculosis | 17,970 | 14.0 | 18,038 | 11.9 | 16,370 | 13.1 |
| Measles | 16,244 | 12.7 | 30,509 | 20.1 | 7,823 | 6.3 |
| Malaria | 11,432 | 8.9 | 10,812 | 7.1 | 10,224 | 8.2 |
| Brucella | 10,565 | 8.3 | 15,510 | 10.2 | 17,584 | 14.1 |
| Hepatitis A | 10,435 | 8.2 | 10,661 | 7.0 | 10,557 | 8.4 |
| Scarlet Fever | 4,814 | 3.8 | 5,910 | 3.9 | 3,691 | 3.0 |
| Hepatitis B | 4,115 | 3.2 | 5,578 | 3.7 | 5,813 | 4.7 |
| B. Dysentery | 1,093 | 0.9 | 1,321 | 0.9 | 1,047 | 0.8 |
| Paratyphoid fever | 767 | 0.6 | 1,100 | 0.7 | 467 | 0.4 |
| Whooping Cough | 510 | 0.4 | 182 | 0.1 | 193 | 0.2 |
| Meningococcal Inf. | 485 | 0.4 | 587 | 0.4 | 592 | 0.5 |
| Tetanus | 12 | 0.0 | 24 | 0.0 | 16 | 0.0 |
| Diphtheria | 4 | 0.0 | 5 | 0.0 | 2 | 0.0 |
| Rabies | 3 | 0.0 | 3 | 0.0 | 3 | 0.0 |
| Poliomyelitis | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Total | 127,903 | 100.0 | 151,622 | 100.0 | 124,987 | 100.0 |

Source: Ministry of Health 2002 (http://www.saglik.gov.tr/sb/extras/istatistikler/apk_2002/s_077.htm) (29 May 2005)

While there is no reason for Turkey's efforts for controlling communicable diseases to be relaxed, non-communicable diseases, such as cardiovascular diseases, constitute an increasing burden of disabilities and deaths. Heart and cerebrovascular diseases are the main

death causes for all deaths in Turkey. As is shown by Table 3.4, ischemic heart diseases and cerebrovascular diseases account for 36.7% of total deaths in Turkey in 2000. These chronic illnesses often require long term medical care, putting increasing pressure on the healthcare system. As these diseases are related to life-style changes such as smoking and high fat diets, public health programs aimed at effectively modifying people's risky behaviors have become all the more important.

**Table 3.4. Percentage Distribution of the First 20 Diseases Causing Death at National Level in Turkey (NBD-CE[1] Project, 2000, Turkey)**

| Causes of Death | % total deaths |
|---|---|
| 1. Ischemic heart disease | 21.7 |
| 2. Cerebrovascular disease | 15.0 |
| 3. COPD | 5.8 |
| 4. Prenatal Causes | 5.8 |
| 5. Lower respiratory infections | 4.2 |
| 6. Hypertensive heart disease | 3.0 |
| 7. Trachea, bronchus and lung cancers | 2.7 |
| 8. Diabetes Mellitus | 2.2 |
| 9. Road traffic accidents | 2.0 |
| 10. Inflammatory heart diseases | 1.9 |
| 11. Congenital anomalies | 1.6 |
| 12. Diarrhoeal disease | 1.5 |
| 13. Stomach cancer | 1.3 |
| 14. Nephritis and nephrosis | 1.1 |
| 15. Leukemia | 1.0 |
| 16. Rheumatic heart disease | 0.9 |
| 17. Breast cancer | 0.9 |
| 18. Peptic ulcer | 0.9 |
| 19. Lymphomas and multiple myeloma | 0.9 |
| 20. Falls | 0.9 |

Source: Ministry of Health and Başkent University 2004. (www.hm.saglik.gov.tr) (burdenofdiseaseENG.pdf, pp.99) (29 May 2005)

[1] National Burden of Disease and Cost-Effectiveness Study

### *3.2. Health System in Turkey*

#### *3.2.1. Healthcare Financing*

Turkey has three main sources of health care financing:

(1) The general government budget funded by tax revenue and allocated mainly through the MoH (also for green card holders), the Ministry of Defense, University hospitals, other public agencies and the health care expenditure of active civil servants;

(2) Social security contributions obtained from members of the SSK, Bağ-Kur and the GERF; and

(3) Out-of-pocket payments in the form of direct payments to private doctors and institutions, premiums paid for voluntary health insurance, and statutory co-payments.

***Government Budget***

The general government budget is funded mainly by tax revenue. It is the main source of financing for publicly provided health services.

The MoH, the largest single provider of health care in Turkey, is predominantly financed by the general government budget. As far as MoH hospitals are concerned, general budget represents only 35% of the overall hospital budget (Kartal, et al., 2004) where the deficit is financed through revolving fund. Since 1988, an additional source of tax revenue has become available to the MoH through special funds from earmarked excise duties on fuel, cigarettes, alcohol and the sale of new cars. A third source of income for the Ministry of Health is the revolving funds, into which insurers and individuals pay fees. These have become progressively more important as a source of financing, accounting as high as two-thirds of the public hospitals' total income.

There are also some programs that are directed to a targeted population. One of them is civil servant's health benefit program. This program covers all civil servants and their dependents' health expenditures. Another program targeted to a specific group is the Green Card Scheme, which is run by the MoH. The aim of this program is to cover health expenditures of uninsured indigents.

***Green Card Program***

Since 1992, the Green Card program has provided a targeting mechanism for hospital health services for the poor. As of February 2005 the government decided to provide pharmaceutical benefits to the green card holders as well. However the Green card holders will have to pay 20% co-payment. Currently, legal arrangements for coverage of outpatient health care services are completed. In principle, Green Card holders are entitled to comprehensive free healthcare benefits. In 2002, there were an estimated 13 million Green Card beneficiaries, covering approximately 14% of the population. For this population, the program spent $56 per beneficiary for inpatient services. Recent official figures indicate that the number of Green Card beneficiaries have dropped to around 9 million in 2005 (Sağlık Bakanlığı, 2005).

***Social Security***

According to data in Table 3.5, 87% of the population has some kind of social security coverage. But it does not mean that about 87% of the population is covered by health insurance. Even though social insurance coverage reported by government authorities is higher, there are also some discussions saying that the benefits provided by the current social welfare system are questionable, inadequate, and of poor quality. It is also very difficult to say exactly how much of the population is covered by any type of insurance scheme. The main reason of possible miscalculations of the number of people covered by social security is that each social security institution knows only how many active and pensioned members it has, so numbers of dependants are estimates based on the average household size in Turkey. In practice, this method of calculation sometimes results in double counting. In that sense it may be recommended the authorities use a source as a base for future health care spending estimations. As proposed in the report of Social Security Reform, it is useful to use the number of people having health cards for health care estimations in the future. If the numbers of people having health cards (Ministry of Labor and Social Security, 2005) are used to calculate per capita health and drug spending under different social insurance schemes, it could be easily seen that per capita health expenditures dramatically increases for SSK and Bag-Kur beneficiaries compared to previous estimations since the denominator dramatically decreased.

**Table 3.5. Social Security Coverage in Turkey, 2003**

| Social Security Organizations | Active Workers | Pensioners | Dependents | Total | % |
|---|---|---|---|---|---|
| SSK | 6,750,460 | 3,935,523 | 24,610,697 | 35,296,680 | 49.9 |
| Emekli Sandığı | 2,508,741 | 2,567,057 | 5,580,871 | 10,656,669 | 15.1 |
| Bağ-Kur | 3,383,849 | 1,446,804 | 11,052,596 | 15,883,249 | 22.5 |
| Private Insurance | 70,925 | 71,715 | 153,013 | 295,653 | 0.4 |
| Total | 12,713,975 | 8,021,099 | 41,397,177 | 62,132,251 | 87.9 |

Source: Sosyal Sigortalar Kurumu, 2003 (http://www.ssk.gov.tr/wps/sskroot/istatistikk/istatistik2003/T1_15.xls)

In 2002 SPO estimated that of the population covered by any kind of social insurance scheme, 83.8% were also covered for their health care expenditures. The results of household survey conducted for Turkey NHA and Turkey Burden of Disease – Cost Effectiveness Study also estimated that health insurance coverage was 67,2% and 64,3%, respectively (Berman et al., 2004; Ministry of Health and Başkent University, 2003). It is expected that social and health care coverage are to closely match each other. The inconsistency among the numbers might be because of the lack of data and information about the beneficiaries and their dependants under the different schemes of social and health insurance. It might be the case that either social insurance schemes do not collect adequately or update their statistics or that birth or death certificates, especially in rural areas, do not mirror actuality. For instance, sometimes, it might be the case to see a person, who actually died a few years ago, benefiting from the Bag-Kur health insurance branch.

The above table shows only public social insurance coverage. For instance, the MoH reported that 1,068,258 people in 2003, who were not covered by any kind of social insurance scheme, were treated in MoH hospitals, and about 607 million Turkish Lira was paid by the MoH to account for medical treatment for the uncovered poor (Sağlık Bakanlığı, 2003).

*a) Sosyal Sigortalar Kurumu* (SSK) provides pension and health services to private sector employees, blue-collar public sector employees, and agricultural workers – and to the dependants of all three groups. The SSK has two separate components that cover health services (occupational injuries and diseases, other diseases and maternity) and retirement services (disability, old age, and death). SSK had an estimated 35.3 million beneficiaries in

2003, including workers and their dependants (Table 3.5). It should be mentioned that all covered by SSK do not have a right to be reimbursed for their health expenditures. Only those who have health cards are eligible to be reimbursed by SSK. Membership is highly concentrated – approximately 50% of beneficiaries are in the urbanized provinces of Ankara, Bursa, İstanbul, and İzmir.

SSK health services are primarily funded by premiums, paid by employees and employers. The total SSK premium includes 14% of payroll paid by the employee and employer. Additionally, within the SSK health system there is a 20% co-payment for outpatient drugs, reduced to 10% for retired beneficiaries. And those beneficiaries who have chronic diseases are exempted from co-payments.

*b) Bağ-Kur* or the Social Insurance Agency of Merchants, Artisans and the Self-employed – covers the self-employed workers. In principle, it covers approximately 15.8 million individuals, or 22.5% of the population. *Bağ-Kur* was uniquely a pension fund for these groups until 1988, when it added health insurance, beginning in pilot provinces. The health insurance program now covers the whole country, but participation rates are low. Of *Bağ-Kur's* 15.8 million members, only an estimated 9.8 million holding health cards are active health insurance beneficiaries (Bağ-Kur, 2005)

Members' health insurance contributions are calculated as 12% of the average "notional income" of insured individuals, separate from the 20% that covers pensions and other benefits. The notional income level is calculated by applying an index determined by the Ministry of Finance that incorporates wage and price inflation. *Bağ-Kur* does not directly provide health services, but contracts with other providers in the public and private sectors. Reimbursement levels vary by type of provider. Drug purchases generally require a 20% co-payment from active members and a 10% co-payment from retired members.

*c) Emekli Sandığı* – the Government Employees Retirement Fund (GERF) combines a pension fund, health insurance, and other benefits. It is managed by the Ministry of Finance. GERF's health benefits are not based on a health-specific premium. They are financed as part of GERF's general funding, which consists solely of retirement contributions, which derive from employee contributions – 16% of salary – and contributions from the Government as an employer – 20% of salary. The plan also receives an additional subsidy from Government general revenues.

GERF covers inpatient and outpatient health services where a 10% drug and prostheses co-payment applies for non-exempted services. Hospital accommodation may be based on an individual's grade within the civil service. Like *Bağ-Kur*, GERF does not operate health facilities, but contracts with public and private institutions.

***Private Financing***

*a) Private Insurance*

Private health insurance has strong potential in Turkey, but currently is limited to about 1% of the population. Private health insurance was permitted in Turkey starting in the 1990s. There are now 36 companies, which covered 704,545 lives at the end of 2003, increased from just 25,000 in 1991. 60% of beneficiaries are in the group (employer) insurance market and 40% in the individual market. In addition, private insurance companies offer policies that supplement public health insurance with specific benefits, including dental, ambulatory check-ups, and optometric services.

*b) Out of Pocket Payments and Co-Payment*

Out-of-pocket payments may be in the form of direct payments to private doctors and institutions, premiums paid for voluntary health insurance and co-payments for drugs and services.

It is difficult to make reliable estimates of the extent of out-of-pocket payments in Turkey, as private spending on health care is not well documented. However the results of Turkey NHA study revealed that the share of out of pocket spending on health in total health expenditure was 29.1% in 1999, and was 27.6% in 2000. Informal payments are also an issue in the Turkish health care system.

As described above, all of the health insurance programs active in Turkey include some type of patient contribution, or cost-sharing. The MoF and MoH set the fee levels for all public health facilities whereas TMA determine the minimum fee levels for private facilities. Patients make a 20% co-payment for drugs in all public insurance schemes. This rate is 10% for retired members. Law introducing a co-pay up to 20% for Green Card holders has been also enacted on 27 April, 2005. Private insurance policies vary, but typically include a 20% co-payment for outpatient and maternity services and drugs.

MoH hospitals are allowed to operate revolving funds that use these funds to pay for hospital expenditures. 536 MoH hospitals – 73.7% of the total, accounting for 96% of MoH hospital beds – operate revolving funds. There are also 43 revolving funds active in university hospitals. Up to 50% of the revolving funds can be used to top providers' salary, if there are no out-standing bills. The Ministry of Finance recovers a "tax" of 15% on these revolving funds, somewhat comparable to the 18% VAT tax that private hospitals pay on their revenues. However, the use of funds is not subject to spending restrictions by category, providing a flexible means for hospitals to meet operating expenses.

Share of the general budget in MoH hospitals total revenue is around 35% according to the NHA 2000 Study. This may indicate a subsidy for public hospitals. This in turn would mean that social security organizations have been paying less on hospital services than the actual service costs. Given the fact that pharmaceutical spending is not subsidized, pharmaceutical spending would artificially stand higher as a proportion of total health care budget of these social security organizations.

*3.2.2. Healthcare Organization and Management*

1) Planning, Regulating and Managing of Health Care System

The planning, regulation and management of health policy-making in Turkey is fragmented and unevenly distributed among different stakeholders. The overall responsibility for planning, coordinating, financially supporting and developing health institutions to provide equitable, high quality and effective health services is divided among the MoH, MoLSS, Ministry of Defense, Universities, SPO, and other governmental bodies.

The MoH is the main government body responsible for health sector policy making, implementation of national health strategies through programs and direct provision of health services. It is the major provider of primary and secondary health care, maternal health services, and children's and family planning services.

The SPO has two separate planning roles. It is responsible for strategic planning, which takes the form of preparing five-year development plans; it is also responsible for investment appraisal and planning and must approve any new capital investment in health care.

Though the MoH has some responsibility for setting policy objectives for the health sector or for planning the delivery of health care, it is primarily concerned with administering the health services provided under its auspices (that is, through its hospitals and other health facilities).

Each University hospital is an autonomous agency and does not come under the jurisdiction of any central planning authority except investment. Individual hospitals are not involved in planning cycles in which strategic objectives, short-term measures and implementation are monitored and adjusted.

At the provincial level, the governors (representatives of each ministry at the centre) and provincial health directorates (for 81 provinces) are responsible for administering health services provided by the MoH. The provincial health directorates are accountable to provincial governors for administrative matters and to the MoH for technical matters.

2) Health Care Provision

The public sector plays a dominant role in health care provision.

The two key public providers are the MoH and the Universities (SSK until February 2005 was the second largest health care provider but all its health facilities were then transferred to MoH). But it was decided to provide information on SSK health facilities in coming pages since this report compares the overall health expenditures as well as pharmaceutical expenditures of main public institutions for the years before 2005.

a. Ministry of Health

The MoH is the most important public provider of primary health care and essentially the sole provider of preventive health services. It is also the major provider of maternal health care services. These services are provided through a network of health posts and health centers which were established throughout the country on the basis of the 1961 law on socialization of health services. There are 11,700 health posts and 5,840 health centers being operated by MoH. For maternal and child care and for key preventive services, MoH runs a number of vertical programs. To help implement these programs, particularly in urban areas, MoH therefore also operates a series of specialized centers and dispensaries, including 280 MCH-FP, 272 tuberculosis control dispensaries and a small number of other specialized dispensaries (Ministry of Health, 2003).

MoH also operates a network of 668 hospitals with a 91,202 bed capacity (50.4% of the total beds (Ministry of Health, 2003). The number of the hospitals under the MoH has increased to 827 hospitals after the transfer of SSK hospitals.

b. The Ministry of Defense

The Ministry of Defense also operates health care network of 42 hospitals (15,900 beds capacity with a share of 8.8% of the total beds) (Ministry of Health, 2003) serving exclusively military personnel and their dependants. 5% of these hospitals' capacity can be used for the general public. There are two MoD hospitals providing undergraduate and postgraduate education.

c. Universities

50 Universities having 26,162 bed capacity (14.5% of total beds) (Ministry of Health, 2003) of which primary responsibility is to provide tertiary care unfortunately due to lack of referral system is often also used for primary care and this leads to inefficiency.

d. SSK

SSK until recently (February 2005) operated a significant network of healthcare facilities with 136 hospitals (29,157 bed capacity with a share of 16.1% of the total beds) (Ministry of Health, 2003), 209 health stations (similar in scope to MoH health posts) and 179 health dispensaries (equivalent to MoH health centers). As mentioned above, the entire SSK healthcare facility network has now been transferred to MoH as of February 2005.

*3.2.3. Regulation of the Pharmaceutical Market*

*(1) Supply of Pharmaceuticals in Turkey*

Pharmaceuticals represent a large and complex industry in Turkey. In contrast with health services provision, which is dominated by the public sector, the pharmaceutical sector is dominated by the private sector. The production, importation, storage, wholesale and retail of drugs and medical supplies are all carried out by private firms. The only exception was until recently (February 2005) a pharmaceutical manufacturing facility operated by SSK. 167 pharmaceutical companies (33 multinational companies and 134 generic and mostly domestically owned) provided 1,388 active ingredients and 3,667 products with different

forms (about 7,000) as of May 2005. They were distributed through 434 registered wholesalers, although lower than 100 of them are currently operational and approximately 20,848 private pharmacies during 2002 (IEIS, 2003, Ministry of Health, 2003). Anyone with a pharmacology degree can open a retail pharmacy, upon application for a license to the provincial health directorate.

In 1995 – 2002 period ratio of exports to imports has decreased from 12.9% to 9.1%. (Table 3.6).

**Table 3.6. Exports and Imports in the Pharmaceutical Industry**

| Years | Exports (Million $) | | | Imports (Million $) | | | Ratio of Exports to Imports (1)/(2) (%) |
|---|---|---|---|---|---|---|---|
| | Raw Materials | Finished Products | Total (1) | Raw Materials | Finished Products | Total (2) | |
| 1995 | 48 | 46 | 94 | 566 | 164 | 730 | 12.9 |
| 1996 | 56 | 49 | 105 | 650 | 225 | 875 | 12.0 |
| 1997 | 39 | 59 | 98 | 668 | 314 | 982 | 10.0 |
| 1998 | 61 | 68 | 129 | 769 | 411 | 1,181 | 10.9 |
| 1999 | 67 | 62 | 128 | 785 | 552 | 1,337 | 9.6 |
| 2000 | 69 | 71 | 140 | 828 | 683 | 1,511 | 9.3 |
| 2001 | 72 | 77 | 149 | 836 | 698 | 1,534 | 9.7 |
| 2002 | 78 | 79 | 157 | 874 | 842 | 1,716 | 9.1 |

Source: İEİS, 2003.

*(2) Market Entry Regulation*

In Turkey, the MoH, General Directorate of Pharmaceuticals and Pharmacies (GDPP) is the sole authority in charge of registration, marketing approval/authorization, pricing of pharmaceuticals, legal classification and inspection. In particular, the role of this authority is to provide for registration, marketing approval/authorization and pricing of pharmaceutical products, to define rules to be followed as well as to control the advertisement of pharmaceutical products, to undertake inspection of pharmaceutical products and pharmaceutical production plants in Turkey.

In its tasks, the Ministry of Health is assisted by a number of ”internal” commissions composed of university professors, pharmacologists, pharmaceutical technologists, clinicians, and representatives of the Ministry and other related experts.

*(3) Pricing Regulation*

In terms of pricing, a basket of five EU countries (Italy, France, Spain, Portugal, and Greece for 2005) to be determined each year to be used as the basis for establishing the price of the original products. The reference price of the original products shall be fixed at 100% of the ex-factory price in the cheapest among the five reference countries or if the ex-factory price is not available, at 100% of the sale price to the wholesaler obtained upon deducting the VAT rate and pharmacy and wholesaler profits from the public sale price in that country. If the ex-factory price in the country from where it is imported is lower than the designated reference price, the ex-factory price in the country of importation shall be taken as the reference price. The public sale price shall be determined upon adding the envisaged wholesalers and pharmacy profit rates and VAT to the sale price to the wholesaler.

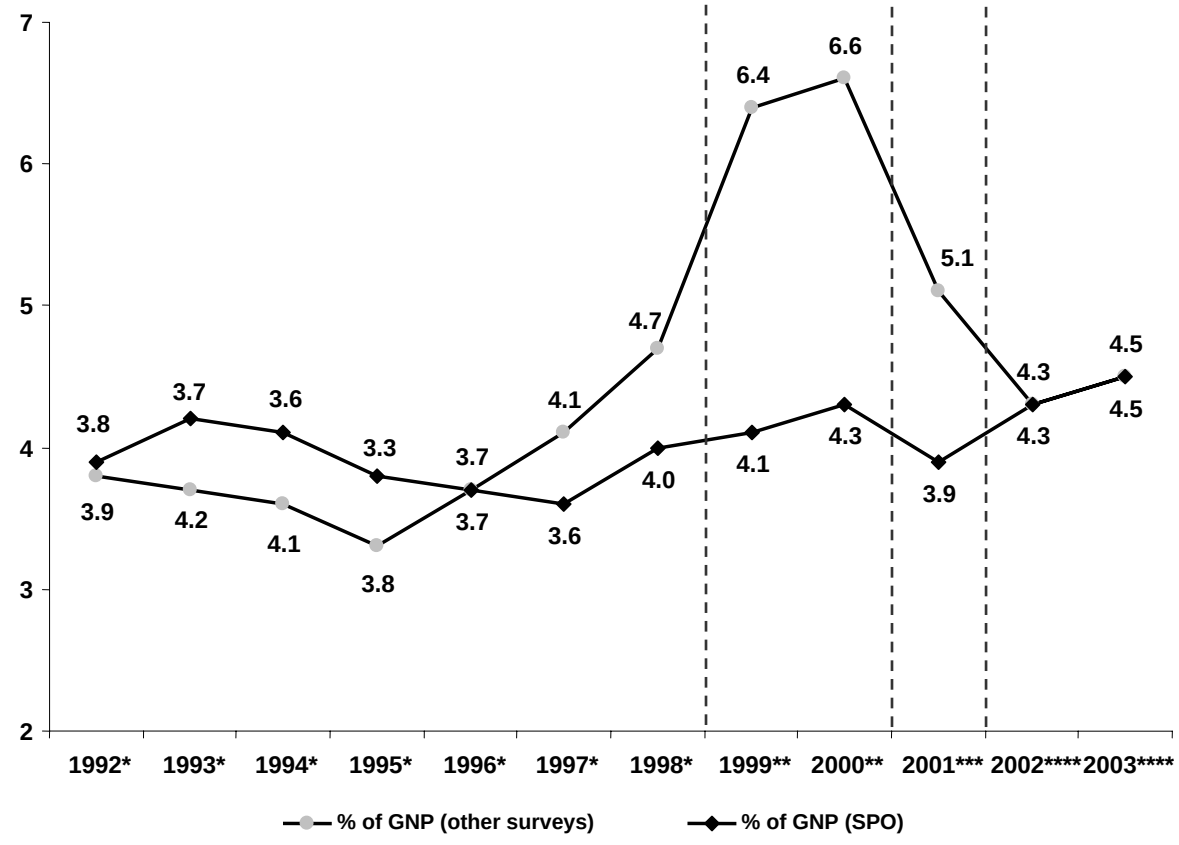
For generic products, the reference price is determined at 80% of the reference price determined for the originals (100% of the cheapest ex-factory sales price among the reference 5 countries). Similarly to the original products, if the ex-factory sales price of the product under pricing in the country of importation is lower than the generic product reference price, the ex-factory price in the country of importation shall be taken as the reference price of that generic product. The final public price shall be determined upon adding the applicable wholesaler and pharmacy margins to the sale price to the wholesaler.

# 4. Healthcare Spending in Turkey

## *4.1. Data Issues*

Due to different methods for data collection used by Turkey than by other countries at different times, estimated healthcare spending in Turkey cannot be easily compared over time and to other countries. The first National Health Account (NHA) study was conducted in Turkey for the years 1999 and 2000. This study followed the System of Health Account (SHA) methodology, which was used by other OECD countries. Even though the World Bank estimated Turkey's healthcare spending in 2001, no new data was used for that study. Data on healthcare spending after 2001 are generated by government agencies (e.g. SPO).

**Figure 4.1. The Results of Different Estimates on the Level of Total Health Expenditures (% of GNP)**




* MoH for 1992-1998, **NHA for 1999-2000, ***World Bank for 2001, and ****SPO for 2002-2003.

Source: Sağlık Bakanlığı, 1997; 2001a; 2001b.
Kartal, et al., 2004.
State Planning Organization, 2005 ( www.dpt.gov.tr)
World Bank, 2003b.

Figure 4.1 shows how the results of different estimates on total health expenditures in Turkey differed. While SPO and MoH estimates may have accurately captured public sector health expenditures, they may not have adequately reflected the extent of private spending (e.g. out-of-pocket spending). This may help explain, in part, why estimated healthcare spending in Turkey using the SHA framework tended to be higher than Turkey's traditional and official statistics. Due to the comprehensiveness of the SHA framework (e.g. NHA Studies captured health expenditures of private sector and some public entities such as municipalities, funds and associations as well as out-of-pocket expenditures, which were not adequately captured by other studies) and international comparability of the data, we will focus our analysis on the data produced by the NHA Studies. However, this is not to undermine the merits and usefulness of results from Turkey's other official and independent studies.

### *4.2. An Anatomy of Health Spending in Turkey*

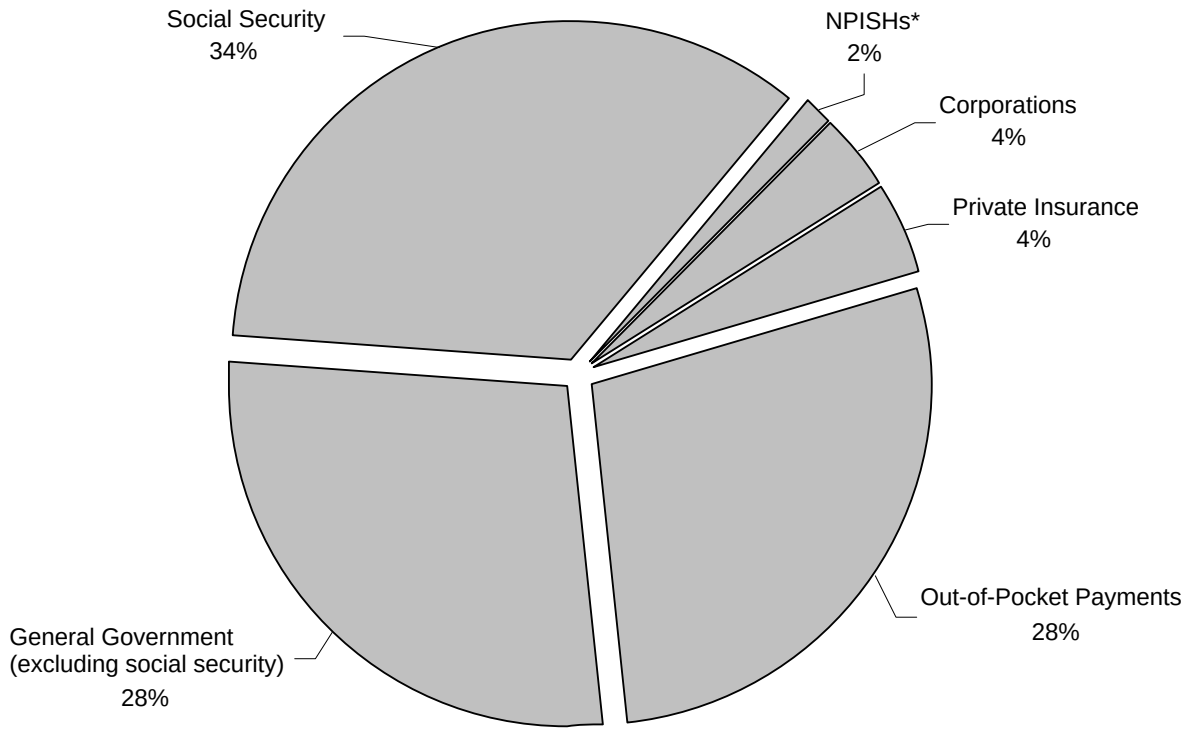
According to the two estimates from the NHA Studies, Turkey spent TRL 4,984.54 trillion (US$26 billion PPP) in 1999 and TRL 8,247.89 trillion (about US$30 billion PPP) in 2000 on health. Per capita spending on health was US$392 PPP in 1999 and US$443 in 2000 respectively. According to NHA study (Kartal, et al., 2004) in 2000, about 24.8% of the total health expenditures spent on pharmaceuticals, which are dispensed to the outpatients. Total health expenditure in Turkey accounted for 6.4% and 6.6% of the country's GDP in 1999 and 2000 respectively. As will be discussed later, in terms of total health expenditure as a percentage of GDP, Turkey does not seem to spend too little (or seems to spend a fair amount) on health compared to other countries. But without a comprehensive understanding of the structure of health spending in Turkey, we will not be able to conduct any evaluative assessment. In the sections below, we will analyze major sources of total health expenditure in Turkey, major players in healthcare financing in Turkey ("financing agent" using the NHA terminology) and major uses of health expenditures.

#### *4.2.1. Health Expenditure by Source*

As indicated by Figure 4.2, total health expenditure in Turkey is predominantly financed through organized mechanisms (organized financing). Out-of-pocket payments only represented 27.6% of the total health expenditure in 2000. With spending by the social security schemes (accounting for 34.9% of the total health expenditure) and other government

spending (accounting for 28% of the total health expenditure) combined more than half (63%) of the total health expenditure in Turkey were financed by the "public sector", leaving the rest to be financed from private sources. Of these, private insurance and corporations (other than health insurance) played a similar, albeit minuscule, role in health financing (accounting for only 4.4% and 3.6% of the total health expenditure, respectively). The predominant mode of finance in the private sector is out-of-pocket payments, accounting for 27.6% of the total health spending.

**Figure 4.2. Total Health Expenditure by Major Source in Turkey (2000)**




* Non-profit Institutions Serving Households (other than social insurance)

Source: Kartal, et al., 2004.

More detailed analysis of the sources of healthcare financing revealed additional structural features of Turkey's health spending. Table 4.1 lists shares of current health expenditure contributed by different financing agents under the major sources. Spending by the Central Government accounted for 21.7% of total health spending in Turkey, leaving the local government only a small role in health resource allocation (4.1% of the total

expenditure). This of course reflects Turkey's political system and governance structure, which are different than some other countries such as those with a federal system, where a local government plays a much larger role in social sector spending including health resources allocation.

**Table 4.1. Current Health Expenditure by Financing Agents, 2000***

| Financing Agent | Shares of Current Health Expenditures (%) |
|---|---|
| **Central Government** | **21.77** |
| *MoH Health Programs* | 9.47 |
| *Green Card* | 2.25 |
| *Annexed budget institutions* | 1.12 |
| *Civil servants health benefits* | 7.09 |
| *Other* | 1.84 |
| **Local Government** | **4.16** |
| **Social Security Funds** | **35.75** |
| *SSK* | 19.20 |
| *GERF* | 7.62 |
| *Bağ-Kur* | 8.93 |
| **Total Public** | **61.67** |
| *Private social insurance* | 0.77 |
| *Private insurance enterprises* | 3.72 |
| *Household out-of-pocket spending* | 28.60 |
| *Corporations direct expenditure* | 3.75 |
| *Other* | 1.49 |
| **Total Private** | **38.33** |
| **Total** | **100.00** |

* The percentages in this table slightly differ from those in Figure 4.2 since the latter reflects the *total* health care expenditures as opposed to *current* expenditures as in this table. The difference between the two emanates from the fact that total expenditures also include investments.

Source: Kartal, et al., 2004.

Among the social security schemes, SSK is the most significant financing agent. Its share of total health expenditure (19.20%) is bigger than the other two social security schemes (GERF and Bağ-Kur) combined. In terms of the share of total health expenditure, SSK's role in financing healthcare in Turkey is approaching that of total Central Government budget allocations to the health sector. Therefore, SSK's transformation and associated consequences would be important considerations for Turkey's policy makers in their efforts to reform their health system, including how to finance and pay for health services.

Health spending by corporations only accounted for 3.75% of the total health expenditure. Share of total health expenditure by private insurance schemes is little over 4%. As Turkey's economy further develops and demand for differential healthcare and insurance products increases, there may be more room for expansion of these two sectors to provide supplementary financing. On the surface, household out-of-pocket spending (accounting for 27.6% of the total health expenditure) does not seem to be a cause for concern. However, without a comprehensive incidence analysis on who bears the financial burden, one would not be able to assess the equity aspect of health financing.

For those who are insured or of high-income groups, out-of-pocket spending for health may not pose a huge financial burden, even though co-payment for drugs is a common practice in Turkey as in many other countries. However, despite the increase in the number of poor people who are covered under the Green Card program, it seems that low-income groups tend to have a higher percentage of people who are uninsured, rendering the health insurance coverage in Turkey still inequitable (Table 4.2). Furthermore, our household data analysis (see Appendix 1) revealed that 47% of the people, who were sick but did nothing, cited "no money" as the major reason. This percentage is disproportionately higher for people of the lowest income quintile (62%) than for the highest income quintile (17%). Financial access to healthcare, especially for low-income groups, seems to remain a problem in Turkey.

**Table 4.2. Insurance Distribution by Income Group in Turkey**

| Quintile | Location | Mean Cost of Last Visit to a Health Institution (TL) | Percent of Individuals in Group with Insurance | | |
|---|---|---|---|---|---|
| Quintile 1 | Rural | 42,300,000 | 43,100,000 | 28% | 46% |
| | Urban | 43,400,000 | | 54% | |
| Quintile 2 | Rural | 23,500,000 | 37,000,000 | 62% | 73% |
| | Urban | 42,000,000 | | 77% | |
| Quintile 3 | Rural | 55,200,000 | 40,800,000 | 50% | 70% |
| | Urban | 37,000,000 | | 75% | |
| Quintile 4 | Rural | 26,000,000 | 30,300,000 | 81% | 86% |
| | Urban | 31,200,000 | | 87% | |
| Quintile 5 | Rural | 27,900,000 | 38,600,000 | 58% | 86% |
| | Urban | 40,600,000 | | 88% | |

Source: World Bank, 2003a.

Not: Payments are for outpatient visits only.
Possession of Green Card insurance is not counted as possession of insurance for these calculations.

*4.2.2. Trends of Health Spending by Major Social Financing Agents*

As described above, social financing agents such as government and social security institutions play a major role in health financing in Turkey. Therefore, it is useful to examine the relative roles played by these different agents over time. Even though estimates of total health spending from different times are unreliable, social financing agents do have comprehensive knowledge about how much they have spent. For this purpose, the health care spending of the Central Government that includes general budget allocations to the Ministry of Health, Universities, and civil servants and their dependants, and main public social security organizations (SSK, GERF, Bağ-Kur) as well as Green Card, have been collected and analyzed over the period of 1992-2003.

Table 4.3 shows the health care spending of main public institutions in terms of US$ PPP and annual percent increases. There seems to have been a steady increase in health expenditures of main public institutions compared to 1992 health expenditures (as is also shown by Figure 1.3). It should be mentioned here that there were also some decreases in health care spending of the Central Government in 1995 and of SSK in 1994. Turkey experienced serious economic crisis during these years, and thus it should not be surprising to observe that health care spending of main public institutions was affected by the adverse economic conditions.

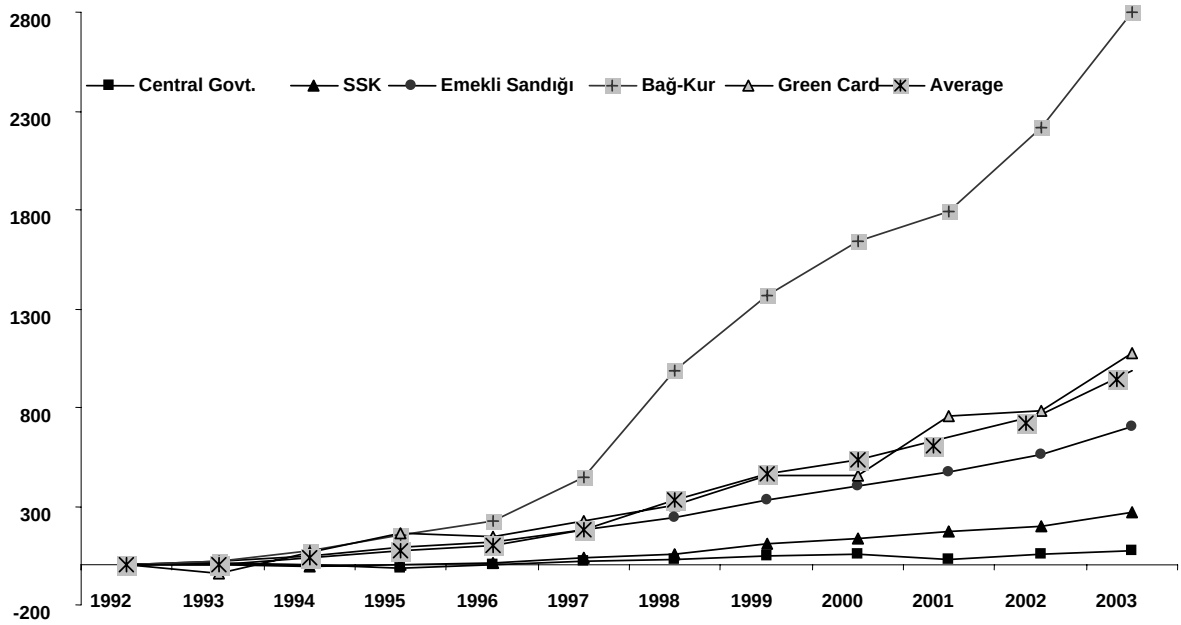
While SSK remains the largest social security institution in terms of its share of total health expenditure, Bag-Kur is the public institution whose spending level has increased the most rapidly, especially since 1999. This may be attributed to the fact that Bag-Kur expanded coverage to include beneficiaries' dependants under the scheme regulated by the Law 3235. The trends are made more visible by Figure 4.3. Similarly, with an increasing number of people holding green cards, recent spending level of this program also increased rapidly. Relatively speaking, the rate of increase in health spending under SSK, GERF and civil servants program remained less remarkable.

## Table 4.3. Trends in Public Health Expenditures by Years in Turkey (in Millions $US, PPP)

| Years | Central Government (a) (i) (j) | % Change | SSK (b) (f) | % Change | GERF (b) (e) | % Change | Bag-Kur (b) (g) | % Change | Green Card Program (c) (d) (h) | % Change |
|---|---|---|---|---|---|---|---|---|---|---|
| **1992** | 4,110 | | 1,995 | | 419 | | 143 | | 102 | |
| **1993** | 4,530 | 9.3 | 2,014 | 0.9 | 508 | 17.6 | 177 | 19.3 | 62 | -63.3 |
| **1994** | 4,284 | -5.7 | 1,936 | -4.0 | 606 | 16.0 | 247 | 28.3 | 169 | 63.2 |
| **1995** | 3,561 | -20.3 | 2,004 | 3.4 | 800 | 24.2 | 360 | 31.4 | 268 | 36.8 |
| **1996** | 4,214 | 15.5 | 2,239 | 10.5 | 900 | 11.2 | 469 | 23.2 | 247 | -8.4 |
| **1997** | 4,900 | 14.0 | 2,849 | 21.4 | 1,193 | 24.5 | 779 | 39.8 | 332 | 25.7 |
| **1998** | 5,488 | 10.7 | 3,142 | 9.3 | 1,447 | 17.6 | 1,557 | 49.9 | 415 | 19.8 |
| **1999** | 6,141 | 10.6 | 4,113 | 23.6 | 1,823 | 20.6 | 2,098 | 25.8 | 567 | 27.0 |
| **2000** | 6,314 | 2.7 | 4,776 | 13.9 | 2,096 | 13.0 | 2,491 | 15.8 | 562 | -1.0 |
| **2001** | 5,283 | -19.5 | 5,467 | 12.6 | 2,402 | 12.8 | 2,710 | 8.0 | 873 | 35.6 |
| **2002** | 6,400 | 17.4 | 5,938 | 7.9 | 2,773 | 13.4 | 3,308 | 18.1 | 899 | 2.9 |
| **2003** | 7,178 | 10.8 | 7,347 | 19.2 | 3,367 | 17.6 | 4,148 | 20.2 | 1,191 | 24.5 |

[a] Sağlık Bakanlığı, 2003.
[b] Sağlık Bakanlığı, 1997; 2001a; 2001b.
[c] Ministry of Health, 2003.
[d] Maliye Bakanlığı (www.bumko.gov.tr) (turkey-health expenditures.pdf).
[e] Emekli Sandığı (www.emekli.gov.tr).
[f] Sosyal Sigortalar Kurumu, 2001; 2002; 2003.
[g] Bag-Kur, 2001; 2002; 2003.
[h] There was only single reported expenditure for the years 1992 and 1993; this expenditure was divided by 2 for estimating 1992 expenditure level by assuming that there was no big change between these two years.
[i] Treatment and drug expenditures for active civil servants working at MoH and Universities were excluded from the general budget allocations of MoH and Universities since these expenditures were captured by civil servants health and drug expenditures for the years of 2001-2003. But the same could not be done due to lack of data for the years of 1992-2000.
[j] Central Government expenditures included MoH, University, and Civil Servants general budget allocations.

**Figure 4.3. Health Care Spending of Main Public Institutions in Turkey (Base Year=1992, US$ PPP)**




Note: Central Government expenditures include MoH, University, and Civil Servants general budget allocations.

Source: Sağlık Bakanlığı, 2003.
Sağlık Bakanlığı, 1997; 2001a; 2001b.
Ministry of Health, 2003.
Maliye Bakanlığı (www.bumko.gov.tr) (turkey-health expenditures.pdf)
Emekli Sandığı (www.emekli.gov.tr)
Sosyal Sigortalar Kurumu, 2001; 2002; 2003.
Bag-Kur, 2001; 2002; 2003.

### *4.2.3. Health Expenditure by Type of Services*

What are the major uses of health expenditure in Turkey? As indicated by Table 4.4, outpatient services and medical goods accounted for close to 60% of the current health expenditure in 2000 (29.74% and 29.07% for outpatient and medical goods, respectively). The figures in Table 4.4 are based on current health expenditure and may be different from the figures based on total health care expenditure provided earlier. By contrast, inpatient care, which usually represents a remarkable cost centre, only accounted for 19.89% of the current health expenditure. It is worth noting that spending on "medical goods" include pharmaceuticals and other durable and non-durable goods, the exact share of which on pharmaceuticals cannot be easily discerned. Moreover, inpatient expenditures also include spending on pharmaceuticals.

Only a small proportion of the current health spending (2.41%) went to public health services. Naturally, a question arises: does Turkey's relatively high spending level on outpatient services and medical goods represent a rational choice or is it an indication of inefficiency? Unfortunately, we cannot answer this question without comprehensive data on other relevant variables such as health outcomes related to the spending patterns. After international comparisons, we will come back to this issue and conduct some further analyses.

**Table 4.4. Functional Allocation of Current Health Spending in Turkey (2000)**

| **Main Functional Classifications** | **Shares of Current Expenditure (%)** |
|---|---|
| Curative Care Inpatient | 19.89 |
| Curative Care Outpatient | 29.74 |
| Services of Rehabilitative Care | 0.88 |
| Ancillary Services | 3.48 |
| Dispensing of Medical Goods | 29.07 |
| Public Health Services | 2.41 |
| Administration | 2.27 |
| Not Specified by Kind | 12.26 |
| **Total** | **100.0** |

Source: Kartal, et al., 2004.

*4.2.4. Health Expenditure by Financing Agent and by Type of Services*

Given the important role of financing agents in shaping a country's spending patterns, it is critically important to examine the question of how different financing agents spend on health. This can be examined from two aspects: a. the relative role of different financing agents in financing different services and b. the budget allocation of different financing agents among different services.

Table 4.5 lists shares of aggregate spending on different services by different financing agents. The Central Government budget is the single most important source for financing public health and preventive services (accounting for 95.8% of the total pubic health spending). Despite its dominant role in total supply of hospital beds and primary care

facilities, the Central Government is the second biggest payer for inpatient services (accounting for 37.9% of the total inpatient spending) and the third biggest payer for outpatient services (accounting for 19.6% of the outpatient spending), as well as the third biggest payer of medical goods dispensed to outpatients (14.3%).

Except for public health services, Social Security Funds plays a bigger health financing role than the Central Government budget allocations. Social Security Funds is the biggest payer for inpatient care (accounting for 46.1% of the total spending) and for medical goods (accounting for 46.8% of the total spending). They are the second largest payer for outpatient care (accounting for 25.2% of the total spending).

Even though it does not play a significant role in financing inpatient care (only accounting for 8.7% of the total spending), out-of-pocket payment is the most important source of financing outpatient services (accounting for 42.8% of the total spending). It also plays a significant role in financing medical goods (accounting for 32.9% of the total spending).

**Table 4.5. Share of Itemized Health Spending by Financing Agent, 2000**

| | Inpatient curative care | Outpatient curative care | Public health and prevention spending | Medical goods dispensed to outpatients |
|---|---|---|---|---|
| Central Government | 37.9 | 19.6 | 95.8 | 14.3 |
| Local Government | 1.1 | 0.5 | 0.3 | 0.8 |
| Social Security Funds | 46.1 | 25.2 | 0.0 | 46.8 |
| Private Insurance | 4.4 | 3.0 | 0.1 | 1.4 |
| OOP Spending | 8.7 | 42.8 | 0.0 | 32.9 |
| Other FA's | 1.8 | 8.9 | 3.8 | 3.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Kartal, et al., 2004.

Table 4.6 shows how different agents allocated their budget to different services. The Central and local governments allocated 29.9% of their budget to inpatient care, 23.1% to outpatient care, and 16.9% to medical goods dispensed to outpatients. Even though Social Security Funds are the biggest payer of the inpatient care sector in Turkey, these expenditures

only consume 25.7% of their total budget. Social Security Funds spend most of their money on medical goods (accounting for 38.0% of the total spending by this source), and spend 20.9% of the budget on outpatient services. By contrast, 44.5% of the out-of-pocket payments went to outpatient care, followed by 33.5% paying for medical goods.

**Table 4.6. Financing of Health Functions: Shares of Functional Current Expenditure Attributed to Different Financing Agent, 2000**

| | Central and Local Government | Social Security Funds | Private Insurance | OOP Spending | Other FA's |
|---|---|---|---|---|---|
| **Inpatient Curative Care** | 29.9 | 25.7 | 19.5 | 6.0 | 7.0 |
| **Outpatient Curative Care** | 23.1 | 20.9 | 19.9 | 44.5 | 50.6 |
| **Services of Rehabilitative Care** | 1.6 | 0.9 | 0.5 | 0.2 | 0.6 |
| **Ancillary Services to Health Care** | 2.1 | 0.4 | 2.2 | 8.9 | 3.0 |
| **Medical Goods Dispensed to Outpatients** | 16.9 | 38.0 | 9.3 | 33.5 | 21.0 |
| **Prevention and Public Health Services** | 8.9 | 0.0 | 0.0 | 0.0 | 1.8 |
| **Health Administration and Health Insurance** | 1.0 | 2.4 | 23.9 | 0.0 | 1.3 |
| **Not Specified by Kind** | 16.4 | 11.6 | 24.6 | 6.9 | 14.7 |
| **Total** | 99.9 | 99.9 | 99.9 | 100.0 | 100.0 |

Source: Kartal, et al., 2004.

# 5. Comparing Turkey's Health Spending to Other Countries

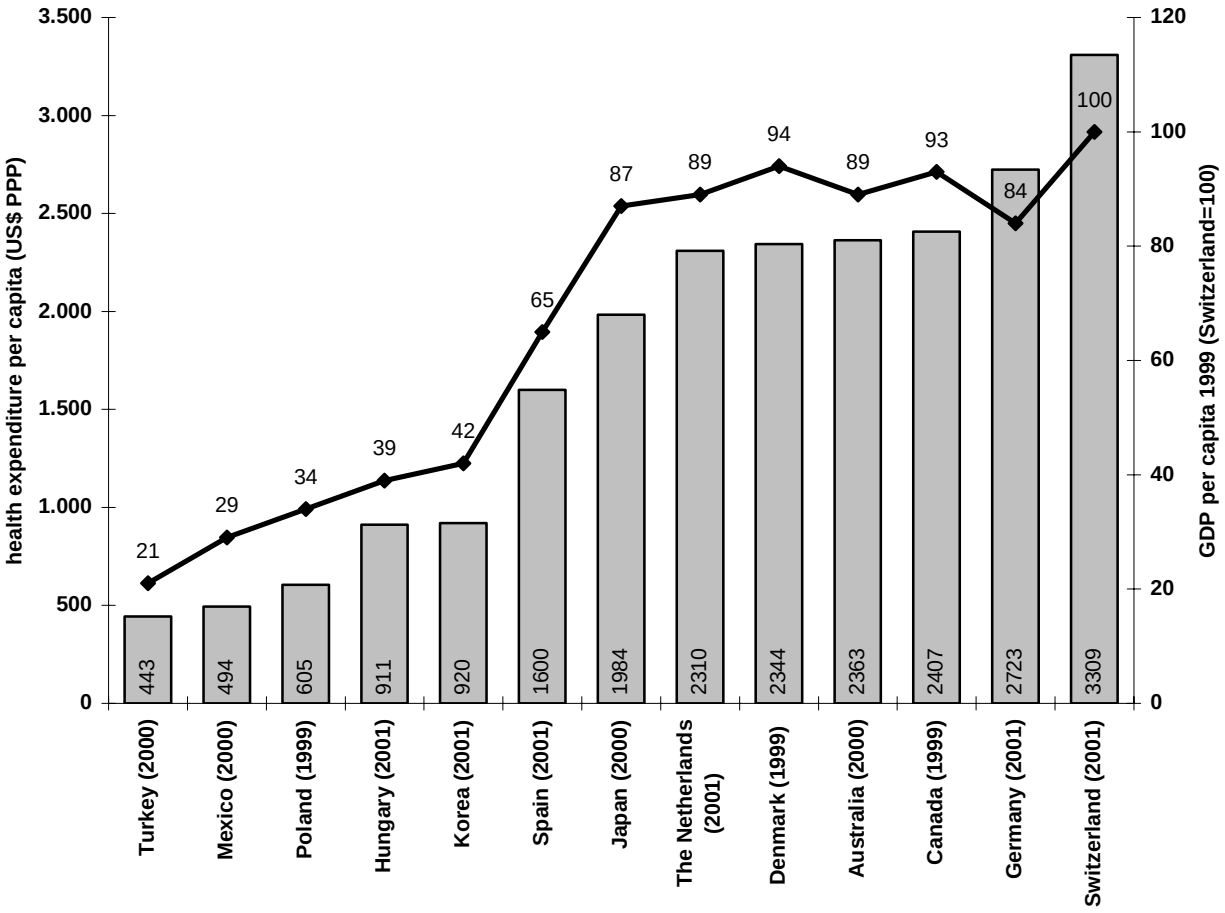
For purposes of assessing the effects of health and pharmaceutical policies and spending in Turkey, ideally we should select those comparator countries, which are similar to Turkey in other factors that affect health spending and health outcomes, but which differ in their health and pharmaceutical policies. Ideally, this means selecting countries that are similar in mean and distribution of GDP per capita, age, education, cultural, environmental and lifestyle factors that affect health, such as climate, nutrition, smoking etc, in addition to urban/rural mix or population density that affects access to facilities. If the compared countries were similar in all these other determinants of health spending and outcomes, then differences between them and Turkey in health spending and health outcomes would reflect the effects of health policies and systems. However, all countries differ in some of these relevant dimensions, so that bivariate analysis is necessarily imperfect. Given Turkey's potential membership of the EU, it makes sense to focus on other EU members, even though Turkey's per capita GDP is much lower. Data limitations in selecting "perfect" comparator countries not withstanding, examining healthcare/pharmaceutical spending in different countries with different levels of socioeconomic development, where data are available and comparable, can still help shed light on the relationship between the former and latter variables.

We will compare Turkey's health spending to that of other countries both in terms of overall level and structure of spending.

## *5.1. Level of Health Spending*

How is Turkey's health spending compared to other countries? As Figure 5.1 shows, Turkey spent the least amount on health among OECD countries in terms of per capita health spending. This is not unexpected because Turkey's average income is lower than most of the other OECD countries (Figure 5.1).

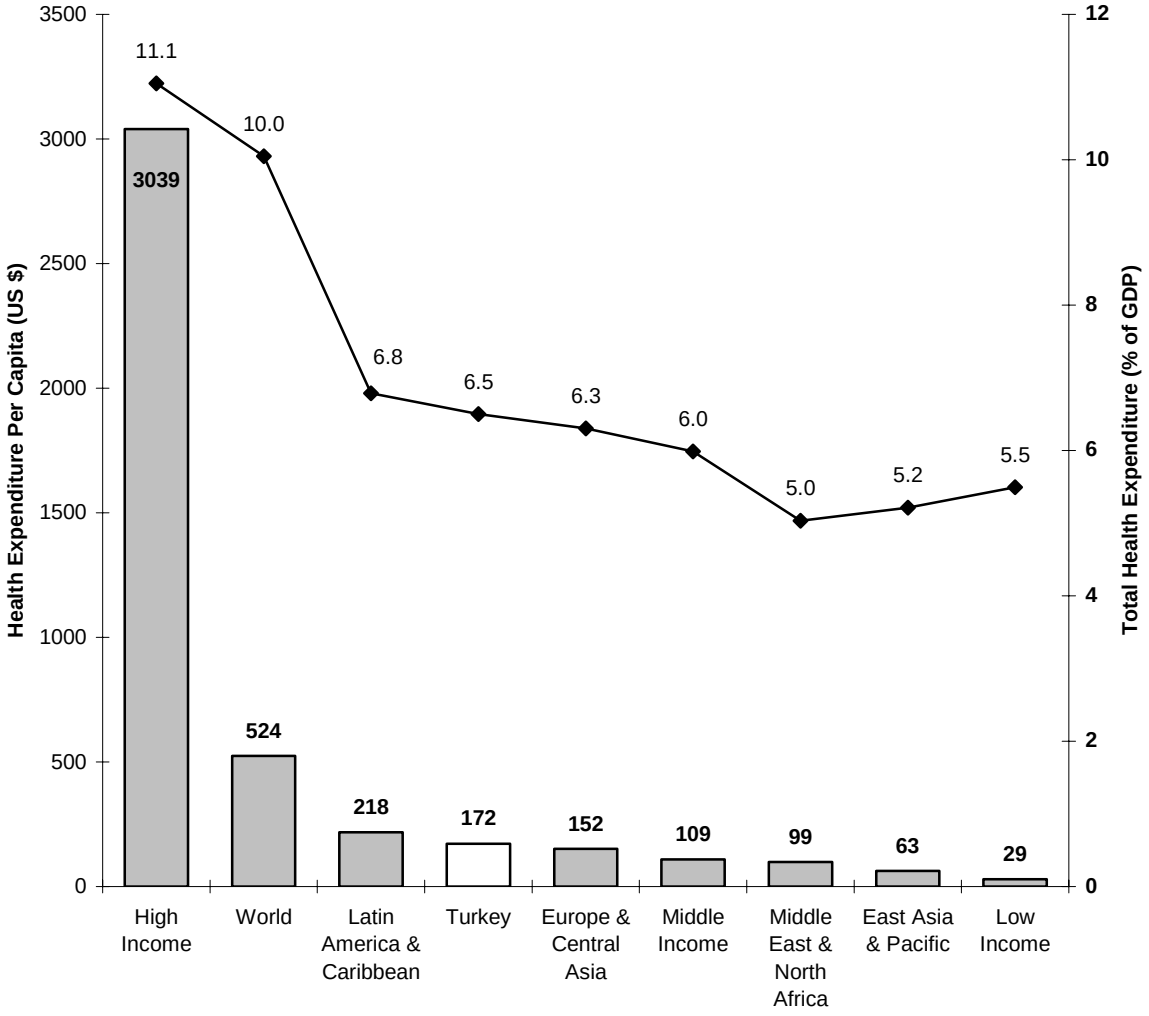
**Figure 5.1. Per Capita Health Spending in OECD Countries (US$, PPP)**




Source: OECD, 2004.

Figure 5.1 clearly indicates that a country's per capita health spending level is closely related to its per capita GDP. Figure 5.2 based on the World Development Indicators Database (www.worldbank.org) also confirmed this fundamental association between income and health spending.

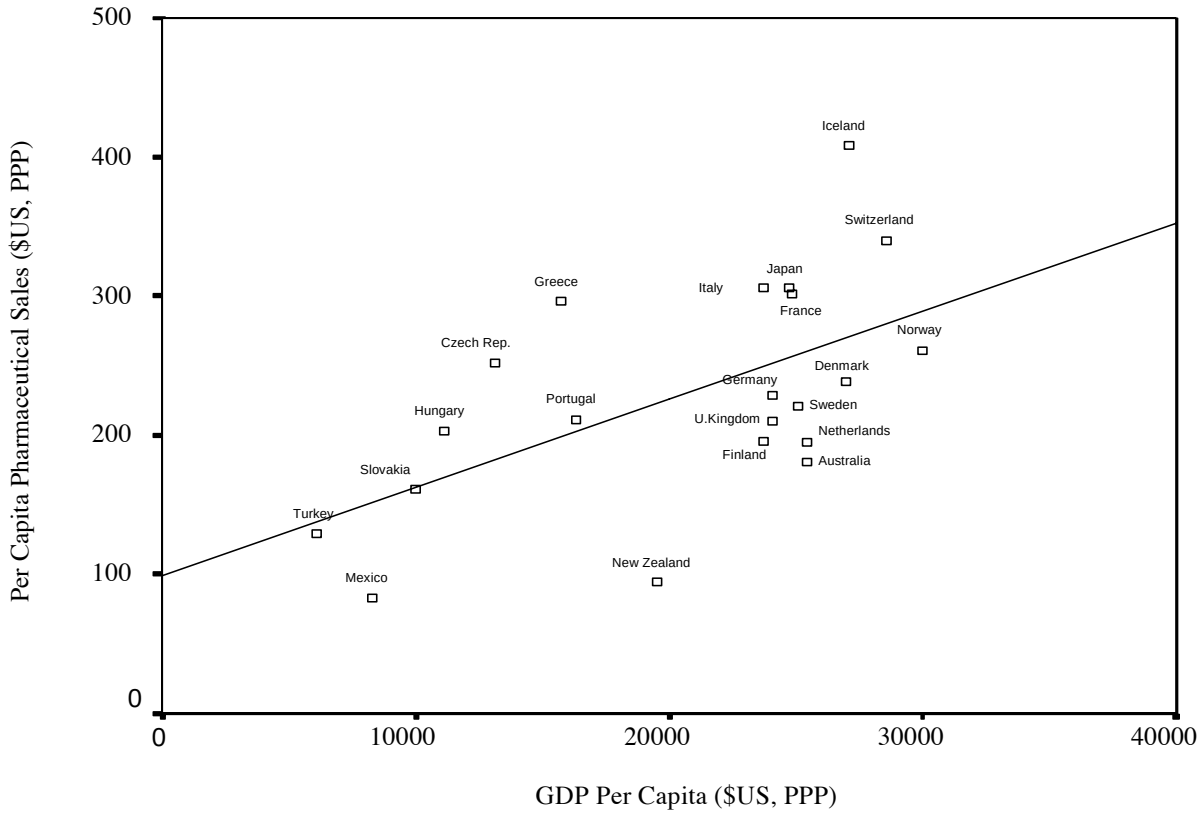
**Figure 5.2. Health Expenditure Per Capita and Total Health Expenditure as % of GDP (2002)**




Source: World Bank (www.devdata.worldbank.org) (Accessed on June 15, 2005)

Similarly, per capita pharmaceuticals expenditure is also closely related to per capita GDP (Figure 5.3). If one fits the data by a linear regression line, Turkey would be right on the line, indicating that Turkey does not appear to be an outlier in terms of pharmaceutical spending given its income level. But it is also worth noting from Figure 5.3 that the relationship between pharmaceutical sales and income is unlikely to be perfectly linear. For example, with higher per capita GDP, Mexico spends less than Turkey. Nonetheless, it would be hard to suggest which country (Turkey or Mexico) represents the "Gold Standard".

**Figure 5.3. Per Capita Pharmaceutical Sales and GDP Per Capita**

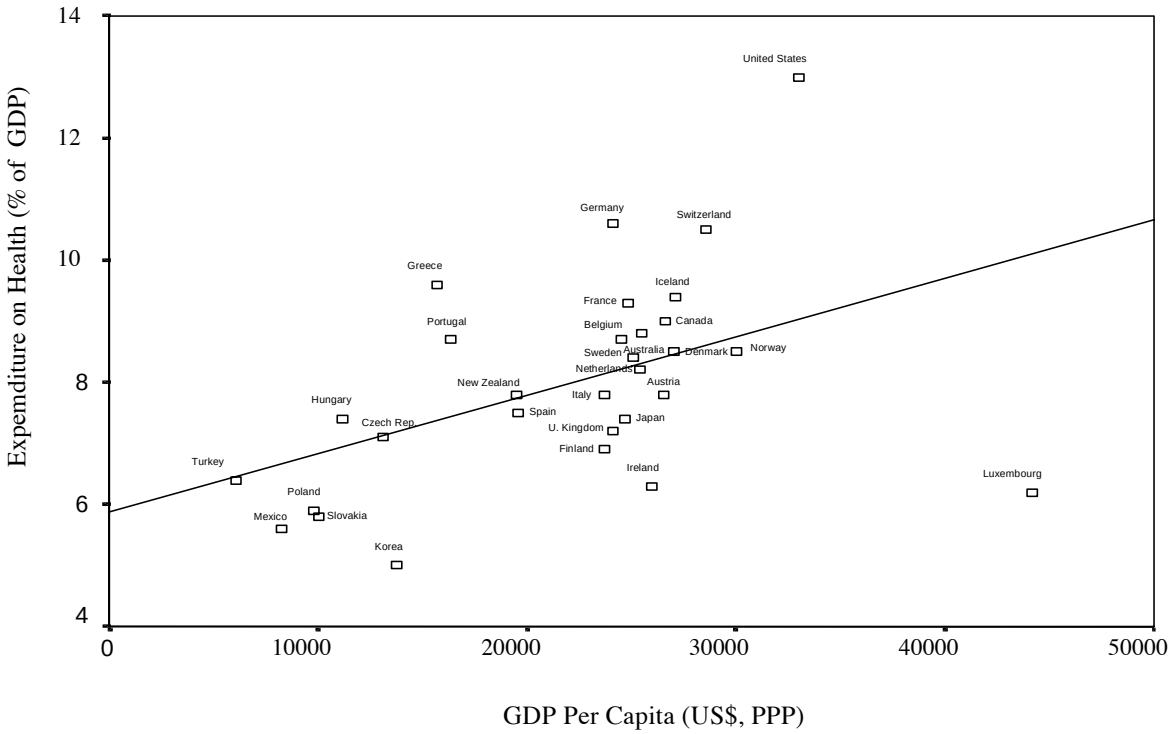



Source: OECD, 2004.

However, when it comes to health spending as a share of the country's GDP, there does seem to be a remarkable variation for a given GDP level. Figure 5.4 is produced using the OECD Health Data 2004. Again, Turkey does not seem to be an outlier in terms of total health spending in relation to its income level (Figure 5.4).

Thailand is a country that is very similar to Turkey in terms of population size (66 million) and per capita GDP (6, 132 US$ PPP compared to Turkey's 6,380 in 1997) according to the UNDP Human Development Report (2003). As indicated by Table 5.1, spending level and pattern in Turkey and Thailand are similar. There is no "Gold Standard" as to the "correct" percentage of GDP that a country should spend on health. Without detailed examination of the structure of health spending, it is hard to make a judgment as to the "adequacy" of Turkey's health spending level by simply looking at the international comparisons of the aggregate level of spending.

**Figure 5.4. Health Expenditure as % of GDP and Per Capita GDP**




Source: OECD, 2004.

**Table 5.1. Comparing Turkey and Thailand**

| **Indicator** | **Turkey** | **Thailand** |
|---|---|---|
| Population | 68 million | 62 million |
| GDP/capita (USD, PPP) | 6,380 | 6,132 |
| Health $ as % of GPD | 6.6% (2000) | 6.1% (2001) |
| Share of health $ by public $ | 62% | 33% |
| Drug $ as share of health $ | 24% | 34% |

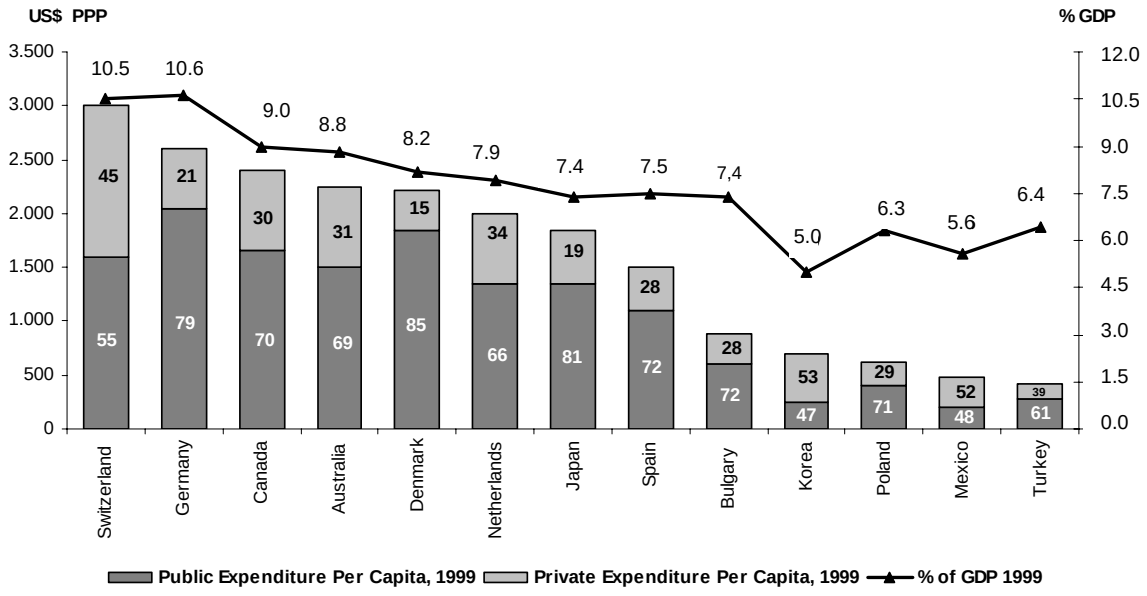
Source: United Nations Development Program, 2003; OECD, 2004; Thailand Institute of Health Policy, 2001; 2003.

### *5.2. Health Expenditure by Financing Agent*

The key question to be examined here is: to what extent are the total health expenditure borne by the individuals (vs. shared by the members of the society)? This may be used as one of the indicators of "equity in health care financing" (WHO, 2000a; Hsiao and Liu, 2001).

Clearly, the public sector played a significant role in health financing in Turkey, accounting for around 63% of the total healthcare spending. This is generally on par with some of the other OECD countries. Figure 5.5 presents the overall characteristics of the public-private mix in health financing across countries. The public share of total health expenditure ranged from 48% in Mexico to 85% in Denmark. Mexico was the only country where less than half of health spending comes from public funds. Compared to Korea, Thailand and Switzerland, Turkey's public sector plays even a bigger role in financing healthcare. In 2000, public funds only accounted for 33% of Thailand's total health spending (Table 5.1).

**Figure 5.5. Percentage of GDP on Health and Relative Share of Public/Private Sector**



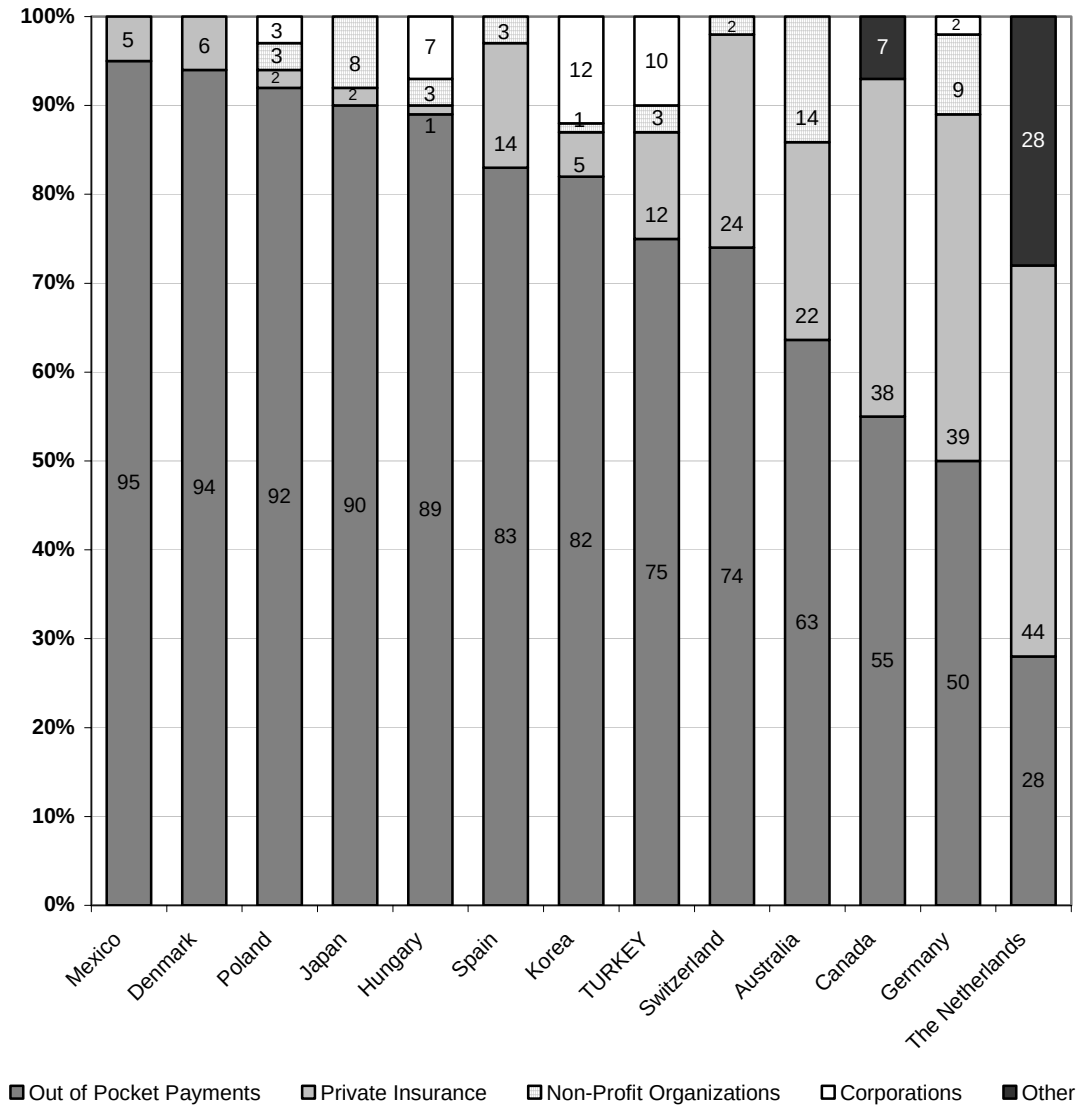

Source: OECD, 2004.

Among the countries, however, there are distinct systems of public funding. Public funds in some countries such as Australia, Canada and Denmark are almost exclusively relied on general revenue, encompassing central, provincial and local government. In other countries such as Germany, Hungary, Korea, and Poland, social insurance accounted for 80-90% of public expenditure. Turkey, along with Mexico, Switzerland, and Thailand, has a mixture of general taxation revenue and social insurance financing, although social insurance accounted for about 30% of the public funds in Thailand, compared to a much higher percentage (55.5%) (Kartal, et al., 2004) in Turkey.

As a new methodological feature, the SHA-based health accounts differentiate between different sub-components of private expenditure. The private sector comprises of private insurance, private household out-of-pocket spending, non-profit institutions, and corporations. As can be seen from Figure 5.6, the role of the two major components of private funding varies to a great extent across countries. In almost all the countries (except the Netherlands), private out-of-pocket spending formed the largest part of private funding sources. This ranged from just under 30% of private funding sources in the Netherlands to 95% in Mexico. Again, Turkey does not appear to be an outlier in this regard. Figure 5.6 also suggests that in higher income OECD countries private insurance tend to be more prevalent than in the middle and lower income countries. It is interesting to point out that for Hungary, out-of-pocket payments include estimated "under-the-table" payments (so-called "gratitude money"). This phenomenon also exists in Turkey. A recent study by Tatar et al. (2003) has found that out of the total payments made to the public sector, 62% was formal and 38% was informal*. Since very few studies have examined this issue in Turkey, it is unclear whether the informal payment practice widely exists and the amount significant. If yes, then results from all the previous health expenditure studies, including the NHA Studies, may have underestimated private health spending, and thus total health spending. This issue will be discussed further in Section 6.2.

* Informal Payment includes all non-statutory payments made by insured patients to the service providers either in cash or in kind. Informal payments include all non-statutory payments made by insured patients to the service providers either in cash or in kind. These include the so-called "knife-payments (bıçak parası)" as well as out of pocket payments, other than statutory co-pays, made by say an SSK beneficiary for a medicine. Moreover, it should be noted that those medications to be used for hospitalized patients are also classified under informal payments if acquired from community pharmacies according to OECD-SHA methodology.

**Figure 5.6. Private Health Expenditure by Financing Agent**




Source: Orozs and Morgan, 2004.

### *5.3. Health Expenditure by Type of Goods/Services*

The key question to be examined in this section is spending on what? Different spending structure may be indicative of relative efficiencies of the countries in their resource allocation.

One of the most important features of the SHA is the distinction made between function of care and providers of care. Functional classification is very important for international comparability of data. Two approaches are applied by the OECD SHA in

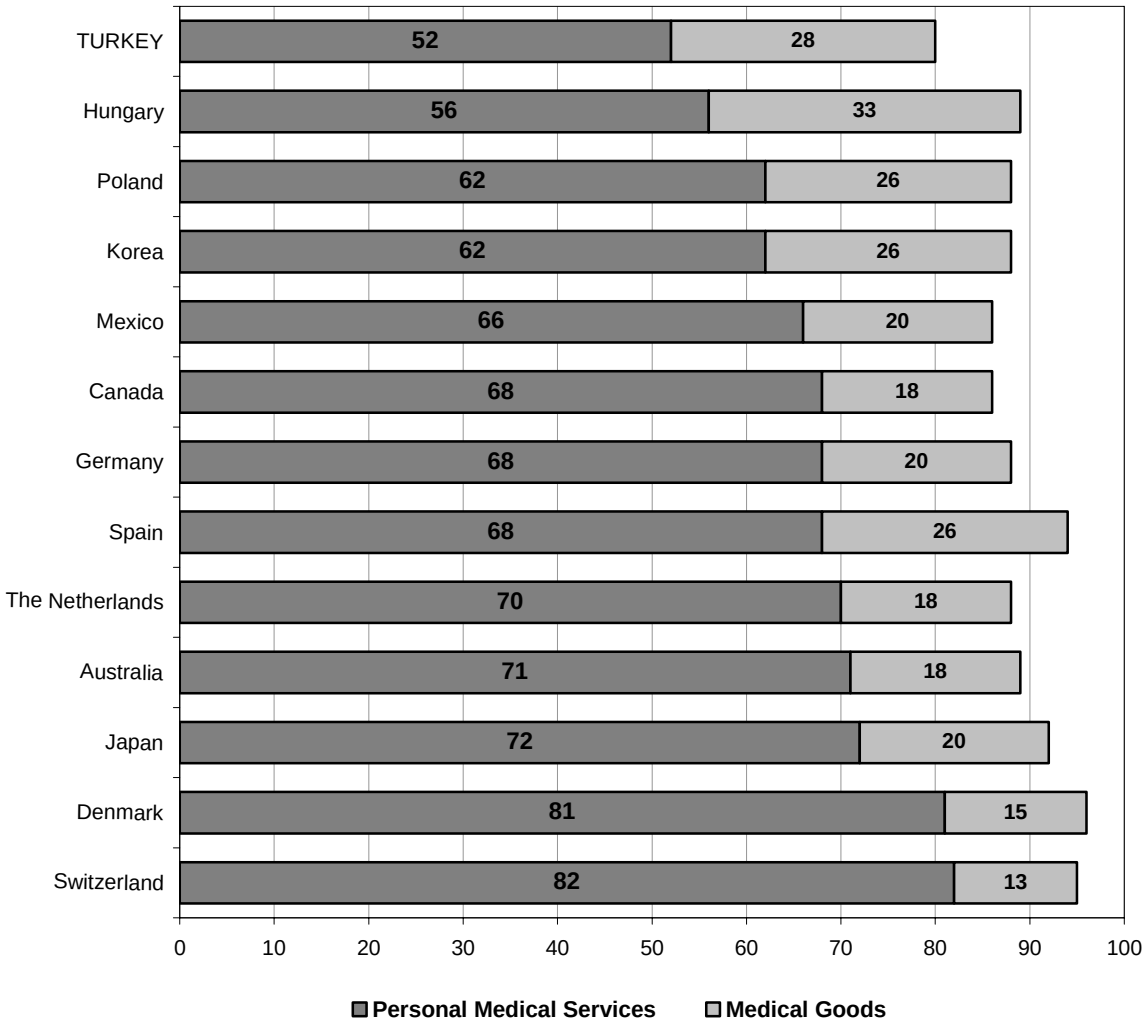
classifying functions: (a) the purpose of healthcare (curative care, rehabilitative care, and long-term care, etc.) and (b) the mode of production that reflects characteristics of technical and managerial organization of healthcare (inpatient care, outpatient care etc.).

### *5.3.1. Health Expenditure for Services and Medical Goods*

Figure 5.7 compares a countries spending on personal medical services as share of total health expenditure to its spending on medical goods* as share of total health expenditure. Turkey seems to stand out as a country that devotes a high proportion of total health expenditure on medical goods (28%), second only to Hungary, which devotes 33% of its total health expenditure on medical goods. In determining whether this is too high, the relevant question is the marginal benefit from medical goods relative to spending on either other health services or other non-health goods and services. If Turkey, indeed, consumes a significantly higher proportion of total health spending on medical goods (presumably mainly pharmaceuticals), the marginal value of spending on other health and non-health goods and services would have to be much lower in Turkey than in other countries for this relatively high pharmaceutical spending to be efficient. However, we cannot measure the relative marginal value (e.g. effect on health) from the alternative medical consumption behavior. In light of the fact that Turkey has many fewer physicians and hospital beds than the comparison countries, one simple reason for Turkey's *relatively* high percent of health care dollar spent on pharmaceuticals might be that Turkey has fewer hospitals and physicians per capita, so that people have less chance to spend on services than on drugs and medical goods (an example of the substitution effect).

* Medical goods include pharmaceuticals and therapeutic appliances and other medical durables provided to out-patients. Mapping total expenditure is not fully achieved.

**Figure 5.7. Health Expenditure by Function of Care (Total Expenditure on Health=100)**




Source: Orozs and Morgan, 2004.

Indeed, according to our NHA household data analysis, a second possible reason pertains to drug prices relative to medical service prices. Comparing spending patterns across OECD countries, it is striking that differences in per capita expenditure on medical goods are far smaller (around 5-fold) than in total health expenditure (with an 8-fold difference). This might be due to the fact that domestic prices of pharmaceuticals reflect international market prices, which are driven by higher-income countries, whereas labor costs are normally based on national wage structures. Therefore, the relative price of drugs to healthcare services is higher in lower-income countries. This feature of pharmaceutical spending levels has an implication on the overall functional structure of health expenditure,

with lower-income OECD countries tending to spend a greater share of their health expenditure on pharmaceuticals.

Official Ministry of Health data on prices for a number of branded original products in Turkey and a number of other European countries in 2004 suggest that Turkish prices for branded originator products are generally lower than the same prices in all reference countries (France, Italy, Portugal, Spain, and Greece) (see Table 5.2). This is not surprising due to reference pricing explained previous sections that Turkish Ministry of Health follows. The situation with regards to older (plus 20 years) medicines since they are not subjected to the new pricing rule and generic products, however, has not been studied.

**Table 5.2. Weighted Average Price and Price Difference of the 2004 Turkish Top Selling Drugs**

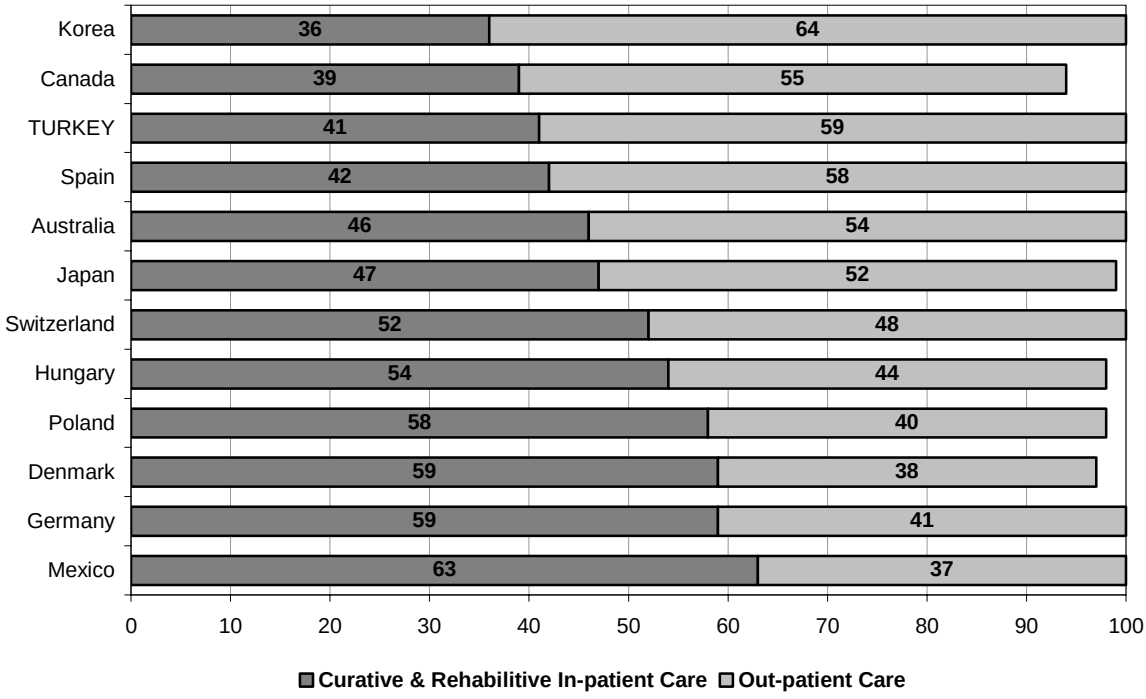
| Product | Molecule | Reference Price (EURO) | Reference Country | Ex-Man Price TL (Excluding VAT) | Reference Price (TL) | Price Difference (%) |
|---|---|---|---|---|---|---|
| Seretide Inhaler 125 Mcg 120 Dose | Salmeterol + Flutikasone | 38.21 | Greece | 66,091,004 | 67,800,244 | -2.52 |
| Plavix 28 Film Tab. | Clopidogrel Hydrogen Sulfate | 37.70 | Spain | 64,163,311 | 66,895,295 | -4.08 |
| Lustral 50 Mg 28 Tab. | Sertralin | 17.82 | Greece | 27,233,202 | 31,620,004 | -13.87 |
| Lipitor 20 Mg 30 Film Tab. | Atorvastatin Calcium | 32.64 | Greece | 34,907,767 | 57,916,775 | -39.73 |
| Norvasc 5 Mg 30 Tab. | Amlodipine Besilate | 10.02 | Portugal | 16,627,091 | 17,783,147 | -6.50 |
| Zyprexa 10 Mg 28 Tab. | Olanzapine | 87.89 | Spain | 143,926,343 | 155,952,983 | -7.71 |
| Fosamax 70 Mg 4 Tab. | Alendoronate Sodium | 26.16 | Greece | 38,627,511 | 46,418,592 | -16.78 |
| Co Diovan 160/25 Mg 28 Film Tab. | Valsartan +H.thyaside | 16.49 | France | 29,259,010 | 29,260,037 | 0.00 |
| Viagra 25 Mg 4 Film Tab. | Sildenafil Citrate | 19.24 | Greece | 29,701,508 | 34,139,668 | -13.00 |
| Lansor 30 Mg 28 Cap. | Lansoprazole | 21.81 | Italy | 17,512,086 | 38,699,904 | -54.75 |
| Symbicort 60 Dose Inhaler | Budesonid | 24.40 | Portugal | 43,287,563 | 43,295,628 | -0.02 |
| Ketek 400 Mg 10 Film Tab. | Telitromycine | 20.00 | Italy | 35,481,631 | 35,488,220 | -0.02 |
| Tavanic 500 Mg 1 Vial | Levofloxacin | 33.91 | Greece | 36,138,463 | 60,170,277 | -39.94 |
| Singulair 4 Mg 28 Tab. | Montelukast Sodium | 29.32 | Spain | 48,908,663 | 52,025,731 | -5.99 |
| Karvezide 300 Mg/12.5 Mg 28 Tab. | İrbesartan + H.thyaside | 20.46 | Italy | 36,290,571 | 36,304,449 | -0.04 |
| Actonel 5 Mg 28 Film Tab. | Risedronate Sodium | 22.67 | Italy | 40,217,736 | 40,225,897 | -0.02 |
| Diamicron Mr 30 Mg 30 Tab. | Gliclazide | 4.00 | Portugal | 7,088,005 | 7,097,644 | -0.14 |
| Foradil 12 Mcg 60 Cap. | Formoterol Fumarate | 21.20 | Greece | 37,064,942 | 37,617,513 | -1.47 |
| Foradil 12 Mcg Inhaler | Formoterol Fumarate | 35.08 | Italy | 58,401,337 | 62,246,338 | -6.18 |
| Hyzaar Forte 14 Tab. | Losartan Potassium +H.thyaside | 12.51 | Portugal | 22,185,965 | 22,197,882 | -0.05 |
| Celebrex 200 Mg 30 Cap. | Celecoxib | 23.27 | Italy | 30,233,888 | 41,290,544 | -26.78 |
| Cipralex 10 Mg 28 Tab. | Escitalopram | 15.64 | Spain | 27,744,839 | 27,751,788 | -0.03 |
| Avandia 8 Mg 28 Film Tab. | Rosiglitazone | 30.45 | France | 54,025,333 | 54,030,815 | -0.01 |
| Beloc Zok 100 Mg 20 Tab. | Metoprolol Succinate | 4.51 | Spain | 7,991,845 | 8,002,594 | -0.13 |
| Nexium 20 Mg 7 Tab. | Esomeprazole | 5.95 | France | 10,556,579 | 10,557,745 | -0.01 |
| Xenical 120 Mg 84 Cap. | Orlistat | 52.54 | Greece | 83,419,137 | 93,227,554 | -10.52 |
| Cefamezin Im/Iv 500 Mg 1 Vial | Cefazolin Sodium | 2.79 | Italy | 2,133,877 | 4,950,607 | -56.90 |
| Inhibace Plus5 Mg 28 Tab. | Cilazapril+ H.thyaside | 10.42 | Greece | 18,480,049 | 18,489,363 | -0.05 |
| Zocor 10 Mg 28 Tab. | Simvastatin | 4.55 | Spain | 8,066,599 | 8,073,570 | -0.09 |

Note: Currency: 1 Euro=1,774,411 TL. One form from each product is chosen.
Source: MoH General Directorate of Pharmaceuticals and Pharmacy web site (http://www.saglik.gov.tr/sb/default.asp?sayfa=birimler&cid=1&sid=1065) (Accessed on 27 June 2005)

*5.3.2. Health Expenditure on Inpatient and Outpatient Care*

In terms of health expenditure by mode of production, Turkey stands out with relatively higher share of total spending devoted to outpatient care. Figure 5.8 depicts the relationship between inpatient and outpatient care expenditure, focusing on curative and rehabilitative care by removing the effect of the differences in long-term care estimation. It is notable that Korea, Turkey, Spain, Japan, Canada, and Australia all show higher shares of expenditure for outpatient care than inpatient care. This may not represent a problem, as long as inpatient and outpatient services are substitutes and outpatient services may be even more cost-effective than inpatient services for certain conditions. A question may arise, if outpatient services are disproportionately provided by hospitals, rather than by ambulatory and primary care facilities.

**Figure 5.8. Health Expenditure by Mode of Production (Curative and Rehabilitative Care=100)**

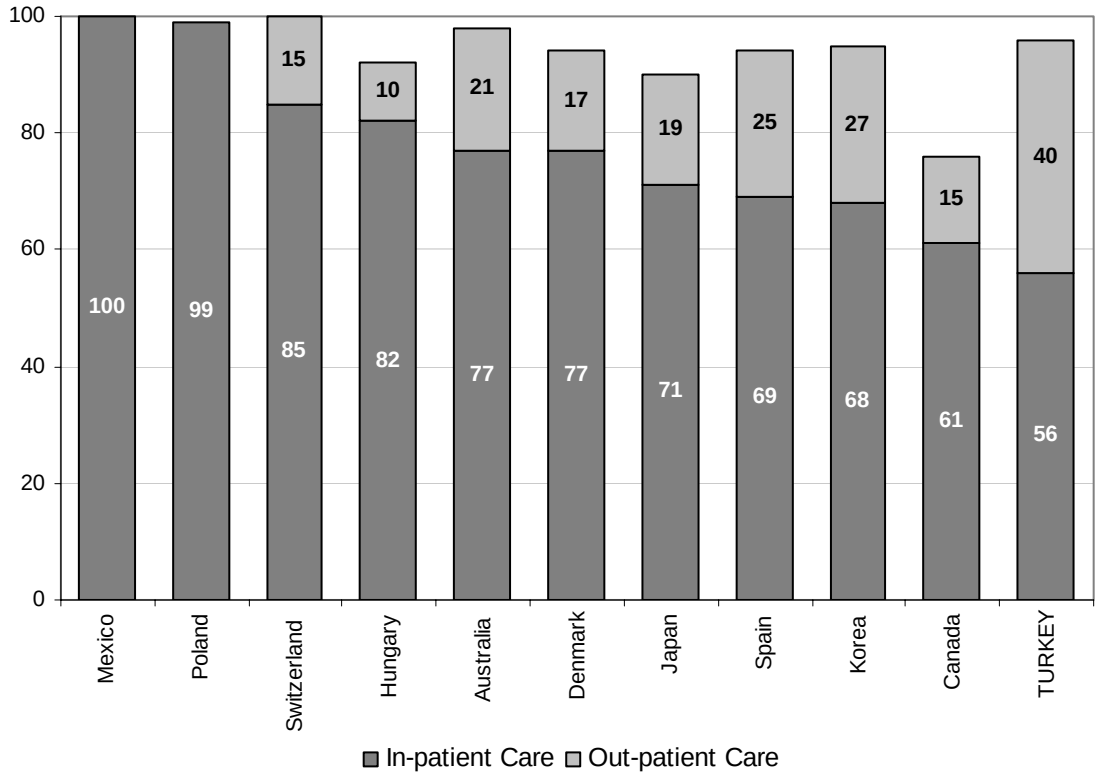



Source: Orozs and Morgan, 2004.

As mentioned in Section 4, one special health spending pattern in Turkey is that Turkish hospitals tend to provide many outpatient services. Figure 5.9 shows a considerable difference in the hospitals' functional structure across countries. In Canada, inpatient care represents about 61% of the total hospital expenses, whereas in Switzerland it accounts for

85%. Where outpatient care is reported, it represents, on average, 17% of hospital expenditure. But Turkey is the country that spends the highest proportion of its total hospital expenditure on outpatient care (40%). According to the MoH's studies, hospital outpatient facilities in Turkey often treat patients who do not require specialist care and could be dealt with at the primary care level (Ministry of Health, 2004). Why do the Turkish hospitals devote so much resource to outpatient care? Besides the lower quality of primary care facilities perceived by the patients, Turkish people may have a higher probability to go to a hospital than go to a primary care facility, because hospital services are financed largely by public funds, as compared to ambulatory services. We will further discuss this issue next. Moreover, lack of an effective referral system may exacerbate the problem of hospitals facing a disproportionately high demand for outpatient care services.

**Figure 5.9. Hospital Expenditure by Function (Hospital Expenditure=100)**




Source: Orozs and Morgan, 2004.

### *5.3.3. Expenditure on Public Health and Administration*

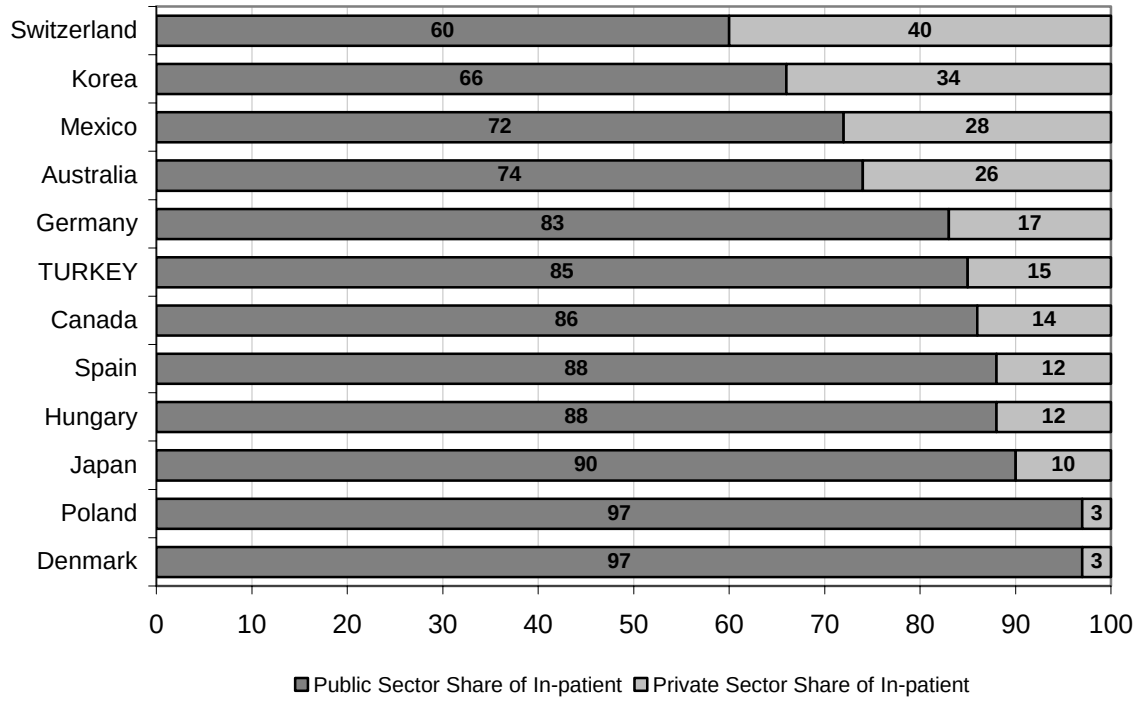
In comparing Turkey's spending on public health services and administration to that of other countries, we do not detect any abnormality. But nursing and residential care facilities account for 18% and 24% in Switzerland and Denmark, respectively, where long-term nursing care accounts for a large proportion of health expenditure. Turkey reported no such expenditure in the health account. Furthermore, even though Day Care and Home Care are generally believed to have been developing dynamically, Turkey has not yet started registering these services. Therefore, periodic NHA Studies and international comparisons of the results can not only help evaluate expenditure on existing services, but also monitor new and emerging services.

## ***5.4. Health Expenditure by Agent and Type of Services***

### *5.4.1. Financing of Inpatient Services*

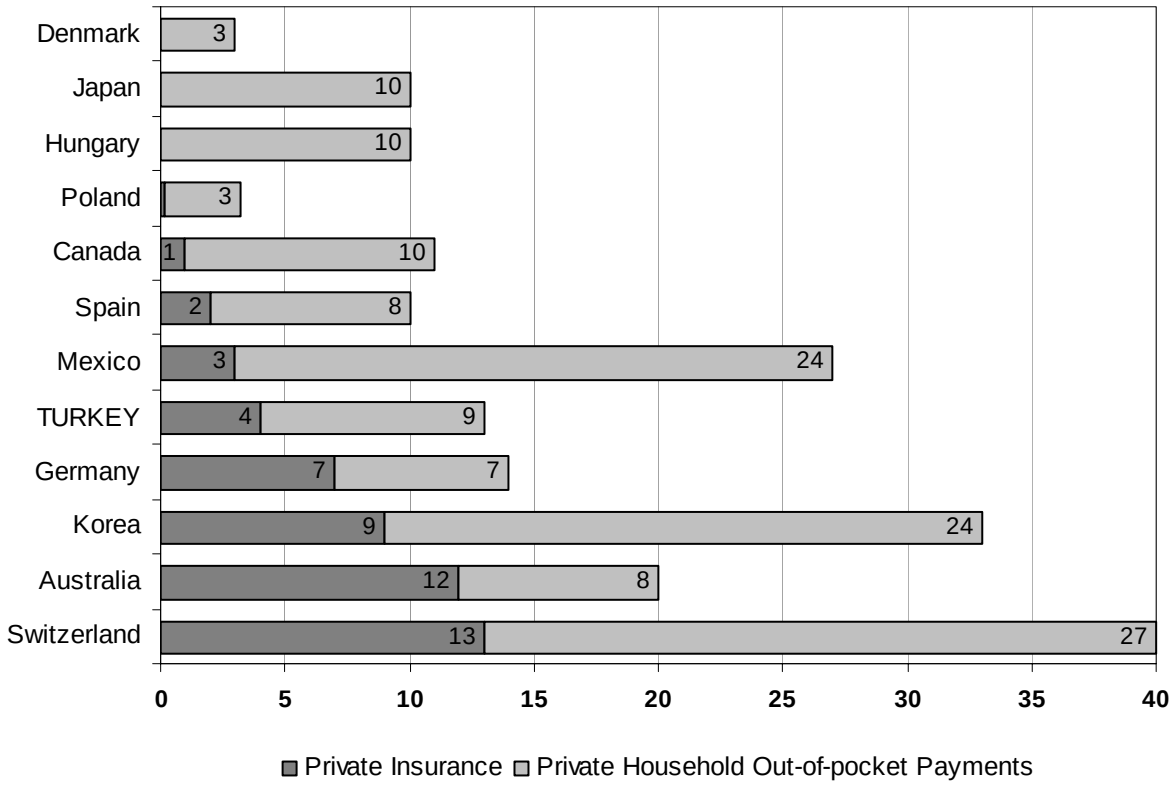
As shown by Figure 5.10, public funds are the dominant source in financing inpatient care across countries, covering on average 82% of the costs with the private sector funding the remaining 18%. However, variation in public funds' contribution exists between countries, ranging from Switzerland's 60% to Denmark's 97%. At 85%, public funds' contribution to financing inpatient care in Turkey is a little above the average level of the OECD countries. The role of public funds in financing inpatient care is far more significant than in the financing of the other components of health care. In part this is due to the fact that the most serious medical conditions tend to be treated in the hospitals. Therefore, the dominance of public funds in financing inpatient care also reflects the greater role of public resources in the dissemination of medical technology.

**Figure 5.10. Share of Inpatient Expenditure by Agent (In-Patient Expenditure=100)**




Source: Orozs and Morgan, 2004.

**Figure 5.11. Share of Inpatient Costs by Private Sectors (In-Patient Expenditure=100)**



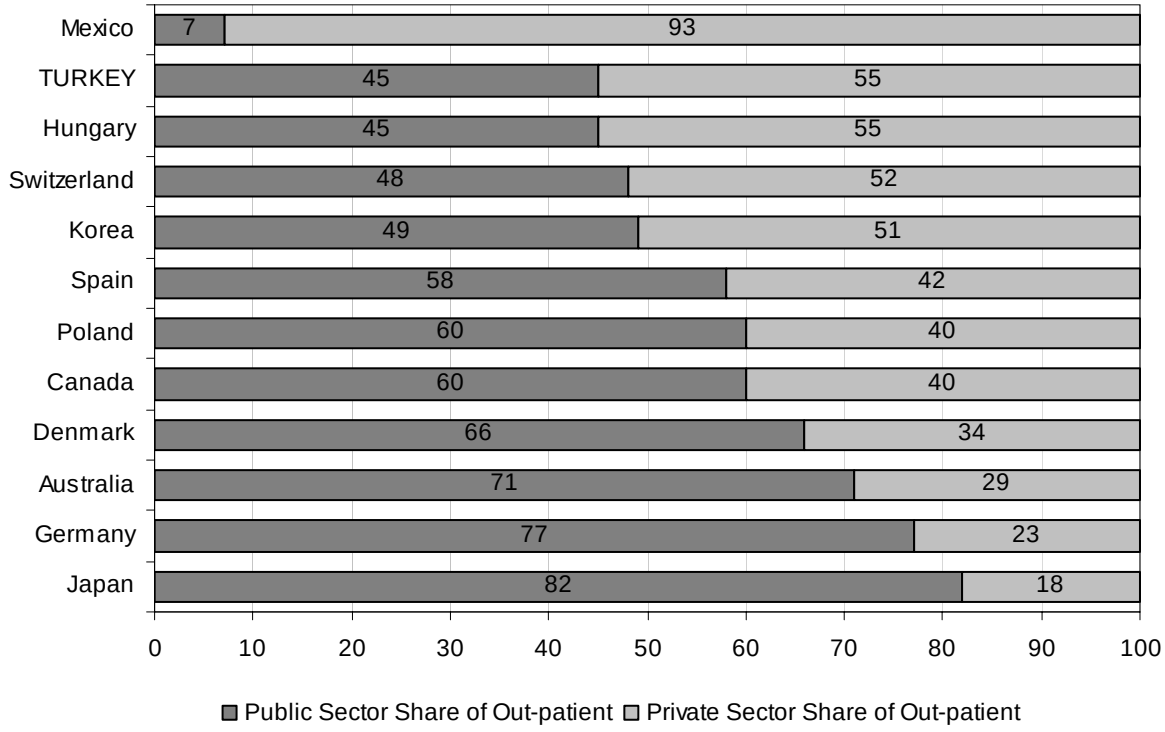

Source: Orozs and Morgan, 2004.

In regard to the private role in the financing of inpatient care, out-of-pocket payments typically fund around 10% of inpatient costs in many countries such as the case with Turkey. It is clear from Figure 5.11 that private insurance market is still very small in Turkey.

### *5.4.2. Financing of Outpatient Services*

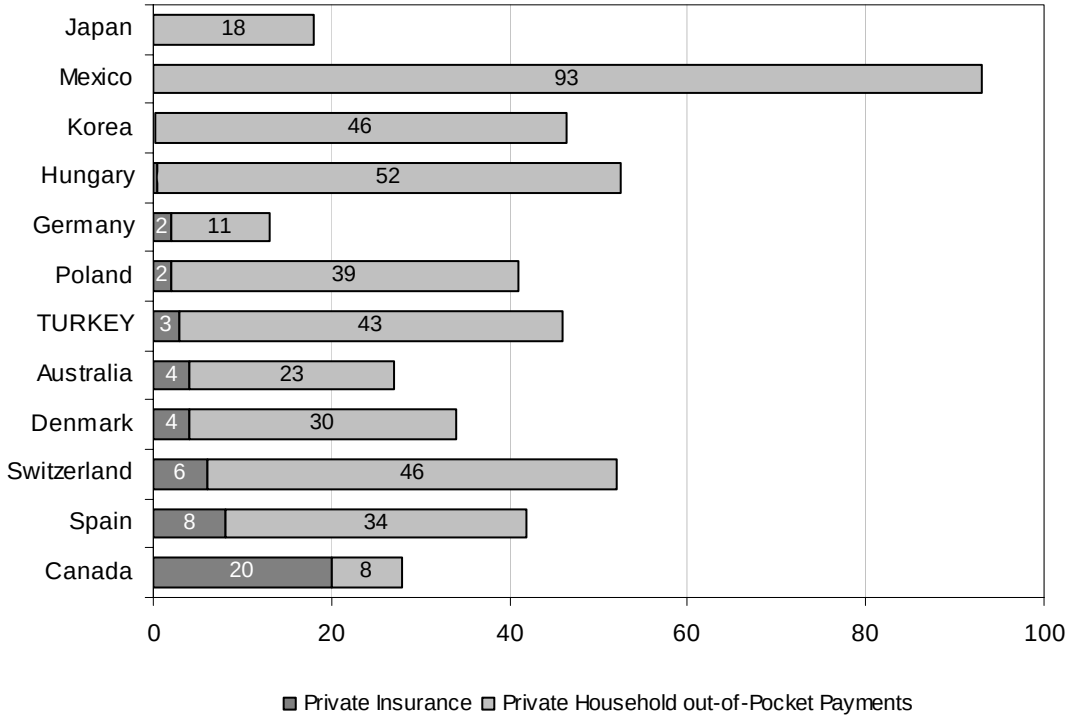
In sharp contrast to the way inpatient care is financed, almost half of outpatient care was financed through private sources (Figure 5.12). In the case of Hungary, Switzerland, Turkey, and Mexico, private financing plays the dominant role. Concerning the breakdown of private sources, out-of-pocket expenditure is the main component of private spending on outpatient services in all countries except Canada and Germany, where private insurance plays a more important role (Figure 5.13). While 83% of Turkey's hospital expenditures (including hospital outpatient services) are financed by public funds, only 24% of the services provided by ambulatory health care providers are financed by public funds. In many OECD countries except Mexico, higher percentage of the services provided by ambulatory health care providers is financed by public funds. This significant difference in the way how hospital and ambulatory services are financed in Turkey may also help explain why we observed that disproportionately high percentage of hospital expenditures devoted to outpatient services. Namely, the actual price for receiving the same outpatient services to the consumers in Turkey may be lower in hospital setting than in an ambulatory setting. According to the economic model of demand for healthcare, people respond to price differentials.

**Figure 5.12. Share of Outpatient Financing by Agent (Out-Patient Expenditure=100)**




Source: Orozs and Morgan, 2004.

**Figure 5.13. Share of Outpatient Costs by Private Sources (Out-Patient Expenditure=100)**

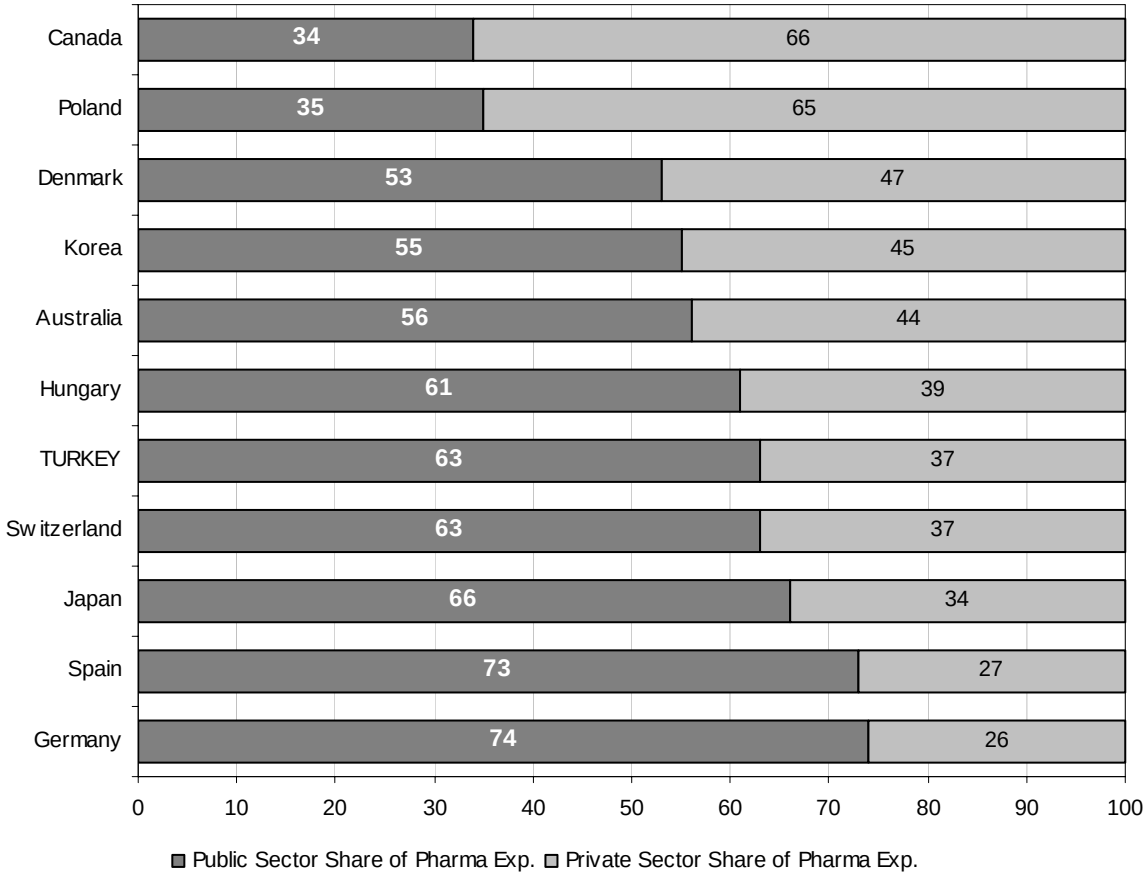



Source: Orozs and Morgan, 2004 .

*5.4.3. Financing of Medical Goods Including Pharmaceuticals*

Figure 5.14 indicates that private funding plays an even more significant role in some OECD countries in financing pharmaceuticals than in funding outpatient care. On Average, 54% of pharmaceuticals expenditure came from public sources, with 46% from private sources. Concerning the relative role of public vs. private financing of pharmaceuticals, OECD countries can be roughly divided into three groups: a. public sector dominant countries: in Germany, Hungary, Japan, Spain, Switzerland and Turkey, government pays for 60-70% of pharmaceuticals; b. mixed financing system: in Australia, Denmark and Korea, public (social security schemes) and private sectors share a roughly equal role in the expenditure on pharmaceuticals; and c. private sector dominant system: in Canada and Poland, private sector finances more than 60% of pharmaceuticals. Out-of-pocket payments are the dominant source of private funding for pharmaceuticals for all countries studied.

**Figure 5.14. Share of Pharmaceutical Expenditure by Public vs. Private Sources (Pharmaceutical Expenditure=100)**




Source: Orozs and Morgan, 2004.

# 6. Further Analysis of Health Spending in Turkey: Some Efficiency and Inequality Issues

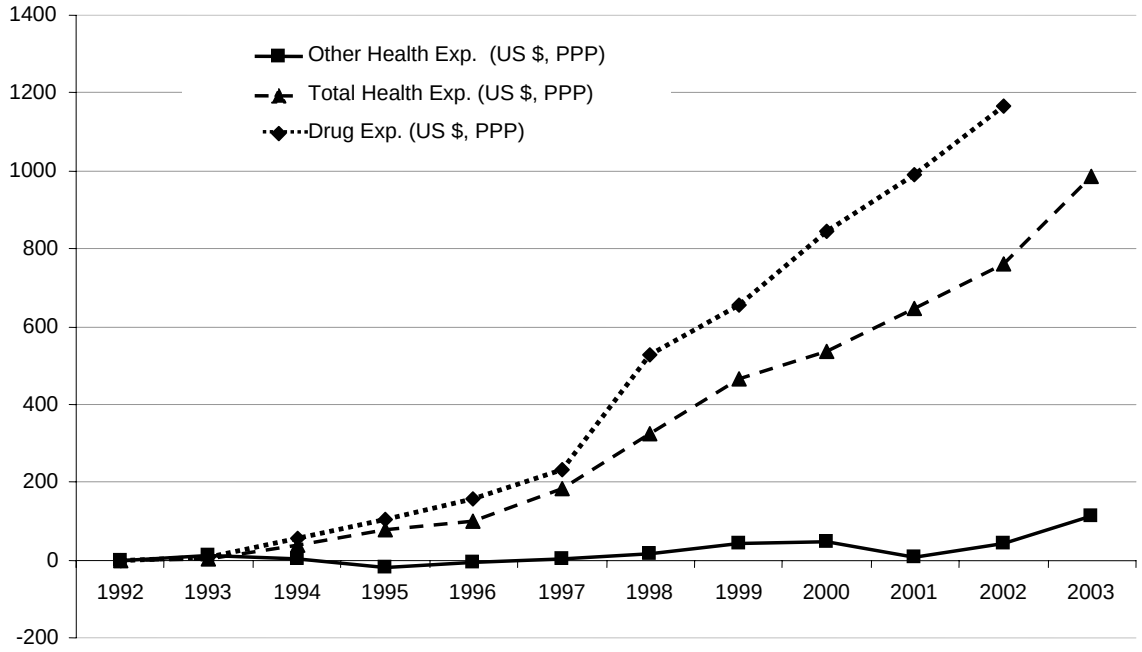
While Chapters 4 and 5 provided descriptive analyses on Turkey's health spending patterns, this chapter will try to conduct an evaluative analysis to uncover any issues that may exist in Turkey pertaining to inefficiency and inequalities in access to healthcare and pharmaceuticals. Different factors may have different implications for the efficiency question. We will mainly use household data analysis to examine problems with regard to inequality in access.

From our international comparative analysis above neither per capita expenditure on health nor per capita expenditure on pharmaceuticals in Turkey appears to be "abnormal". What makes Turkey's health spending pattern special (by international comparison), however, lies not in it's overall level of spending, but the structure of spending: first, Turkey seems to spend a relatively high proportion of its total health resources on pharmaceuticals, and second, high proportion of total hospital expenses are devoted to outpatient services. Can these special spending patterns be interpreted as clear indication of inefficiencies? Probably not. A comprehensive analysis on the factors affecting the spending pattern is in order.

## *6.1. Factors Affecting Utilization of Pharmaceuticals and Efficiency Issues*

Figure 6.1 depicts the trend in total drug expenditures and total health expenditures of main public institutions. Obviously, total drug expenditures increased faster than non-drug health expenditures. This increasing trend may be due to increasing prices of drugs. It may be also due to the increasing utilization rate.

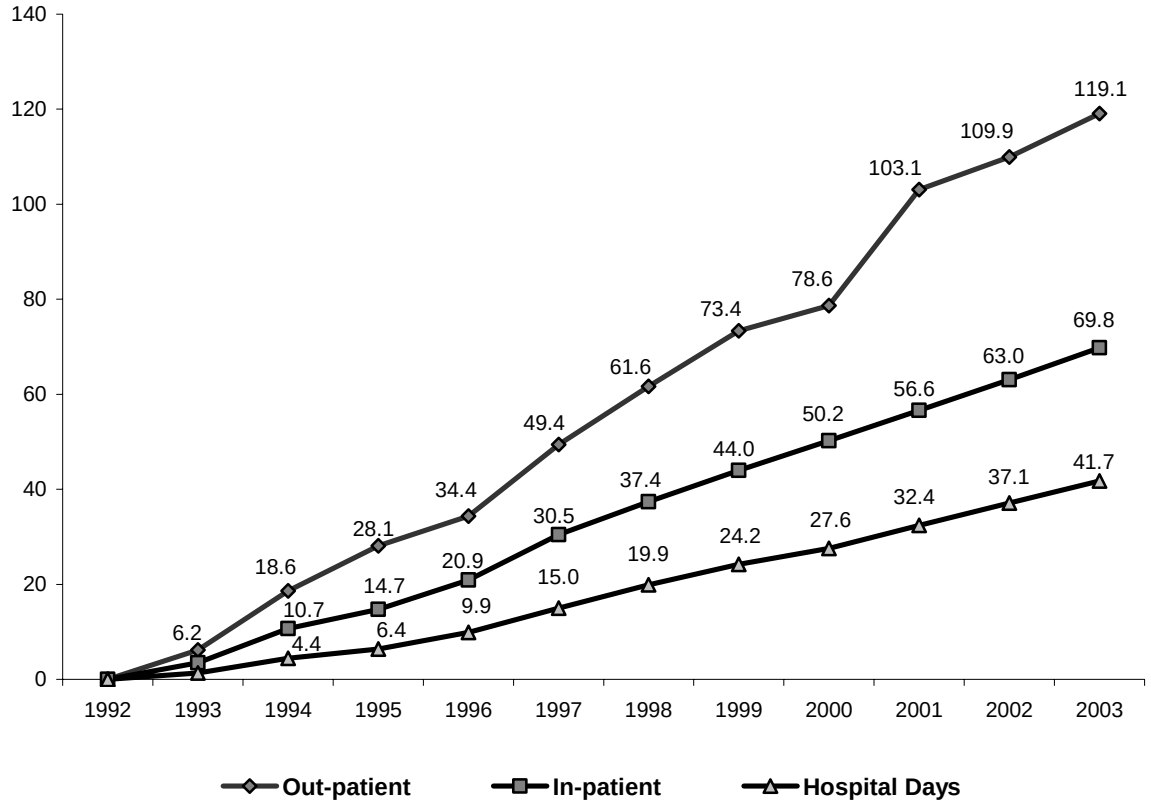
**Figure 6.1. Changes in Drug, Non-Drug, and Total Health Expenditure of Main Public Institutions**




Source: Sağlık Bakanlığı, 1997; 2001a; 2001b.
Ministry of Health, 2003.
Maliye Bakanlığı (www.bumko.gov.tr) (turkey-health expenditures.pdf)
Emekli Sandığı (www.emekli.gov.tr)
Sosyal Sigortalar Kurumu, 2001; 2002; 2003.
Bag-Kur, 2001; 2002; 2003.

As can be seen from Figure 6.2, the number of out-patient visits, number of hospital admissions, and total number of hospitalization days all increased over the years in Turkey. The close relationship between healthcare utilization increase and drug expenditure increase makes it difficult to attribute drug expenditure increase to price inflation. Nonetheless, there are several reasons for why we may be concerned about the efficiency issue of drug expenditure. The questions about drug utilization pattern to meet the priority health needs of the country, significant differences in both average drug expenditure and rate of increase among members of different social security schemes, and some underlying health system deficiencies can be regarded as explanatory factors.

**Figure 6.2. Increase in Number of Out-Patient Visits to Hospitals, Hospital Admissions, and Hospital Days by Year (Base Year=1992)**

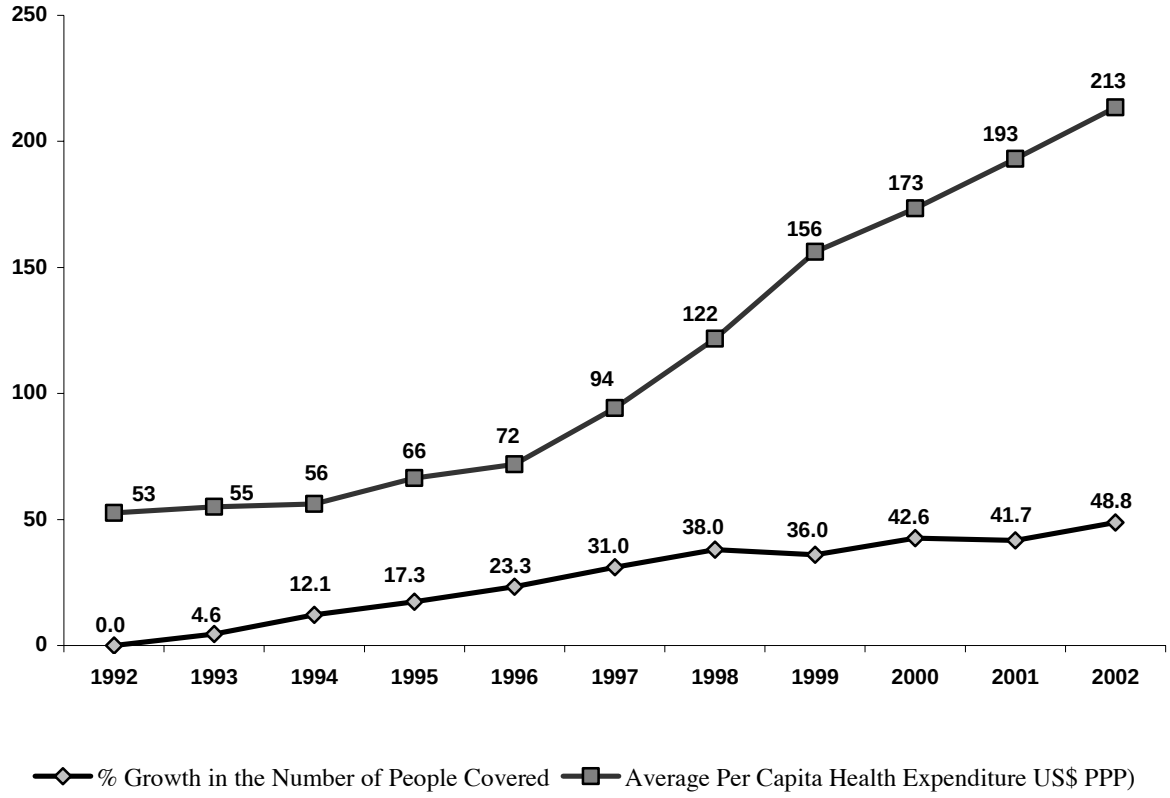



Source: Sağlık Bakanlığı, 1996; 2001; 2002; 2003.

The increasing healthcare utilization is related to both the demand-side and supply-side factors.

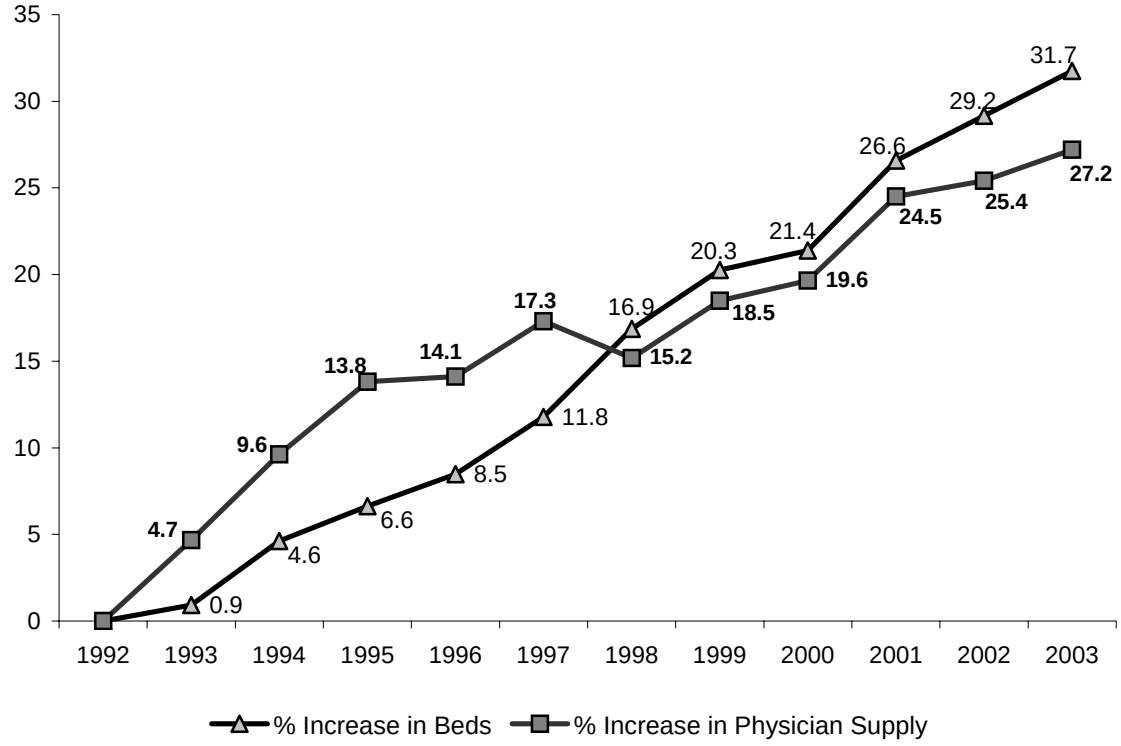
On one hand, the number of people covered by the social insurance schemes increased over the years. But at the same time, the average spending level of the insured members also increased (Figure 6.3). On the other hand, Turkey also has eye witnessed remarkable increase in supplies of hospital beds and physicians (Figure 6.4). It is hard to sort out which set of factors – demand-side or supply-side factors are more important in driving up the expenditure.

**Figure 6.3. Change of Number of People Covered by the Social Insurance Schemes and Average Health Expenditure of the Members**




Source: Sağlık Bakanlığı, 2003.
Sağlık Bakanlığı, 1997; 2001a; 2001b.
Ministry of Health, 2003.
Maliye Bakanlığı (www.bumko.gov.tr) (turkey-health expenditures.pdf)
Emekli Sandığı (www.emekli.gov.tr)
Sosyal Sigortalar Kurumu, 2001; 2002; 2003.
Bag-Kur, 2001; 2002; 2003.

**Figure 6.4. Change in The Supplies of Hospital Beds and Physicians**

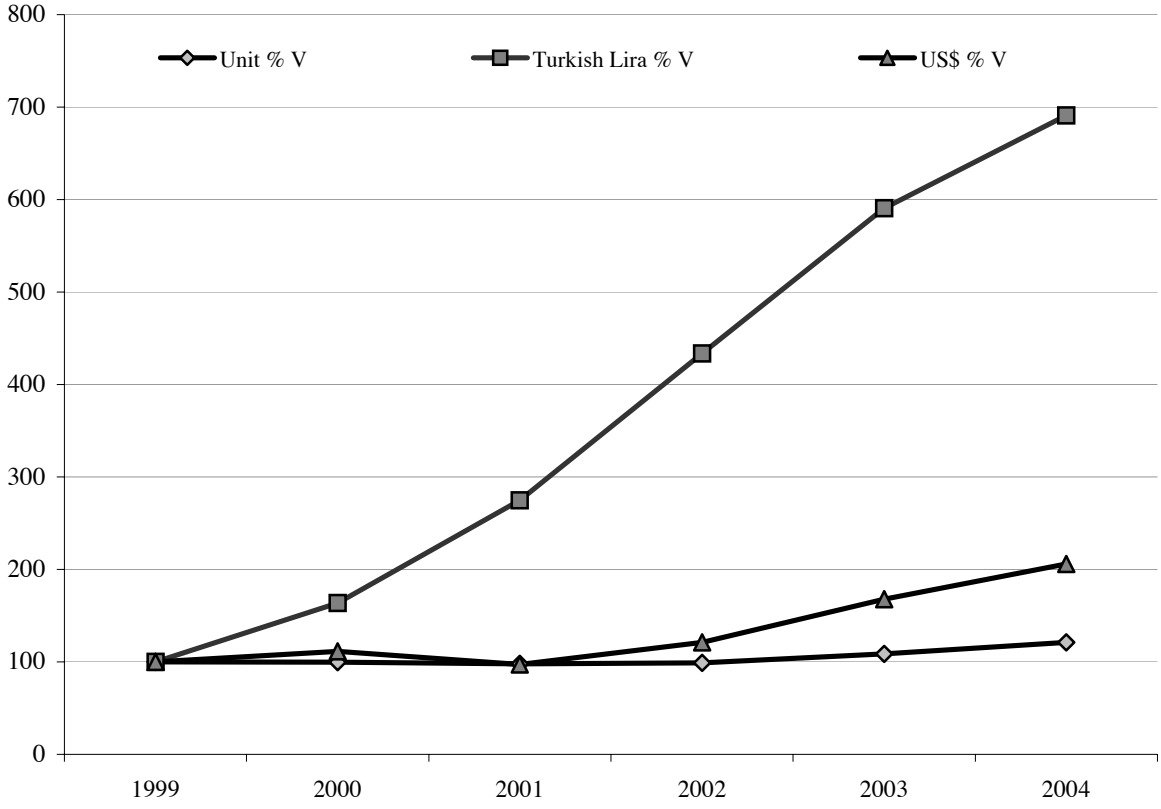



Source: Sağlık Bakanlığı, 1996; 2001; 2002; 2003.

What explains pharmaceutical expenditure increase, price or volume?

Using IMS data, we analyzed the recent market trend in Turkey from 1999 to 2004. Comparing to the 1999 baseline data, total sales volume in 2004 in terms of units based on ATC-1 classification by IMS data only increased by about 20%. However, total sales volume in money terms increased by 200% and 700% in US$ and in TL respectively (Figure 6.5). This result implies that recent increase in drug expenditure can be explained, to a large extent, by significant increase in average price of drugs. Further studies are needed to determine whether this price increase is mainly caused by introduction of newer and more expensive drugs.

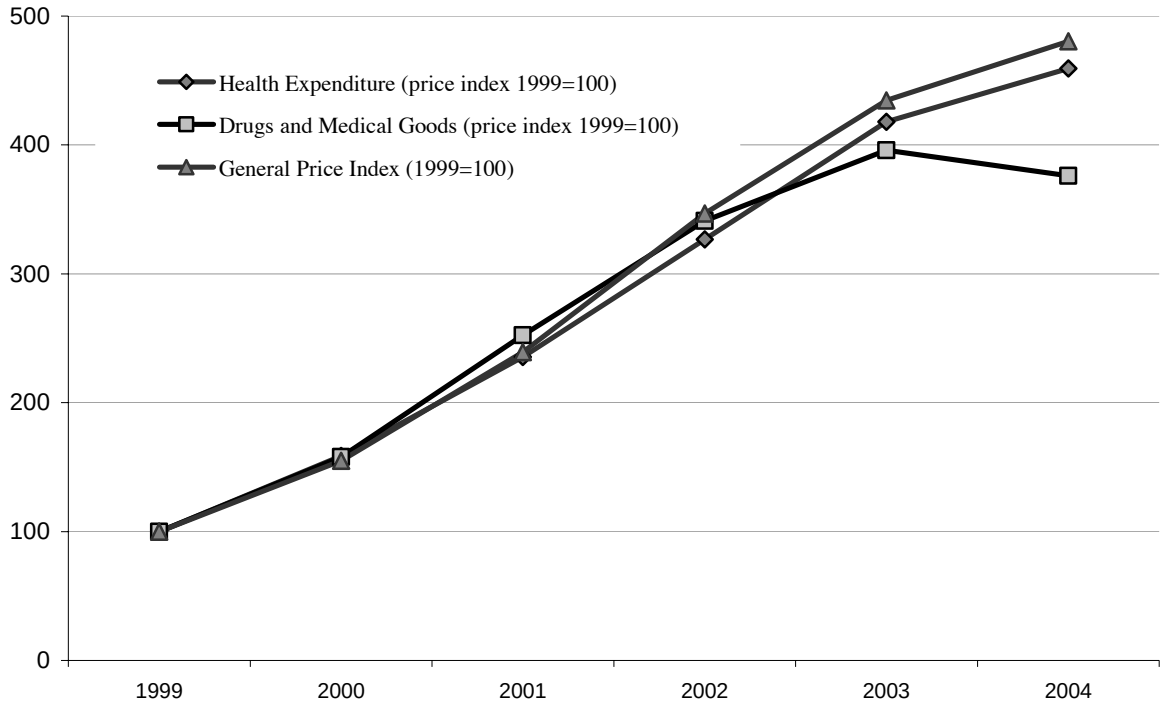
**Figure 6.5. Change of Drug Sale Volumes and Values**




Source: IMS, 2004.

However, price increases in pharmaceuticals, on average, have been by and large in line with the general inflation levels in Turkey since mid-1990s (Figure 6.6). Efficiency question pertains not only to price inflation issue, but also concerns on what kind of pharmaceuticals are utilized and whether the utilization pattern represents efficient allocation of resources. This will be analyzed in the next section.

**Figure 6.6. Changes in Prices of Medical Services, Drugs and General Consumer Price Index in Turkey (1999-2004)**




Source: DİE, 2005 (www.die.gov.tr) (Access Date 29 May 2005)

Table 6.1 listed the top 10 sellers of medicines in Turkey. They accounted for about 40% of the total market. The highest consumption is that of antibiotics, followed by analgesics and anti-migraine preparations, anti-rheumatic drugs and muscle relaxants. This pattern does not correspond well to the major burden of diseases in the country as indicated in Table 6.1. For example, as Turkey has already experienced the epidemiological transition, the major causes of deaths and disability nowadays are non-communicable diseases, such as heart disease and cancer.

**Table 6.1. Consumption of Medicines by Therapeutic Classes in Turkey (% of the Total Value)**

| Treatment Group | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|
| Antibiotics | 20.4 | 19.0 | 18.2 | 18.1 |
| Analgesics and Anti-Migraine Preparations | 13.2 | 12.0 | 12.1 | 12.3 |
| Anti-Rheumatic System Muscle Relaxants | 10.2 | 11.0 | 11.6 | 11.0 |
| Cough and Cold preparations | 8.9 | 8.6 | 7.9 | 8.4 |
| Vitamins, Minerals and Anti-Anemics | 7.2 | 7.3 | 6.5 | 6.4 |
| Dermatological | 5.2 | 5.3 | 5.4 | 5.3 |
| Stomatological, Antacids and Anti-Emetics | 5.0 | 5.3 | 5.2 | 5.2 |
| Cardiovascular System Preparation | 4.4 | 4.8 | 5.5 | 6.3 |
| Hormones and Gynaecological Preparations | 4.0 | 4.3 | 4.5 | 4.5 |
| Otology and Eye-Ear Preparations | 4.1 | 4.2 | 4.4 | 4.3 |

Source: IEIS, 2002; IEIS, 2003; World Bank, 2003b.

Pharmaceutical consumption patterns in Turkey are also somewhat different compared to the world average (Table 6.2). In particular, the share of systemic anti-infectiveness in the pharmaceutical basket in Turkey (26.2%) is very high compared with the world average (9.9%). One might suspect that pharmaceutical resources may not be allocated to areas where the most returns for the investment in terms of health improvement can be brought about. Furthermore, there might be concerns about drug resistance problems, if anti-biotics are not used appropriately. Future studies need to examine cost-effectiveness of different pharmaceuticals as well as the consumer and provider behavior to determine the driving forces for the pharmaceutical consumption patterns.

**Table 6.2. Consumption of Medicines by Therapeutic Classes in Turkey and the World (%)**

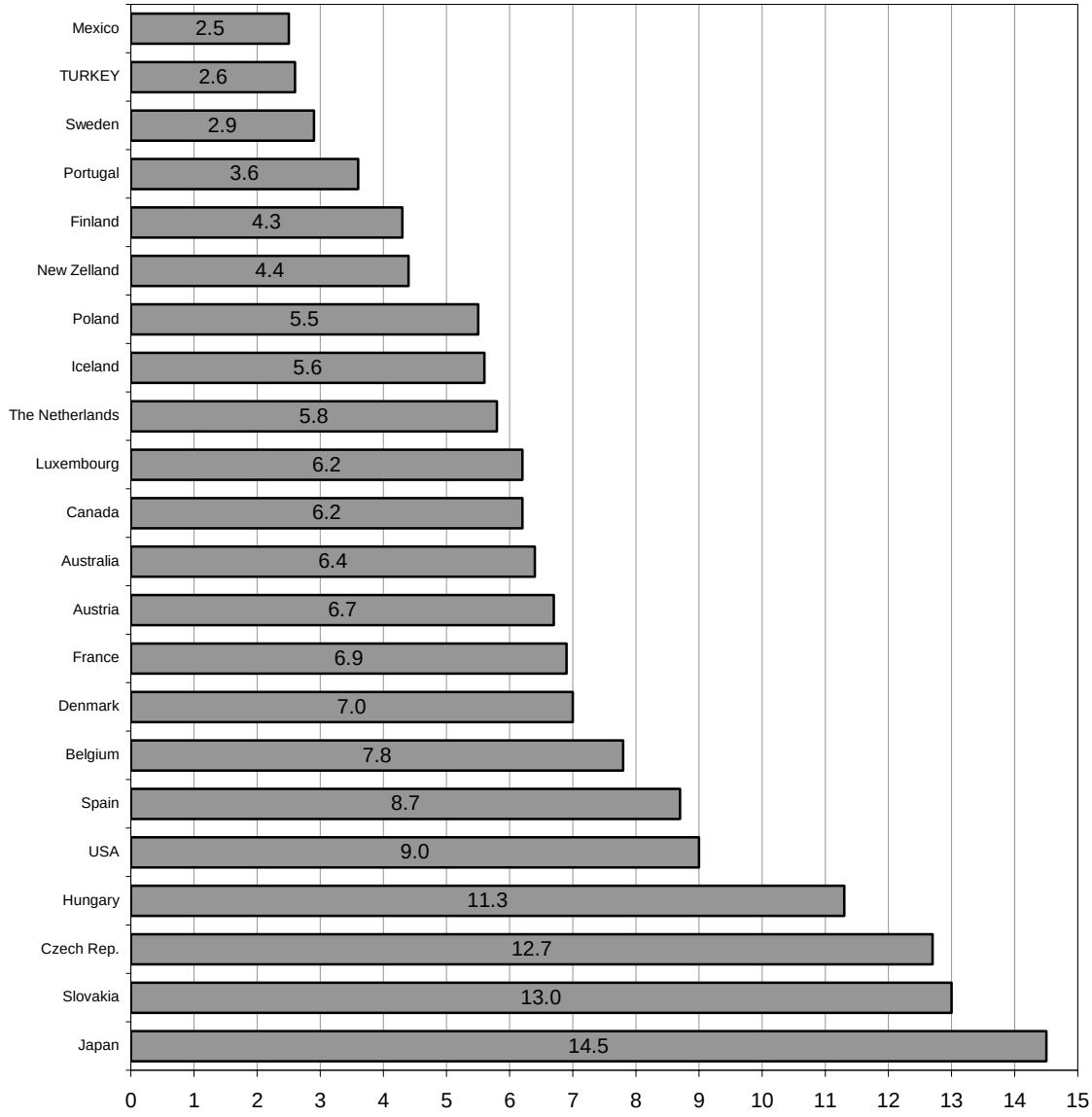
| Therapeutic Class | Average Share in the World | Share in Turkey |
|---|---|---|
| Cardiovascular | 19.3 | 11.9 |
| Central nervous system | 15.8 | 9.5 |
| Alimentary T & Metabolics | 15.3 | 12.8 |
| Systemic Anti-infectiveness | 9.9 | 26.2 |
| Respiratory system | 9.3 | 7.8 |

Source: IEIS, 2002; IEIS, 2003; World Bank, 2003b.

Another concern for appropriateness pertains to the “self-medication” practices, which seem to widely exist in Turkey. By international comparison, consultation rate in Turkey is rather low (Figure 6.7). As indicated by Table A2, about 30% of the people who

were ill chose to purchase drugs and other medical goods without a prescription. This percentage is significantly higher among the insured (about 23%) than among the uninsured (about 31%), higher among the highest income quintile (32%) than among the lowest income quintile (25%). Clearly, self-medication is closely related to the ability to pay. If significant percentage of insured people purchase pharmaceuticals themselves without consultation with a doctor, this also raises issue about the access to healthcare facilities, in addition to the question of consumers' capability for rational drug use.

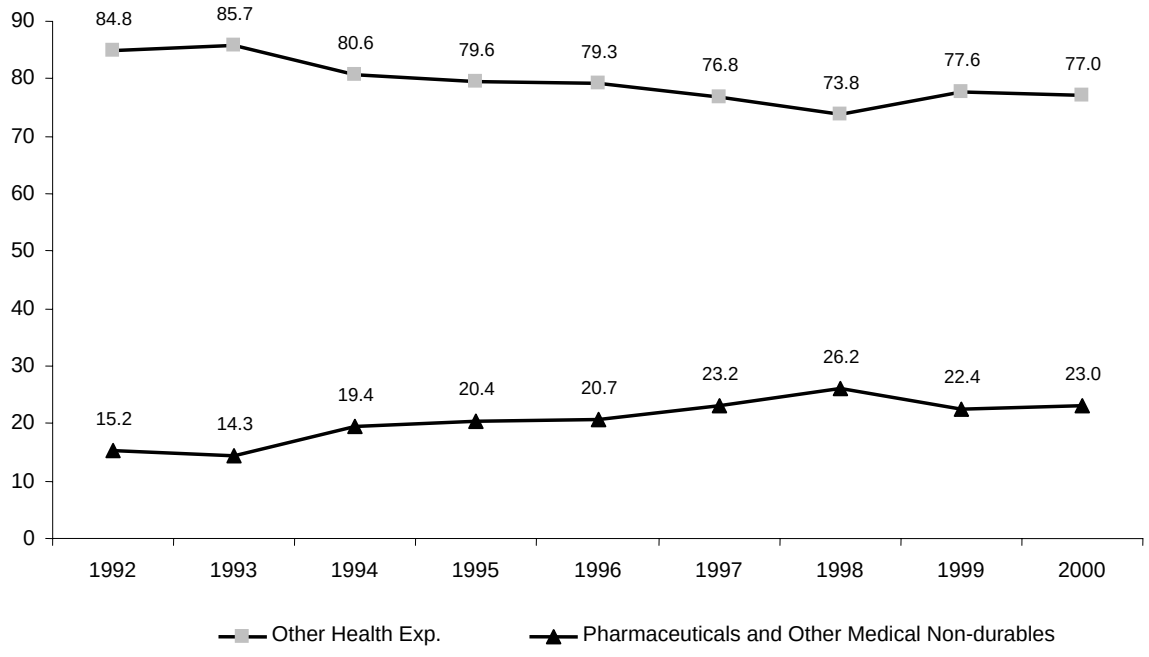
**Figure 6.7. Consultation Rate (2001)**




Source: OECD, 2004.

Regarding the spending trend, not only the per capita drug expenditure has increased over the years, drug expenditures as share of total health expenditures also seem to have increased over time in Turkey (Figure 6.8). As discussed above, pharmaceutical expenditures are disproportionately financed by private sources (mainly out-of-pocket spending), and people tend to purchase drugs from pharmacies without a prescription. Therefore, the spending trend in Turkey may be influenced, to a large extent, by demand-side factors such as changes in insurance coverage and income.

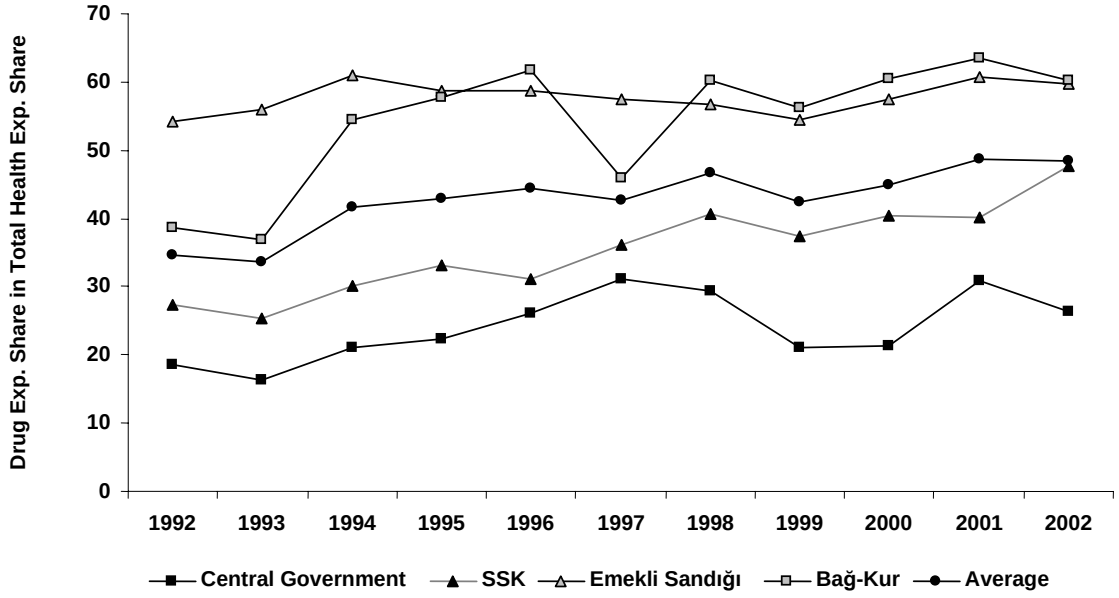
**Figure 6.8. Growth of Drug Expenditures in Total Health Expenditures**




Source: Sağlık Bakanlığı, 1997; 2001a; 2001b.
Kartal, et al., 2004.

This trend seems to be confirmed with health spending patterns of Turkey's major public payers. As seen from Figure 6.9, public institutions devoted, on average, more than 40% of their total spending on pharmaceuticals, approaching 50% in recent years. For GERF and Bag-Kur, expenditure on pharmaceuticals as share of total health spending is as high as 60%. However, the drug expenditures of SSK and Central Government (MoH, Universities, Civil Servants) are remarkably lower.

**Figure 6.9. The Share of Drug Expenditures of Main Public Payers in Their Total Health Expenditures (%)**




Note: Central Government expenditures included MoH, University, and Civil Servants general budget allocations

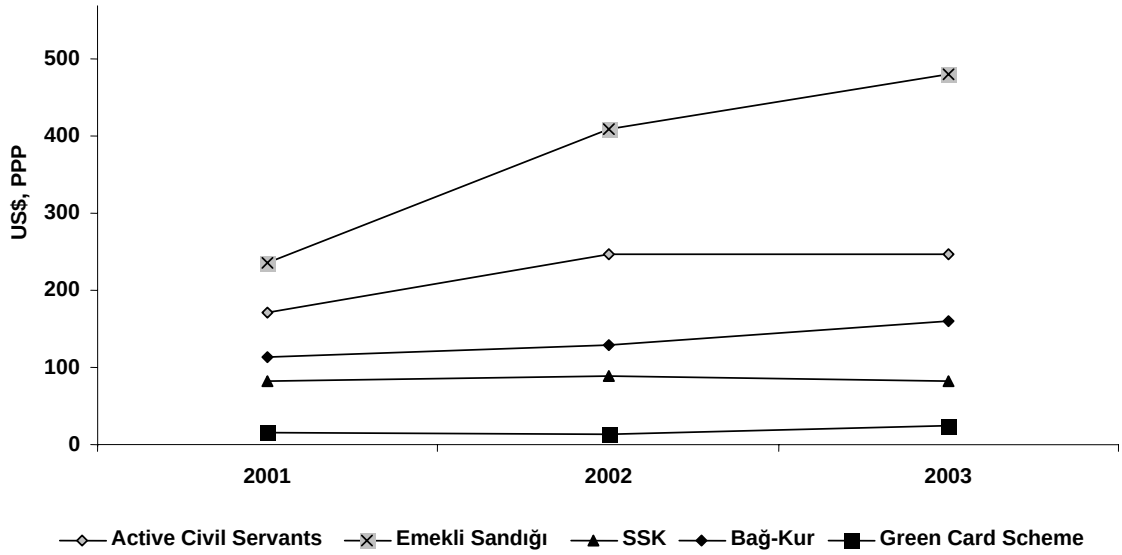
Source: Sağlık Bakanlığı, 2003.
Sağlık Bakanlığı, 1997; 2001a; 2001b.
Ministry of Health, 2003.
Maliye Bakanlığı (www.bumko.gov.tr) (turkey-health expenditures.pdf)
Emekli Sandığı (www.emekli.gov.tr)
Sosyal Sigortalar Kurumu, 2001; 2002; 2003.
Bag-Kur, 2001; 2002; 2003.

To begin with, there have been differences among main public institutions in terms of per capita drug expenditures (Figure 6.10). The average drug spending level among the GERF beneficiaries is the highest, followed by active civil servants, Bag-Kur, SSK, and green card holders. Of course, without detailed data on the membership characteristics (e.g. their age structure and health status, etc.) we cannot ascertain the extent to which the differences can be explained simply by the differential in the underlying healthcare needs. However, given the significant differences in average drug expenditure, as well rate of increase in drug expenditure as share of total health expenditure, we suspect that at least partially the differences can be explained by the different demand-side and supply-side constraints, which are related to the different financing structures of the different social security schemes.

All social security organizations are financed by premium contributions from members and employers as well as government contributions. Given the different political power possessed by GERF members (civil servants and retired government employees) and Green Card holders (the poor who also face other non-financial constraints), it is not surprising to observe a much lower average drug expenditure among the later than the former.

A caveat must be mentioned here with regard to the definition and data sources used to calculate the per capita expenditure figure. There are three sets of numbers that can be used as the denominator: officially reported members of different social insurance schemes, members eligible for health expenditure reimbursement, and members actually holding a health card. If the numbers of people having health cards reported in the study of Ministry of Labor (Ministry of Labor and Social Security, 2005) are used to calculate per capita health and drug spending under different social insurance schemes, per capita drug and total health expenditures would have been higher.

**Figure 6.10. Per Capita Drug Expenditure by Agent and by Year**




Note: Per capita drug expenditures for active civil servants and their dependents and retired servants and their dependants were calculated separately. Those people voluntarily insured were excluded from SSK and Bağ-Kur beneficiaries since they are not able to be reimbursed for their health expenditures.

Source: Sağlık Bakanlığı, 1997; 2001a; 2001b; 2003.
Ministry of Health, 2003.
Maliye Bakanlığı (www.bumko.gov.tr) (turkey-health expenditures.pdf)
Emekli Sandığı (www.emekli.gov.tr)
Sosyal Sigortalar Kurumu, 2001; 2002; 2003.
Bag-Kur, 2001; 2002; 2003.

What is interesting, however, is the ability of SSK to keep the average drug expenditure relatively low. Several factors may help explain this. SSK operates under the MoLSS and serves principally employees of the private sector and blue-collar workers of the public sector.

Before February 2005, SSK used to purchase the cheapest alternative from available products with the same active ingredient or the same therapeutic class. Consequently, the cheapest alternative (generic or original) of each molecule was purchased by SSK to be serviced to its patients at SSK pharmacies. If an SSK pharmacy was not available, then the patient could have purchased the prescribed drug at private pharmacies where the SSK reimbursed them on the basis of the cheapest generic plus up to 30% more. As mentioned earlier the system has totally changed after the transfer of SSK hospitals to MoH. Lower expenditure not withstanding, it is unclear whether SSK achieved cost savings at the expense of providing inferior access to and sub-standard quality of services for its members.

### *6.2. Inequalities in Healthcare Access and Financial Burden of Medical Expenditures*

If the assessment of efficiency centers around the question of spending on what, then the assessment of inequality focuses on the question of spending for whom and by whom. In this section we will examine the extent, to which inequalities exist in access to healthcare and in financial burden of medical expenditures across different socioeconomic groups in Turkey. The macro level data indicate a favorable situation of organized financing for Turkey: about 62% of the total health expenditures are financed by government funds (social insurance funds and general revenues), leaving the private sector shoulder only 38% of the total health spending. However, this statistics does not inform us on the question of who actually pays and who really benefits from the current financing system. Our analysis based on further analysis of NHA Household Survey indicates some inequality problems in several dimensions, which will be discussed below.

#### *6.2.1. Inequalities in Access to Healthcare*

Beside geographical inequalities in availability of health services and pharmacies, inequalities in financial access are a major access problem. This is reflected in both the uninsurance problem and under-insurance problem.

According to different estimates (Table 6.3), Turkey still has 16.9% -35.7% of the population who are uninsured. As is shown in our household data analysis (Appendix 1), significant disparities exist in healthcare utilization and financial burden between the insured and uninsured groups.

**Table 6.3. Health Insurance Coverage in Turkey**

| The Relevant Study | Health Insurance Coverage |
|---|---|
| SPO 2002 Estimate | 83.1 |
| NHA Household Survey Estimate (2003) | 67.2 |
| Burden of Disease and Cost-Effectiveness Study Estimate (2003) | 64.3 |

Source: State Planning Organization, 2005; Sağlık Bakanlığı ve Başkent Üniversitesi, 2003; Berman, et al., 2004.

Depending on the benefit packages, people who are insured may still have different access to healthcare services. For example, given Turkey's health financing system, one would imagine that most of the hospital expenditures are covered by public funds. However, as Table 6.4 indicates, about 30% of the hospitalized patients have to buy drugs outside the hospital. This percentage is higher among the uninsured (38.9%) than among the insured (27.4%), higher in rural areas (36.7%) than in urban areas (29.3%), and higher in the lowest income quintile (39.4%) than in highest income quintile (22.5%).

**Table 6.4. Percentage of Hospital Patients Needing to Buy Drugs**

| | Percent |
|---|---|
| **Total** | 29.71 |
| **Settlement** | |
| Rural | 36.70 |
| Urban | 29.36 |
| Ankara | 30.12 |
| Istanbul | 16.84 |
| Izmir | 11.84 |
| **Regions** | |
| West | 24.09 |
| South | 46.81 |
| Central | 35.88 |
| North | 63.02 |
| East | 67.86 |
| **Gender** | |
| Male | 28.73 |
| Female | 30.47 |
| **Health Coverage** | |
| Have Insurance | 27.47 |
| Doesn't Have Insurance | 38.92 |
| **Income Quintile** | |
| First | 39.47 |
| Second | 42.11 |
| Third | 28.05 |
| Fourth | 20.80 |
| Fifth | 22.57 |

Source: Sağlık Bakanlığı, 2005b (www.hm.saglik.gov.tr) (Access Date 15 September 2005)

### *6.2.2. Inequalities in Affordability and Financial Burden of Medical Expenditures*

As we discussed earlier, significant number of people, when they are sick, do not go to a doctor. About 47% of the people who did nothing when they were sick said that “no money” was the main reason. As is indicated by Table A.3 the percentage of people doing nothing for financial reasons tends to be higher among the uninsured (64.2%) than among the insured (35.0%), higher in rural areas (51.8%) than in urban areas (46.8%), and higher in the lowest income quintile (62.5%) than in highest income quintile (17.3%).

Our household data analysis also revealed significant inequalities in financial burden of medical expenditures. Table A.5 listed per capita out-of-pocket health expenditures for different groups, and we can clearly observe remarkable variation. For example, out-of-pocket spending is clearly correlated with people's health status (perceived health status): the sicker a person is, the more he/she has to pay out-of-pocket. This clearly violates the principle of equity in health care delivery and financing: getting healthcare according to one's health need and paying for healthcare according to one's ability (not one's health need).

The inequality problem in financial burden is perhaps most pronounced in drug expenditures. As is shown in Table A.6, not only is the out-of-pocket drug expenditure closely correlated with one's health status, the poorest group actually has to pay a higher amount for hospital drug expenditures ($3.55), for self-medication ($10.31), and for prescription drugs ($71.19) than the richest group for hospital drug expenditures ($2.81), for self-medication ($6.89), and for prescription drugs ($51.46).

Furthermore, people in Turkey, especially the low-income populations, may be burdened by the informal payment practices. A recent study by Tatar et al (2003) has found that out of the total payments made to the public sector, 62% was formal and 38% was informal. As Table 6.5 shows, in the public sector, the majority of both formal and informal payments occurred for drugs. For the informal payments this is followed by the physicians' surgical services and donations. Donations are the amount that is paid to associations attached to hospitals or health centers.

**Table 6.5. Out-of-Pocket Payments by Provider and Purpose (%)**

| Purpose | Public | | Private | | Total |
|---|---|---|---|---|---|
| | Formal | Informal | Formal | Informal | |
| Donation | - | 11.1 | - | - | 1.3 |
| Physicians' medical services | 9.2 | 2.3 | 29.8 | 99.0 | 32.6 |
| Physicians' surgical services | 8.2 | 23.5 | - | - | 4.4 |
| Drugs | 70.3 | 50.5 | 49.7 | 1.0 | 46.7 |
| Nurses' /other staff's care | - | 1.5 | - | - | 0.2 |
| Laboratory/ imaging tests | 8.1 | - | 12.2 | - | 8.2 |
| Other services | 4.0 | 11.1 | 8.3 | - | 6.6 |
| **Total** | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Tatar, et al., 2003.

Additional findings from this study include:

(1) Informal payments comprised of 25% of out-of-pocket (OOP) payments for the total sample examined;

(2) Majority of the informal payments were in the form of cash payments. Gift and in-kind payments also existed to a lesser degree;

(3) Many public sector doctors have a private practice on the side. It is widely acknowledged that in Turkey if a patient wants to get prompt and better services, he/she has to visit the private office of the doctor first. In addition, some surgeons ask for extra money for performing surgery ("knife payments");

(4) Even Green Card holders, who constitute the poorest section of the population, had to make informal payments in supposedly free public facilities. Worse still, in the public sector, the poor paid more informal payments per capita than the wealthier segments of the population. The elderly paid more informal payments per capita than the young. The unemployed also paid more informal payments per capita in the public sector then their counterparts.

While more studies are needed to document the detailed formal and informal constraints facing the socially disadvantaged, this study already clearly indicates the need to develop more effective mechanisms to assure real improvement in access to healthcare services, which are provided by public and private sectors.

# 7. Policy Implications from Our Study

Any new policy initiatives, in order to be effective and successful, should be based on adequate diagnostic evidence on where major problems exist, what major causes of these problems are and the feasibility of proposed policy actions. We organize our policy discussions around three major problem areas, on which this study is focused: level and structure of health and pharmaceutical spending, efficiency issues, and inequality problems.

## *7.1. The Level and Structure of Health and Pharmaceuticals Spending in Turkey*

We have found no strong evidence to suggest that the overall level of health spending in Turkey is inadequate – either too high or too low by international comparison. The estimates from SHA-based studies indicate that Turkey spends 6.6% of its GDP on health in 2000. This is on par with other countries with similar per capita GDP levels. For example, Thailand also spent 6.1% of its GDP on health in 2000.

For the country as a whole, there seems to be no strong reason for concern about any eminent "out of control" cost escalation in drug expenditure. After all, the per capita spending on drugs is significantly lower, related of course to Turkey's relatively low income level, than the OECD country average.

Since Turkey only conducted NHA studies for 1999 and 2000, the results of which can thus be compared to other countries using similar methodology, we were not able to conduct a reliable and comprehensive trend analysis regarding changes of Turkey's total health spending over time. Estimates of health spending before 1999 and after 2000 are based on different sources of data and utilized different methods. Therefore, one of the first recommendations we would like to propose to policy makers in Turkey is to organize periodic NHA studies. We hope that discussions contained in this study helped make it clear how important NHA studies are in providing the kind of comprehensive information on levels, sources, channels, and uses of health resources, as well as trends that policy makers would need, in order to make evidence-based policies.

However, one thing is very clear. Expenditure on pharmaceuticals constitutes a significant proportion of total expenditures on health in Turkey (about 24.8% in 2000). This share is higher than in many OECD countries, but lower than in Thailand, which devoted 34% of its total health expenditure on pharmaceuticals.

To a certain extent, the higher proportion of total spending on pharmaceuticals is due to the fact that domestic prices of pharmaceuticals reflect international market prices, whereas labor costs are normally based on national wage structures. This feature of pharmaceutical spending levels has an implication on the overall functional structure of health expenditure, with lower-income countries such as Turkey and Thailand tending to spend greater shares of their health expenditure on pharmaceuticals.

Indeed, our analysis indicates that the increase in drug expenditure in Turkey can be attributed, to a certain extent to drug price increases as well as to the increasing rate of utilization. Therefore, a case can be made for policy makers in Turkey to pay attention to carefully monitor and control expenditures on pharmaceuticals. However, it is important to note that pharmaceutical policy is complex, because it involves two major public policy goals:

(1) Health policy and social interventions to enhance the welfare of patients, which may imply cost-containment strategies;

(2) Industrial policy to strengthen economic efficiency, competitiveness and innovation.

Given Turkey's vibrant pharmaceutical industry, health policy and industry objectives have to be considered jointly. Comparative analysis of the OECD countries' drug expenditure patterns indicated that a country's spending on pharmaceuticals depends on income as well as institutional characteristics. For example, faced with strong fiscal pressures, Italy managed to bring down the growth rate of pharmaceutical expenditures in the last few years. Certainly, effective policy instruments are available, including cost-sharing by the consumers, reference-pricing, promoting generics, global budgeting, etc. Developing a comprehensive package of policies would naturally draw on these international experiences, many of which will be discussed in detail in the other SUVAK study carried out by Kanavos and others. In the next section, we will focus our discussions on the question of how Turkey can bring its own experiences to bear on developing new policies to improve efficiency.

### *7.2. Efficiency Concerns and Policy Recommendations*

We did find some evidence indicating that health resources and pharmaceuticals may not have been utilized efficiently in Turkey.

A disproportionately high percentage of hospital expenditure is devoted to outpatient (rather than inpatient) care, indicating the need to strengthen primary care facilities and develop a viable referral system. The drug spending pattern in Turkey does not appear to correspond closely to the disease pattern, and there seems to be excessive use of antibiotics by international comparison. Given the potential problem of drug resistance resulting from inappropriate use of antibiotics, there is a need for policy makers to consider effective organizational and financial mechanisms to address the issue of rational drug use. This can be done using various policy instruments; including strengthening patient education and information, developing better clinical guidelines, and redesigning basic benefit packages and payment methods under social insurance programs to create incentives for both consumers and providers to rationalize drug utilization.

The most remarkable characteristic of the Turkish health spending patterns and health system structure is the fact that different social security funds performed so differently, both in terms of per capita drug expenditure and drug expenditure as share of total health spending. As shown by Figure 6.8, the average drug spending level among the GERF beneficiaries is the highest, followed by active civil servants, Bag-Kur, SSK, and Green Card holders. Of course, without detailed data on the membership characteristics (e.g. their age structure and health status, etc.), we cannot ascertain the extent to which the differences can simply be explained by the differential in the underlying healthcare needs. However, given the significant differences in average drug expenditure, in addition to rate of increase in drug expenditure as share of total health expenditure, we suspect that the differences can be at least partially explained by different demand-side and supply-side constraints, which are related to the different financing and organizational structure of the different social security schemes.

All social security organizations are financed by premium contributions from members and employers as well as government contributions. Given the different political power possessed by GERF members (civil servants and retired government employees) and Green Card holders (the poor who also face other non-financial constraints), it is not

surprising to observe a much lower average drug expenditure among the later than the former.

Covering more than 35 million people (about 50% of the Turkish population), SSK is the largest social security fund. What is interesting about SSK is its ability to keep the average drug expenditure relatively low. Several factors may help explain this. SSK operates under the Ministry of Labor and Social Security and serves principally employees of the private sector and blue-collar workers of the public sector. The payment method for purchasing and providing services SSK used to follow have contributed to its control of overall health and drug spending. On the other hand, there is a concern that SSK may have achieved cost savings at the expense of providing inferior access to and sub-standard quality of services for its members. As Turkey is transforming its health system and thinking of developing a universal health insurance system, it would be critically important to examine the pros and cons of Turkey's existing social insurance schemes, to draw on international best-practice examples and Turkey's own good experiences to develop new policies to improve health system performance on equity, quality and efficiency under the universal health insurance system. To help enhance further "inward learning" processes, it is suggested that future studies (at the individual and institutional level) focus on the following two questions:

(1) What is the quality difference (if any) in health services and pharmaceuticals utilized by members of SSK and their counterparts belonging to other social security schemes? Carefully examining the quality dimension in inter-funds comparison, which we were not able to do due to data and time constraints, can help shed light on the question of whether SSK's effectiveness in controlling health expenditure occurred at the expense of quality, or whether SSK's experiences really represent a cost-effective alternative.

(2) What are the most effective instruments used by SSK and other schemes to control costs while maintaining quality? This study should include more careful, comprehensive examination of the organizational and managerial aspects of the SSK's operations and more extensive interaction with SSK's executives at different levels and SSK's major partners: health care providers, pharmacies, and members.

### *7.3. Equity Concerns and Policy Recommendations*

At the moment the total supply of and access to pharmaceuticals do not appear to be a problem in Turkey. However, one might be concerned about over-concentration of resources in urban cities and lack of access in the vast rural areas. Using the Geographical Information System (GIS) to map out the distribution of dispensers of pharmaceutical products would give us a clearer picture regarding physical access to pharmaceuticals by people living in different areas.

Beside geographical inequalities, problems with inequalities in financial access and financial burden of health expenditures are found to exist through our household data analysis. Turkey still has 16.9% -35.7% of the population who are uninsured. Many of the poor people did nothing when they were sick, because they cannot afford to pay. Depending on the benefit packages, people who are insured may still have different access to healthcare services. 30% of the hospitalized patients have to buy drugs outside the hospital. This percentage is higher among the uninsured and low-income groups than their insured and high-income counterparts. Moreover, the poor people have to pay higher amount for pharmaceuticals than their rich counterparts.

One approach to solve this problem would be to expand the Green Card program. Alternatively, Turkey may want to think of drawing on successful experiences from Thailand, which adopted a universal health insurance system in 2002, as its universal health coverage scheme will be in effect at the beginning of 2006.

It should be noted, however, that adopting a universal health insurance system would not mean that the equity in access problems will be solved once and for all. Even among the insured people, there is evidence indicating significant inequalities in healthcare and drug utilization. Moreover, user fees in the form of paying into the “revolving funds” at the public facilities, coupled with “informal payments”, may pose a serious burden for low-income people in Turkey. A recent study by Tatar et al (2003) has found that out of the total payments made to the public sector, 62% was formal and 38% was “informal”. Drugs comprised of the majority of formal and informal payments. Furthermore, even Green Card holders, who represent the poorest segment of the population, paid for informal payments in supposedly “free” public facilities. Worse still, in the public sector, the poor paid more informal payments per capita than the wealthier segments of the population; the elderly paid

more informal payments per capita than the young, and the unemployed also paid more informal payments per capita in the public sector than their counterparts.

Clearly, equity-oriented policy makers in Turkey need to seriously consider monitoring more carefully what has really happened to the vulnerable population in terms of changes in their financial and cultural access to healthcare and drugs. More importantly, policy makers need to think about developing more effective mechanisms (including promotion of medical professional ethics) to protect the poor and hold those providers accountable, who take advantage of the vulnerable populations.

Perhaps the most systematic approach to reforming the health and pharmaceutical sector in Turkey is developing a Turkish National Drug Policy (TNDP). As described and discussed extensively elsewhere (WHO, 2003b), a National Drug Policy provides a framework to coordinate and align the efforts of many different participants in the health and pharmaceutical sector. It provides direction and specifics to prioritize the medium- to long-term goals set by the government for the pharmaceutical sector and identifies main strategies for attaining them. Naturally, an important part of this process would be establishing a more consistent and reliable data base for monitoring and evaluating changes in health and pharmaceutical spending in Turkey, including monitoring and evaluation of Turkey's progress towards achieving "universal access to essential medicines", which is part of the Millennium Development Goals (MDGs).

# REFERENCES


Bag-Kur (2001). 2001 Statistical Yearbook.

Bag-Kur (2002). 2002 Statistical Yearbook.

Bag-Kur (2003). 2003 Statistical Yearbook.

Bag-Kur (2005). (www.bagkur.gov.tr)

Banta, H. D. (2000). Increase in Global Access to Essential Drugs Sought. JAMA, 283(3): 321-323.

Berman, P.; Toros, A. and Şahin, İ. (2004). Turkey National Household Health Expenditure Survey: 2002-2003. Report to The Ministry of Health, Government of Turkey. April.

Chaudhury, R.R. and Bapna, J. S. (1997). World Health Forum. 18(3-4): 345-7.

DİE (2005). (www.die.gov.tr) (Access date: May 29, 2005)

Emekli Sandığı. (www.emekli.gov.tr)

Hacettepe University Institute of Population Studies (2003). Turkey Demographic and Health Survey TDHS 2003. (http://www.hips.hacettepe.edu.tr/tnsa2003eng/reports.htm)

Hsiao, W.C. and Liu Y. (2001). "Health Care Financing: Assessing its Relationship to Health Equity", in Challenging Inequities in Health: From Ethics to Action, Evans T, et al. (Eds.), New York: Oxford University Press: 260-275.

IMS 2004 Data.

İEİS (2002), *Türkiye'de İlaç: 2002*. İlaç Endüstrisi İşverenler Sendikası (İEİS), Ankara.

İEİS (2003), *Türkiye'de İlaç: 2003*. İlaç Endüstrisi İşverenler Sendikası (İEİS), Ankara.

Kartal, M.; Ozbay, H.; Eristi, H.E. (2004). SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Turkey-National Health Accounts 2000. OECD Health Technical Papers No. 13, Paris, France.

Kanavos, P.; Ustel, İ.; Costa, J. (2005). Study on Pharmaceutical Reimbursement Policy in Turkey, SUVAK, September.

Maliye Bakanlığı Bütçe ve Mali Kontrol Genel Müdürlüğü. Turkey-Health Expenditures.pdf. (www.bumko.gov.tr).

Ministry of Health (2002). Health Statistics. (http:// www.saglik.gov.tr/ sb/extras/istatistikler/ apk_2002/s_077.htm)

Ministry of Health (2003). Health Statistics. Research, Planning and Coordination Council. Ankara.

Ministry of Health (2004). Turkey Health Report. School of Public Health of the Ministry of Ministry of Health of Turkey, Ankara.

Ministry of Health and Başkent University (2004). National Burden of Disease and Cost Effectiveness Project Burden of Disease Final Report. December 2004. (www.hm.saglik.gov.tr )

Ministry of Labor and Social Security (2005). Proposal for Reform in Social Security, April.

OECD (2004). OECD Health Data. 3rd Edition.

OECD Health Technical Papers No. 1 (Ingham, L.; Bennetts, R.; Hynes, T.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Australia-National Health Accounts 2000. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 2 (Fortin, G.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Canada-National Health Accounts 1999. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 3 (Nielsen, I.K.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Denmark-National Health Accounts 2000. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 4 (Zifonun, N.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Germany-National Health Accounts 2001. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 5 (Manno, M and Hajdu, M.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Hungary-National Health Accounts 2001. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 6 (Sakamaki, H.; Ikezaki, S.; Yamazaki, M.; Hayamizu, K.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Japan-National Health Accounts 2000. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 7 (Jeong, H. S.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Korea-National Health Accounts 2001. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 8 (Merino-Juárez, M. F.; Alarcón-Gómez, M. G.; Lozano-Ascencio, R.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Mexico-National Health Accounts 2001. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 9 (Mosseveld, C. V.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies The Netherlands-National Health Accounts 2001. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 10 (Kawiorska, D.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Poland-National Health Accounts 1999. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 11 (Toledano, J. R. And García Calatayud, M. L.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Spain-National Health Accounts 2001. OECD: Paris, France, 2004.

OECD Health Technical Papers No. 12 (Rossel, R. and Gerber, Y. A.) SHA-based Health Accounts in Thirteen OECD Countries: Country Studies Switzerland-National Health Accounts 2001. OECD: Paris, France, 2004.

Orozs, E. and Morgan D. (2004). SHA Based National Accounts in Thirteen OECD Countries: A comparative Analysis, OECD Health Working Papers, August.

Sağlık Bakanlığı (1996). Yataklı Tedavi Kurumları İstatistik Yıllığı. Ankara.

Sağlık Bakanlığı (1997). Türkiye Sağlık Harcamaları ve Finansmanı 1992-1996. T.C. Sağlık Bakanlığı Sağlık Projesi Genel Koordinatörlüğü, Ankara.

Sağlık Bakanlığı (2001). Yataklı Tedavi Kurumları İstatistik Yıllığı. Ankara.

Sağlık Bakanlığı (2001a). Türkiye Sağlık Harcamaları ve Finansmanı 1997. T.C. Sağlık Bakanlığı Sağlık Projesi Genel Koordinatörlüğü, Ankara.

Sağlık Bakanlığı (2001b). Türkiye Sağlık Harcamaları ve Finansmanı 1998. T.C. Sağlık Bakanlığı Sağlık Projesi Genel Koordinatörlüğü, Ankara.

Sağlık Bakanlığı (2002). Yataklı Tedavi Kurumları İstatistik Yıllığı. Ankara.

Sağlık Bakanlığı (2003). Yataklı Tedavi Kurumları İstatistik Yıllığı. Ankara.

Sağlık Bakanlığı (2004). OECD Sağlık Hesapları Sistemine Göre Türkiye Ulusal Sağlık Hesapları 1999-2000. Refik Saydam Hıfzısıhha Merkezi Başkanlığı Hıfzısıhha Mektebi Müdürlüğü. Ankara.

Sağlık Bakanlığı (2005a).( http://www.saglik.gov.tr/yesil/xls/YKBS_Rapor_Il.xls) (Accessed on June 20, 2005).

Sağlık Bakanlığı (2005b). (http://www.hm.saglik.gov.tr) (Accessed on September 15, 2005)

Sağlık Bakanlığı ve Başkent Üniversitesi (2003). Ulusal Hastalık Yükü ve Maliyet Etkililik Projesi: Hanehalkı Araştırması Ara Raporu. 24 December. (www.hm.saglik.gov.tr )

Sağlık Bakanlığı Refik Saydam Hıfzısıhha Merkezi Başkanlığı Hıfzısıhha Mektebi Müdürlüğü (2004). OECD Sağlık Hesapları Sistemine Göre Türkiye Ulusal Sağlık Hesapları 1999-2000. Ankara.

Sosyal Sigortalar Kurumu (2001). 2001 Working Paper. (www.ssk.gov.tr)

Sosyal Sigortalar Kurumu (2002). 2002 Working Paper. (www.ssk.gov.tr)

Sosyal Sigortalar Kurumu (2003). 2003 Working Paper. (www.ssk.gov.tr)

State Planning Organization (2005). 1950-2005 Social Indicators. (www.dpt.gov.tr)

TR Central Bank. (http://www.tcmb.gov.tr).

TR Undersecretariat of Treasury. (http://www.treasury.gov.tr).

Tatar, M.; Özgen H.; Şahin, B.; Belli, P.; Berman, P. (2003). Informal Payments in The Health Sector: A Case Study from Turkey. MEMIO. Harvard School of Public Health and Hacettepe University School of Health Administration.

Thailand Institute of Health Policy (2001). Thailand Health Profile 1999-2000. Thailand Ministry of Health.

Thailand Institute of Health Policy (2003).

Turkey-European Union Pre-Accession Joint Program 2003.

United Nations (2002). Millennium Development Goals: Task Force on HIV/AIDS, Malaria, TB, and Access to Essential Medicines. (http://www.unmillenniumproject.org/).

United Nations Development Program (2003). Human Development Report 2003. Millennium Development Goals: A Compact Among Nations To End Poverty.

World Bank. World Development Indicators. (www.worldbank.org)

World Bank (2003a). Turkey Reforming the Health Sector for Improved Access and Efficiency (in Two Volumes) Volume 1: Main Report

World Bank (2003b). Turkey Reforming the Health Sector for Improved Access and Efficiency (in Two Volumes) Volume 2: Main Report

World Health Organization (2000a). The World Health Report 2000. Geneva: WHO.

World Health Organization (2000b). WHO Medicines Strategy: Framework for Action in Essential Drugs and Medicines Policy 2000-2003. Geneva, WHO.

World Health Organization (2002). A55/12 WHO Medicines Strategy- Expanding Access to Essential Medicines- Report by the Secretariat. World Health Organization.

World Health Organisation (2003a). European Health for All Database**.** (http://www.euro.who.int/hfadb).

World Health Organization (2003b). Operational Package For Monitoring And Assessing Country Pharmaceutical Situations. Working Draft, June 2003.

# APPENDIX: Analysis of Demand for Healthcare in Turkey

In this appendix we present some preliminary analysis of the NHA household survey data carried out on 10,000 households including more than 43,000 household members in 2002. The analysis in this section is based on the data provided by MoH (Sağlık Bakanlığı, 2005b) (http://www.hm.saglik.gov.tr, Access date: September 15, 2005).

## The Annual Utilization Rates

It is necessary to examine health care utilization and spending patterns to answer the question of the adequacy of the current level of health and pharmaceutical spending in Turkey compared to selected countries. For achieving the above objective, it was thought that the most recent household survey conducted for Turkey National Health Accounts Study was more appropriate, and the analysis was based on unweighted data.

Table A.1 summarizes the annual utilization rates for hospitalization, outpatient and preventive health care services by some selected household characteristics. Overall, a normal Turkish man or woman is expected to stay in a hospital 0.0764 times, to meet with a physician in outpatient clinics 4.12 times, and to use preventive health care providers 0.303 times within a year. What the utilization rates for different health care services tells us is that utilization rates are lower compared to other nations living in relatively wealthier countries. It might be a bias to say that lower per capita health expenditure stems from lower utilization rates since there are some countries such as Mexico and Switzerland whose utilization rates are even lower than Turkey's. However, the general trend shows that those countries with higher per capita health expenditure are more likely to have higher utilization rates (OECD, 2004).

Table A.1 shows that there are very important differences in the utilization rates of different population segments, and the table also suggests that some household and social characteristics might play very important roles in the utilization of health care services. For instance, those people who are living in urban areas and the western part of the country and those people who are female, covered by any kind of health insurance and with high income quintile are more likely to have outpatient visit compared to others.

**Table A.1. Annual Utilization Rates for Health Care Services**

| | Annual Hospitalization Rate Per 1000 Population | Annual Outpatient Rate Per 1000 Population | Annual Preventive Rate Per 1000 Population |
|---|---|---|---|
| **Total** | **76.4** | **4122.6** | **303.2** |
| **Settlement** | | | |
| *Rural* | 74.4 | 3478.2 | 288.7 |
| *Urban* | 77.2 | 4520.0 | 319.1 |
| *Ankara* | 87.3 | 4324.8 | 384.4 |
| *İstanbul* | 74.5 | 4240.0 | 352.9 |
| *İzmir* | 80.7 | 5125.8 | 277.1 |
| **Regions** | | | |
| *West* | 81.8 | 4589.9 | 276.6 |
| *South* | 73.8 | 4058.0 | 256.2 |
| *Central* | 75.7 | 4571.9 | 245.2 |
| *North* | 87.7 | 4168.1 | 220.6 |
| *East* | 66.3 | 3220.3 | 430.5 |
| **Gender** | | | |
| *Male* | 66.7 | 3321.2 | 220.4 |
| *Female* | 86.2 | 4923.1 | 385.9 |
| **Insurance** | | | |
| *Have Insurance* | 95.3 | 5132.3 | 299.4 |
| *Doesn't Have Insurance* | 42.2 | 2288.4 | 310.2 |
| **Income Quintile** | | | |
| *First* | 63.7 | 2885.1 | 350.1 |
| *Second* | 71.2 | 2937.0 | 275.1 |
| *Third* | 79.4 | 4173.3 | 297.6 |
| *Fourth* | 74.4 | 4628.2 | 270.3 |
| *Fifth* | 92.9 | 5884.3 | 373.7 |

## The Actions Taken by Households When They Need to Seek Care and The Adequacy of Alternative Health Care Methods

The adequacy of expenditure level might be questioned by the adequacy of health care service utilization. Table A.2 summarizes the actions that people of the NHA Study took when they got sick in the last two weeks. We concluded that using informal methods (did nothing, self treatment, and using traditional healers) is very common among Turkish people. About 32% of the participants in the sample stated that they sought either self treatment or traditional healers or did nothing when they were sick. The reasons why they did nothing are also summarized in Table A.3. More attention should be paid to socio-

demographic characteristics of people using self treatment and traditional healers, and of those who did nothing.

More specifically, people who were living in the rural areas and the eastern part of the country are more likely to do nothing when they are sick. This is interesting because health care services are thought to be more accessible in urban areas compared to rural areas, and in the western part of Turkey since the eastern part of the country is mainly underdeveloped. Being female and having no health insurance and lower income increase the probability of doing nothing when sick. In the "doing nothing" alternative, the perceived health status might be a more important determinant compared to other characteristics.

**Table A.2. Distribution of Actions When Sick for Different Population Groups (%)**

| | Did Nothing | Self Treatment | Received Treatment from Health care Providers | Sought Drugs and Medical Goods | Sought Diagnostic Tests | Sought Treatment from Traditional Healers | Total |
|---|---|---|---|---|---|---|---|
| **Total** | **12.27** | **19.33** | **36.28** | **29.96** | **1.95** | **0.21** | **100.00** |
| **Settlement** | | | | | | | |
| *Rural* | 14.01 | 18.38 | 35.71 | 30.19 | 1.51 | 0.20 | 100.00 |
| *Urban* | 11.43 | 17.71 | 37.17 | 31.41 | 2.07 | 0.21 | 100.00 |
| *Ankara* | 11.69 | 27.97 | 34.87 | 23.95 | 0.96 | 0.57 | 100.00 |
| *İstanbul* | 12.13 | 21.71 | 33.60 | 28.65 | 3.75 | 0.16 | 100.00 |
| *İzmir* | 10.18 | 23.75 | 39.82 | 25.89 | 0.36 | 0.00 | 100.00 |
| **Regions** | | | | | | | |
| *West* | 10.07 | 18.83 | 37.12 | 30.84 | 3.03 | 0.11 | 100.00 |
| *South* | 14.34 | 27.72 | 31.38 | 25.53 | 0.80 | 0.22 | 100.00 |
| *Central* | 12.68 | 20.80 | 37.21 | 28.05 | 0.93 | 0.33 | 100.00 |
| *North* | 7.40 | 15.45 | 41.28 | 33.33 | 2.43 | 0.11 | 100.00 |
| *East* | 16.76 | 14.89 | 34.98 | 31.60 | 1.46 | 0.30 | 100.00 |
| **Gender** | | | | | | | |
| *Male* | 11.63 | 18.10 | 36.86 | 31.31 | 1.91 | 0.18 | 100.00 |
| *Female* | 12.68 | 20.12 | 35.91 | 29.09 | 1.98 | 0.22 | 100.00 |
| **Insurance** | | | | | | | |
| *Have Insurance* | 8.83 | 17.95 | 39.08 | 31.96 | 2.00 | 0.18 | 100.00 |
| *Doesn't Have Insurance* | 22.59 | 23.49 | 27.89 | 23.94 | 1.81 | 0.29 | 100.00 |
| **Income Quintile** | | | | | | | |
| *First* | 21.88 | 19.40 | 31.87 | 25.13 | 1.46 | 0.25 | 100.00 |
| *Second* | 16.76 | 18.05 | 35.96 | 28.22 | 0.88 | 0.14 | 100.00 |
| *Third* | 11.92 | 20.75 | 35.54 | 29.53 | 1.93 | 0.33 | 100.00 |
| *Fourth* | 9.70 | 19.71 | 36.38 | 31.85 | 2.17 | 0.18 | 100.00 |
| *Fifth* | 6.50 | 18.73 | 39.48 | 32.49 | 2.65 | 0.15 | 100.00 |

The reasons why people do not seek the needed health care from the formal health care sector and providers may provide very important insights to health care policy makers and should be taken into account for sound actuarial estimations or government contributions for the poor because the effects of these reasons will be minimized when people are allowed access to health care services and are covered by a national health insurance.

Table A.3 shows the reasons why people did not seek treatment by their characteristics. Almost all segments of the population in the sample of Turkish NHA household survey predominantly stated that they did nothing when they were sick because they did not have enough money to pay for treatment.

## Table A.3. Reasons for Doing Nothing/ Not Seeking Treatment by Population Groups When Sick (%)

| | It was an unimportant health problem | Because of long distance to access to needed care | Nonavailability of good quality health care | Long waiting times | No money | No time | No vehicle | Did not want to leave my children at home alone | Ignorance | Did not know | Others | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | 7.6 | 4.2 | 5.4 | 3.5 | 47.7 | 5.2 | 1.7 | 1.9 | 12.4 | 0.2 | 10.1 | 100.0 |
| **Settlement** | | | | | | | | | | | | |
| *Rural* | 7.2 | 5.9 | 2.9 | 0.9 | 51.8 | 4.4 | 2.8 | 1.1 | 14.3 | - | 8.6 | 100.0 |
| *Urban* | 7.9 | 3.5 | 6.5 | 3.8 | 46.8 | 5.2 | 0.8 | 2.7 | 11.3 | 0.5 | 11.0 | 100.0 |
| *Ankara* | 10.0 | 6.7 | 5.6 | 11.1 | 40.0 | 6.7 | 1.1 | 3.3 | 10.0 | - | 5.6 | 100.0 |
| *İstanbul* | 8.7 | 2.4 | 6.3 | 5.3 | 46.4 | 5.8 | 0.5 | 1.0 | 12.1 | - | 11.6 | 100.0 |
| *İzmir* | 2.4 | 1.2 | 10.8 | 4.8 | 37.3 | 7.2 | 4.8 | 2.4 | 12.0 | - | 16.9 | 100.0 |
| **Regions** | | | | | | | | | | | | |
| *West* | 7.8 | 2.4 | 6.0 | 4.0 | 46.2 | 5.4 | 2.6 | 1.6 | 12.0 | - | 11.8 | 100.0 |
| *South* | 7.2 | 1.3 | 5.1 | 2.6 | 51.1 | 3.8 | 1.3 | 1.3 | 8.5 | 0.4 | 17.4 | 100.0 |
| *Central* | 6.7 | 5.4 | 6.1 | 5.4 | 41.4 | 8.6 | 0.6 | 3.5 | 16.9 | - | 5.4 | 100.0 |
| *North* | 12.6 | 3.4 | 2.3 | 2.3 | 35.6 | 5.7 | 2.3 | 3.4 | 19.5 | 1.1 | 11.5 | 100.0 |
| *East* | 7.1 | 7.3 | 5.0 | 2.1 | 54.7 | 3.1 | 1.4 | 1.2 | 10.2 | 0.2 | 7.6 | 100.0 |
| **Gender** | | | | | | | | | | | | |
| *Male* | 8.3 | 3.9 | 4.6 | 3.5 | 46.0 | 5.4 | 1.8 | 0.5 | 14.4 | 0.2 | 11.4 | 100.0 |
| *Female* | 7.2 | 4.5 | 5.9 | 3.4 | 48.6 | 5.1 | 1.6 | 2.7 | 11.2 | 0.2 | 9.5 | 100.0 |
| **Health Coverage** | | | | | | | | | | | | |
| *Have Insurance* | 8.3 | 5.0 | 8.0 | 5.5 | 35.0 | 5.9 | 1.8 | 2.5 | 16.1 | 0.2 | 11.7 | 100.0 |
| *No Insurance* | 6.6 | 3.2 | 2.1 | 0.9 | 64.2 | 4.3 | 1.5 | 1.2 | 7.7 | 0.1 | 8.3 | 100.0 |
| **Income Quintile** | | | | | | | | | | | | |
| *First* | 5.0 | 5.7 | 3.4 | 1.6 | 62.5 | 2.7 | 2.5 | 0.9 | 8.9 | - | 6.6 | 100.0 |
| *Second* | 4.0 | 4.3 | 2.3 | 1.0 | 64.2 | 5.0 | 1.7 | 2.3 | 10.3 | 0.3 | 4.6 | 100.0 |
| *Third* | 7.1 | 5.1 | 7.4 | 6.1 | 44.8 | 4.0 | 2.0 | 2.7 | 10.8 | 0.7 | 9.4 | 100.0 |
| *Fourth* | 8.8 | 1.1 | 7.1 | 4.2 | 35.7 | 7.1 | 1.1 | 3.2 | 18.0 | - | 13.8 | 100.0 |
| *Fifth* | 16.0 | 4.2 | 8.4 | 5.9 | 17.3 | 9.3 | - | 0.8 | 16.9 | - | 20.7 | 100.0 |

The methods to get rid of the effects of disease by those who did nothing might be also important to understand the health care utilization pattern. Table A.4 shows that more than 80% of the people opting for self treatment used medicines at home. This action is more common among the people who live in rural areas and southern and northern parts of the country. Using medicines available at home is also more common among females and those who are covered by any kind of health insurance. However, it seems that having higher or lower income does not make any difference.

**Table A.4. Self Treatment Actions by Population Groups When Sick (%)**

| | Used home medicine | Used medicines available at home | Used medicine from someone I know | Other | Did not Know | Total |
|---|---|---|---|---|---|---|
| **Total** | **10.3** | **80.6** | **4.6** | **4.4** | **0.1** | **100.0** |
| **Settlement** | | | | | | |
| *Rural* | 6.8 | 85.4 | 3.3 | 4.5 | - | 100.0 |
| *Urban* | 8.1 | 81.4 | 5.4 | 4.9 | 0.2 | 100.0 |
| *Ankara* | 13.2 | 71.9 | 7.2 | 7.8 | - | 100.0 |
| *İstanbul* | 17.3 | 76.5 | 3.3 | 2.9 | - | 100.0 |
| *İzmir* | 17.5 | 76.6 | 5.2 | 0.6 | - | 100.0 |
| **Regions** | | | | | | |
| *West* | 15.5 | 76.3 | 5.0 | 3.2 | - | 100.0 |
| *South* | - | 91.5 | 4.6 | 3.3 | 0.5 | 100.0 |
| *Central* | - | 87.8 | 4.6 | 7.6 | - | 100.0 |
| *North* | - | 91.8 | 3.0 | 5.2 | - | 100.0 |
| *East* | - | 88.4 | 5.6 | 6.0 | - | 100.0 |
| **Gender** | | | | | | |
| *Male* | 12.0 | 78.6 | 4.8 | 4.6 | - | 100.0 |
| *Female* | 9.3 | 81.8 | 4.4 | 4.3 | 0.2 | 100.0 |
| **Health Coverage** | | | | | | |
| *Have Insurance* | 9.9 | 83.0 | 3.3 | 3.8 | 0.1 | 100.0 |
| *No Insurance* | 11.2 | 75.5 | 7.5 | 5.8 | - | 100.0 |
| **Income Quintile** | | | | | | |
| *First* | 6.7 | 81.0 | 6.4 | 5.8 | - | 100.0 |
| *Second* | 8.5 | 78.0 | 6.7 | 6.7 | - | 100.0 |
| *Third* | 12.5 | 78.6 | 4.3 | 4.1 | 0.5 | 100.0 |
| *Fourth* | 9.4 | 83.8 | 3.4 | 3.4 | - | 100.0 |
| *Fifth* | 12.5 | 80.5 | 3.6 | 3.4 | - | 100.0 |

**The Determinants of Out-of-Pocket Health and Pharmaceutical Expenditures and Health Care Utilization**

Tables A.5 – A.7 show per capita out-of-pocket health and drug expenditures, as well as the expenditure components by some selected socio-economic variables. Total per capita out-of-pocket health expenditure is about US$178 in terms of purchasing power parity in the year of 2000 according to the results of the analysis of NHA Household Survey Data. Of this amount, about 75% goes to outpatient services. Those people who are living in western parts of the country, are female, with bad health status, and with substantial income are expected to have more per capita out-of-pocket health and drug spending. Most importantly, those people who are covered by any kind of health insurance scheme are expected to have more per capita out-of-pocket health spending compared to those who are not covered. For instance, a person not covered by a health insurance is expected to spend about US$ 163, this amount is lower than the amount (US$ 220.39) that a person retired from SSK, that supposed to be eligible to be covered for all kind of health care expenditures. The beneficiaries of SSK were eligible for health care services coverage as long as they previously used SSK health care facilities or allowed referral rules. This result simply suggests that those people, who are covered by any kind of health insurance, including private, try to compensate the health care quality or access barriers by paying out-of-pocket. It is also interesting to see that the amount paid by people covered by health insurance is higher than the amount paid by those not covered. This finding might be explained by the fact that those people not covered are also the poor and cannot afford to pay more as much as the rich.

Per capita drug expenditure paid from out-of pocket in the year of 2000 was found to be about US$ 73 in PPP terms. Of that amount about 55% went to the prescribed drugs while 12.5% and 3.3% were for self treatment and non-prescription drugs (OTC), respectively. As expected, those people who are living in the western part of the country and with bad health status had more per capita drug spending. As shown in Table A.6, people who were in the first income quintile, which are the poorest segment of the population, had the highest level of spending on drugs. This fact might stem from the fact that the poor try to combat their disease by using more drugs, which is the easier alternative to going to the hospital or physician offices. Furthermore, in Table A.7, the poor as well as the people who are disadvantaged in terms of living in relatively underdeveloped areas and health care coverage try to compensate by spending more on drugs. For instance, the share of drug spending in total health care expenditure is 47.8% for those living in eastern region of the country, 52.7% for those with bad health status, 45.6% for those not covered by health insurance, and 58.3% for those in the first income quintile.

## Table A.5. Per Capita Out-of-Pocket Total Health Care Spending for Different Health Care Services After Reimbursement (US$, PPP)

| | Hospitalization Expenditures | % | Outpatient Expenditures | % | Preventive Care Expenditures | % | Private Insurance premiums and other HH level expenditure | % | Total Health Expenditures | % |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **21.50** | **12.06** | **132.00** | **74.06** | **19.13** | **10.73** | **5.59** | **3.14** | **178.22** | **100.00** |
| **Settlement** | | | | | | | | | | |
| *Rural* | 23.05 | 13.99 | 125.85 | 76.37 | 10.79 | 6.55 | 5.10 | 3.09 | 164.79 | 100.00 |
| *Urban* | 14.80 | 9.07 | 118.98 | 72.95 | 23.54 | 14.43 | 5.77 | 3.54 | 163.09 | 100.00 |
| *Ankara* | 37.91 | 24.40 | 103.60 | 66.67 | 8.18 | 5.27 | 5.69 | 3.66 | 155.37 | 100.00 |
| *İstanbul* | 34.40 | 14.04 | 175.95 | 71.84 | 28.95 | 11.82 | 5.64 | 2.30 | 244.94 | 100.00 |
| *İzmir* | 20.77 | 7.58 | 215.18 | 78.54 | 30.31 | 11.06 | 7.72 | 2.82 | 273.99 | 100.00 |
| **Region** | | | | | | | | | | |
| *West* | 27.30 | 12.20 | 165.72 | 74.05 | 22.54 | 10.07 | 8.23 | 3.68 | 223.79 | 100.00 |
| *South* | 12.01 | 7.30 | 134.36 | 81.69 | 13.09 | 7.96 | 5.01 | 3.05 | 164.48 | 100.00 |
| *Central* | 18.79 | 11.59 | 128.24 | 79.06 | 9.57 | 5.90 | 5.60 | 3.45 | 162.20 | 100.00 |
| *North* | 18.11 | 15.82 | 84.32 | 73.69 | 5.22 | 4.56 | 6.79 | 5.93 | 114.44 | 100.00 |
| *East* | 21.14 | 13.33 | 106.77 | 67.31 | 28.90 | 18.22 | 1.82 | 1.15 | 158.63 | 100.00 |
| **Gender** | | | | | | | | | | |
| *Male* | 23.60 | 16.05 | 103.16 | 70.17 | 11.15 | 7.59 | 9.10 | 6.19 | 147.02 | 100.00 |
| *Female* | 19.40 | 9.27 | 160.80 | 76.80 | 27.10 | 12.94 | 2.09 | 1.00 | 209.39 | 100.00 |
| **Perceived Health Status** | | | | | | | | | | |
| *Very Bad* | 104.03 | 15.60 | 546.75 | 81.98 | 0.57 | 0.09 | 15.58 | 2.34 | 666.93 | 100.00 |
| *Bad* | 99.99 | 17.31 | 449.73 | 77.87 | 24.12 | 4.18 | 3.74 | 0.65 | 577.57 | 100.00 |
| *Same* | 50.08 | 13.29 | 277.59 | 73.68 | 38.40 | 10.19 | 10.69 | 2.84 | 376.76 | 100.00 |
| *Good* | 12.17 | 9.02 | 95.03 | 70.44 | 21.07 | 15.62 | 6.64 | 4.92 | 134.91 | 100.00 |
| *Very Good* | 22.46 | 21.89 | 68.64 | 66.88 | 6.00 | 5.85 | 5.53 | 5.39 | 102.63 | 100.00 |
| *Don't Know* | 103.34 | 96.84 | 3.37 | 3.16 | - | 0.00 | - | 0.00 | 106.71 | 100.00 |

## Table A.5. Per Capita Out-of-Pocket Total Health Care Spending for Different Health Care Services After Reimbursement (US$, PPP) (Continued)

| | Hospitalization Expenditures | % | Outpatient Expenditures | % | Preventive Care Expenditures | % | Private Insurance Premiums and other HH Level Expenditure | % | Total Health Expenditures | % |
|---|---|---|---|---|---|---|---|---|---|---|
| **Type of Insurance** | | | | | | | | | | |
| *No Health Insurance* | 19.44 | 11.98 | 130.69 | 80.53 | 10.39 | 6.40 | 1.76 | 1.09 | 162.29 | 100.00 |
| *SSK Active* | 20.25 | 10.08 | 156.70 | 78.02 | 16.02 | 7.98 | 7.88 | 3.93 | 200.85 | 100.00 |
| *SSK Retired* | 27.10 | 12.30 | 162.76 | 73.85 | 22.15 | 10.05 | 8.38 | 3.80 | 220.39 | 100.00 |
| *Bağ-Kur Active* | 32.93 | 15.90 | 155.52 | 75.09 | 13.85 | 6.69 | 4.82 | 2.33 | 207.13 | 100.00 |
| *Bağ-Kur Retired* | 38.38 | 17.95 | 122.40 | 57.24 | 45.11 | 21.10 | 7.94 | 3.72 | 213.83 | 100.00 |
| *GERF* | 25.24 | 14.62 | 115.17 | 66.72 | 18.32 | 10.61 | 13.89 | 8.05 | 172.62 | 100.00 |
| *Civil Servant (Active)* | 8.78 | 5.07 | 74.79 | 43.15 | 82.37 | 47.52 | 7.39 | 4.27 | 173.33 | 100.00 |
| *Green Card* | 19.02 | 16.06 | 94.84 | 80.08 | 3.14 | 2.65 | 1.43 | 1.21 | 118.42 | 100.00 |
| *Private Insurance* | 0.77 | 0.27 | 74.33 | 26.50 | 33.33 | 11.88 | 172.08 | 61.35 | 280.51 | 100.00 |
| *Others* | 12.82 | 12.95 | 75.91 | 76.66 | 0.00 | 0.00 | 10.29 | 10.39 | 99.03 | 100.00 |
| **Health insurance status** | | | | | | | | | | |
| *Have Insurance* | 22.63 | 12.10 | 132.72 | 70.97 | 23.94 | 12.80 | 7.70 | 4.12 | 186.99 | 100.00 |
| *No Insurance* | 19.44 | 11.98 | 130.69 | 80.53 | 10.39 | 6.40 | 1.76 | 1.09 | 162.29 | 100.00 |
| **Income Quintiles** | | | | | | | | | | |
| *First* | 18.57 | 12.19 | 127.38 | 83.60 | 4.19 | 2.75 | 2.23 | 1.46 | 152.37 | 100.00 |
| *Second* | 20.96 | 15.46 | 104.36 | 76.97 | 8.10 | 5.97 | 2.16 | 1.59 | 135.58 | 100.00 |
| *Third* | 14.84 | 10.47 | 117.26 | 82.72 | 7.20 | 5.08 | 2.44 | 1.72 | 141.75 | 100.00 |
| *Fourth* | 22.49 | 11.33 | 146.39 | 73.74 | 25.55 | 12.87 | 4.10 | 2.06 | 198.52 | 100.00 |
| *Fifth* | 34.22 | 11.27 | 180.74 | 59.54 | 66.05 | 21.76 | 22.58 | 7.44 | 303.58 | 100.00 |

## Table A.6. Per Capita Out-of-Pocket Total Drug Spending After Reimbursement (US$, PPP)

| | Drug Expenditures for Hospitalization (A) | % | Self Treatment Expenditures (B) | % | Expenditures for prescription drugs (C) | % | Drug Expenditures for non-prescription drugs (OTC) (D) | % | Total Drug Expenditures for Preventive Services ( E ) | % | Total Drug Expenditures (A+B+C+D+E) | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **3.41** | **4.66** | **9.19** | **12.56** | **54.36** | **74.32** | **2.41** | **3.30** | **3.78** | **5.16** | **73.15** | **100.00** |
| **Settlement** | | | | | | | | | | | | |
| *Rural* | 3.98 | 5.77 | 7.31 | 10.58 | 54.50 | 78.88 | 1.46 | 2.11 | 1.84 | 2.66 | 69.09 | 100.00 |
| *Urban* | 2.66 | 3.79 | 9.23 | 13.15 | 49.63 | 70.70 | 2.21 | 3.14 | 6.47 | 9.22 | 70.19 | 100.00 |
| *Ankara* | 5.64 | 11.12 | 12.48 | 24.60 | 29.29 | 57.75 | 2.00 | 3.94 | 1.31 | 2.59 | 50.73 | 100.00 |
| *İstanbul* | 4.43 | 5.80 | 11.68 | 15.28 | 51.23 | 67.03 | 6.55 | 8.57 | 2.54 | 3.33 | 76.43 | 100.00 |
| *İzmir* | 0.74 | 0.50 | 14.14 | 9.55 | 131.84 | 89.00 | 1.42 | 0.96 | 0.00 | 0.00 | 148.14 | 100.00 |
| **Region** | | | | | | | | | | | | |
| *West* | 3.42 | 3.96 | 8.97 | 10.39 | 68.19 | 79.03 | 3.75 | 4.34 | 1.96 | 2.28 | 86.28 | 100.00 |
| *South* | 1.78 | 2.09 | 14.16 | 16.70 | 63.74 | 75.18 | 1.37 | 1.61 | 3.74 | 4.41 | 84.78 | 100.00 |
| *Central* | 2.25 | 4.30 | 7.41 | 14.16 | 37.99 | 72.57 | 2.37 | 4.53 | 2.33 | 4.45 | 52.35 | 100.00 |
| *North* | 2.65 | 6.43 | 6.55 | 15.88 | 29.75 | 72.13 | 1.59 | 3.84 | 0.71 | 1.72 | 41.25 | 100.00 |
| *East* | 5.18 | 6.83 | 9.36 | 12.33 | 51.49 | 67.88 | 1.46 | 1.92 | 8.37 | 11.04 | 75.86 | 100.00 |
| **Gender** | | | | | | | | | | | | |
| *Male* | 3.01 | 6.30 | 5.77 | 12.07 | 35.81 | 74.87 | 2.04 | 4.27 | 1.20 | 2.50 | 47.84 | 100.00 |
| *Female* | 3.80 | 3.86 | 12.60 | 12.80 | 72.89 | 74.05 | 2.78 | 2.83 | 6.35 | 6.45 | 98.43 | 100.00 |
| **Perceived Health Status** | | | | | | | | | | | | |
| *Very Bad* | 34.23 | 9.74 | 141.14 | 40.14 | 169.42 | 48.19 | 6.80 | 1.94 | | 0.00 | 351.59 | 100.00 |
| *Bad* | 9.76 | 4.16 | 38.77 | 16.54 | 179.04 | 76.38 | 4.59 | 1.96 | 2.26 | 0.96 | 234.41 | 100.00 |
| *Same* | 8.37 | 5.77 | 30.00 | 20.67 | 93.87 | 64.70 | 6.86 | 4.73 | 5.99 | 4.13 | 145.09 | 100.00 |
| *Good* | 1.49 | 2.70 | 5.06 | 9.19 | 42.34 | 76.83 | 1.57 | 2.85 | 4.65 | 8.43 | 55.10 | 100.00 |
| *Very Good* | 0.63 | 3.37 | 1.16 | 6.20 | 14.66 | 78.48 | 0.75 | 4.03 | 1.48 | 7.92 | 18.68 | 100.00 |
| *Don't Know* | 86.11 | 100.00 | - | 0.00 | - | 0.00 | - | 0.00 | - | 0.00 | 86.11 | 100.00 |

## Table A.6. Per Capita Out-of- Pocket Total Drug Spending After Reimbursement (US$, PPP), (Continued)

| | Drug Expenditures for Hospitalization (A) | % | Self Treatment Expenditures (B) | % | Expenditures for Prescription Drugs (C) | % | Drug Expenditures for non-Prescription Drugs (OTC) (D) | % | Total Drug Expenditures for Preventive Services ( E ) | % | Total Drug Expenditures (A+B+C+D+E) | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Type of Insurance** | | | | | | | | | | | | |
| *No Health Insurance* | 2.73 | 3.69 | 10.71 | 14.48 | 54.42 | 73.57 | 3.67 | 4.96 | 2.44 | 3.30 | 73.97 | 100.00 |
| *SSK Active* | 3.30 | 4.27 | 6.53 | 8.45 | 63.52 | 82.21 | 1.23 | 1.60 | 2.69 | 3.48 | 77.27 | 100.00 |
| *SSK Retired* | 1.36 | 1.50 | 12.00 | 13.30 | 70.70 | 78.34 | 3.90 | 4.33 | 2.28 | 2.53 | 90.25 | 100.00 |
| *Bağ-Kur Active* | 7.65 | 10.13 | 6.13 | 8.11 | 58.57 | 77.54 | 1.57 | 2.07 | 1.62 | 2.15 | 75.53 | 100.00 |
| *Bağ-Kur Retired* | 5.96 | 9.72 | 17.04 | 27.76 | 37.26 | 60.70 | 1.10 | 1.79 | 0.03 | 0.04 | 61.39 | 100.00 |
| *GERF* | 0.82 | 2.25 | 2.44 | 6.75 | 30.19 | 83.33 | 1.57 | 4.34 | 1.21 | 3.34 | 36.23 | 100.00 |
| *Civil Servant (Active)* | 0.84 | 1.67 | 3.21 | 6.33 | 20.98 | 41.39 | 0.86 | 1.69 | 24.80 | 48.92 | 50.70 | 100.00 |
| *Green Card* | 7.20 | 9.04 | 13.13 | 16.50 | 56.76 | 71.33 | 1.35 | 1.70 | 1.13 | 1.43 | 79.58 | 100.00 |
| *Private Insurance* | 0.00 | 0.00 | 7.17 | 7.48 | 75.33 | 78.61 | 0.00 | 0.00 | 13.33 | 13.91 | 95.83 | 100.00 |
| *Others* | 2.69 | 4.54 | 7.50 | 12.63 | 45.87 | 77.22 | 3.33 | 5.61 | | 0.00 | 59.39 | 100.00 |
| **Health insurance status** | | | | | | | | | | | | |
| *Have Insurance* | 3.78 | 5.20 | 8.35 | 11.49 | 54.33 | 74.74 | 1.72 | 2.37 | 4.51 | 6.20 | 72.69 | 100.00 |
| *No Insurance* | 2.73 | 3.69 | 10.71 | 14.48 | 54.42 | 73.57 | 3.67 | 4.96 | 2.44 | 3.30 | 73.97 | 100.00 |
| **Income Quintiles** | | | | | | | | | | | | |
| *First* | 3.55 | 3.99 | 10.31 | 11.60 | 71.19 | 80.16 | 3.09 | 3.48 | 0.68 | 0.76 | 88.81 | 100.00 |
| *Second* | 4.70 | 7.44 | 10.35 | 16.38 | 45.88 | 72.63 | 1.63 | 2.58 | 0.61 | 0.97 | 63.17 | 100.00 |
| *Third* | 2.37 | 4.48 | 9.03 | 17.08 | 38.40 | 72.60 | 1.51 | 2.86 | 1.58 | 2.99 | 52.89 | 100.00 |
| *Fourth* | 3.22 | 3.99 | 8.46 | 10.49 | 61.69 | 76.46 | 2.00 | 2.48 | 5.32 | 6.59 | 80.68 | 100.00 |
| *Fifth* | 2.81 | 3.52 | 6.89 | 8.64 | 51.46 | 64.54 | 4.38 | 5.49 | 14.20 | 17.81 | 79.74 | 100.00 |

## Table A.7. Per Capita Out-of-Pocket Total Health and Drug Expenditures, (US$, PPP)

| | Total Health Expenditures | Total Drug Expenditures | Drug/Total Spending (%) |
|---|---|---|---|
| **Total** | **178.22** | **73.15** | **41.04** |
| **Settlement** | | | |
| *Rural* | 164.79 | 69.09 | 41.93 |
| *Urban* | 163.09 | 70.19 | 43.04 |
| *Ankara* | 155.37 | 50.73 | 32.65 |
| *İstanbul* | 244.94 | 76.43 | 31.21 |
| *İzmir* | 273.99 | 148.14 | 54.07 |
| **Region** | | | |
| *West* | 223.79 | 86.28 | 38.55 |
| *South* | 164.48 | 84.78 | 51.54 |
| *Central* | 162.20 | 52.35 | 32.27 |
| *North* | 114.44 | 41.25 | 36.05 |
| *East* | 158.63 | 75.86 | 47.82 |
| **Gender** | | | |
| *Male* | 147.02 | 47.84 | 32.54 |
| *female* | 209.39 | 98.43 | 47.01 |
| **Perceived Health Status** | | | |
| *Very Bad* | 666.93 | 351.59 | 52.72 |
| *Bad* | 577.57 | 234.41 | 40.58 |
| *Same* | 376.76 | 145.09 | 38.51 |
| *Good* | 134.91 | 55.10 | 40.84 |
| *Very Good* | 102.63 | 18.68 | 18.20 |
| *Don't Know* | 106.71 | 86.11 | 80.70 |
| **Type of Insurance** | | | |
| *No Health Insurance* | 162.29 | 73.97 | 45.58 |
| *SSK Active* | 200.85 | 77.27 | 38.47 |
| *SSK Retired* | 220.39 | 90.25 | 40.95 |
| *Bağ-Kur Active* | 207.13 | 75.53 | 36.47 |
| *Bağ-Kur Retired* | 213.83 | 61.39 | 28.71 |
| *GERF* | 172.62 | 36.23 | 20.99 |
| *Civil Servant (Active)* | 173.33 | 50.70 | 29.25 |
| *Green Card* | 118.42 | 79.58 | 67.20 |
| *Private Insurance* | 280.51 | 95.83 | 34.16 |
| *Others* | 99.03 | 59.39 | 59.98 |
| **Health Insurance Status** | | | |
| *Have Insurance* | 186.99 | 72.69 | 38.88 |
| *No Insurance* | 162.29 | 73.97 | 45.58 |
| **Income Quintiles** | | | |
| *First* | 152.37 | 88.81 | 58.29 |
| *Second* | 135.58 | 63.17 | 46.59 |
| *Third* | 141.75 | 52.89 | 37.32 |
| *Fourth* | 198.52 | 80.68 | 40.64 |
| *Fifth* | 303.58 | 79.74 | 26.27 |

The results of four models on determinants of health expenditures were summarized in Table A.8. The first model which is on total hospital expenditures shows that being male is a significant determinant increasing the level of hospital expenditures. This finding simply suggests that male patients are more likely to have higher hospital expenditures compared to female patients. The second statistically significant determinant of hospital expenditures is health insurance status. Those patients who are covered by any kind of health insurance scheme are more likely to spend less hospital expenditure compared to those patients who are not covered by any health insurance. This finding is an expected and significant due to the fact that patients not covered by any kind of health insurance scheme have to pay their expenditures out-of-pocket while expenditures of patients covered by health insurance are supposed to be paid by health insurance programs.

The results of other models also show that health insurance status plays a very significant role in determining the level of out-of-pocket health expenditures. The findings show that having health insurance decreases the level of out of pocket expenditures for total outpatient care, as well as total health expenditure. All these findings on health insurance status are expected.

The region variable was found to be a statistically significant determinant of the level of out of pocket outpatient, preventive and total health expenditure. According to the results, living in the western part of the country increases the level of outpatient and total health expenditures taken from out-of-pocket, while living in the eastern part of the country increases the level of out-of-pocket spending for preventive services. This finding might be explained by the fact that access to outpatient services in relatively more developed parts of the country is easier than in other regions, and people who are residing in the eastern part are more likely to use and spend more for preventive care services.

In addition, income was found to be a significant determinant just for the health expenditures for preventive care services, which is expected because preventive care has more income and price elasticity compared to other needed health care services.

## Table A.8. The Stepwise Multivariate Regression Results on Out-of-Pocket Health Expenditures

| Dependent Variables | Total Hospital Expenditure | | | Total Outpatient Expenditure | | | Total Preventive Expenditure | | | Total Health Expenditure | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standardized Coefficients Beta | t | Sig. | Standardized Coefficients Beta | t | Sig. | Standardized Coefficients Beta | t | Sig. | Standardized Coefficients Beta | t | Sig. |
| **Constant** | | 6.859 | 0.000 | | 5.889 | 0.000 | | -1.321 | 0.188 | | 8.168 | 0.000 |
| **Gender (Male)** | 0.123 | 4.340 | 0.000 | | | | | | | | | |
| **Having health insurance (Yes)** | -0.118 | -4.166 | 0.000 | -0.035 | -2.566 | 0.010 | | | | -0.028 | -2.283 | 0.022 |
| **Residential Area (Urban)** | | | | | | | | | | | | |
| **Region** | | | | | | | | | | | | |
| *West* | | | | 0.035 | 2.556 | 0.011 | | | | 0.029 | 2.322 | 0.020 |
| *South* | | | | | | | | | | | | |
| *Central* | | | | | | | | | | | | |
| *North* | | | | | | | | | | | | |
| *East* | | | | | | | 0.123 | 2.045 | 0.042 | | | |
| **Marital Status** | | | | | | | | | | | | |
| *Never Married* | | | | | | | | | | | | |
| *Currently Married* | | | | | | | | | | | | |
| *Divorced* | | | | | | | | | | | | |
| *Widow* | | | | | | | | | | | | |
| *Separated* | | | | | | | | | | | | |
| **Age groups** | | | | | | | | | | | | |
| **Income quintile** | | | | | | | 0.151 | 2.514 | 0.012 | | | |
| **Health status** | | | | | | | | | | | | |
| **Education level** | | | | | | | | | | | | |
| **R Square** | | | 0.028 | | | 0.002 | | | 0.030 | | | 0.002 |
| **Adjusted R Square** | | | 0.027 | | | 0.002 | | | 0.023 | | | 0.001 |
| **F** | | | 17.524 | | | 6.366 | | | 4.382 | | | 5.124 |
| **F Significancy** | | | 0.000 | | | 0.002 | | | 0.013 | | | 0.006 |

The results of the regression models on the out-of-pocket drug spending during the utilization of four different health care services were summarized in Table A.9. According to the results of four models, having health insurance was found to be a statistically significant determinant in determining the level of out-of-pocket drug spending. By looking at these findings, we may conclude that population segments not covered by any kind of health insurance scheme are more likely to spend more to drugs.

The results also suggest that those people residing in the eastern part of the country during hospitalization and whose income level is high during preventive care utilization are more likely to spend more out-of-pocket for drugs.

Furthermore, having good health status is expected to lower out-of-pocket health spending, as well as total health care spending, as a result of the lower level of utilization. The results on health status variable suggest that having good health status lowers out of pocket drug spending during out patient care services and total drug spending. Living in urban areas was also found to be a statistically significant variable, decreasing the level of out-of-pocket drug expenditures.

## Table A.9. Results of Stepwise Multivariate Regression Results on Out-of-Pocket Drug Expenditures During the Utilization of Different Health Care Services

| Dependent Variables | Log of Total Drug Expenditure During Hospitalization | | | Log of Total Outpatient Drug Expenditure | | | Log of Total Preventive Drug Expenditure | | | Log of Total Drug Expenditure | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standardized Coefficients Beta | t | Sig. | Standardized Coefficients Beta | t | Sig. | Standardized Coefficients Beta | t | Sig. | Standardized Coefficients Beta | t | Sig. |
| **Constant** | | 107.995 | 0.000 | | 62.355 | 0.000 | | 12.187 | 0.000 | | 69.669 | 0.000 |
| **Gender (Male)** | | | | | | | | | | | | |
| **Having health insurance (Yes)** | -0.171 | -2.636 | 0.009 | -0.101 | -4.298 | 0.000 | -0.320 | -2.601 | 0.012 | -0.111 | -5.040 | 0.000 |
| **Residential Area (Urban)** | | | | -0.061 | -2.532 | 0.011 | | | | -0.045 | -2.013 | 0.044 |
| **Region** | | | | | | | | | | | | |
| *West* | | | | | | | | | | | | |
| *South* | | | | | | | | | | | | |
| *Central* | | | | -0.056 | -2.362 | 0.018 | | | | | | |
| *North* | | | | -0.051 | -2.158 | 0.031 | | | | | | |
| *East* | 0.129 | 1.988 | 0.048 | | | | | | | | | |
| **Marital Status** | | | | | | | | | | | | |
| *Never Married* | | | | | | | | | | | | |
| *Currently Married* | | | | | | | | | | | | |
| *Divorced* | | | | | | | | | | | | |
| *Widow* | | | | | | | 0.241 | 2.023 | 0.048 | | | |
| *Separated* | | | | | | | | | | | | |
| **Age groups** | | | | | | | | | | | | |
| **Income quintile** | | | | | | | 0.438 | 3.589 | 0.001 | | | |
| **Health status** | | | | -0.057 | -2.392 | 0.017 | | | | -0.045 | -2.014 | 0.044 |
| **Education level** | | | | | | | | | | | | |
| **Interaction (Education/ Age)** | | | | -0.072 | -2.955 | 0.003 | | | | -0.071 | -3.096 | 0.002 |
| **R Square** | | | 0.049 | | | 0.036 | | | 0.237 | | | 0.028 |
| **Adjusted R Square** | | | 0.041 | | | 0.033 | | | 0.196 | | | 0.026 |
| **F** | | | 5.922 | | | 11.231 | | | 5.787 | | | 14.940 |
| **F Significancy** | | | 0.003 | | | 0.000 | | | 0.002 | | | 0.000 |

As stated earlier, the structural differences in producing health care services among the countries might be an important factor in explaining health expenditure differences. There is a common belief and observation in Turkey that a significant number of patients are required to get their needed drugs during hospitalization out of the hospital setting because hospital pharmacies are not well-supplied. Then drug spending made to outside private pharmacies is considered a part of drug expenditures rather than hospital expenditures. However, this type of spending should be a part of hospital expenditure according to definitions of SHA's methodology. As shown in Table A.10, about 30% of hospitalized patients were required to get their drugs out of the hospital; this amount is relatively very high and may increase the share of drug spending in total health spending in a country.

**Table A.10. The Share of People Buying Needed Drugs During Hospital Stays**

| | % |
|---|---|
| **Total** | **29.71** |
| **Settlement** | |
| *Rural* | 36.70 |
| *Urban* | 29.36 |
| *Ankara* | 30.12 |
| *İstanbul* | 16.84 |
| *İzmir* | 11.84 |
| **Regions** | |
| *West* | 24.09 |
| *South* | 46.81 |
| *Central* | 35.88 |
| *North* | 63.02 |
| *East* | 67.86 |
| **Gender** | |
| *Male* | 28.73 |
| *Female* | 30.47 |
| **Health Coverage** | |
| *Have Insurance* | 27.47 |
| *Doesn't Have Insurance* | 38.92 |
| **Income Quintile** | |
| *First* | 39.47 |
| *Second* | 42.11 |
| *Third* | 28.05 |
| *Fourth* | 20.80 |
| *Fifth* | 22.57 |

The determinants of drug utilization from private pharmacies during hospitalization were shown in Table A.11. According to the results of logistic regression, health and health insurance status, residential area, and region are the variables having statistically significant effects on drug utilization from private pharmacies during hospitalization. The results suggest that those people who are covered by any kind of health insurance scheme, are living in urban and eastern parts of the country, and have relatively good health status are more likely to use less private pharmacies for drugs during hospitalization compared to those people who do not have health insurance, are living in rural and north parts of the country, and have bad health status.

**Table A.11. The Results of Stepwise Logistic Regression on Drug Use During Hospital Stays**

| **Dependent Variables** | **Probability of Drug Use Outside Hospital** | | | |
|---|---|---|---|---|
| | **Beta** | **Standard Error** | **Sig** | **Exp (B)** |
| **Constant** | 0.847 | 0.312 | 0.007 | 2.332 |
| **Gender (Male)** | | | | |
| **Having health insurance (Yes)** | -0.619 | 0.162 | 0.000 | 0.539 |
| **Residential Area (Urban)** | -0.333 | 0.140 | 0.017 | 0.717 |
| **Region** | | | 0.000 | |
| *West* | 0.104 | 0.233 | 0.657 | 1.109 |
| *South* | 0.267 | 0.199 | 0.180 | 1.306 |
| *Central* | -0.118 | 0.236 | 0.618 | 0.889 |
| *North* | 0.813 | 0.173 | 0.000 | 2.255 |
| *East* | Reference | | | |
| **Marital Status** | | | | |
| *Never Married* | | | | |
| *Currently Married* | | | | |
| *Divorced* | | | | |
| *Widow* | | | | |
| *Separated* | | | | |
| **Age groups** | | | | |
| **Income quintile** | | | | |
| **Health status** | -0.400 | 0.077 | 0.000 | 0.670 |
| **Education level** | | | | |
| **Interaction (Education x Age)** | | | | |
| **Model Chi-Square** | | | | 8.697 |
| **Sig.** | | | | 0.000 |
| **-2 Log likelihood** | | | | 1.337.171 |
| **Cox & Snell R Square** | | | | 0.071 |

The methods used in case of disease might also be considered important factors in the level of health care spending on an individual as well as country level. As indicated in previous sections, the utilizations of the informal sector or self treatment methods are ways that Turkish people most commonly apply to. This might be considered as an important factor in explaining health care spending differentials and low level per capita health care spending in Turkey. The country-specific factors, such as access to health care services, maldistribution of health care personnel, and household-specific factors such as income and education level play very important roles in preferring informal sector health care providers to formal sector health professionals. The results of the four models on self treatment methods which analyzed utilization of herbal drugs, using available drugs at home, using drugs of other people, and using other alternatives were shown in Table A.12.

The statistically significant determinants of using herbal drugs are residential area and region variables. The results suggest that living in urban areas and eastern part of the country increase the probability of using herbal drugs compared to those who are living in rural and other regions of the country rather than the eastern region.

The statistically significant variables affecting the probability of using drugs available at home are found to be region and age of the people. Compared to the population living in eastern region of Turkey, the populations in the western region are more likely to use available drugs at home while the population segment living in the northern region are less likely. In addition, the results suggest that the probability of using available drugs at home increases with age.

Having any kind of health insurance and living in urban areas were found to be statistically significant determinants of utilization of drugs from someone known. Having health insurance decreases the probability of utilization of other people while living in urban areas increases that probability. These results might be explained by the fact that having health insurance eases the access to physicians as well as prescribed drugs from pharmacies. However, the higher probability of using other people's drugs for population living in urban parts of the country is a bit unexpected. The common belief that people in rural parts are expected to use other people's drugs more since access to pharmacies and physicians is more difficult. Besides this fact, people in rural parts might not have appropriate or any drugs to give or they might not be willing to give their drugs to someone else.

The results also show that having health insurance decreases the probability of other alternative self treatment methods, while women who are never married, divorced and widow are more likely to use other self treatment methods compared to women who are separated.

## Table A.12. The Results of Stepwise Multivariate Logistic Regression on Self Treatments Methods

| Dependent Variables | Utilization of Herbal Drugs | | | | Utilization of Medicine Available at Home | | | | Utilization of Drugs Available at other Known People | | | | Probability of other Alternatives | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Beta** | **St. Error** | **Sig** | **Exp (B)** | **Beta** | **St. Error** | **Sig** | **Exp (B)** | **Beta** | **St. Error** | **Sig** | **Exp (B)** | **Beta** | **St. Error** | **Sig** | **Exp (B)** |
| **Constant** | -3.508 | 0.208 | 0.000 | 0.030 | -1.547 | 0.129 | 0.000 | 0.213 | -4.203 | 0.287 | 0.000 | 0.015 | -4.626 | 0.428 | 0.000 | 0.010 |
| **Gender (Male)** | | | | | | | | | | | | | | | | |
| **Having health insurance (Yes)** | | | | | | | | | -1.072 | 0.246 | 0.000 | 0.342 | -0.703 | 0.236 | 0.003 | 0.495 |
| **Residential Area (Urban)** | 0.614 | 0.210 | 0.003 | 1.848 | | | | | 0.759 | 0.304 | 0.013 | 2.135 | | | | |
| **Region** | | | 0.000 | | | | 0.000 | | | | | | | | | |
| *West* | -0.807 | 0.274 | 0.003 | 0.446 | 0.530 | 0.092 | 0.000 | 1.698 | | | | | | | | |
| *South* | -0.493 | 0.213 | 0.021 | 0.611 | 0.070 | 0.090 | 0.434 | 1.073 | | | | | | | | |
| *Central* | -1.146 | 0.427 | 0.007 | 0.318 | -0.134 | 0.128 | 0.297 | 0.875 | | | | | | | | |
| *North* | -1.053 | 0.274 | 0.000 | 0.349 | -0.326 | 0.099 | 0.001 | 0.722 | | | | | | | | |
| *East* | Ref. | | | | Ref. | | | | Ref. | | | | Ref | | | |
| **Marital Status** | | | | | | | | | | | | | | | 0.097 | |
| *Never Married* | | | | | | | | | | | | | 0.996 | 0.430 | 0.021 | 2.708 |
| *Currently Married* | | | | | | | | | | | | | -16.128 | 4.771 | 0.997 | 0.000 |
| *Divorced* | | | | | | | | | | | | | 1.236 | 0.522 | 0.018 | 3.442 |
| *Widow* | | | | | | | | | | | | | 2.256 | 1.113 | 0.043 | 9.546 |
| *Separated* | Ref. | | | | Ref. | | | | Ref. | | | | Ref. | | | |
| **Age groups** | | | | | 0.083 | 0.030 | 0.006 | 1.087 | | | | | | | | |
| **Income quintile** | | | | | | | | | | | | | | | | |
| **Health status** | | | | | | | | | | | | | | | | |
| **Education level** | | | | | | | | | | | | | | | | |
| **Interaction (Education/ Age)** | | | | | | | | | | | | | | | | |
| **Model Chi-Square** | | | | 44.368 | | | | 71.633 | | | | 22.290 | | | | 18.603 |
| **Sig.** | | | | 0.000 | | | | 0.000 | | | | 0.000 | | | | 0.002 |
| **-2 Log likelihood** | | | | 1.414.466 | | | | 5.712.183 | | | | 715.115 | | | | 795.727 |
| **Cox & Snell R Square** | | | | 0.008 | | | | 0.013 | | | | 0.004 | | | | 0.003 |

The logistics regression models in Table A.13 were also run to determine the most important variables affecting the prescribed and over the counter drug utilization and drug utilization for people applying to formal health care providers. According to the results, having health insurance and increasing income were found to be statistically significant variables, which increased the probability of drug utilization, while living in urban areas was the statistically significant variable decreasing the probability of drug utilization. In summary those people who have health insurance, are with higher income, and live in rural parts of the country are more likely to use more drugs compared to those who do not have health insurance, live in urban parts of the country, and are with lower income. The region variable was also found to be a statistically significant determinant of drug utilization. The results suggest that those people who are living in the western and southern parts of the country are more likely to use less drugs while those people who are living in the central part are more likely to use more drugs compared to those people who are living in the eastern part of the country.

The logistic regression model for the probability of prescribed drug utilization estimated that health insurance status, type of residential area, region, marital status, age, income and health status played statistically significant roles. The results suggest that those people covered by any kind of health insurance are more likely to use more prescribed medicines compared to those people who are not covered by any kind of health insurance. Compared to those who live in rural parts of the country and have relatively good health status, those who live in urban parts of the country and do not have relatively good health status are more likely to use less prescribed medicines. These findings might be explained by the fact that having good health status results with less medical care and drug utilization, and people living in rural areas are prescribed medicines easily by the physicians whenever it is available because access to pharmacies and physicians are more difficult in rural areas. It is also interesting see that compared to those people living in the eastern region of the country, living in the western and southern regions of the country decreases the probability of prescribed medicine utilization while living in the central and northern parts of the country increases this probability. The results also showed that increasing age and income level increase the probability of prescribed drug utilization.

Statistically significant determinants of over the counter drug utilization were found to be gender, health insurance, and marital status variables. The results suggest that the probability of using over the counter drugs is higher among males and those who do not have health insurance while the probability is lower among those who are never married.

## Table A.13. The Results of Stepwise Logistic Regression on Drug, Prescribed Drug, and OTC Drug Utilization

| Dependent Variables | Probability Of Drug Utilization for People Using Formal Health Care Personnel | | | | Probability of Prescribed Drug Utilization | | | | Probability of OTC Drug Utilization | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Beta | St.Error | Sig | Exp (B) | Beta | St.Error | Sig | Exp (B) | Beta | St.Error | Sig | Exp (B) |
| **Constant** | -1.054 | 0.104 | 0.000 | 0.348 | -1.456 | 0.217 | 0.000 | 0.233 | -3.412 | 0.216 | 0.000 | 0.033 |
| **Gender (Male)** | | | | | | | | | 0.384 | 0.182 | 0.035 | 1.468 |
| **Having health insurance (Yes)** | 0.647 | 0.073 | 0.000 | 1.910 | 0.618 | 0.077 | 0.000 | 1.855 | -0.630 | 0.190 | 0.001 | 0.532 |
| **Residential Area (Urban)** | -0.185 | 0.064 | 0.004 | 0.831 | -0.186 | 0.066 | 0.005 | 0.830 | | | | |
| **Region** | | | 0.000 | | | | 0.000 | | | | | |
| *West* | -0.340 | 0.090 | 0.000 | 0.712 | -0.370 | 0.094 | 0.000 | 0.691 | | | | |
| *South* | -0.247 | 0.080 | 0.002 | 0.781 | -0.200 | 0.082 | 0.015 | 0.819 | | | | |
| *Central* | 0.331 | 0.107 | 0.002 | 1.392 | 0.295 | 0.109 | 0.007 | 1.343 | | | | |
| *North* | -0.038 | 0.085 | 0.651 | 0.962 | 0.330 | 0.086 | 0.000 | 1.391 | | | | |
| *East* | Ref. | | | | Ref. | | | | Ref. | | | |
| **Marital Status** | | | | | | | 0.015 | | | | 0.028 | |
| *Never Married* | | | | | 0.143 | 0.086 | 0.094 | 1.154 | -0.753 | 0.319 | 0.018 | 0.471 |
| *Currently Married* | | | | | -0.125 | 0.277 | 0.653 | 0.883 | 0.003 | 0.219 | 0.989 | 1.003 |
| *Divorced* | | | | | -0.176 | 0.139 | 0.206 | 0.838 | -0.774 | 0.432 | 0.073 | 0.461 |
| *Widow* | | | | | -0.105 | 0.550 | 0.848 | 0.900 | -0.515 | 0.270 | 0.056 | 0.598 |
| *Separated* | Ref. | | | | Ref. | | | | Ref. | | | |
| **Age groups** | | | | | 0.074 | 0.034 | 0.029 | 1.077 | | | | |
| **Income quintile** | 0.087 | 0.023 | 0.000 | 1.091 | 0.155 | 0.024 | 0.000 | 1.168 | | | | |
| **Health status** | | | | | -0.109 | 0.038 | 0.005 | 0.897 | | | | |
| **Education level** | | | | | | | | | | | | |
| **Interaction (Education x Age)** | | | | | | | | | 0.063 | 0.030 | 0.035 | 1.065 |
| **Model Chi-Square** | | | | 174.968 | | | | 234.666 | | | | 33.366 |
| **Sig.** | | | | 0.000 | | | | 0.000 | | | | 0.000 |
| **-2 Log likelihood** | | | | 6.938.931 | | | | 6.726.493 | | | | 1.211.836 |
| **Cox & Snell R Square** | | | | 0.032 | | | | 0.059 | | | | 0.006 |

The logistic regression models for the probability of alternative treatment methods used because of the diseases faced within the last 15 days were summarized in Table A.14. Of the six alternative treatment methods, three of which are 'did nothing', 'self treatment', and 'utilization of traditional healers' can be considered as being inappropriate ways to treat the disease, and the remaining three include the formal health care providers and sector. In this regard, utilization of inappropriate methods reveals the indicators of unmet health need of the population. So it can be safe to conclude that the amount of health care spending will definitely increase if the people using these alternatives are convinced or enabled to use formal health care providers. Also, these indicators can be used to explain health care spending differentials among countries.

According to the results, having health insurance, increasing age, income and health status, living in the eastern part of the country compared to northern part, and never being married compared to being separated are the statistically significant factors decreasing the probability of utilization of "did nothing" as an alternative treatment method or health care seeking behavior. The probability of utilization of the second inappropriate treatment method 'self treatment' is decreased among the people who are covered by any kind of health insurance and living in the northern part of the country compared to eastern part. However, living in the urban and western part of the country compared to rural and eastern parts, and increasing age increases the probability of utilization of "self treatment" which is captured mainly by drug utilization. The logistic regression model for the utilization of traditional healers could not be fitted since there were not enough observations in the data set.

The results showed that having health insurance, living in rural parts of the country, increasing income and health status, and living in the central part compared to living in the eastern part are the variables increasing the probability of using formal health care providers, while living in urban and western part compared to rural and eastern part, and increasing age decreases the probability of using health care providers. When the utilization of drugs and medical goods were considered, it was found that the probability of using this alternative was increased by having health insurance, increasing age and income variables; it was decreased by living in urban parts of the country as well as in western and southern regions compared to the eastern region variables. The probability of the third appropriate alternative treatment method provided by the formal health sector, which was utilization of diagnostic and screening centers, was affected negatively by increasing age and living in western, southern, and northern regions compared to eastern region of the country, while increasing income increased the probability of using this alternative.

## Table A.14. Results of Stepwise Logistic Regression on the Utilization of Alternative Treatment Methods for People When Sick in the Past 15 Days

| Dependent Variables | Probability of Did Nothing | | | | Probability of Self Treatment | | | | Probability of Utilization of Formal Health Care Providers | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Beta | St.Error | Sig | Exp (B) | Beta | St.Error | Sig | Exp (B) | Beta | St.Error | Sig | Exp (B) |
| **Constant** | 0.786 | 0.266 | 0.003 | 2.194 | -1.279 | 0.142 | 0.000 | 0.278 | -0.874 | 0.202 | 0.000 | 0.417 |
| **Gender (Male)** | | | | | | | | | | | | |
| **Having health insurance (Yes)** | -0.794 | 0.081 | 0.000 | 0.452 | -0.270 | 0.073 | 0.000 | 0.764 | 0.753 | 0.070 | 0.000 | 2.123 |
| **Residential Area (Urban)** | | | | | 0.199 | 0.070 | 0.005 | 1.220 | -0.178 | 0.064 | 0.005 | 0.837 |
| **Region Dummies** | | | 0.032 | | | | 0.000 | | | | 0.000 | |
| *West* | 0.177 | 0.115 | 0.122 | 1.194 | 0.503 | 0.090 | 0.000 | 1.653 | -0.371 | 0.087 | 0.000 | 0.690 |
| *South* | 0.182 | 0.107 | 0.088 | 1.200 | 0.063 | 0.086 | 0.464 | 1.065 | -0.087 | 0.078 | 0.260 | 0.916 |
| *Central* | -0.221 | 0.160 | 0.168 | 0.802 | -0.108 | 0.123 | 0.380 | 0.897 | 0.337 | 0.109 | 0.002 | 1.400 |
| *North* | 0.211 | 0.106 | 0.047 | 1.235 | -0.347 | 0.093 | 0.000 | 0.707 | 0.045 | 0.083 | 0.588 | 1.046 |
| *East* | Ref. | | | | Ref. | | | | Ref. | | | |
| **Marital Status Dummies** | | | 0.007 | | | | | | | | | |
| *Never Married* | -0.222 | 0.103 | 0.032 | 0.801 | | | | | | | | |
| *Currently Married* | 0.553 | 0.297 | 0.062 | 1.739 | | | | | | | | |
| *Divorced* | 0.016 | 0.180 | 0.931 | 1.016 | | | | | | | | |
| *Widow* | 0.285 | 0.602 | 0.636 | 1.329 | | | | | | | | |
| *Separated* | Ref. | | | | | | | | | | | |
| **Age groups** | -0.140 | 0.046 | 0.002 | 0.869 | 0.090 | 0.030 | 0.002 | 1.094 | -0.070 | 0.028 | 0.014 | 0.932 |
| **Income quintile** | -0.207 | 0.030 | 0.000 | 0.813 | | | | | 0.096 | 0.022 | 0.000 | 1.100 |
| **Health status** | -0.124 | 0.048 | 0.010 | 0.883 | | | | | 0.103 | 0.037 | 0.005 | 1.108 |
| **Education level** | | | | | | | | | | | | |
| **Interaction (Education x Age)** | -0.053 | 0.016 | 0.001 | 0.948 | | | | | | | | |
| **Model Chi-Square** | | | | 350.348 | | | | 92.142 | | | | 240.207 |
| **Sig.** | | | | 0.000 | | | | 0.000 | | | | 0.000 |
| **-2 Log likelihood** | | | | 4.599.899 | | | | 6.174.824 | | | | 7.167.463 |
| **Cox & Snell R Square** | | | | 0.063 | | | | 0.017 | | | | 0.044 |

## Table A.14. The Results of Stepwise Logistic Regression on the Utilization of Alternative Treatment Methods for People When Sick in the Past 15 Days (Continued)

| Dependent Variables | Probability of Utilization of Drug and Medical Goods Providers | | | | Probability of Utilization of Diagnostic and Screening Providers | | | | Probability of Utilization of Traditional Healers | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Beta | St.Error | Sig | Exp (B) | Beta | St.Error | Sig | Exp (B) | Beta | St.Error | Sig | Exp (B) |
| **Constant** | -1.557 | 0.151 | 0.000 | 0.211 | -3.164 | 0.413 | 0.000 | 0.042 | (this model did not work because of lack of appropriate number of observation) | | | |
| **Gender (Male)** | | | | | | | | | | | | |
| **Having health insurance (Yes)** | 0.542 | 0.073 | 0.000 | 1.719 | | | | | | | | |
| **Residential Area (Urban)** | -0.160 | 0.065 | 0.013 | 0.852 | | | | | | | | |
| **Region Dummies** | | | 0.000 | | | | 0.000 | | | | | |
| *West* | -0.414 | 0.091 | 0.000 | 0.661 | -1.168 | 0.338 | 0.001 | 0.311 | | | | |
| *South* | -0.233 | 0.079 | 0.003 | 0.792 | -1.106 | 0.283 | 0.000 | 0.331 | | | | |
| *Central* | 0.185 | 0.108 | 0.085 | 1.204 | 0.056 | 0.261 | 0.829 | 1.058 | | | | |
| *North* | 0.232 | 0.084 | 0.006 | 1.261 | -0.626 | 0.270 | 0.021 | 0.535 | | | | |
| *East* | Ref. | | | | Ref. | | | | | | | |
| **Marital Status Dummies** | | | 0.006 | | | | | | | | | |
| *Never Married* | 0.104 | 0.082 | 0.208 | 1.109 | | | | | | | | |
| *Currently Married* | -0.271 | 0.270 | 0.316 | 0.763 | | | | | | | | |
| *Divorced* | -0.245 | 0.135 | 0.070 | 0.783 | | | | | | | | |
| *Widow* | -0.383 | 0.547 | 0.484 | 0.682 | | | | | | | | |
| *Separated* | Ref. | | | | | | | | | | | |
| **Age groups** | 0.095 | 0.032 | 0.003 | 1.099 | -0.198 | 0.088 | 0.024 | 0.820 | | | | |
| **Income quintile** | 0.155 | 0.023 | 0.000 | 1.168 | 0.201 | 0.067 | 0.003 | 1.223 | | | | |
| **Health status** | | | | | | | | | | | | |
| **Education level** | | | | | | | | | | | | |
| **Interaction (Education x Age)** | | | | | | | | | | | | |
| **Model Chi-Square** | | | | 220.502 | | | | 50.838 | | | | |
| **Sig.** | | | | 0.000 | | | | 0.000 | | | | |
| **-2 Log likelihood** | | | | 7.003.977 | | | | 1.302.746 | | | | |
| **Cox & Snell R Square** | | | | 0.040 | | | | 0.09 | | | | |