Financial Burden of Health Care Expenditures in Turkey: 2002-2003

Seher Nur Sulku and Didem Minbay Bernard

Agency for Healthcare Research and Quality Working Paper No. 09004

November 2009

Suggested citation: Sulku S, Bernard D. Financial Burden of Health Care Expenditures in Turkey: 2002-2003. Agency for Healthcare Research and Quality Working Paper No. 09004, November 2009, http://gold.ahrq.gov.

AHRQ Working Papers provide preliminary analysis of substantive, technical, and methodological issues. The papers have not undergone external peer review. They are distributed to share valuable experience and research. Comments are welcome and should be directed to the authors. The views expressed are those of the authors and no official endorsement by the Agency for Healthcare Research and Quality or the Department of Health and Human Services is intended or should be inferred.

Financial Burden of Health Care Expenditures in Turkey: 2002-2003

ABSTRACT

We examine whether and to what extent the health insurance system in Turkey provided adequate protection against high out of pocket expenditures in the period prior to "The Health Transformation Programme" (HTP) for the non elderly population. We measure health care burdens as the share of out of pocket health care expenditures within family income. We define high burdens as expenses above 10 and 20 percent of income. We find that 19 percent of the nonelderly population were living in families spending more than 10 percent of family income and that 14 percent of the nonelderly population were living in families spending more than 20 percent of family income on health care. Furthermore, the poor and those living in economically less developed regions had the greatest risk of high out of pocket burdens. More significantly, we find that the risk of high financial burdens varied by the type of insurance among the insured due to differences in benefits among the five separate public schemes that provided health insurance in the pre-reform period.

Seher Nur Sulku, Ph.D.
Economist
Strategy Development Headship
The Ministry of Health of Turkey
Mithatpaşa Cad. No: 3 Sıhhıye, 06434
and Research Assistant Dr., Econometrics Department
Karadeniz Technical University, Trabzon
Email: sehernur.sulku@saglik.gov.tr.

Didem Minbay Bernard, Ph.D.
Senior Economist
Center for Financing, Access, and Cost Trends
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850
Phone: (301)427-1682
Fax: (301)427-1276
Email: didem.bernard@ahrq.hhs.gov

All the views expressed in this paper belong to the authors and do not necessarily represent those of the Ministry of Health Turkey Strategy Development Headship.

Introduction

The World Health Organization (WHO) European Region Committee has approved a new health policy framework in September 1998. Turkey, as a member of WHO, has accepted this new health policy and initiated a series of reforms to align its health care system with the health regulations of the European Union and the OECD countries [1, 2]. The "Health Transformation Program" (HTP) was launched in 2003.

WHO states one of the major aims of health policy as providing financial protection especially for the poor and disadvantaged groups from high health care expenditures. One of the main goals of the HTP is to provide financial protection. The Universal Health Insurance (UHI) system was implemented in October, 2008. Prior to the UHI, health insurance was provided by five different public schemes each with separate provider networks. UHI will provide health services under one scheme.

Financial burdens of health care expenditures during the period prior to HTP reforms has not been examined. Therefore, there are no benchmarks to evaluate the performance of the reforms in terms of providing adequate financial protection. This paper fills an important gap by examining the distribution of health care expenditure burdens for the period prior to the UHI which was implemented in 2008. We examine the risk of high financial burden due to out of pocket health spending for the non elderly population by insurance status. Furthermore, we examine the distribution of out of pocket expenditures by service type, access to care and self-reported health status. Our study provides a benchmark against which policymakers can evaluate the health care reform in terms of providing financial protection.

Background

Turkey's per capita gross domestic product (GDP) was $5,045 in 2005. Total health care expenditures were $27.6 million in 2005 and health expenses accounted for 5.7% percent of the GDP [3]. Turkey's population was 72 million in 2005. The age composition of Turkey is much younger than that of other OECD countries: In Turkey, children 0 to 14 years constitute 28.4% of the population while individuals aged 65 and above constitute only 5.9%. In other OECD countries, on average children 0 to 14 years constitute 17.4% and those aged 65 and above constitute 15% of the population.

Prior to HTP reforms

Health care delivery system. Prior to the HTP reforms provision of health care was complex and fragmented. There were three main public providers: the Ministry of Health (MoH), the Social Insurance Organization (SSK), and universities. The Ministry of Health, the largest provider of health care in Turkey, provided primary health care, secondary, and tertiary care through its own primary health care facilities and hospitals. It was the only provider of preventive services. In 2002, MoH managed 654 hospitals that accounted for 57% of hospitals and approximately 50 percent of total hospital beds.

SSK provided health care services through its 120 hospitals and other health facilities. University hospitals (56 hospitals) were the main provider of tertiary care, though their share in the overall delivery system was small. With 241 hospitals, the private sector accounted for 20% of all hospitals. However, the private sector accounted for only 6.7% of total hospital beds [4]. The private sector had a major role in providing outpatient care through its outpatient clinics. Doctors were allowed to work part time both in a public facility and in their private clinics [5].

Health care financing. Before the HTP reforms, health care financing was also complex and fragmented. There were three different social security schemes: SSK, Government Employees Retirement Fund (GERF), and the Social Insurance Agency of Merchants, Artisans and the Self-employed (Bag-Kur). These security funds provided both pension and health insurance. SSK covered private sector employees and blue-collar public sector employees, Bag-Kur covered self-employed people and GERF covered retired civil servants. In addition, health spending of active civil servants was financed from the general government budget. Moreover, the Green Card scheme, which provided free health services for the poor was directly funded by the government budget.[1] Apart from these five schemes, the Social Solidarity Fund, which was financed through the government budget, covered the health expenses of the low income uninsured who were ineligible for Green Card.

Differences in benefits between the public insurance schemes. The five separate schemes had varying benefit levels. GERF had the most generous benefits package, providing all outpatient and inpatient care, medical and non-medical services. GERF provided access to all facilities: state facilities, universities, and the private sector facilities [2]. Active civil servants were allowed to use public facilities and could also be referred to the private facilities. The SSK covered all inpatient and outpatient expenditures, but did not provide nor pay for preventive care services. The SSK provided services directly through its own facilities. However, members could be referred to the MoH, university, and less frequently, private hospitals. The SSK purchased the significant percentage of drugs from manufacturers and but also manufactured generic drugs; and its members obtained pharmaceuticals through SSK hospitals and dispensaries.

[1] For the distribution of population by insurance scheme please see Section 3 Results 'Burdens by Insurance Status'.

Bag-Kur did not operate its own health facilities. Bag-Kur provided inpatient services, outpatient services and pharmaceuticals through contracted health organizations such as the Ministry of Health and SSK facilities, university hospitals, private hospitals, nongovernmental organizations and pharmacies for [7]. The Green Card scheme covered inpatient care only at the Ministry of Health hospitals and alllowed referrals to university hospitals. However, the Green Card holders were reimbursed by the Solidarity Fund for outpatient expenses if the Fund had enough sources.

Prior to the health care reform, only GERF and Bag-Kur members had access to private facilities for dental care. Furthermore, only GERF members had direct access to university hospitals, while SSK members had to be referred from other public hospitals. Bag-Kur members were required to pay for expenses incurred at university and private hospitals out of pocket, and then were reimbursed from Bag-Kur subject to quantity and price constraints. For services that were not provided by contracted hospitals, patients were referred to private centers. SSK members had access to only contracted centers [8].

Insurance premiums: GERF did not collect any premiums for health insurance. It financed its health care services through the GERF budget. GERF budget was composed of pension contributions: active civil servants' contributions as employees (16% of salary) and the government's contribution as employer (20% of salary). Moreover, the difference between GERF funds and expenses were subsidized from the government's general budget.

Active civil servants' health care expenses were not covered by GERF and their expenses were financed through allocations from the government budget. The SSK was mainly funded

through premiums based on payroll wages.[2] SSK actives had to pay 5% of payroll wage as employee contribution and employers paid 6 % of payroll wage.

Insurance premiums were a significant burden especially for Bag-Kur active members, since there was no other contribution from other sources. Bag-Kur premiums were 20% of Bag-Kur active member's average income. Bag-Kur retirees paid for health insurance through a 10% deduction from their pension.

Co-payment for outpatient services were the same for GERF, SSK and Bag-Kur. For outpatient pharmaceuticals, prosthesis and other healing devices co-payment rates were 20% and 10% for active members and pensioners, respectively.[3] Furthermore, SSK members and their dependents had copays per outpatient visit.[4] However, copay rates were reduced for consultation and surgery at SSK facilities.

Crucial HTP Reforms

Under the HTP reforms, the SSK health facilities were transferred to the MoH thereby separating the financing (SSK) and the provision of health care services (MoH). The SSK members gained access to all MoH hospitals. Performance based supplementary payment system was initiated in the MoH health facilities. Health information systems were improved. Moreover, Green Card scheme started to cover outpatient health expenses. Both Green Card holders and SSK members gained access to private pharmacies. Social Security Institution (SSI) was established; SSK, Bag-Kur and GERF were integrated into one institution.

[2] Additional sources of funding are payments of non-members for using SSK facilities (such as Bag-Kur members).
[3] However, neither of the insurance schemes were charging for the long-term outpatient drug therapies (such as cancer, chronic illnesses).
[4] Copay amount was equal to 'civil servants wage multiplier' times 20. Civil servants wage multiplier, which is a constant less than one, renewed every 6 months by the Council of Ministers.

Most significantly, in 2008 UHI was initiated. UHI aims to extend GERF benefits to all insured people. Thus, the benefit generosity across the various health insurance schemes is unified under UHI. Ultimately, UHI will cover the whole population. However, the reform will take some time; active civil servants and green card holders will be covered by UHI in three years.[5]

Methods and Data

We used data from the 2002-2003 National Household Health and Expenditure Survey. This survey was administered to help develop and implement the 'National Health Accounts' that are in line with the standards of the European Union and OECD Health Accounts System.[6] The household survey contains detailed information on health insurance coverage, health utilization, and out of pocket spending (OOPS) on healthcare as well as other sociodemographic variables. Two rounds of the survey were administered during September-October 2002 and during March-April 2003. The survey had a 92 percent response rate with 9,805 out of 10,675 households completing the survey.[7] Sample size is 39,411 for the nonelderly (younger than 65 years) population used in this study. Our results are weighted to be nationally representative of the Turkish civilian, noninstitutionalized population younger than 65 years.[8] Sandard errors have been corrected for the complex design of the survey.

Health care burdens are defined as the share of out of pocket health care expenditures within family income. Burdens are contructed at the family level and then assigned to individuals

[5] Please see references [2] and [4] for more detailed information on HTP reforms.
[6] Turkish Institute of Health (TUSAK), the MoH Turkey, conducted the National Health Accounts study with a consortium of Harvard Public Health School and Health Management Resaearch Company. The consortium assigned BİGTAŞ research company to conduct the 2002-2003 National Household Health and Expenditure Survey. The Survey's sample has been developed by the Turkish Statistical Institute (TUIK).
[7] The sample chosen with random probability sample technique to represent Turkey's population and its five regions. Turkey is composed of 7 geographical regions: North (Karadeniz Region), South (Akdeniz Region), South East, Central Anatolia, East Anatolia, Aegean and Marmara Regions. This survey combines South East and East Anatolia regions as 'East'; and Aegean and Marmara Regions as 'West'.
[8] The weights were constructed by Turkish Statsistical Institute (TUIK).

within the family. The burden measure includes all out of pocket payments for healthcare products and services. Premium payments and indirect health expenditures are not included.[9] The survey did not collected data on premiums for public insurance schemes.[10] Thus we could not include premiums in the financial burden measure.

Following previous literature, we define high burdens as OOP spending above 10 and 20 percent of family income[11] [see 9, 10]. The survey data have been previously edited by the MoH of Turkey. In order to construct the burden measure (dividing health expenses by income), we replace income for families that report zero income (7.6% of the sample) with a week's minimum wage. [12]

We also present burdens by demographic characteristics and by poverty status. We use TUIK's poverty line (PL) based on food and non-food expenses:[13] poor (income< P), low-income (100% PL <income<200% PL), middle-income (200% Pl<income< 400% Pl), and high-income (income > 400% PL).[14]

[9]The expenses for transportation, meal and hospital attendant are called as indirect expenses. In literature these expenses are not included directly in the OOPS on health.

[10] The survey collected only premium for private insurance. Only 0.4% of non-elderly population were privately insured in Turkey in 2002-2003. Thus we did not include the premium payments in the financial burden measure.

[11] Annual family income is the sum of annual personal income of all family members. Annual personal income is composed of the sum of income received during last 12 months such as salary, wage or crop share, interest income, rental income, remittance, any payment from public aid programs in cash or in kind and inheritance (or lotteries in cash or in kind).

[12] Since our survey has winter-2002 and summer-2003 rounds we calculate the related minimum weekly wages for these years separately. Yearly minimum wage was $1468.3 in 2002 and $1816.4 in 2003. Thus a weekly minimum wage is $30.5 in 2002 and $37.8 in 2003.

[13] TUIK provides poverty lines for families composed of at most 10 persons. In our analyze families crowded than 10 persons constitutes 4% of our sample. Indeed, only 3% of them incurred health care expenses greater than 10% of family income. Thus, we did not consider families crowded than 10 persons, and this does not affect our results represented in this section.

[14] Note that the size of the lower income groups are higher than the official estimates, but it is within the poverty estimates for Turkey. According to TUIK, 18.6 % of the population was below the poverty line. Accroding to the Worl dBank, in 2003 29.6 of the population was below the poverty line. According to Ankara Business Bureau, 74 percent of the population is below the poverty line. Underreporting of income in the household survey may also partially explain the discrepancy.

Results

Burdens by Insurance Status

Exhibit 1 shows that the publicly provided health insurances schemes covered 65.4% of the nonelderly population (43.3 million). SSK covered 33.6% of the population (active SSK and pensioned), Bag-Kur insured 11.0% of the population (active and pensioned), and GERF covered 4.4% of the population. Active civil servants and their dependants account for 7.8% and Green Card holders account for 8.7% of the population. Uninsured population (22 million) accounts for 33.7% of the nonelderly population. Three hundred thousand individuals, 0.4% of non-elderly population, had private insurance. The remaining, 0.5% of non-elderly population, had other health coverage[15].

Overall, 19 percent of the nonelderly population (12.6 million) was living in families spending more than 10 percent of family income on health care. In other words, approximately one out of every five persons incurred burdens that exceeded 10 percent of family income. Moreover, 14 percent of the nonelderly population was living in families spending more than 20 percent of family income on health care.

Second, there are significant differences in the risk of high burdens by insurance type. Green Card holders are the most likely and active civil servants are the least likely to bear high burdens. Among the active members, Bag-Kur actives had the greatest risk, while active civil servants had the lowest risk of high burdens. Active civil servants had the highest income ($6112) and lowest OOP spending ($209). Similarly, among retirees Bag-Kur retirees had the greatest risk while retired civil servants (GERF) had the lowest risk. Retired civil servants (GERF) had higher income ($5179) and lower OOP spending ($211) compared to Bag-Kur

[15] Other health coverages are mainly foreign health insurance and the Turkish Armed Forces' health insurance for military personnel and veterans.

and SSK retirees. However, the difference in out of pocket payments among the retired insurees are not statistically significantly different from each other.

Exhibit 1 also shows that Green Card holders faced the greatest risk of high burdens. Green Holders had the lowest average income level ($1671). More significantly, their average out-of-pocket spending ($286) is higher than oop spending among active civil servants and retired civil servants (GERF) who had the highest income among the nonelderly population. We should indicate that the difference among oop health spending is not statistically significant.

Burdens by demographic characteristics and poverty status

Exhibit 2 shows risk of high burdens by demographic characteristics and poverty status. Differences in risk of high burdens by age, sex region, urbanicity, by cities and by poverty status are significant. Adults aged 55 to 64 years are the least likely (%16.6) and the children aged 0 to 17 years are most likely (%20.7) to incur health care financial burdens exceeding 10% of family income. High burden among children are due to high rates of uninsurance and low income. People living in the East region were most likely (24.2%) and those living in Central Anatolia region were least likely (15.7%) to bear high burdens. East region of Turkey is economically less developed and the number of insured people is low compared to other regions. Furthermore, in the east region there is a shortage of health care providers. [2].

Exhibit 2 also shows that people living in rural areas have greater risk of incuring high burdens compared to those in urban areas. People living in Ankara and Izmir (second and third largest cities) were less likely to incur high burdens compared to those in Istanbul. While the overall uninsurance rate for urban areas was 28.2%, 32.8 % of the population in Istanbul was uninsured. The risk of high burdens are greater among lower income groups.

Distribution of out of pocket spending by service type

Exhibit 3 shows average out of pocket expenditures and the distribution of out of pocket spending by service type. For this analysis we use person-level out of pocket expenditures. Average out of pocket spending was significantly higher among those with burdens at the 20 percent threshold ($435) compared to persons with burdens below the 20 percent threshold ($14). Among those with burdens above 20 percent of income, ambulatory care accounted for 46.8 percent and prescription medications accounted for 30.8 percent of out of pocket expenditures. Mean out of pocket expenditures were not significantly different among active civil servants compared to SSK and Bag-Kur actives. Among active civil servants, hospital stays accounted for 14.4 percent, ambulatory care visits accounted for 27.8 percent, prescription medications accounted for 48.3 percent and other services accounted for 9.5 percent of out of pocket expenditures. Exhibit 3 also shows that among all insurance types, ambulatory care visits and prescription medications account for the largest share of out of pocket expenditures.

Utilization of health services by insurance coverage

Exhibit 4 shows that the percent with any health care use was significantly higher among the active civil servants compared to SSK actives, Bag-Kur actives and Green card holders. Similarly, the percent with any health care use were significantly higher among the retired civil servants (GERF) compared to SSK and Bag-Kur retirees. There was no significant difference among the public health insurance schemes in access to inpatient care except for Green card holders. The percent with any inpatient care was significantly higher for Green card holders compared to active civil servants. Before the HTP only inpatient care was covered for Green card holders. Consequently, percent with any outpatient care, any preventive care and any medication were significantly lower among Green card holders

compared to active civil servants. Exhibit 4 also shows that the percent with any medication use was significantly lower among the SSK actives compared to active civil servants. Prior the HTP system, SSK members had limited access to medication as they could only use SSK pharmacies. Lastly, the percent with any outpatient care, any medication use, any preventive care, any inpatient care and any health care use were significantly lower among the uninsured compared to among the active civil servants.

Self-reported health status by insurance coverage

Exhibit 5 shows the differences in self-reported health status by insurance type. As with the utilization measures, we find that the percent reporting good or very good health is higher among active civil servants compared to Green card holders and the uninsured. Similarly, the percent reporting good or very good health is higher among retired civil servants compared to SSK and Bag-Kur retirees suggesting lower satisfaction with the health care system among those with SSK, Bag-Kur coverage, Green card holders and the uninsured.

Discussion

We examined whether and to what extent the health insurance system in Turkey provided adequate protection against high out of pocket expenditures in the period prior to "The Health Transformation Programme" (HTP) for the non-elderly population. We found that 18.9 (14.4) percent of the nonelderly population were living in families spending more than 10 percent of family income on health care and 14.4 percent of the nonelderly population were living in families spending more than 20 percent of family income on health care. Furthermore, those with lower income, those living in rural area, those living in the eastern region, those living in Istanbul and those who are younger had greater risk of having high out of pocket burdens. More significantly, we found that the risk of high financial burden varied among the five

separate public schemes that provided health insurance in the pre-reform period. We also found wide variation in terms of access to care and self-reported health status between the different insurance schemes. GERF provided the best financial protection against high out-of-pocket health spending, followed by SSK and Bag-Kur. We did not include health insurance premiums in our burden measure due to lack of data. However, due to high premium contribution requirements by Bag-Kur, some of its members did not participate in its health care insurance program (which was not mandatory). Thus, some with Bag-Kur coverage might not have had access its health insurance benefits.

During the same period, out of pocket burdens among the nonelderly population in the United States were significantly lower. Banthin and Bernard found that 8.5 percent of the nonelderly population were living in families spending more than 10 percent of family income on health care and 4.3 percent of the nonelderly population were living in families spending more than 20 percent of family income on health care in 2003 [9].

Our findings are generally in line with previous literature. Tatar et. al. examined informal health care expenditures in Turkey in 2002 employing a survey of 900 households. They find that the informal payments of the poor are significantly greater than that of non-poor. [5]. Their result is consistent with our findings and confirms the inadequency of the health care system prior to HTP reforms. A recent report by the World Bank emphasizes that access to health care services was lower in rural areas prior the HTP period. The Report also underlines the inefficiency of health care personel and services in the east part of Turkey. [7]. Our results that those living in rural area and living in the eastern region have greater risk of having high out of pocket burdens are also consistent with the World bank report.

We are aware of only one other study on health expenditure burdens in Turkey during the HTP period. Using Turkey's Household Budget Survey, Aran and Hentschel found that only 5.3% of households were spending more than 10% of their household expenditure on health care in 2006 [11]. However, we cannot conclude that catastrophic health spending has declined over this period. Health care expenditure data collected as part of a general survey of expenditures are generally underreported compared to expenditure data collected by surveys specifically focus on health care. Thus, we believe that the National Household Health Expenditure Survey is a more reliable source for estimating health care expenditure burdens.

The goal of the health care reform is to reduce the variation in the level of health related burdens and to improve access to care for all. The next 'National Household Health and Expenditure Survey' will be conducted in 2010 by the Turkish Statistical Institute. By replicating our analysis with data from 2010, we plan to investigate the extent to which the healthcare reform will succeed in lowering health care burdens. Thus, this study will provide the benchmark against which researchers can measure the success of the health care reform in terms of providing financial protection.

REFERENCES

[1] Future for Turkish health sector under 21 aims. (21 hedefte Türkiye sağlıkta gelecek). Ankara, Turkey: Ministry of Health and Refik Saydam Hygiene Center School of Public Health; 2007.

[2] OECD. OECD Reviews of health systems Turkey, OECD and the International Bank for Reconstruction and Development, The World Bank; 2009.

[3] Organisation for Economic Co-operation and Development (OECD) health data 2008: statistics and indicators for 30 countries. Paris, France: OECD; 2008.

[4] Health 2006. (Sağlık 2006). Ankara, Turkey: Ministry of Health; 2006.

[5] Tatar MH, Ozgen B, Sahin PB, Berman P. Informal payments in the health sector: a case study from Turkey. Health Affairs 2007; 26: 1029-39.

[6] Savas, SB, Karahan Ö, Saka Ö. Health care systems in transition: Turkey. In: Thomson S, and Mossialos E, editors. Copenhagen, European Observatory on Health Care Systems; 4(4) 2002.

[7] World Bank. Turkey: reforming the health sector for improved access and efficiency. Volume 1 and 2, report no. 24358-TU.2003. Washington DC: International Bank for Reconstruction and Development, The World Bank; 2003.

[8] Social Security Institution. 2007 Activity report. (2007 Yılı Faaliyet Raporu). Social Security Institution; 2008. Available at http://www.sgk.gov.tr/wps/wcm/connect/2c354400 4c166713848084615 6da2d6a/2007FaaliyetRaporu.pdf?MOD=AJPERES.

[9] Banthin JS, Bernard DM. Changes in financial burdens for health care national estimates for the population younger than 65 years, 1996 to 2003. Journal of the American Medical Association 2006; 22: 2712-9.

[10] Banthin JS, Cunningham P, Bernard DM. Financial burden of health care, 2001-2004. Health Affairs 2008, 27: 188- 95.

[11] Aran M, Hentschel J. Household level health expenditures and health ınsurance coverage of the poor in Turkey. Washington DC: World Bank; forthcoming.

Exhibit 1. Components of Family Out-of-pocket Burdens among the Nonelderly Population, Turkey: 2002-2003

Insurance Status	Population (*1000)	Family Income (US $)†	Out-of-pocket spending on care (US $)†	Percent in families with out-of-pocket burden greater than 10 %	Percent in families with out-of-pocket burden greater than 20 %
Total Turkey Sample	66085	3904 (162.4)	351 (21.9)	18.9 (0.6)	14.4 (0.6)
Active Civil Servants	5150	6112 (467.0)	209 (48.2)	8.8 (1.1)	5.7 (0.9)
SSK active	15181	4571** (197.4)	367* (59.9)	15.9** (0.9)	10.6** (0.8)
Bag-Kur active	5562	5229 (894.3)	387* (51.7)	21.5** (1.7)	16.8** (1.6)
GERF	2899	5179 (209.8)	211 (36.1)	10 (1.3)	6.5 (1.1)
SSK retirees	7012	4064** (121.3)	299 (43.1)	15.2** (1.1)	9.8** (0.9)
Bag-Kur retirees	1696	3784** (259.3)	331 (93.0)	17.6** (2.1)	12.2** (1.7)
Green Card	5752	1671** (101.3)	286 (34.5)	25.9** (1.8)	22.2** (1.7)
Uninsured	22239	2867** (184.8)	424** (33.2)	23.4** (1.1)	19.3** (1.0)
Private Insurance	273	13360** (2495.6)	153 (53.3)	5.5 (2.7)	1.5** (1.0)
Others	323	3382** (446.3)	178 (53.1)	13.4 (3.5)	5.7 (2.1)

Source: Authors' calculations using data from the 2002-2003 National Household Health and Expenditure Survey. Survey was conducted in September 2002/ April 2003. average exchange rate for this period (1 US $ = 1.6 YTL) is used to convert family income and OOP spending on health into US dollars.

Notes: †Standard errors of means are in parentheses. Statistical significance denotes difference from the reference category, active civil servants. *p<0.05 **p<0.01

Exhibit 2.a Risk of High Burdens By Demographic Characteristics and by Poverty Status, Among the Nonelderly Population, Turkey: 2002-2003

Characteristics		Population (Thousands)	Persons with total family burden >0.10 of Family Income	>0.20 of Family Income
Total		66,085		
Age	0-17	23,834	20.7	16.3
			(0.8)	(0.8)
	18-34	20,826	18.8	14.2*
			(0.7)	(0.6)
	35-54	17,052	17**	12.4**
			(0.6)	(0.5)
	55-64	4,374	16.6**	12.8**
			(1.0)	(0.8)
Sex	Male	33,182	18.6	14.2
			(0.6)	(0.6)
	Female	32,903	19.2	14.6
			(0.6)	(0.6)
Region	West	28,531	18.5	13.5
			(1.0)	(0.8)
	South	7,763	18.7	15
			(1.4)	(1.4)
	Middle	11,216	15.7*	10.8*
			(1.0)	(0.8)
	North	7,179	17	13.2
			(1.4)	(1.5)
	East -South East	11,396	24.2*	20.6**
			(2.0)	(2.0)
Urbanicity	Rural	20,738	21.5	17.7
			(1.4)	(1.4)
	Urban	27,258	17.2**	12.8**
			(0.8)	(0.6)
Major cities	Ankara	3,423	14.6	9.2
			(1.9)	(1.3)
	İstanbul	11,757	20.5*	14.6**
			(1.5)	(1.4)
	İzmir	2,909	14.2	11.1
			(1.6)	(1.3)

Source: Authors' calculations using data from the 2002-2003 National Household Health and Expenditure Survey. Note: †Standard errors of means are in parentheses. Statistical significance denotes difference from the reference category which is the first row of each panel. *p<0.05 **p<0.01

Exhibit 2.b Risk of High Burdens By by Poverty Status, Among the Nonelderly Population, Turkey: 2002-2003

Family Income (FI)†	Population (Thousands)	Persons with total family burden >0.10 of Family Income	Persons with total family burden >0.20 of Family Income
Poor	34,043	23.3	19.4
(FI<100% poverty line)		(0.8)	(0.7)
Low Income	17,699	14.3**	9**
(100%< FI<200% poverty line)		(0.8)	(0.7)
Middle Income	8,507	13**	7.3**
(200%< FI<400% poverty line)		(1.1)	(0.9)
High Income	3,311	5.6**	2.6**
(FI≥400% poverty line)		(1.2)	(0.8)

Source: Authors' calculations using data from the 2002-2003 National Household Health and Expenditure Survey. Note: †Poverty line by household size from Turkish Statistical Institute, (TUIK)). Poverty line is calculated including food and non-food expenses. †Standard errors of means are in parentheses. Statistical significance denotes difference from the reference category which is poor. *p<0.05 **p<0.01

Exhibit 3. Distribution of Out-of-Pocket Expenditures by Service Type, Among the Nonelderly Population, Turkey: 2002-2003

	US$ average oop expenses	(%) Distribution of average OOP			
		Hospital Stays	Ambulatory Care Visits	Prescription Medication	Other Services
Total	74.3	17.3	37.3	39.3	6.1
	(4.4)	(0.8)	(2.4)	(2.4)	(0.5)
persons with burden≤	13.5	18.5	30	45.9	5.6
%20 of income	(0.7)	(1.0)	(4.2)	(4.2)	(0.7)
persons with burden>	435.3**	15.8	46.8**	30.8**	6.7
%20 of income	(27.9)	(1.1)	(1.5)	(1.4)	(0.7)
insurance coverage					
Active Civil Servants	62.6	14.4	27.8	48.3	9.5
	(20.6)	(2.5)	(3.1)	(3.6)	(1.9)
SSK active	79.8	16	39.9**	35.9**	8.2
	(10.4)	(1.4)	(2.0)	(2.0)	(1.2)
Bag-Kur active	88.9	15.1	40.2*	41	3.6**
	(14.0)	(2.2)	(4.8)	(4.6)	(1.0)
GERF	46.9	20.1	29	46	4.9
	(11.1)	(3.8)	(5.4)	(5.4)	(2.1)
SSK pensioned	89.9	13.6	41.6**	41.3	3.6**
	(15.8)	(1.4)	(2.1)	(2.1)	(1.1)
Bag-Kur pensioned	99.3	17.2	41.4*	37.9	3.4*
	(27.7)	(3.3)	(4.6)	(4.8)	(1.5)
Green Card	48.1	32.4**	29	34.8**	3.8**
	(5.3)	(2.7)	(2.7)	(2.8)	(1.1)
Uninsured	73.9	17.2	37.7	38.8	6.3
	(5.9)	(1.3)	(8.5)	(8.5)	(1.0)

Source: Authors' calculations using data from the 2002-2003 National Household Health and Expenditure Survey.

Notes: Standard errors of means are in parentheses. ** [*] Difference from the reference category is significant at 1 [5] percent level. Those with burden <20% of income are the reference category. The reference category in the lower panel is active civil servants.

Exhibit 4. Percent with Any Use of Health Care Services by Insurance Type Among the Nonelderly Population, Turkey: 2002-2003

Insurance Coverage	Outpatient (%)	Inpatient (%)	Preventive Care (%)	Medication† (%)	Any Health Care Use(%)‡
Total	9.3	3.1	1.1	6.5	12.9
(Turkey Sample)	(0.2)	(0.1)	(0.1)	(0.2)	(0.3)
Active Civil	12.8	3.2	1.7	8.3	16.6
Servants	(0.7)	(0.4)	(0.2)	(0.6)	(0.7)
SSK active	9.6**	3.6	1.3	6.5**	13.9**
	(0.4)	(0.2)	(0.1)	(0.3)	(0.4)
Bag-Kur active	9.9	2.9	0.8**	7.5	13**
	(0.7)	(0.3)	(0.2)	(0.6)	(0.7)
GERF	17.9**	3.4	1.4	13.1**	21.5**
	(1.1)	(0.5)	(0.4)	(0.9)	(1.1)
SSK retirees	14	3.8	0.8**	9.7	17.5
	(0.7)	(0.3)	(0.1)	(0.6)	(0.8)
Bag-Kur retirees	15.6	4.4	0.6**	11.9**	19.4
	(1.3)	(0.7)	(0.3)	(1.3)	(1.6)
Green Card	8.1**	5.6**	0.9**	4.7**	13.7**
	(0.6)	(0.5)	(0.2)	(0.4)	(0.8)
Uninsured	5.5**	1.8**	1.1*	4**	8**
	(0.3)	(0.1)	(0.1)	(0.2)	(0.3)

Source: Authors' calculations using data from the 2002-2003 National Household Health and Expenditure Survey.

Notes: † Included prescription medication during hospitalization, outpatient and/or preventive health care. ‡: Any outpatient, any inpatient, any preventive care and any prescription medication. Standard errors of means are in parentheses. ** [*] Difference from the reference category (active civil servants) is significant at 1 [5] percent level.

Exhibit 5. Self Reported Health Status by Insurance Type Among the Nonelderly Population, Turkey: 2002-2003

Insurance Status	Number of Persons (x1000)	Percent of total population	Very Bad (in %)	Bad (in %)	Average (in %)	Good or very good (in %)
Total†	50820	100	0.3	3.6	13.6	82.5
			(0.0)	(0.2)	(0.4)	(0.5)
Active Civil Servants	3906	7.7	0.1	1.9	10.8	87.2
			(0.1)	(0.3)	(0.9)	(1.1)
SSK active	11150	21.9	0.2	1.9	11.0	86.9
			(0.1)	(0.2)	(0.6)	(0.6)
Bag-Kur active	4218	8.3	0.2	2.9	11.1	85.8
			(0.1)	(0.4)	(0.9)	(1.1)
GERF	2678	5.3	0.4	4.8	15.8	79**
			(0.2)	(0.6)	(1.1)	(1.3)
SSK retirees	6553	12.9	0.4	5.1	18.9	75.6**
			(0.1)	(0.4)	(0.9)	(1.0)
Bag-Kur retirees	1598	3.1	0.6	4.6	20.6	74.2**
			(0.3)	(0.7)	(1.6)	(1.8)
Green Card	4050	8	0.8	5.6	16.6	77.1**
			(0.2)	(0.5)	(1.1)	(1.3)
Uninsured	16161	31.8	0.2	4.1	12.9	82.7**
			(0.0)	(0.3)	(0.6)	(0.8)

Source: Authors' calculations using data from the 2002-2003 National Household Health and Expenditure Survey.

Notes: † Total population for self reported health status (51 million) is less than our nonelderly total population (which is 66 million), due to missing values, ** [*] Difference from the reference category (active civil servants) is significant at 1 [5] percent level.

ACKNOWLEDGEMENTS

We are grateful to the Strategy Development Headship of the Ministry of Health (MoH) for sponsoring Seher Nur Sulku's visit to US Department of Health and Human Services Agency for Healthcare Research and Quality (AHRQ). We thank the MoH Turkey Turkish Institute of Health (TUSAK) for providing access to the 2002-2003 National Household Health and Expenditure Survey data and TUSAK specialists for technical assistance. We are grateful to Memet Atasever, head of MOH Strategy Development Headship, MoH Turkey, Steve Cohen, Director of the Center for Financing, Access and Cost Trends (CFACT), AHRQ, Jessica Banthin, Director of the Division of Modeling and Simulation, CFACT, AHRQ, and Joel Cohen, Director of the Division for Economic and Social Studies, CFACT, AHRQ, for helpful comments. Any remaining errors are our own.