THE MINISTRY OF HEALTH OF TURKEY

HEALTH AT A GLANCE TURKEY 2007

The Ministry of Health of Turkey ▪ Refik saydam Hygiene Center,
School Of Public Health

THE MINISTRY OF HEALTH OF TURKEY
REFİK SAYDAM HYGIENE CENTER PRESIDENCY
SCHOOL OF PUBLIC HEALTH

HEALTH AT A GLANCE

TURKEY 2007

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PREFACE

Health at a glance 2007 provides different aspects for health system performance in Turkey. The study touches on issues like health sector financing, human resources in health sector, and recently pointed out, e-health and medical technology as well as evaluation of health status and services in their current situation. In addition, the process of health system and health reforms starting from the pre-Republic period is examined in this study.

It is noteworthy to collect data on population and provided services, to analyze them, and to publish the prepared reports in any phase of health management both for the evaluation of studies and for planning and prioritization. Thus, health services can be provided effectively. World Health Organization declares that health system should assure high quality provision of health care services necessary for all. Information produced out of data analysis is a must requirement for realization of above necessity, restructuring of policies, and for the evaluation of conducted programs.

The Program for Transformation in Health, which has been implemented since 2003, is a comprehensive program that regards all studies conducted to date and that aims to produce most appropriate solutions with participatory and democratic decision process. It is aimed to organize, finance and provide health care services in an effective, efficient and equal way.

I believe that this study shall guide health sectors reforms, policies and strategies in Turkey and thus shall be helpful for institutions, organizations and individuals in the sector; and I would like to express my gratitude to everyone who put effort in this study and wish success in future studies.

Recep AKDAĞ MD. Prof.
Minister

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School of Public Health

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ABREVIATIONS

RT	: Republic of Turkey
GNAT	: Grand National Assembly of Turkey
MoH	: Ministry of Health
NSC	: National Security Council
MCHFP	: Maternal-Child Health and Family Planning
TRT	: Turkish Radio and Television Corporation
STRCT	: The Scientific and Technological Research Council of Turkey
SSO	: Social Security Organization (SGK)
SIO	: Social Insurance Organization (SIO)
RF	: Government Employees' Retirement Fund
Bag-Kur	: Social Security Organization for Artisans and the Self-Employed
SPH	: The School of Public Health
SPO	: State Planning Organization
SEE	: State Economic Enterprise
IPATME	: Institute of Public Administration for Turkey and Middle East
TDHS	: Turkey Demographic and Health Survey
TURKSTAT	: Turkish Statistical Institution
NBD-CE	: National Burden of Disease Cost-Effectiveness
NUTS	: The Nomenclature of Territorial Units for Statistics
GPS	: General Population Survey
WHO	: World Health Organization
EU	: European Union
HALE	: Healthy Life Expectancy
IMR	: Infant Mortality Rate
DALY	: Disability Adjusted Life Years
YLD	: Years Lost With Disability
PKU	: Phenylketonuria
GDP	: Gross Domestic Product
NMRT	: National Medical Rescue Teams
DL	: Decree Law
UHI	: Universal Health Insurance
USD(S)	: American Dollars

OECD	: Organization for Economic Cooperation and Development
TMA	: Turkish Medical Association
NGOs	: Non-governmental Organizations
TPA	: Turkish Pharmacists' Association
MHCC	: Ministry of Health Communication Center
NBI	: Notice on Budget Implementation
VAT	: Value Added Tax
ATC	: Anatomic-Therapeutic-Chemical
COPD	: Chronic Obstructive Pulmonary Disease
TAF	: Turkish Armed Forces
TGB	: Turkish Grain Board
HCST	: Higher Council of Science and Technology
TAS	: Turkish Academy of Sciences
ACARD	: The Advisory Council for Applied Research and Development
SPRU	: Science Policy Research Unit (United Kingdom)
NNRC	: National Nanotechnology Research Center
CRMS	: Core Resource Management System
PHSM	: Primary Health Statistics Module
PFS	: Patient Follow-up System
UAS	: Uniform Accounting System
GNP	: Gross National Product
TATD	: Turkish Association for Technological Development
YTL	: Turkish New Lira
CPEH	: Current Public Expenditure on Health
TPEH	: Total Public Expenditure on Health
PIE	: Public Investment Expenditure
PPP	: Purchasing Power Parity
HAS	: Health Accounts System
THS	: Total Health Expenditure
WB	: World Bank
PTH	: The Program for Transformation in Health
TIBA	: Turkish Industrialists' and Businessmen's Association
MHDGP	: Ministry of Health General Directorate of Personnel
MoF	: Ministry of Finance

PDC	: Personnel Distribution Table
HEC	: Higher Education Council
MoNE	: Ministry of National Education
MHDGHE	: Ministry of Health General Directorate of Health Education
MSE	: Medical Specialty Examination
MSDGCS	: Ministry of Health General Directorate of Curative Services
TDA	: Turkish Dental Association
SSPC	: Student Selection and Placement Center
MoARA	: Ministry of Agriculture and Rural Affairs
CME	: Continuous Medical Education
MHGCUHP	: Ministry of Health General Coordination Unit of Health Project
MEER	: Marmara Emergency Earthquake Reconstruction Project
JCI	: Joint Commission International
SPH-DHES	: School of Public Health-Distant Health Education System
THIS	: Turkey Health Information System
GCIS	: Green Card Information System
MHTIS	: Ministry of Health Tender Information System
MDERS	: Medical Devices and Equipment Record System
FMIS	: Family Medicine Information System
GIS	: Geographical Information System
HRMS	: Human Resources Management System
SRMS	: Supply Resources Management System
FRMS	: Financial Resources Management System
PPIS	: Pharmaceuticals and Pharmacy Information System

CHAPTER 1 COUNTRY PROFILE

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1.1. GEOGRAPHY

Turkey is a Eurasian country that stretches across the Anatolian peninsula in southwest Asia and the Balkan region of southeastern Europe. Turkey is situated between 36-42° northern latitudes and between 26-45° eastern longitudes. There is a 76-minutes time difference between its easternmost and westernmost tips. Its area is 814.578 square kilometers. Turkey borders the Black Sea in the north; Commonwealth of Independent States (Armenia, Georgia, Nahcevan), Iran in the east; Iraq, Syria and the Mediterranean Sea in the south; the Aegean Sea in the west; and Greece and Bulgaria in the northeast. Marmara Sea is located in the middle of Turkey's northwest. Marmara Sea is connected to the Aegean Sea by the Dardanelles and to the Black sea with the Bosporus Strait. The Aegean Sea is an arm of the Mediterranean Sea. The Mediterranean Sea is connected to the Atlantic Ocean with the Gibraltar in the West. Thus, Turkey's surrounding seas open to world oceans. The Straits carry importance for Turkey and Black sea countries. Moreover, the Bosphorus Strait and the two bridges on it (Bosphorus and Fatih Bridges) connect Asia and Europe on the land. In the south, Turkey is very close to North Africa countries. In short, Turkey is located between Europe-Asia and Africa continents. Land border of Turkey is 2.753 km. in total. Turkey has the longest land border with Syria (877 km.). Turkey also has land borders with Georgia (276 km.), Armenia (316 km.), Nahcevan (Azerbaijan) (18 km.), Iran (454 km.), Iraq (331 km.), Bulgaria (269 km.), and Greece (212 km). The coastline of Turkey's four seas is 8.333 km. (Anatolia coast 6480 km., Thrace coast 786 km., The Islands coast 1067 km). Thus total border line of Turkey reaches to 11.086 km. (1).

Anatolian Peninsula is bounded by highlands on the east, north and south, and is a semi-arid plateau. North Anatolia in the north and Toros Mountains in the south extend along Black sea and Mediterranean coasts and meet in the east. Median altitude of Turkey is 1,130 meters, yet there are regional differences: while the altitude is 500 meters in the West, it reaches up to 2000 meters in the East. Climate in Turkey varies in terms of temperature and precipitation due to land shape and heights. Annual precipitation averages about 500 millimeters; yet it rises to 2,000 millimeters in Rize along the Black Sea coast, and falls below 300 millimeters in some parts of Central Anatolia. Typically, the summers are hot and dry, and the winters are bitterly cold, rainy, windy and with frequent heavy snowfall in the Central

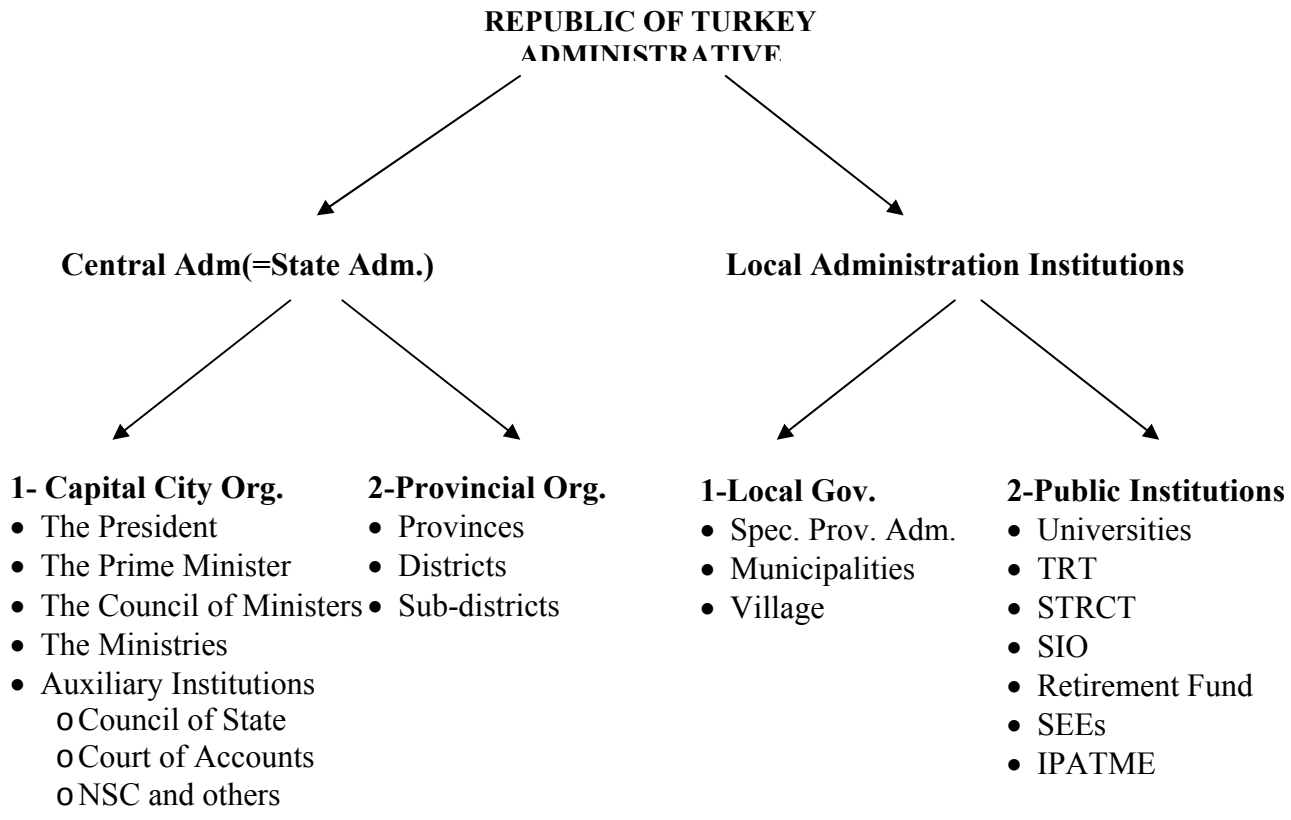
and Eastern Anatolia Regions. In the summers, temperature does not vary greatly between the regions but in the winters significant temperature variations are observed in different regions. Winter temperature average below –10°C in the east, while it average about +10°C in the South (2).

1.2. ADMINISTRATIVE STRUCTURE

1.2.1. Administrative Distribution and Political Organization

Since the foundation of the Republic, Turkish administrative structure has been shaped by 1924, 1961, and 1982 Constitutions. The Constitutions declares that Turkey is a Republic with a parliamentary system and the will of people be vested in the Grand National Assembly of Turkey (GNAT). All constitutions adopted basic individual, social and political rights and the principle of separation of powers (legislative, executive, and judiciary). GNAT is the legislative body of the Republic. 500 members of the Parliament are elected by general vote of the people every five years. The President of the Republic is elected by the parliament and stays in duty for seven years. The Council of the Ministers is the executive body and composed of the Prime Minister and the Ministers. Judiciary power belongs to the Supreme Court (Constitutional Court), Supreme Court of Appeals, Supreme Court of Military Appeals, Council of State, court of administration and justice, and military courts (2).

Administrative organization of the Republic of Turkey is divided into two, namely “Central Administration” (state) and “Local Administration Institutions”. Central administration is divided into two as capital organization and provincial organization. Local administration bodies are divided into two categories; those bodies based on locality (local government organizations) and those based on services provided (public institutions) (3).



After the Constitution of 1921, existing livas (an administrative unit in Ottoman period) were transformed into provinces and so 74 provinces came into being. Looking at the number of provinces after the foundation of the Republic, it is observed that while there were 63 provinces in 1926, the number of provinces was reduced to 57 in 1933, yet increased again to 67 in 1957, 74 in 1991, 76 in 1992, 79 in 1995, and 80 in 1996 (4). The number of provinces increased to 81 in the year 2000 (5). These provinces are divided into administrative units as districts, subdistricts and villages. The head of the province is the governor who is appointed by the Council of Ministers, approved by the President of the Republic and is responsible to the central government. As the highest-level administrative officer in the province, 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 government in the capital Ankara, and maintains law and order within his/her jurisdiction. Local authorities (Municipalities) who come to power with local elections held every five years are administered by the Mayor and members of Municipal Council. According to the legislation, a municipality may be established in places having a population of more than 2.000 people. Among the duties of the municipalities are provision of infrastructure services such as electric, water and gas services, road construction and maintenance, sewerage, and garbage collection within the borders of

municipality. Education and health services are in fact provided by the central government, yet municipalities also provide health care services for those living in low economic and social conditions (2).

Turkey is divided into seven geographical regions: Marmara, Aegean, Black sea, Central Anatolia, Mediterranean, Eastern Anatolia, and Southeastern Anatolia.

Five Regions (West, South, Central, North, and East) are distinguished, reflecting, to some extent, differences in socioeconomic development levels and demographic conditions among sections of the country. This regional breakdown is frequently used for sampling and analysis in social surveys (Turkey Demographic and Health Survey and National Burden of Disease-Cost Effectiveness Study).

WESTERN REGION PROVINCES: Edirne, Tekirdağ, Kırklareli, İstanbul, Kocaeli, Sakarya, Çanakkale, Yalova, Bursa, Bilecik, Balıkesir, Kütahya, Manisa, Uşak, Afyon, Denizli, İzmir, Aydın, Muğla

SOUTHERN REGION PROVINCES: Isparta, Antalya, İçel, Adana, Hatay, Burdur, Osmaniye, Kahramanmaraş,

CENTRAL REGION PROVINCES: Eskişehir, Ankara, Kırıkkale, Kırşehir, Çankırı, Yozgat, Sivas, Kayseri, Nevşehir, Aksaray, Konya, Niğde, Karaman

NORTHERN REGION PROVINCES: Zonguldak, Karabük, Bartın, Sinop, Kastamonu, Samsun, Ordu, Giresun, Trabzon, Bayburt, Gümüşhane, Amasya, Artvin, Bolu, Rize, Tokat, Düzce, Çorum

EASTERN REGION PROVINCES: Kars, Erzurum, Iğdır, Van, Muş, Elazığ, Malatya, Adıyaman, Diyarbakır, Siirt, Şırnak, Mardin, Şanlıurfa, Gaziantep, Ağrı, Bitlis, Erzincan, Batman, Ardahan

In addition to the five geographic regions traditionally used in field research, in the direction of EU adaptation process, in accordance with Law No: 2002/4720, State Planning Organization and Turkish Statistical Institute have developed NUTS (The Nomenclature of Territorial Units for Statistics) in three different levels. NUTS is the statistical region categorization used by EU countries. 81 provinces form NUTS Level 3. 26 regions developed out of province grouping form NUTS Level 2, and 12 regions achieved through grouping 26 regions form NUTS Level 1 (2, 6).

1.3. DEMOGRAPHIC CONTEXT

1.3.1. Population Structure

The first successful population survey took place in 1831. The main purpose of this survey was to determine the number of people eligible for military service and to identify new tax resources, and it covered the whole Muslim and Christian male population residing in Rumelia and Anatolia (7). According to this survey, there was total 4 million male population, 2.5 million men in Anatolia, and 1.5 million men in Rumelia. Since the purpose of the survey was to determine the number of males eligible for military service, false information was provided so as to avoid military service, and non-Muslim ecclesiastics did not provide accurate information about their congregations. Moreover, male population was tried to be calculated accurately but necessary sensitivity was not applied in terms of female population (8).

After the 1831 population survey, a new survey was conducted in 1844, and though another one was attempted in 1854, it could not be completed. A general population survey was decided to be conducted in 1870 but could not be implemented. The population Survey conducted in Danube provinces in 1874 was followed by another survey initiated and carried on for a long period in the Ottoman period. In that survey which followed the Russian War in 1878, the population residing in Istanbul was counted but the population in Tripoli and Arabia was just estimated. At the same period, the Regulation on Population Registry was issued and first Directorate of Population and Census was founded. It was the first time that births, deaths and migrations were kept in record. In 1891, the Central Statistical Assembly was founded in Bab-ı Ali and statistical services were arranged by laws and regulations (7).

By a new law issued in 1918, all statistical activities were gathered under the roof of the respective General Directorate. Though, the implementation was annulled in a year's time and the previous system continued until the Republic was declared. After the Republic was founded, it turned out to be a major problem for Turkey to learn about the exact number of population living in the country together with their social and economic characteristics (7).

First census in the post-Republic period was conducted in 1927 and the second in 1935. After 1935, censuses were conducted in every five years until 1990. Censuses are conducted in every ten years since 1990, the latest of which was the 14th General Population Census which was conducted on 22 October 2000 (5).

In 1927, the population in Turkey was reported 13.648.270. While there were 18 people per km² 'in 1927 in Turkey, it increased to 88 people per km² in 2000 (5).

2000 General Population Survey: Population was 67.803.927 and growth rate was 18.3 % in 1990-2000 period. Average population growth rate in urban areas was higher than the country average (27 ‰ in provinces and 26.4 ‰ in district) while it was rather low in subdistricts and villages (4.2 ‰) (5). Considering demographic structure, half of the population is younger than 24.8 age. The population gets younger from the West to the East with respect to the structure of age by regions (5).

For every 100 people in 15-64 age group, Child Dependency Ratio, which is defined as the number of people in 0-14 age group, is **46.3**. The ratio increases from western to eastern regions. For every 100 people in 15-64 age group, Elderly Dependency Ratio, which is defined as the number of people in 65 + age group, is **8.8** across Turkey**.** Provinces with higher elderly dependency ratio than 15 % are mostly located in the Black Sea and Marmara Region. Noted as 6 % at most, this ratio is lowest in Hakkari, Sirnak, Sanliurfa, Van, Bitlis, Agri, Mus, Diyarbakir and Batman provinces which are located in the Eastern and Southeastern Anatolia Region (5).

According to 2003 TDHS, 7% of Turkish population is 65+ aged. Elderly population ratio which is 6 % in urban areas is 9 % in rural areas. Increase in the elderly population could be explained by two factors: rapid decline in fertility and increase in life expectancy at all age groups. Dependency rate, which is defined as the proportion of unproductive population (under 15 age and above 65 age) to 15-64 age group, was found to be 64.7 in 1990 census, 55.1 in 2000 census and 56.3 in 2003 TDHS study. Decrease in dependency ratio implies that the economic burden of elderly and young population on productive population has been significantly alleviated (2).

Table 1-1: 2000-2006 Turkey, Rural, Urban Mid-Year Change in Population ('000)

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Urban	43647	44619	45595	46575	47559	48547	49541
Rural	23773	23746	23707	23656	23593	23518	23433
Total	67420	68365	69302	70231	71152	72065	72974

Source: TURKSTAT (www.tuik.gov.tr), 2007

As it could be seen in Table 1.1, the population which was 67.420.000 in 2000 was estimated 72.974.000 in 2006.

Urban population which was noted 24.2 % in 1927 did not have a significant change until 1950. Urban population which was 25 % in 1950 had a rapid change then and increased to 64.9 % in 2000. According to the estimates made for the year 2006, urban population is 67.88 % (5).

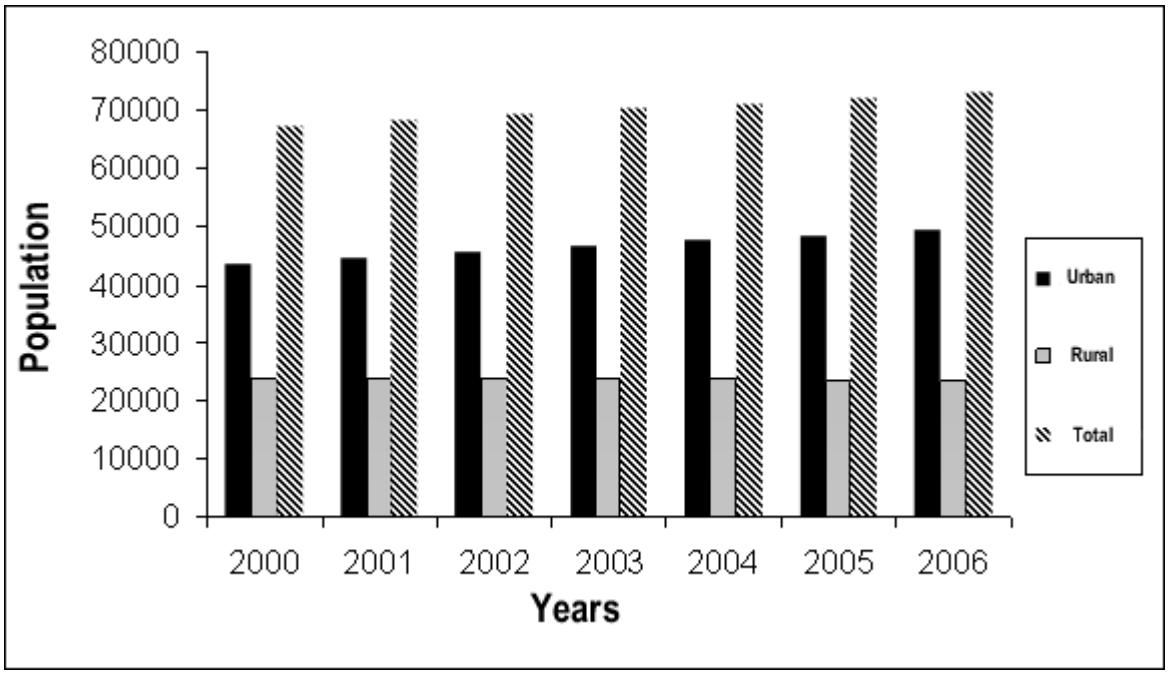


Figure 1-1: Population Change in 2000-2006

Source: TURKSTAT (www.tuik.gov.tr), 2007

Distribution of the population (′000) is presented in Table 1.2 and Figure 1.2 according to NUTS in 2000 and 2006. Considering distribution of the population by NUTS regions, there are outstanding differences between distribution of population among regions in 2000 and 2006**.**

Table 1-2: 2000 and 2006 population distribution by NUTS (’000)

Region (NUTS-Level 1)	**2000**	**2006**
Istanbul	9920	11622
Western Marmara	2886	2985
Aegean	8894	9507
Eastern Marmara	5706	6244
Western Anatolia	6400	7050
Mediterranean	8648	9532
Central Anatolia	4177	4265
Western Black sea	4897	4671
Eastern Black sea	3122	3189
Northeastern Anatolia	2504	2516
Middle eastern Anatolia	3706	4027
Southeastern Anatolia	6559	7365

Source: TURKSTAT (www.tuik.gov.tr), 2007

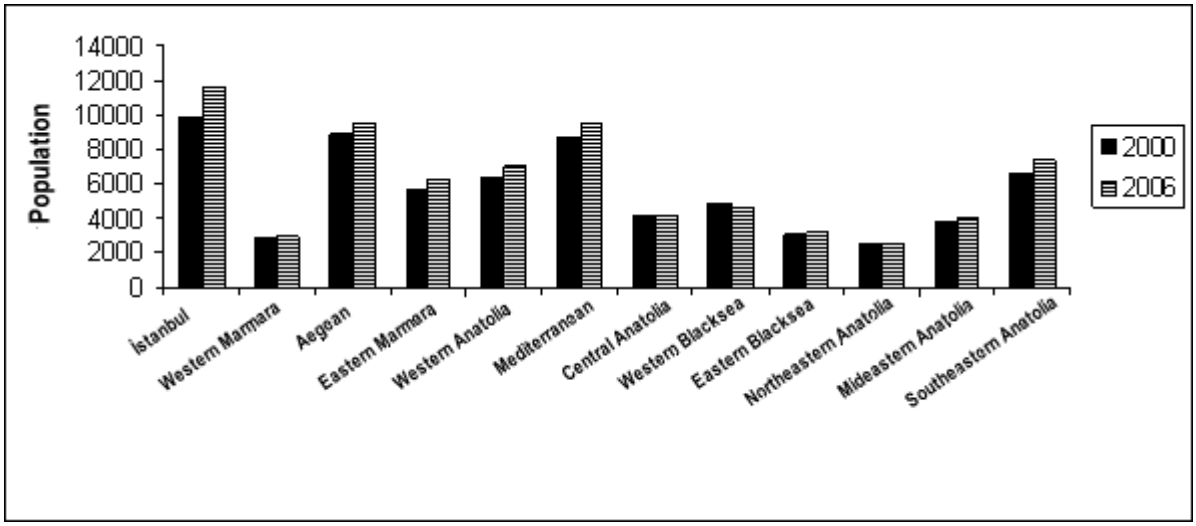


Figure 1-2: 2000 and 2006 populations by NUTS 1 Regions

Source: TURKSTAT (www.tuik.gov.tr), 2007

As indicated in Table 1.2 and Figure 1.2, the highest increase was noted in Istanbul with 17.15 % (12.88 % in the Southeastern Anatolia, 10.22 % in the Mediterranean and 6.9 % in the Aegean Region). Western Black Sea is the only region with a negative change which is – 4.6 %.

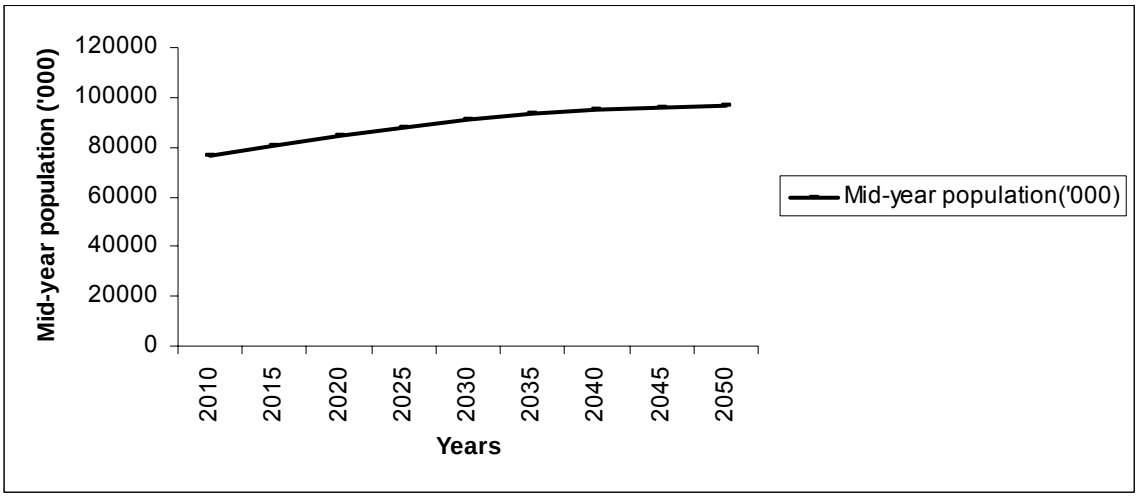


Figure 1-3: Mid-year Population Estimates for 2010-2050 ('000)

Source: Social and Economic Features of the 2000 Census, 2003

Figure 1.3 presents the mid-year population estimates ('000) for 2010-2050 periods. According to this, it is estimated that the country's population would be 76.505 in 2010; 80.524 in 2015, 84.301 in 2020, 87.756 in 2025, 90.806 in 2030, 93.284 in 2035, 95.060 in 2040, 96.102 in 2045 and 96.498 in 2050. Apart from this, TURKSTAT is implementing a new project – Address-Based Population Registry System - which enables to register people

where they do reside. More detailed and exact findings will have been obtained when this study is finished. Thus, existing statistics and projections will have to be reviewed.

Table 1.3 and Figure 1.4 present the average household size in 1980-2003 periods.

Table 1-3: Average Household size for 1980-2003

Census Year	Total Population	Total Household Population	Number of Total Household	By Total Population	By Total Household Population
1980	44 736 957	45 328 519	8 522 499	5,25	5,32
1985	50 664 458	50 813 802	9 730 018	5,21	5,22
1990	56 473 035	55 622 032	11 188 636	5,05	4,97
2000	67 803 927	67 809 048	15 070 093	4,50	4,50
2003	70 231 000				4,18

Source: 1980-2000 TURKSTAT (www.tuik.gov.tr), 2003 NBD-CE Household Survey

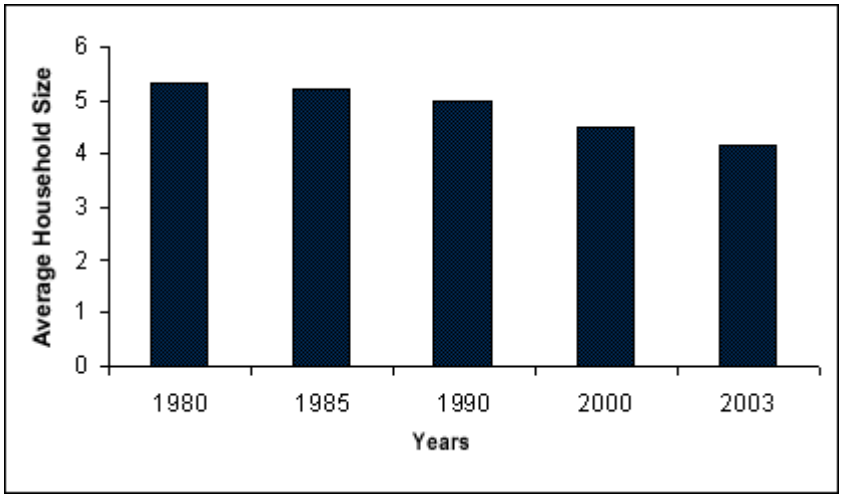


Figure 1-4: Average Household Size in 1980-2003 Periods

Source: 1980,1985,1990 and 2000 TURKSTAT (www.tuik.gov.tr)
2003 NBD-CE Household Survey

As indicated in Table 1.3 and Figure 1.4, the average household size has been decreased between 1980 and 2003 (decreased from 5.32 to 4.1).

1.3.2. Population Growth

1.3.2.1 Population Growth Rate

In the last 73 years, Turkey's population has increased about five times. It was noted 67.803.927 in 2000. In 1927-2000 period, Turkey's population had a continuous increase. The lowest annual population growth rate was 10.6 ‰ in 1940-1945 and the highest annual

population growth rate was 28.5 ‰ in 1955-1960 period. In 1990-2000, Turkey's annual population growth rate was found to be 18.3 ‰. Considering Turkey's population growth rate by years, it could be seen that the growth rate, which was above 20 ‰ after 1945, had a significant decline after 1980. In 1980-1985, the annual population growth rate was 24.9 ‰, then declined to 18.3 in 1990-2000 period. In the last 20 years, population growth rate has had a decrease about 27 % (5).

Figure 1.5 presents the population growth rates in 2000-2006. In 2000, the population growth rate was measured as 14.1 ‰ but declined in years (13.8 ‰ in 2001; 13.5 ‰ in 2002; 13.2 ‰ in 2003; 12.9 ‰ in 2004 and 12.6 ‰ in 2005) and was estimated as 12.4 ‰ in 2006.

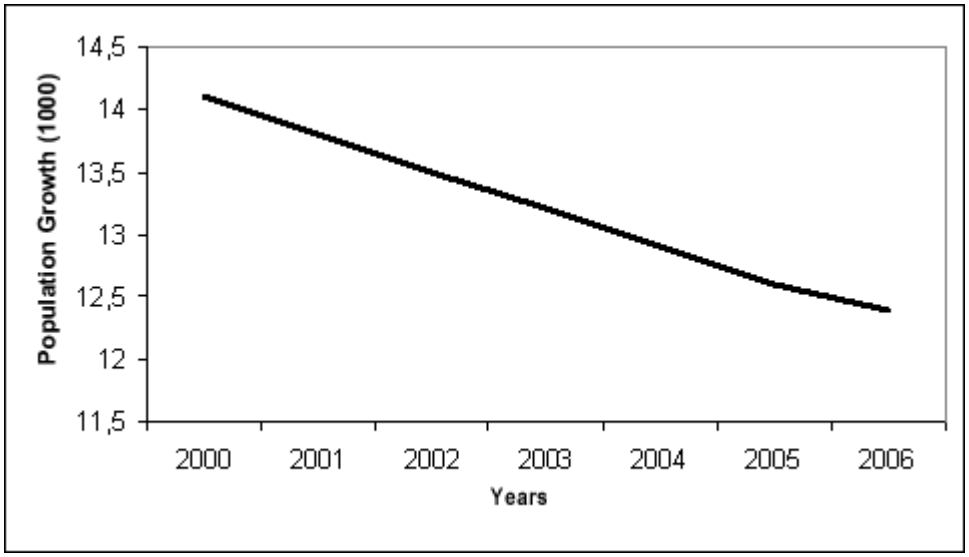


Figure 1-5: Population Growth Rate in 2000-2006 (‰)

Source : TURKSTAT (www.tuik.gov.tr), 2007

Table 1.4 and Figure 1.6 present the population growth rate estimates which are made for 2010-2050 period.

Table 1-4: Population Growth Rate Estimates for 2010- 2050 Years

	2010	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Population Growth Rate (‰)	11,1	9,6	8,6	7,4	6,1	4,6	3,0	1,5	0,3

Source :TURKSTAT (www.tuik.gov.tr), 2007

Table 1.4 and Figure 1.6 present the population growth rate estimates which are made for the year 2010 and 2050. According to this, population growth rate which is 11.1 ‰ in 2010 is expected to be 0.3 ‰ in 2050.

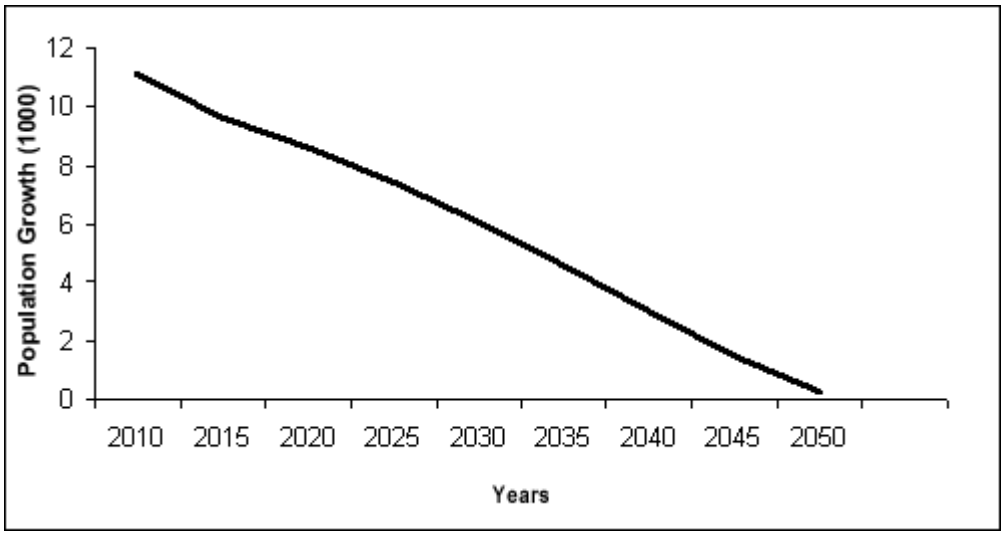


Figure 1-6: Population Growth Rate Estimates for 2010- 2050 (‰)
Source :TURKSTAT (www.tuik.gov.tr), 2007

1.3.3. Migration

According to the WHO sources, approximately 175 million people all over the world or 2.9 % of the world population, in other words, spend their lives permanently or temporarily outside their homeland (9).

Migrations within national borders are called Internal Migrations while migrations beyond national borders are called External Migrations. As it could be also seen with this definition, migration might be directed at other countries and even other continents. It is obvious that voluntary internal migration is very common in Turkey from less developed regions to more developed regions that have industrial and trade centers and offer better job opportunities and to tourism centers where the climate is warmer. Environmental conditions and natural disasters such as flood, earthquake and etc might lead to compulsory migration as well as terrorist attacks (10). Migrations in the first years of the Republic were a part of the search for national identity and thus were rather directed by the government. They could be assessed from the perspective of development and modernization (11). Since the 1950s, internal migration has been a common phenomenon in Turkey which is continuous and which increases from time to time. Such demographic movements are usually from rural to urban areas and from less developed to more developed regions. Most of these movements are caused by social and economic factors (12).

According to 1990 General Population Census, the share of provinces and districts in total population is 59.21 % while that of villages is 40.79 %. According to 1997 General Population Census, the share of provinces and districts in total population is 65.03 % while that of village is 34.97 %. Comparing the results of two censuses, it could be asserted that internal migration is a continuing phenomenon in Turkey (10).

To analyze demographic movements in Turkey from a regions-based perspective, it would be possible to make a distinction among regions which give out and take in migration continuously. Eastern, Southeastern and Black Sea Regions give out migration whereas industrial centers such as Istanbul and Kocaeli and Mediterranean (which includes warm climate provinces like Muğla and Antalya), Marmara and Western Anatolia Regions take in migration (10).

Table 1.5 presents the percentage of migrating population in 1980-2000.

Table 1-5: Population Migrating Between Settlement Areas and Provinces in 1980-2000

Year of Census	Permanently Residing Population[(1)]	Term	Population Migrating Between Settlement Areas		Population Migrating Between Provinces	
			Number[(2)]	%	Number[(2)]	%
1980	38 395 730	1975-1980	3 584 421[(3)]	9,34	2 700 977	7,03
1985	44 078 033	1980-1985	3 819 910[(3)]	8,67	2 885 873	6,55
1990	49 986 117	1985-1990	5 402 690[(3)]	10,81	4 065 173	8,13
2000	60 752 995	1990-2000	6 692 263	11,02	4 788 193	7,88

Source: TURKSTAT (www.tuik.gov.tr), 2007
1) External migration is not included in permanently residing population.
2)Migration between villages which are affiliated with the same province are not included.
3)Migration between districts and villages which are affiliated with the same province are not included. In 1995-2000 term, the population migrating between districts of the same province was 125. 896 and the population migrating between villages of the same province was 99. 823 in total.

As seen in Table 1.5, there has been significant increase in the proportion of population which migrate especially between settlement areas by year.

Table 1.6 presents the net migration and net migration rates according to the NUTS Region System.

Table 1-6: Net Migration and Net Migration Rates of NUTS-Statistical Regions

Region (Level 1)	Resident Population 2000	Net Migration	Net Migration Rate ‰
Total	**60 752 995**	**0**	**0,0**
Istanbul	9 044 859	407 448	46,1
Western Marmara	2 629 917	67 794	26,1
Aegean	8 121 705	184 003	22,9
Eastern Marmara	5 201 135	81 828	15,9
Western Anatolia	5 775 357	90 900	15,9
Mediterranean	7 726 685	2 728	0,4
Central Anatolia	3 770 845	- 95 005	-24,9
Western Blacksea	4 496 766	- 231 791	-50,3
Eastern Blacksea	2 866 236	- 75 820	-26,1
Northeastern Anatolia	2 202 957	- 112 607	-49,8
Middle eastern Anatolia	3 228 793	- 109 588	-33,4
Southeastern Anatolia	5 687 740	- 209 890	-36,2

Source: TURKSTAT (www.tuik.gov.tr), 2007
*Migration between provinces in the same region was not included.

As seen in Table 1.6, Istanbul has the highest migration rate (46.1 %) and Western Blacksea and Northeastern Anatolia Regions have the lowest migration rate (respectively 50.3 and 49.8 %) when net migration rates are compared by NUTS regions.

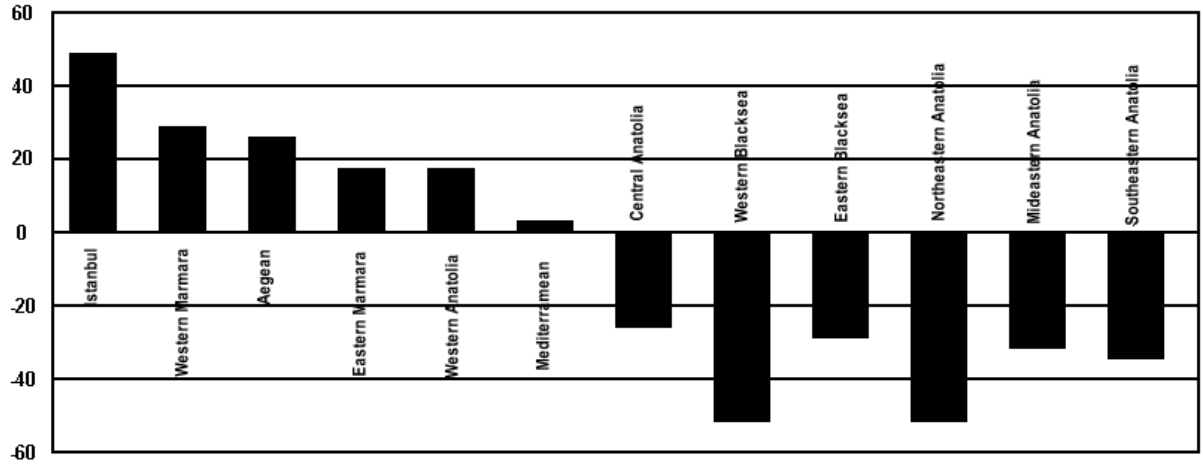


Figure 1-7: Net Migration Rate by NUTS 1 Regions ‰ (2000)

Source: TURKSTAT (www.tuik.gov.tr), 2007

Thinking the life-long migration approach, it would be seen that about half of the household (48.9 %) lives at a place rather than their place of birth. Approximately half of Turkish population experiences migration at least once in their lifetime. Average number of migration calculated for total population is 1.2. The population who has migrated at least once in their lifetime has an average migration of 1.9. As for the causes of migration by gender, female population migrates for rather family-related and individual reasons while male population migrates for family-related and economic reasons. As for historical periods, basic reason for migration was economic for men in the pre-1980 period but today family-related and individual factors are more influential on migration. About 11 % of 18-69 aged population in Turkey is inclined to experience migration in the future (12).

CHAPTER 2 HEALTH STATUS

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2.1 LIFE EXPENTANCY

Average life expectancy in Turkey is gradually increasing. 7% of Turkish population is above 65 years old. Older population ratio is 9% in rural area, while it is 6% in urban settlements. The ratio of the older population is the highest older population ratio in the demographic history of Turkey. The increase in the older population could have been caused by two reasons: rapid decrease in fertility, and life expectancy increase in all age groups. (2).

As depicted in Figure 2.1, life expectancy at birth is 70.4 years in total for the year 2000; 70.6 for 2001; 70.7 for 2002; 70.9 for 2003; 71.1 for 2004; 71.3 for 2005 and 69.1 among men and 74.0 among women, 71.5 in total for 2006.

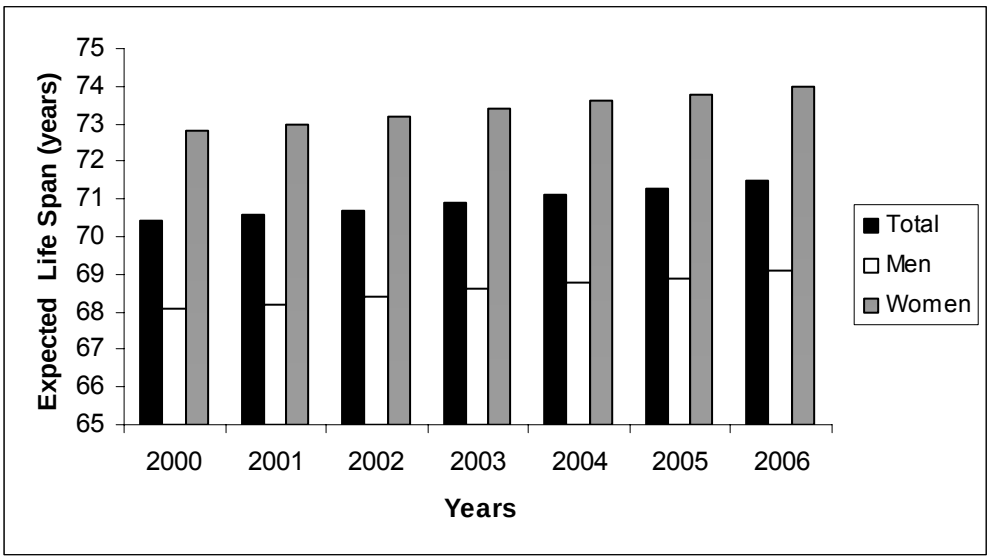

Figure 2-1: Life Expectancy at birth for 2000-2006 (Years)

Source: TURKSTAT (www.tuik.gov.tr), 2007

Figure 2.2 presents comparison of life expectancy at birth with European Union (EU) countries**.**

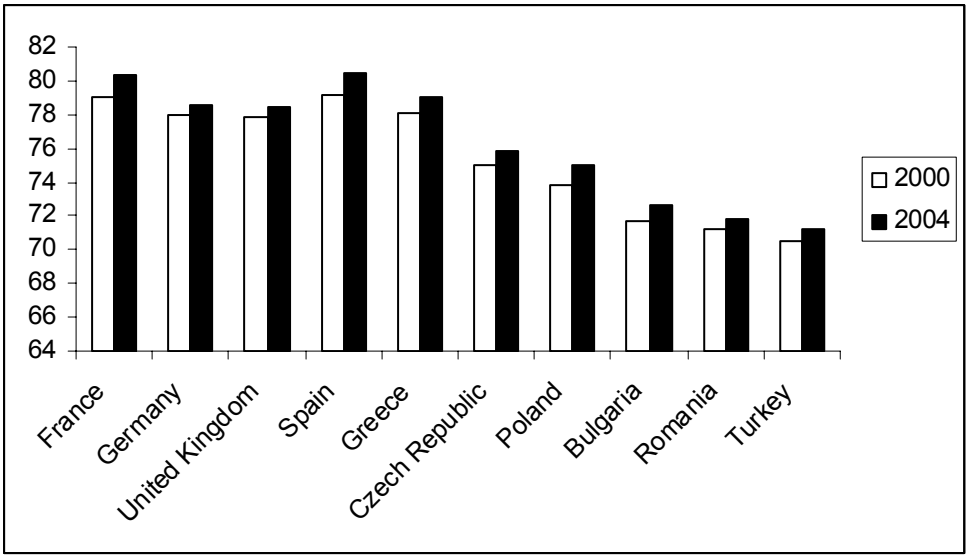

Figure 2-2: Life Expectancy at Birth by countries (2000-2004)

Source: OECD Health Data 2006

For 2004, 80.3 in France; 78,6 in Germany ; 78,5 in UK; 80,5 in Spain; and 71,2 in Turkey. When compared to EU countries in terms of life expectancy at birth, Turkey is behind those countries.

Figure 2.3 depicts Life Expectancy at Birth estimates in Turkey for 2010-2050. As it is seen, life expectancy years were estimated as 72.0 years in total for 2010; 72.7 for 2015; 73.5 for 2020, 74.4 for 2025; 75.5 for 2030; 76.4 for 2040; 76.6 for 2045; and 77.3 for 2050.

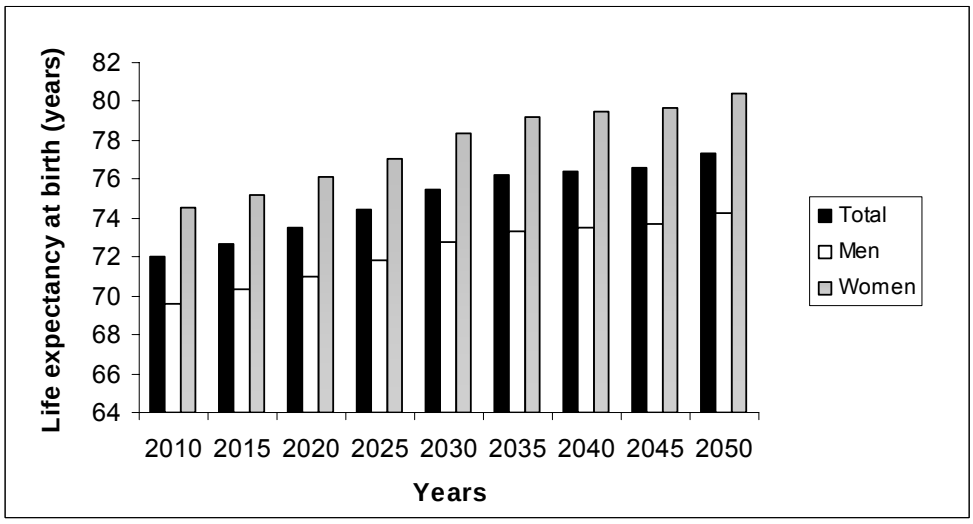

Figure 2-3: Life Expectancy at Birth in Turkey "2010-2050 Estimates"

Source: TURKSTAT (www.tuik.gov.tr), 2007

2.2 HEALTHY LIFE EXPECTANCY (HALE)

HALE (Healthy Life Expectancy) is the average number of years that a person is expected to live considering the unhealthy years caused by a disease or injury. Significant resources are spent to reduce occurrence, duration and intensity of some significant diseases that cause morbidity but not mortality, and to reduce impact of these on human life (13,14).

HALE estimates are important for countries in health issues. Figure 2.4 presents healthy life expectancy at birth for EU countries.

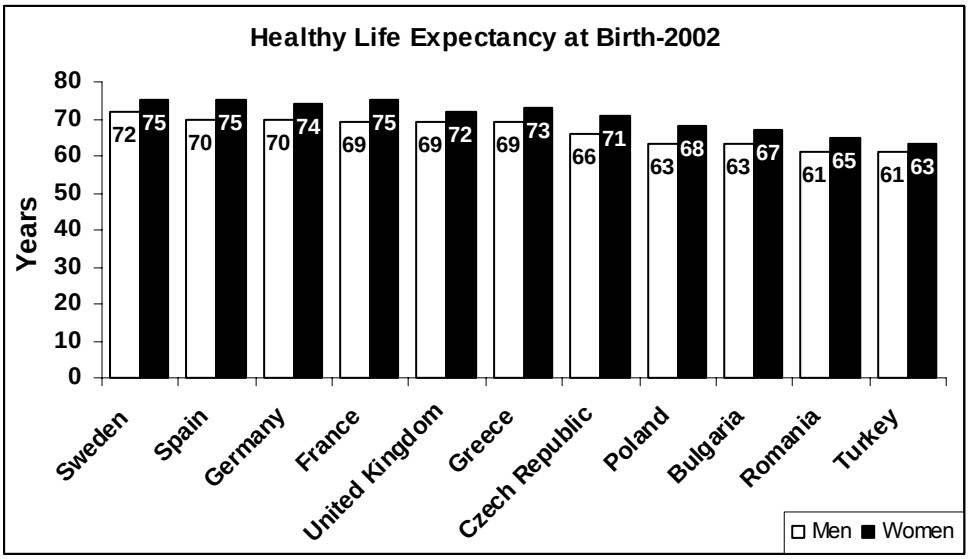

Figure 2-4: Healthy Life Expectancy at Birth in EU countries -2002

Source : World Health Organization WHOSTAT 2006

As stated in Figure 2.4, HALE is the highest in Sweden with 72 years for men and 75 for women. Moreover, it is 70 years and above in Spain, Germany, France, and UK. In Turkey, it is 61 for men and 63 for women.

2.3 MORBIDITY AND MORTALITY IN INFANCY AND CHILDHOOD

2.2.1 Infant Mortality Rate

Turkey has achieved significant success in reducing infant mortality rates (IMR) in the last few years, and while IMR was 150 per 1000 live births in 1970s, it has been reduced to 40 per 1000 live births in 1998; and 20 per 1000 live births in 2003 (2). Decrease in IMR became more progressive during 1990s. However, IMR in Turkey is significantly high when compared to EU average (8 per 1000 live births) (15).

Table 2.1 and Figure 2.5 present IMR in Turkey between 1971-2007.

Table 2-1: Infant Mortality Rates in Turkey between 1971-2007

Years	IMR (per 1000)	Years	IMR (per 1000)
1971*	134	1993	52,6
1973*	123	1998	42,7
1975*	112	2003	29
1977*	102	2004	24,6
1979*	96	2005	23,6
1983	95,31	2006	22,6
1988	77,72	2007	21,7

Source: * Trends in Fertility and Mortality in Turkey US-NRC and SPO Five Years Development Plan Estimates
1983 Turkish Demographic and Health Survey 1979-1982 period estimates.
1988 Turkish Demographic and Health Survey
1993, 1998, 2003 Turkish Demographic and Health Survey
2004, 2005, 2006, 2007 TURKSTAT Estimates

As depicted in Table 2.1 and Figure 2.5, IMR was found as 134 in 1971; 77.72 in 1988; 52.6 in 1993; 42.7 in 1998; 29 in 2003; 24.6 in 2004; 23.6 in 2005; 22.6 in 2006; and 21.7 in 2007 (per 1000 live births).

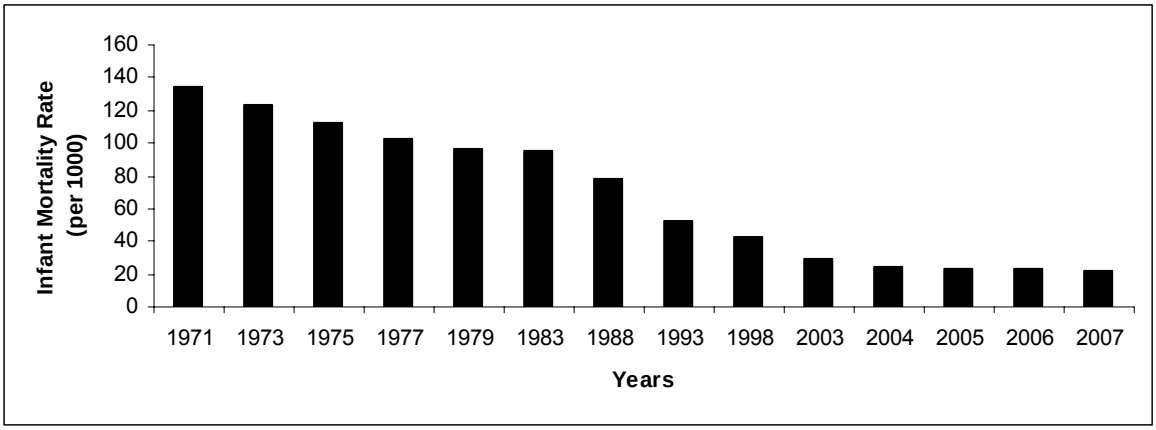

Figure 2-5: IMR for the years between 1970-2007

Source: * Trends in Fertility and Mortality in Turkey US-NRC and SPO Five Years Development Plan Estimates
1983 Turkish Demographic and Health Survey 1979-1982 period estimates.
1988 Turkish Demographic and Health Survey
1993, 1998, 2003 Turkish Demographic and Health Survey
2004, 2005, 2006, 2007 TURKSTAT Estimates

Figure 2.6 depicts European counties Infant Mortality Rates (per thousand). When compared to EU countries, IMR in Turkey is relatively high. IMR was found as 3 per thousand in Sweden; 4 per thousand in Spain, Germany, France, Czech Republic, and Greece; 5 per thousand in United Kingdom; 7 per thousand in Poland; 12 per thousand in Bulgaria; 17 per thousand in Romania; and 28 per thousand in Turkey.

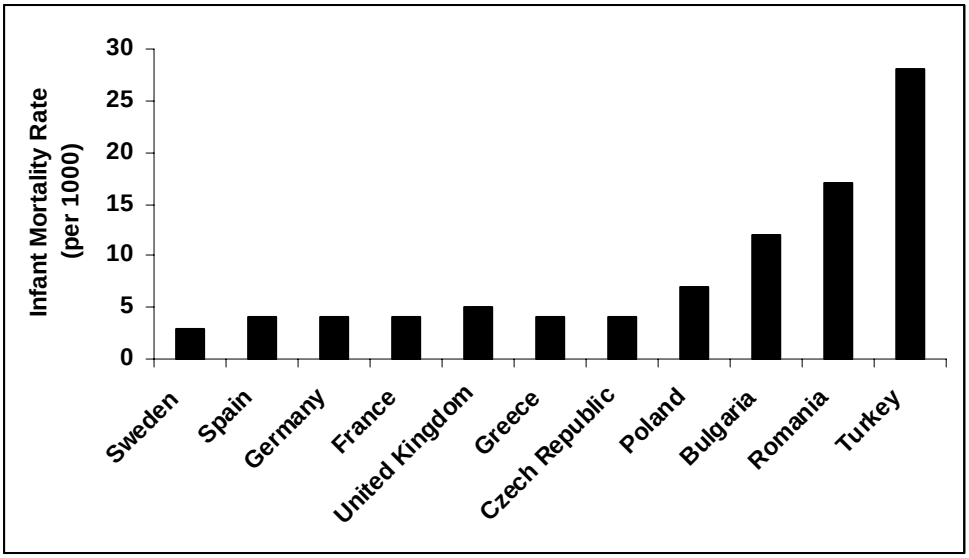

Figure 2-6: Infant Mortality Rates in European Countries (per thousand), 2004

Source: WHOSTAT 2006 (http://www.who.int/whosis/whostat2006_mortality.xls)

Figure 2.7 present IMR Estimates for the years between 2010- 2050. According to this, IMR is estimated as 20.0 per thousand in 2010; 17.2 in 2015; 14.7 in 2020; 12.2 in 2025; 9.7 in 2030; 8.2 in 2035; 7.8 in 2040; 7.3 in 2045; and 6.5 in 2050. This means that even in 2050, we will not have achieved the level in EU countries.

Table 2.2 presents IMR estimate for 2010-2050.

Table 2-2: IMR estimates for 2010- 2050, Turkey

IMR (‰)	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Total	20,0	17,2	14,7	12,2	9,7	8,2	7,8	7,3	6,5

Source: TURKSTAT (www.tuik.gov.tr), 2007

IMR is estimated as 20 per thousand for 2010; 14.7 for 2020; 8.2 for 2030; 7.8 for 2040; and 6.5 for 2050.

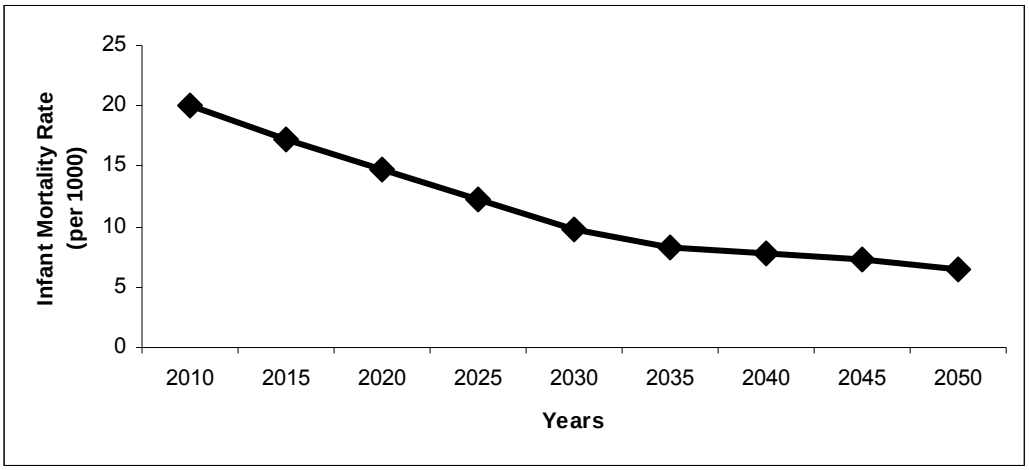

Figure 2-7: IMR estimates for 2010- 2050, Turkey (per thousand)

Source: TURKSTAT (www.tuik.gov.tr), 2007

2.2.1.1 Under-five Mortality

Under-five mortality that is one of the principal indicators related to child health and services was found as 25,14 per thousand in 2006 estimates while it was 97,4 per thousand in 1988.

Table 2.3 and Figure 2.8 depict under-five mortality rates for 1988-2006.

Table 2-3: Under-five mortality rates for 1988-2006 (per thousand)

Years	Under-five mortality rate (per thousand)
1988*	97,4
1993*	60,9
1998*	52,1
2003*	37
2004**	27,42
2005**	26,25
2006**	25,14

Source: *Turkish Demographic and Health Surveys,
**TURKSTAT (www.tuik.gov.tr) , 2007

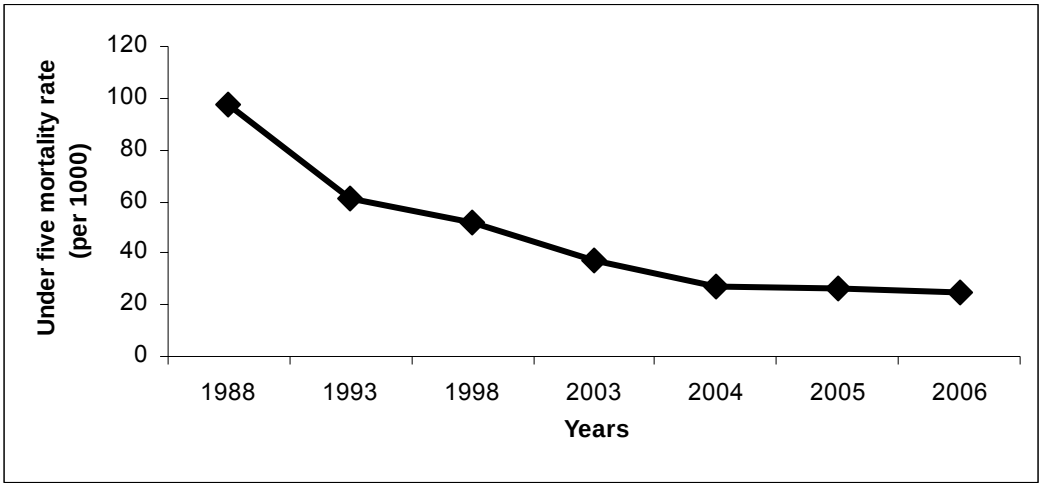

Figure 2-8: Under-five mortality rates for 1988-2006 (per thousand)

Source: 1988,1993,1998,2003 Turkish Demographic and Health Surveys
2003, 2004,2005,2006 TURKSTAT (www.tuik.gov.tr)

Figure 2.9 presents comparison of under-five mortality rates in EU countries. Under-five mortality rate is 5 per thousand in Sweden, France, Greece, Germany, and Czech

Republic; 15 per thousand in Bulgaria; and 20 per thousand in Romania. It is estimated as 27 per thousand in Turkey and this is a relatively high rate when compared to EU countries.

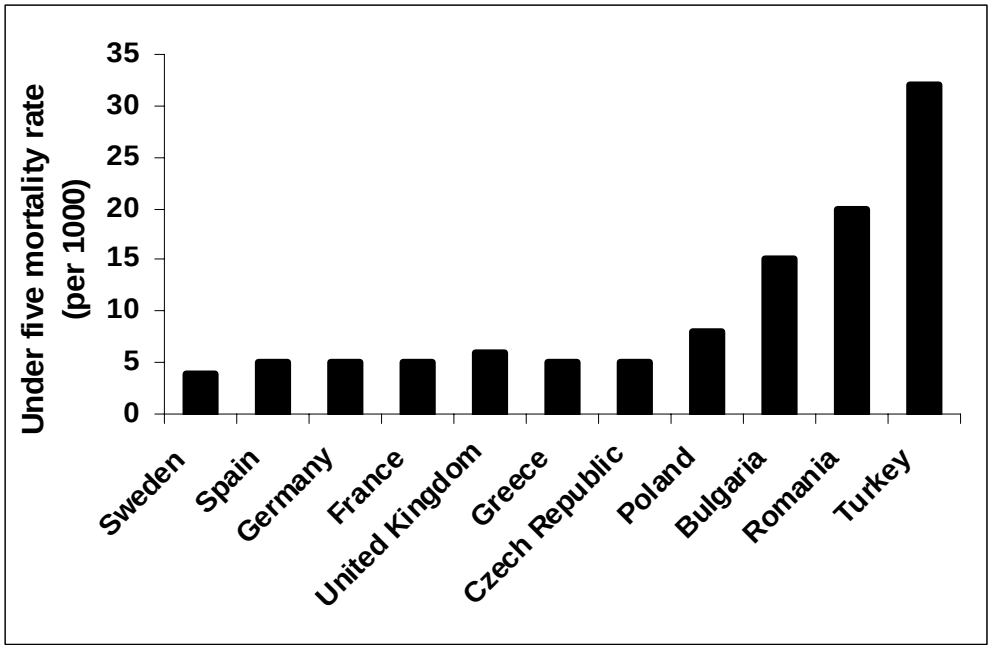

Figure 2-9: Under-five Mortality Rates in EU countries (2004)

Source: WHOSTAT 2006 http://www.who.int/whosis/whostat2006_mortality.xls and TURKSTAT 2004 data

Figure 2.10 presents under-five mortality rate projections until 2020. This means that even in 2020, we will not have achieved the level in EU countries.

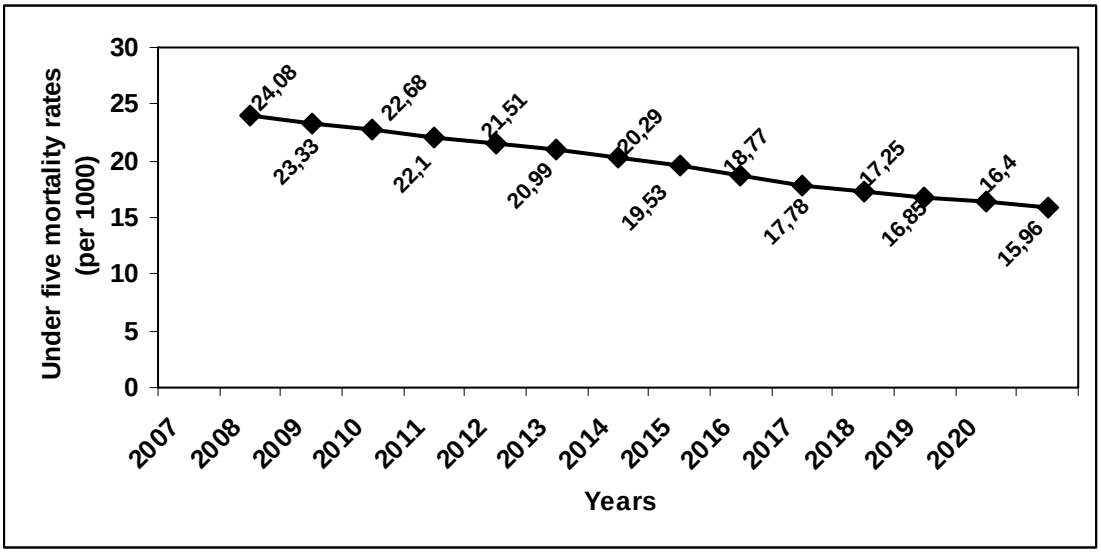

Figure 2-10 Under-five Mortality Rate Projections

Source: TURKSTAT (www.tuik.gov.tr), 2007

2.2.2 Causes of Death (0-14 Years)

Considering the causes of mortality in childhood, we would see that perinatal deaths lower respiratory system infections, congenital anomalies, diarrhea and meningitis are among the first five preventable causes (14).

Table 2.4 presents distribution of first 20 diseases which cause death in 0-14 age group at national level in Turkey by gender.

Table 2-4: % Distribution of First 20 Diseases which Cause Death in 0-14 Age Group at National Level in Turkey by Gender

	Total	**%**	**Male**	**%**	**Female**	**%**
1	Perinatal Causes	37,6	Perinatal Causes	37,2	Perinatal Causes	38,1
2	Lower Respiratory Infections	14,0	Lower Respiratory Infections	13,7	Lower Respiratory Infections	14,4
3	Congenital Anomalies	10,3	Congenital Anomalies	10,7	Congenital Anomalies	10,0
4	Diarrheal Diseases	8,4	Diarrheal Diseases	8,3	Diarrheal Diseases	8,6
5	Meningitis	2,7	Traffic Accidents	2,7	Meningitis	2,7
6	Traffic Accidents	2,5	Meningitis	2,7	Measles	2,5
7	Measles	2,2	Measles	1,9	Traffic Accidents	2,2
8	Tuberculosis	1,4	Tuberculosis	1,5	Upper Respiratory Infections	1,4
9	Upper Respiratory Infections	1,2	Leukemia	1,3	Protein Energy Malnutrition	1,3
10	Protein Energy Malnutrition	1,2	Upper Respiratory Infections.	1,1	Tuberculosis	1,2
11	Leukemia	1,2	Protein Energy Malnutrition	1,1	Leukemia	1,1
12	Cerebrovascular Diseases	0,9	Cerebrovascular Diseases	1,0	Self-Injury	1,0
13	Self-Injury	0,7	Lymphoma and Multiple Myeloma	0,6	Cerebrovascular Diseases	0,8
14	Lymphoma and Multiple Myeloma	0,5	Self-Injury	0,5	Lymphoma and Multiple Myeloma	0,5
15	Iron Deficiency Anemia	0,4	Suffocation	0,4	Burns	0,3
16	Hepatitis B	0,3	Iron Deficiency Anemia	0,4	Hepatitis B	0,3
17	Suffocations	0,3	Falls	0,3	Poisoning	0,3

18	Falls	0,3	Hepatitis B	0,3	Iron Deficiency Anemia	0,3
19	Burns	0,3	Burns	0,2	Epilepsy	0,3
20	Poisoning	0,2	Asthma	0,2	Falls	0,3

Source: NBD-CE Burden of Disease Study, 2003

As indicated in Table 2.4, perinatal causes are the first causes of mortality in both genders and in total (37.6 % in total, 37.2 % among men and 38.1 % among women). Lower respiratory diseases occupy the second rank with 14 % in total, 13.7 % among men and 14.4 % among women. Third rank is occupied by congenital anomalies (10.3 % in total, 10.7 % among men and 10.0 % among women) and fourth rank by diarrheal diseases in both gender and total. In the sixth rank, meningitis has 2.7 % in total, traffic accidents have 2.7 % among men and meningitis has 2.7 % among women.

2.2.3 Burden of Disease (DALY)

DALY (= Disability Adjusted Life Years) is a criteria which combines brief measurement of population health – for example, mortality and immortal health outputs – so as to represent it with a single figure.

DALY refers to the years which are lost due to early death and the years which are spent in disability. Since DALY makes use of both cost and health effects, it also helps to compare the costs which are needed for additional healthy living as a result of various health interventions (14).

The concept of DALY aims to make assessment of burden of disease with single criteria which is caused by premature deaths that occur due to various diseases and diseases that do not result in death but lead to long-term disability and loss of body functions (14).

Table 2.5 presents % distribution of first 10 diseases in 0-14 age group by gender, which causes DALY at national level in Turkey.

Table 2-5: % Distribution of Major 10 Diseases in 0-14 Age Group which Cause DALY at National Level in Turkey, by Gender

	Total	**%**	**Men**	**%**	**Women**	**%**
1	Perinatal Causes	27,6	Perinatal Causes	27,4	Perinatal Causes	27,9

2	Lower Respiratory Infections	10,5	Congenital Anomalies	10,6	Lower Respiratory Infections	10,7
3	Congenital Anomalies	10,3	Lower Respiratory Infections	10,3	Congenital Anomalies	10,0
4	Diarrheal Diseases	6,5	Diarrheal Diseases	6,4	Diarrheal Diseases	6,6
5	Traffic Accidents	2,4	Traffic Accidents	2,5	Traffic Accidents	2,2
6	Meningitis	2,1	Meningitis	2,1	Meningitis	2,1
7	Migraine	1,7	Protein Energy Malnutrition	1,5	Migraine	2,1
8	Measles	1,6	Asthma	1,4	Measles	1,9
9	Protein Energy Malnutrition	1,6	Measles	1,4	Asthma	1,8
10	Asthma	1,6	Migraine	1,3	Protein Energy Malnutrition	1,7

Source: NBD-CE Study Final Report on Burden of Disease, 2003

As it could be seen in Table 2.5, perinatal causes have the highest share in total DALYs in 0-14 age group with 27.6 %. It is 27.4 % among men and 27.9 % among women. Second rank is occupied by Lower Respiratory Infections (10.5 %). In this age group, Congenital Anomalies (10.3 %) are at the third and Diarrheal Diseases (6.5 %) are at the fourth rank.

Table 2.6 and Figure 2.11 presents distribution of DALY values at national level in Turkey by disease groups, age groups and gender. (DALY/1000 Population)

Table 2-6: Distribution of DALY Values at National Level in Turkey by Disease Groups, Age Groups and Gender (DALY/1000 Population)

Disease Groups	**0-4**	**5-14**	**15-29**	**30-44**	**45-59**	**60-69**	**70-79**	**80 and above**
Male								
Group I	255,0	12,6	11,9	10,0	11,1	13,8	15,1	19,7
Group II	91,7	24,7	69,1	101,1	191,8	319,3	402,0	428,1
Group III	20,6	19,6	39,4	20,1	13,7	11,8	6,8	8,8

Female								
Group I	248,4	15,4	31,7	21,6	18,6	28,6	18,8	21,9
Group II	85,5	24,2	66,6	92,9	161,3	252,6	367,2	411,6
Group III	15,0	11,5	11,5	8,1	7,2	6,0	3,4	4,6
Total								
Male	367,3	56,9	120,3	131,2	216,6	344,9	423,9	456,6
Female	348,9	51,1	109,8	122,5	187,1	287,2	389,4	438,1

Source: NBD-CE Study Final Report on Burden of Disease, 2003

NOTE: Group I: Communicable Diseases, Maternal and Perinatal Causes and Nutrition Deficiency-Caused Diseases

Group II: Non-Communicable Diseases; Cardiovascular System Diseases, Respiratory System Diseases, Digestive System Diseases, Endocrine, Nutritional and Metabolic Diseases, Sense Organ Disorders, Genitourinary System Diseases, Malign Neoplasm, Musculo-Skeletal System and Neurological System, Neuro-Psychiatric Disorders and Dental and Oral Health Disorders

Group III: Intented and Non-Intented Injuries

In 0-4 age group, burden of disease among men was found to be 367.3 DALY/1000 population and among women 348.9 DALY/1000 population. In 5-14 age group, burden of disease was found to be 56.9 DALY/1000 among men and 51.1 DALY/1000 population among women. In 15-29 age group, these values are respectively 120.3 DALY/1000 and 109.8 DALY/1000. In 60-69 age group, these values are inclined to increase again and it was noted 344.9 DALY/1000 among men and 287.2 DALY/1000 among women. In 70-79 age group, the increase turns out to be more outstanding and it is 423.9 DALY/1000 among women and 389.4 DALY/1000 among men. In 80 + age group, it is 456.6 DALY/1000 among men and 438.1 DALY/1000 among women.

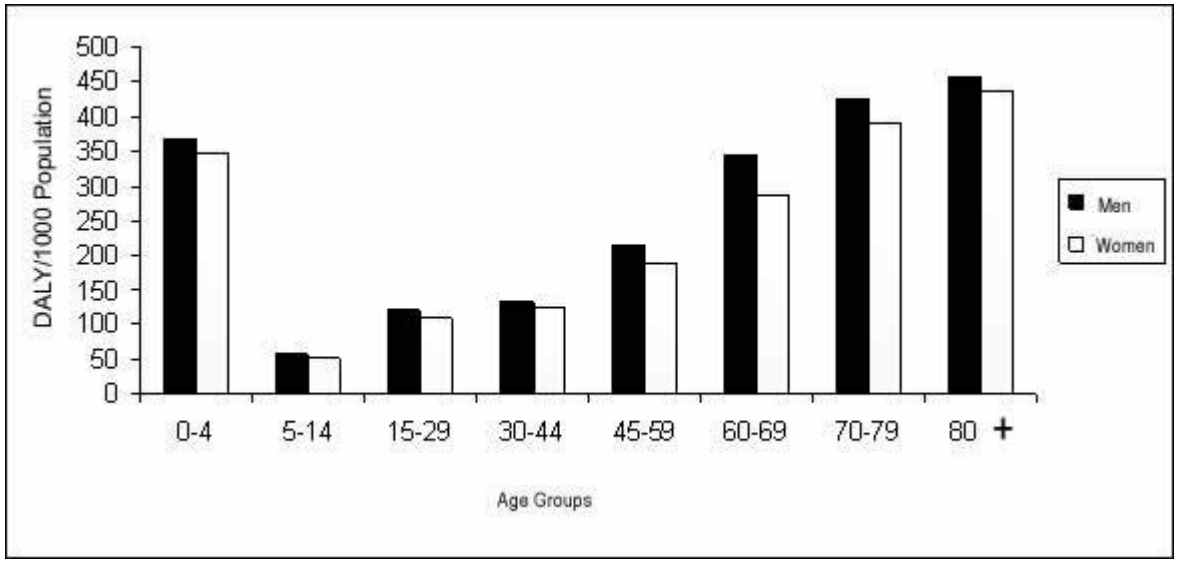

Figure 2-11: Distribution of DALY Values at National Level in Turkey by Age Groups and Gender (DALY/1000 Population),

Source: NBD-CE Study Final Report on Burden of Disease, 2003

2.3 VACCINE-PREVENTABLE DISEASES

2.3.1 Vaccination Schedule in Childhood

Countries identify implementation programs for vaccination and others based on their epidemiologic characteristics. Target groups of vaccination and vaccination schedules might be reviewed considering the changes in epidemiologic characteristics within a country and changes in mortality trends, improvements in production of vaccines and/or immunization and new challenges and/or opportunities in health organization and problems. Thus, the knowledge and practices in vaccination services are dynamic (16).

Table 2.7 presents the latest vaccination schedule which was implemented by the Ministry of Health as of 2006.

Table 2-7: Vaccination Schedule for Children

	Birth	1 Month	2 Months	3 Months	4 Months	6 Months	12 Months	16- 24 Months	Primary School 1st Grade	Primary School 8th Grade
BCG			I							
DPT (Diphtheria, Pertussis,			I	II	III			R		

tetanus)										
Hib (Hemophilus Influenza Type B)			I	II	III			R		
OPV (Oral polio vaccine)			I	II	III			R	R	
MMR (Measles, Mumps, Rubella)							I		R	
Hepatitis B	I	II				III				I -II –III*
Td (Adult type dhyphteria-tetanus)									√	√
Rubella										√*

Source: Circular on Expanded Immunization Program, Republic of Turkey Primary Health Care Services General Directorate, 30.11.2006/1867/120

***** Until the cohort with incomplete vaccination is completed

Vaccination Schedule for Children

Pre-school	**Vaccines**
Birth	Hepatitis B-1
1 month (4 weeks)	Hepatitis B-2
2 Months (8 weeks)	BCG, DPT-1, OPV-1, Hib-1
3 Months (12 weeks)	DPT-2, OPA-2, Hib-2
4 Months (16 weeks)	DPT-3, OPV-3, Hib-3

6 Months (24 weeks)	Hepatitis B-3
12 Months (52 weeks)	MMR
Repeat dose (16–24 months)	DPT-R, OPV-R, Hib-R (1 year after DPT-3, OPV-3, Hib-3)
School Period	**Vaccines**
1st grade	OPV, MMR, Td
8th grade	Td, Rubella (until mid-cohort is completed) Hepatitis B 3 dose (until mid-cohort is completed)
Vaccination for children below 6, and who have never been vaccinated in the first year of their lives	
First encounter	DPT, OPV, Hib, Hep B, ppd TST (Tuberculin Skin Test)
2 days after first encounter	MMR, BCG if necessary according to TST results
1 month after first encounter	DPT, OPV, Hep B
2 months after first encounter	DPT, OPV, Hib (Hemophilus Influenza Type B)
8 months after first encounter	DPT, OPV, Hep B (P.S: childhood vaccination schedule shall be continued with school vaccinations.)
Vaccination for children above 6, who have never been vaccinated before:	**Vaccines**

First encounter	Td, OPV, Hep B, MMR
1 month after first encounter	Td, OPV, Hep B, Measles
8 months after first encounter	Td, OPV, Hep B

2.3.2 Vaccination Ratios

Vaccination coverage eventuates in high levels in Turkey. Table 2.8 presents vaccination coverage ratio for age 0 for the years 2000-2006.

Table 2-8: Vaccination Coverage Ratio for Age 0

Vaccine	2000 Coverage %	2001 Coverage %	2002 Coverage %	2003 Coverage %	2004 Coverage %	2005 Coverage %	2006 Coverage %
BCG	77	82	77	76	79	88	88
DPT3	80	83	78	68	85	90	90
Measles	81	84	82	75	81	91	98
Hepatitis B3	66	72	72	68	77	85	82

Source: Republic of Turkey General Directorate of Primary Healthcare Services, 2007

2.3.3 Vaccine-Preventable Diseases

Among the vaccine preventable diseases are Pertussis, poliomyelitis, diphtheria, measles and tetanus.

2.3.3.1 Measles:

Figure 2.12 presents the measles incidence rates in 2000-2006. Accordingly, morbidity rate was noted 23.94/100.000 in 2000; 44.96/100.000 in 2001; 11.5/100.000 in 2002; 8.25/100.000 in 2003; 12.44/100.000 in 2004; 1.65/100.000 in 2005; and 0.05/100.000

in 2006. As diseases have been notified by the standard case definitions since 2005, only the cases which received confirmed diagnosis since that year have been taken into consideration.

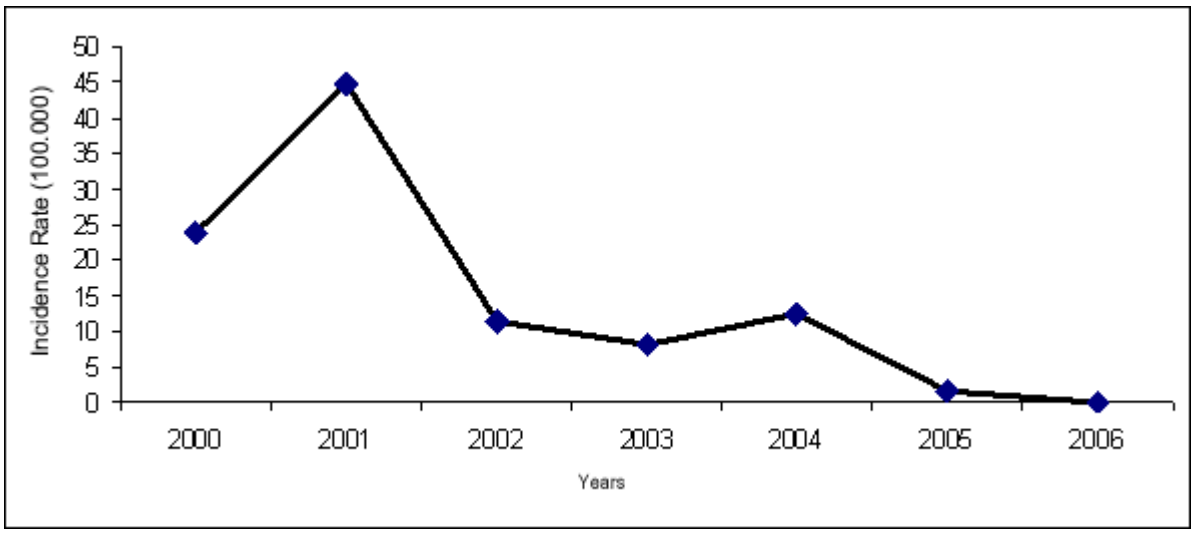

Figure 2-12: Measles Incidence Rates in 2000-2006 (100.000)

Source: Ministry of Health, General Directorate of Primary Care, Department of Communicable Diseases, 2007

In 2003 NBD-CE Study, measles incidence rate was found to be 45.000/100.000 among men and 43.400/100.000 among women while prevalence was noted as 0.100/100.000 among men and women (17).

Among the causes of mortality, measles occupies the 7th rank with 2.2 % among the first 20 diseases in 0-14 age group. It is at the 6th rank in rural areas (2.8 %) and 8th rank in urban areas (1.6 %). Among first 10 diseases which cause the Burden of Disease (DALY), measles occupies the 8th rank with 1.6 %. It is 1.4 % among men, 1.9 % among women and 2.2 % in rural areas. Measles, however, is not included in the first 10 diseases which cause to death in provinces (14).

2.3.3.2 Diphtheria:

Figure 2.13 presents the diphtheria incidence rates in 2000-2006. Accordingly, morbidity rate was noted 0.01/100.000 in 2000 and 2001; and 0.003/100.000 in 2003. No cases were reported in 2004, 2005 and 2006. As diseases have been notified by the standard case definitions since 2005, only the cases which are exactly defined since that year have been taken into consideration.

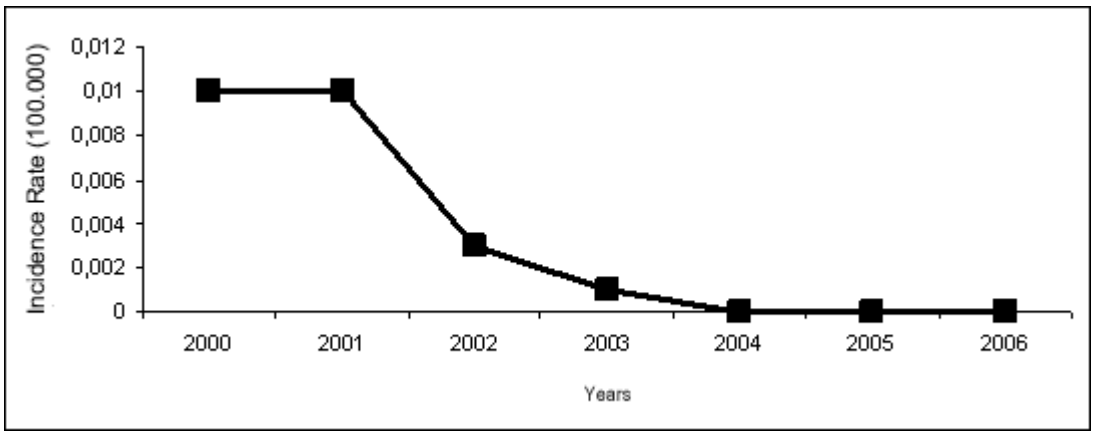

Figure 2-13: Diphtheria Incidence Rates in 2000-2006 (100.000)

Source: Ministry of Health, Directorate General of Primary Care, Department of Communicable Diseases, 2007

2.3.3.3 Neonatal Tetanus

Figure 2.14 presents the neonatal tetanus incidence rates in 2000-2006. Accordingly, morbidity rate was noted 0.97/100.000 in 2000; 2.35/100.000 in 2001; 2.35/100.000 in 2002; 3.01/100.000 in 2003; 1.11 % in 2004; 2.31/100.000 in 2005 and 1.34/100.000 in 2006. As diseases have been notified by the standard case definitions since 2005, only the confirmed cases have been taken into consideration.

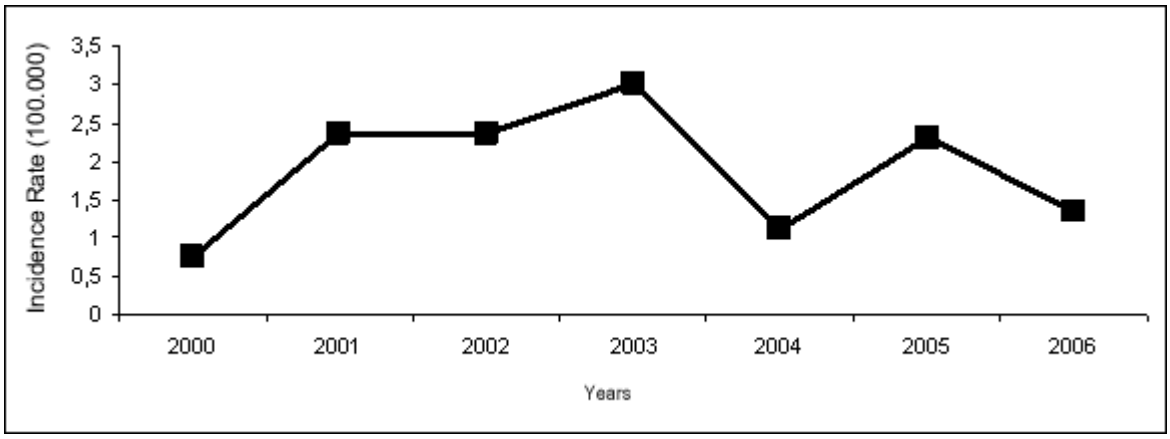

Figure 2-14: Neonatal Tetanus Incidence Rates in 2000-2006 (100.000)

Source: Ministry of Health, General Directorate of Primary Care, Department of Communicable Diseases, 2007

2.3.3.4 Tetanus

Figure 2.15 presents the tetanus incidence rates in 2000-2006. Accordingly, morbidity rate was found to be 0.02/100.000 in 2000; 0.03/100.000 in 2001; 0.02/100.000 in 2002 and 2003; 0.03 % in 2004 and 2005; and 0.01 % in 2006. As diseases have been notified by the standard case definitions since 2005, only the confirmed cases have been taken into consideration.

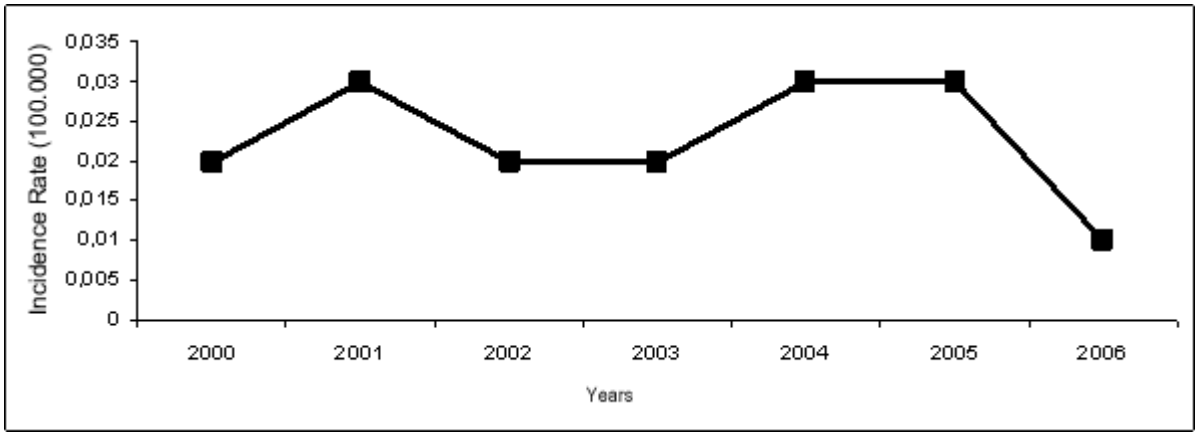

Figure 2-15: Tetanus Incidence Rates in 2000-2006 (100.000)

Source: Ministry of Health, General Directorate of Primary Care, Department of Communicable Diseases, 2007

In 2003 NBD-CE Study, the tetanus incidence was found to be 0.040/100.000 in women and men while the prevalence was noted as 0,000/100.000 in women and men (17).

2.3.3.5 Whooping Cough

Figure 2.16 presents the whooping cough incidence rates in 2000-2006. Accordingly, morbidity rate was found to be 0.75/100.000 in 2000; 0.27/100.000 in 2001; 0.3/100.000 in 2002; 0.38/100.000 in 2003; 0.54/100.000 in 2004; and 0.1/100.000 in 2005 and 2006. As diseases have been notified by the standard case definitions since 2005, only the confirmed cases have been taken into consideration.

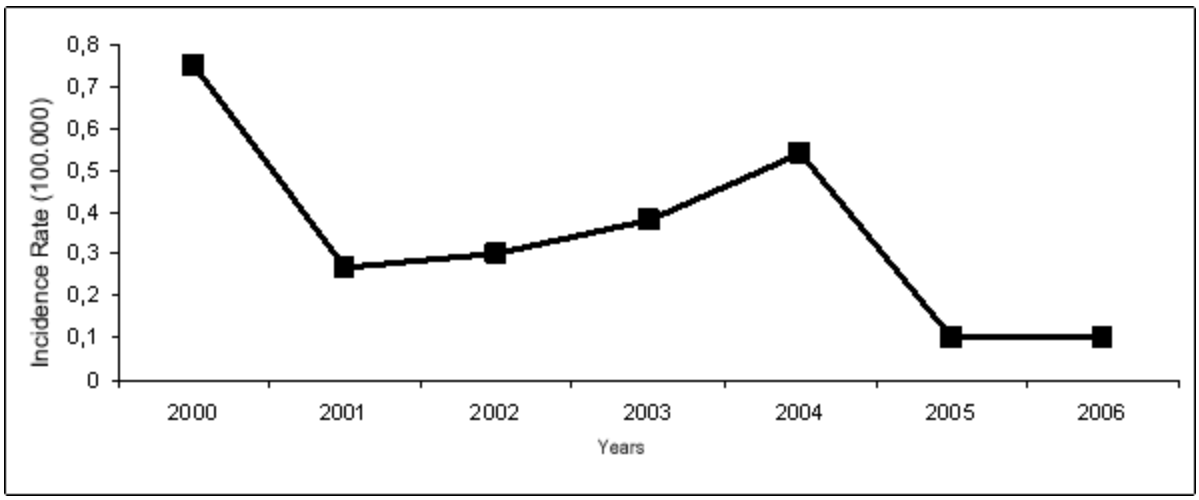

Figure 2-16: Whooping Cough Incidence Rates in 2000-2006 (100.000)

Source: Ministry of Health, General Directorate of Primary Care, Department of Communicable Diseases, 2007

In 2003 NBD-CE Study, whooping cough incidence was found to be 34.000/100.000 among men, 34.200/100.000 among women and 33.000/100.000 in total. Prevalence, on the other hand, was noted 0.600/1000 among men and women (17).

Looking at the % distribution of first 10 diseases in 0-14 age group by gender which cause YLD (Years Lost with Disability) at national level in Turkey according to 2003 NBD-CE Study, whooping cough occupies the 7th rank with 3.0 % in total (2.9 % among men and 3.1 % among women). Following the congenital anomalies in 0-14 age group in rural areas (11.1 %), migraine occupies the 2nd rank (5.9 %). Asthma, Perinatal causes, falls, iodine deficiency and whooping cough are other diseases which make the YLD in this group (14).

2.3.3.6 Meningitis

Figure 2.17 presents the meningitis incidence rates in 2000-2006. Accordingly, morbidity rate was found to be 0.71/100.000 in 2000; 0.87/100.000 in 2001 and 2002; 0.96/100.000 in 2003; 0.83/100.000 in 2004; 0.32/100.000 in 2005 and 0.23/100.000 in 2006. As diseases have been notified by the standard case definitions since 2005, only the confirmed cases have been taken into consideration.

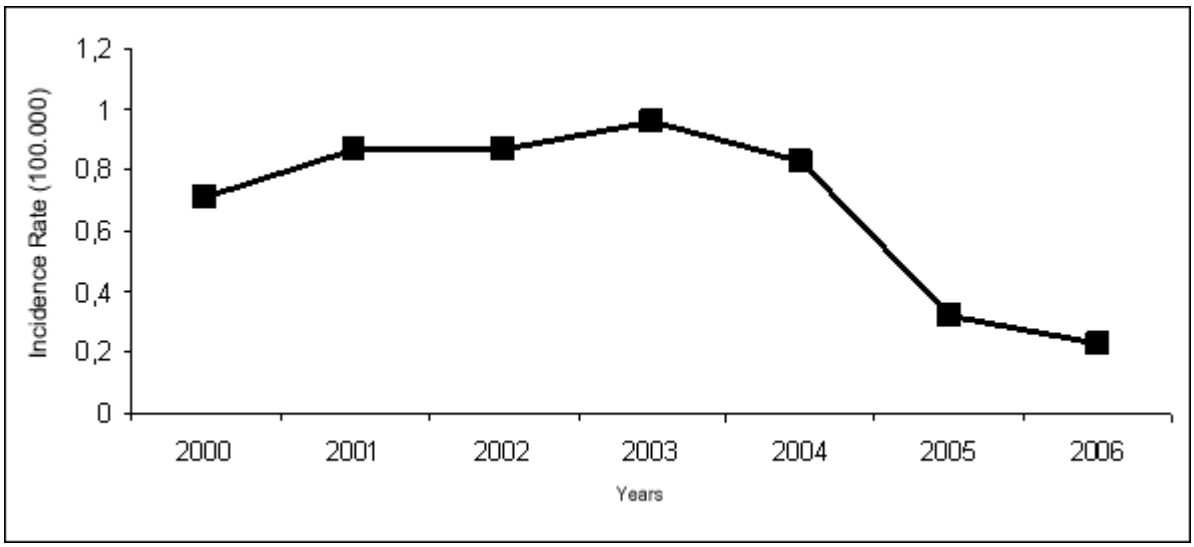

Figure 2-17: Meningitis Incidence Rates in 2000-2006 (100.000)

Source: Ministry of Health, General Directorate of Primary Care, Department of Communicable Diseases, 2007

Considering the incidence of three types of meningitis in 2003 NBD-CE Study, streptococcal pneumonia meningitis and h. influenza meningitis was found to be 0.800/100.000 in women and men; neissera meningitis 1.900/100.000 among men; 1.400/100.000 among women and 1.600/100.000 in total (17).

Considering the causes of mortality in 0-14 age group in 2003 NBD-CE Study, meningitis occupies the fifth rank with a share of 2.7 % among the first ten diseases. Perinatal causes have the biggest percentage (27.6 %) among total DALYs while meningitis occupies the sixth rank with 2.1 % (14).

2.4 GENETIC DISEASES

2.4.1 Phenylketonuria

Phenylketonuria (PKU) is an inherited metabolic disease characterized by a deficiency in the enzyme phenylalanine hydroxylase (PAH). The body does not properly metabolize an amino acid called phenylalanine, thus it accumulates in the blood and causes irreversible brain damage. If not diagnosed and cured in the early period, PKU results in severe mental retardation. Turkey is one of the countries where this disease is seen most often (1 / 4500 in Turkey). The reason is the high ratio of consanguineous marriages. 1 in 4 marriages in Turkey is a kinship marriage and these marriages most often happen between first degree relatives. Each year, approximately 300 babies are born with PKU. In Turkey, 4 persons in a hundred are PKU carrier. Mental retardation can be avoided with early diagnosis and treatment of the disease. With the support of the universities and under the responsibility of our Ministry, "National Newborn Phenylketonuria Screening Program" was initiated in 22 provinces in 1987 and expanded to the nation in 1993. Free screening tests for newborn is available in the scope of the program (18).

In most of the European countries, PKU screening is performed in the national level (19).

The objectives of the screening programs initiated in 1987 are; to screen each newborn for PKU, to provide proper diet treatment for the babies having PKU diagnosis in order to prevent mental retardation, and to provide rehabilitation for children with mental retardation. (20).

In 1987, screening tests were applied to 4.7% of the newborn. This ratio increased to 70.3% at the end of 2003, 81.2% in 2004, and 85.6% in 2005 (Table 2.9).

Table 2-9: Blood sample taken from newborns for PKU by years

Years	%*
2000	58.3
2001	61,0
2002	58.9
2003	70.3
2004	81,2
2005	85,6
2006	86,3

Source: Republic of Turkey, General Directorate of Maternal-Child Health and Family Planning, 2007

* In accordance with MoH Directive 2006/130; blood sample is taken from the newborn ideally on the 3rd-5th days after the birth. However, blood samples of babies who are born at health institutions are taken just before they leave the hospital, for the purpose of reaching as many as babies. If the sample was taken before the baby was fed enough, the parent is informed that they should consult the nearest health institution within the first week again. At the primary level health institutions, it is emphasized that if heel blood had not been taken from the child, or if the blood had been taken from baby's heel before 48-72 hours or before breastfeeding, heel blood must be retaken (21). For this reason, the table includes more than one samples taken from a baby.

Table 2.10 presents PKU screening and the number of cases detected.

Table 2-10: Phenylketonuria Screenings and Detected Cases by years

Years	Number of blood samples	PKU	PHPA (Persistent Hyper phenylalaninaemia)	THPA (Transient Hyper phenylalaninaemia)	Total case	Cumulative case
2000	816.227	96	40	39	175	1718
2001	855.004	109	146	50	305	2023
2002	824.787	99	92	70	261	2284
2003	1.041.497	98	96	44	238	2522
2004	1.119.432	94	79	37	209	2731
2005	1.157.734	104	191	201	295	3026
2006	1.167.089	97	130	531	227	3253

Source: Republic of Turkey, General Directorate of Maternal-Child Health and Family Planning, 2007

2.5 DIARRHEAL DISEASES

Globally, 5% of disability adjusted health loss and 4% of total deaths occur due to diarrhea. In 1998, it is estimated that 2.2 million people most of whom were children under 5 died from diarrhea. In the said year, approximately 4 billion diarrhea cases occurred in the world (22).

Figure 2.18 depicts incidence rates for acute bloody diarrhea for 2005 and 2006. As it is seen, acute bloody diarrhea incidence was 17.9 per 100.000 in 2005 and 14.5 in 2006.

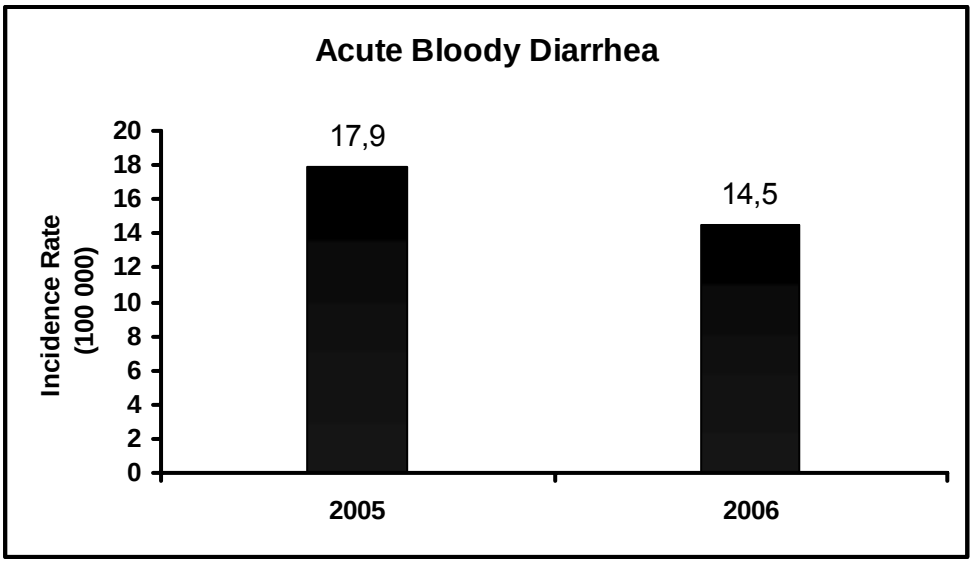

Figure 2-18: Incidence rates for acute bloody diarrhea, 2005-2006

Source: 2005 data from Republic of Turkey, Ministry of Health, General Directorate of Primary Health Care Services Study Yearbook, 2005; 2006 data from General Directorate of Primary Health Care Services Communicable Diseases Department, 2007

Figure 2.19 present typhoid fever morbidity rates for 2000-2006. Typhoid fever morbidity rates were estimated as 38.09/100.000 in 2000, 28.99/100.000 in 2003, and 2.08/100.000 in 2006. Starting from 2005, disease notifications have been done through standard case definitions.

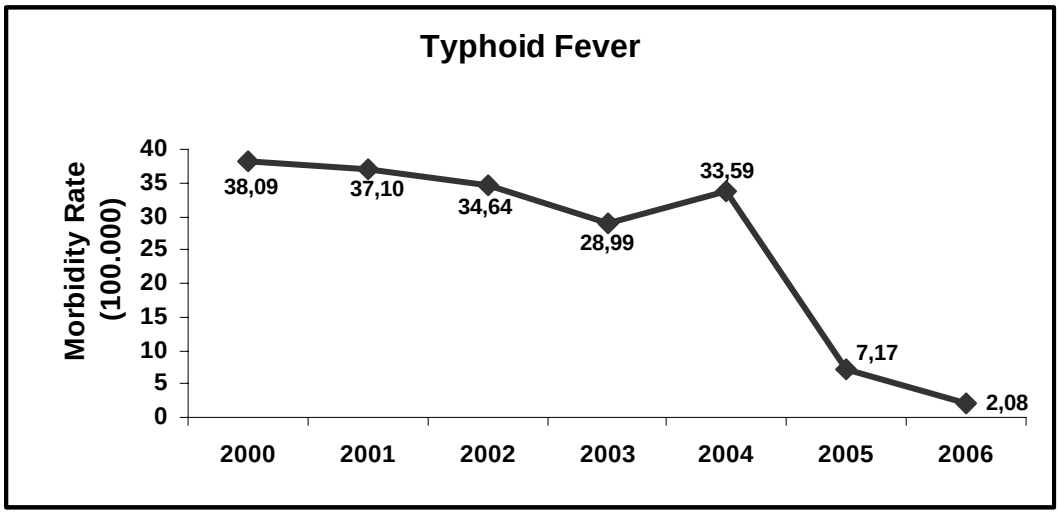

Figure 2-19: Typhoid fever morbidity rates for 2000-2006

Source: 2000-2005 General Directorate of Primary Health Care, Study Yearbook, 2005, 2006 General Directorate of Primary Health Care

As seen in Figure 2.20, Para-typhoid fever morbidity rate was 1,17/100.000 in 2000, 0,45/100.000 in 2003, and 0,60/100.000 in 2004.

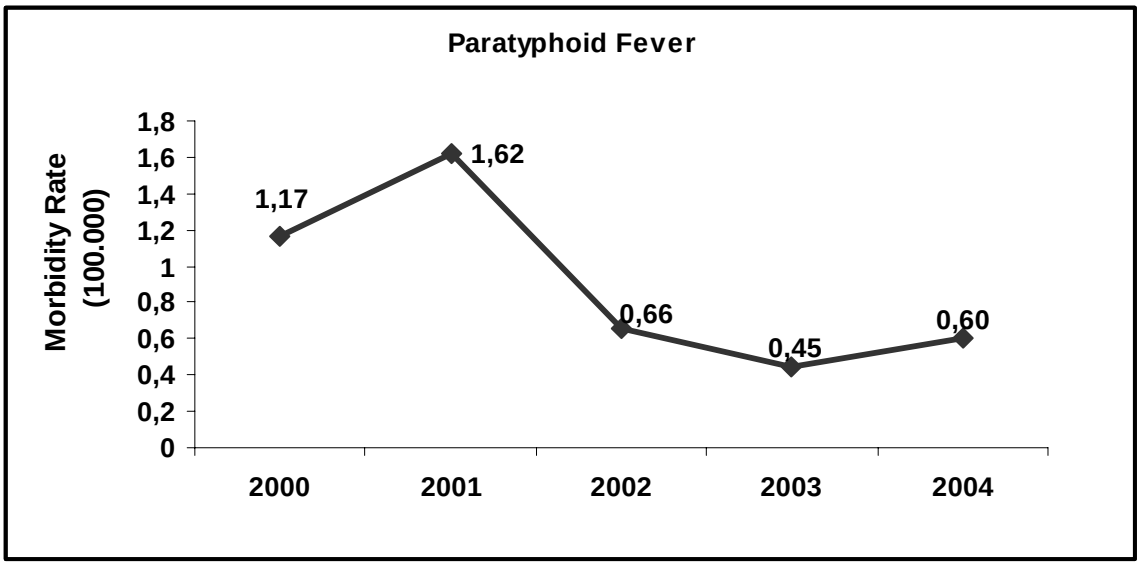

Figure 2-20: Paratyphoid fever morbidity rates for 2000-2004

Source: MoH, General Directorate of Primary Health Care, Study Yearbook 2004

Figure 2.21 presents amoebic dysentery morbidity rates for 2000-2004. The rates were found as 34,97/100.000 for 2000, 23,68/100.000 for 2003 and 28,76/100.000 for 2004.

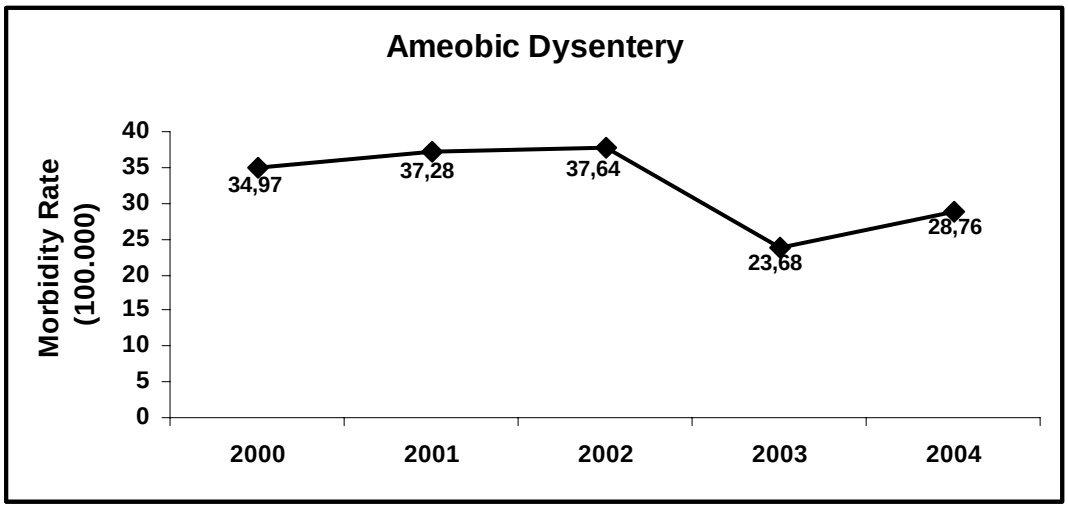

Figure 2-21: Amoebic dysentery morbidity rates for 2000-2004

Source: MoH, General Directorate of Primary Health Care, Study Yearbook 2004

Figure 2.22 presents bacillary dysentery morbidity rates for 2000-2004. The rate was found as 1.58/100.000 for 2000, 0,63/100.000 for 2003, and 0,85/100.000 for 2004.

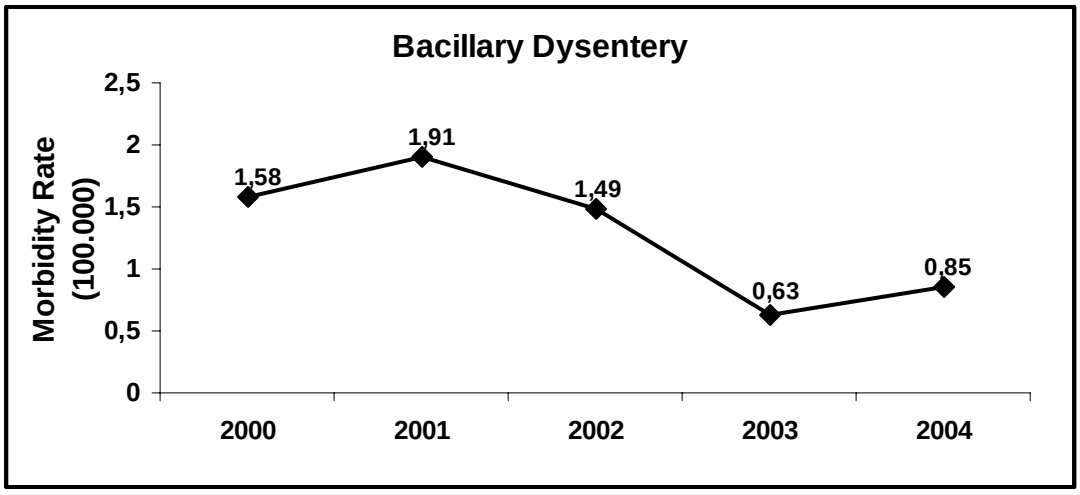

Figure 2-22: Bacillary Dysentery Morbidity Rate for 2000-2004

Source: MoH, General Directorate of Primary Health Care, Study Yearbook 2004

In the 2003 NBD-CE study, diarrheal diseases incidence was found as 29455.1 /100.000 in total, it is 29686.6 /100.000 among men and 29217.5/100.000 among women. Prevalence is 29.7 per thousand in total, 29.8 among men, 29.5 among women (17).

Figure 2.23 depicts Hepatitis A morbidity rates for 2000-2006. Hepatitis A morbidity rate is determined as 15.70 /100.000 for 2000, 9.64 /100.000 for 2003, 12.40 /100.000 for 2004, 12.81/100 000 for 2005, and 9.79/100 000 for 2006. Since the notifications of disease have been done according to standard case definitions since 2005, cases with confirmed diagnosis were taken starting from 2005.

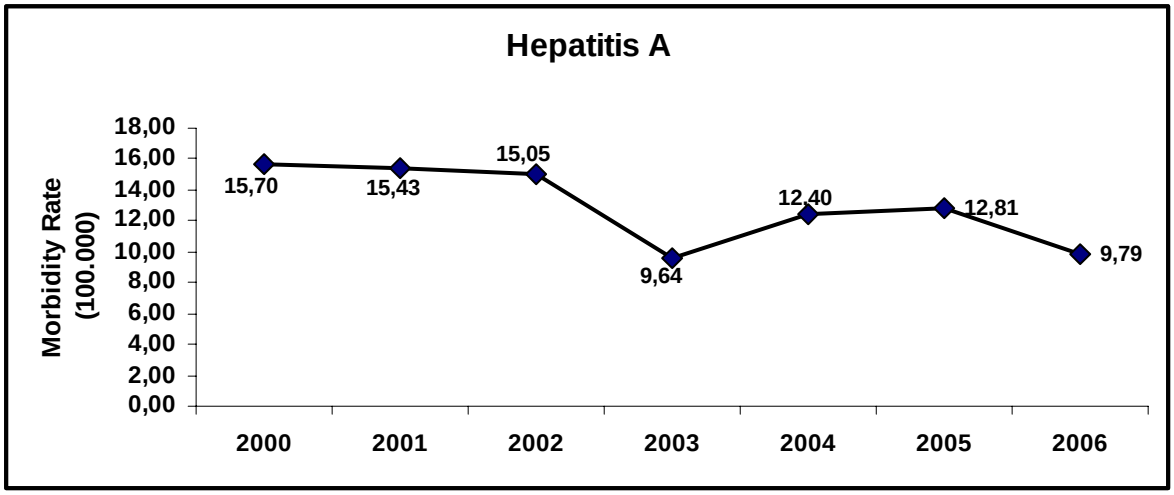

Figure 2-23: Hepatitis A Morbidity Rates for 2000-2006

Source: 2000-2005 General Directorate of Primary Health Care Services Study Yearbook 2005, 2006 General Directorate of Primary Health Care Services

Since 2004, the data have been collected in the direction of the Ministry of Health Standard Diagnosis, Surveillance, and Laboratory Guideline, thus the reason for the increase in the data for the year 2004 is thought to be caused by the guideline and the changed notification system.

Table 2.11 depicts the place of diarrheal diseases among the percent distribution of the first 20 diseases that cause death in the national level in Turkey.

Table 2-11: Diarrheal diseases among the first 20 causes of mortality in Turkey National Level, by Age groups, settlement area and regions (%)

	Total	Male	Female
National	1,5	1,6	1,4
0-14 age group	**8,4**	**8,3**	**8,6**
15-59 age group	-	-	-
60 years old and above	-	-	-
Urban	1,2	1,1	1,3
Rural	1,9	1,8	2,0
West	-	-	0,9
South	1,2	1,2	1,4
Central	1,2	1,1	1,3
North	1,2	1,2	1,2
East	**3,5**	**3,5**	**3,6**

Source: NBD-CE Burden of Disease Study, 2003

As indicated in Table 2.11, diarrheal diseases stand at the 12th rank among national level causes of death with a ratio of 1.5%. Diarrheal diseases are the fourth rank cause of death among the age group 0-14 with the ratio of 8.4%. Diarrheal diseases occupy the 13th rank among the causes of death in urban area with 1.2% and 10th rank in the rural area with 1.9%. Looking at the regional distribution, diarrheal diseases do not exist among the first 20 major diseases that cause death in the Western region, while they occupy the 6th rank in the eastern region with 3.5% ratio. In the regional age group distribution, diarrheal diseases are seen in the 4th rank among 0-14 age group total causes of death in the western, southern and central region and 3rd in the northern and eastern region.

Table 2.12 presents % distribution of diarrheal diseases among the distribution of the diseases that cause DALY in the national level.

Table 2-12: % Distribution of Diarrheal Diseases among the total DALY in national, age group, Rural-Urban, and Regional level

	Total %	Rank	Male %	Rank	Female %	Rank
National	2,0	11	2,1	10	2,0	12

0-14 age group	6,5	4	6,4	4	6,6	4
Urban	1,5	13	1,4	15	1,5	15
Rural	2,7	7	2,7	7	2,7	8
West	1,2	15	1,2	17	1,2	18
South	1,6	13	1,6	14	1,7	13
Central	1,6	13	1,6	14	1,7	13
North	1,8	13	1,8	13	1,7	13
East	3,9	5	4,0	5	3,7	5

Source: NBD-CE Burden of Disease Study, 2003

As depicted in Table 2.12, diarrheal diseases occupy the 11th rank among the total DALYs with a ratio of 2.0%. In the national level, diarrheal diseases are the 10th among the male population with 2.1%, and 12th among female population with 2.0%. In 0-14 age group, diarrheal diseases occupy the 4th rank with 6.5%. Among all age groups, diarrheal diseases are 13th in the urban area with 1.5%, and 7th in the rural area with 2.7%.

2.6 LOWER RESPIRATORY TRACT DISEASES

According to the 2003 NBD-CE Study, incidence of lower respiratory tract diseases was found to be 5661.9/100.000 which was 5511.3 among men and 5816.4 among women. Prevalence was 1.1/1000 in total and in both sexes (17).

In the 2003 NBD-CE Study, having 4.2 %, lower respiratory infections occupied the fifth rank among the first 20 diseases which caused mortality at national level in Turkey. As for the age groups, lower respiratory infections were the 2nd cause of death in total and both sexes in 0-14 age group; 8th in total in 15- 59 age group (the 11th rank among women and 7th rank among men); 7th in total and among men and 6th among women in 60+ age group (14).

Total burden of disease is noted 10,802,494 in Turkey. Respiratory system diseases constitute 675,876 of the burden of disease identified. Among first 20 diseases which cause DALY at national level in Turkey, lower respiratory infections occupy the fifth rank with 3.8 %. It is at the 8th rank with 2.6 % in the West while it is at the 2nd rank with 6.2 % in the East. In 0-14 age group, it is the second cause of burden of disease with 10.5 % in total and with 10.7 % among women while it is the third cause with 10.3 % among men in total DALYs (14).

2.7 PROTEIN-ENERGY MALNUTRITION

As for communicable diseases-related mortality in under-5 age children in developing countries, malnutrition is the major cause of 1 of every 2 deaths (53 %). In Africa, one of every two heavily undernourished children loses his/her life while being treated at hospital for insufficient care. One of every 4 pre-school children suffers from under nourishment which effects their mental and physical development severely (23). Heavy malnutrition is defined as the weight which is less than 70 % of the height or below -3SD and/or edema in both legs. Maternal health should be promoted and child mortality should be decreased since both are very important to decline malnutrition which causes 54 % of 10.8 million child deaths that occur in under-5 age children every year (24).

Table 2-13: Nutrition Status of Children in 1993-1998 period and in 2003

	Height by Age		**Weight by Height**		**Weight by Age**	
Years	Percentage below -3 SD	Percentage below -2 SD	Percentage below -3 SD	Percentage below -2 SD	Percentage below -3 SD'	Percentage below -2 SD
1993	5,9	18,9	0,4	3,0	1,8	9,5
1998	6,1	16,0	0,4	1,9	1,4	8,3
2003	3,6	12,2	0,3	0,7	0,6	3,9

Source: 1993, 1998 and 2003 Turkey Demographic and Health Survey (TDHS)

Looking at the Table 2.13, it would be seen that stunting, which was noted 18.9 % in 1993 TDHS, was receded to 12.2 % in 2003 TDHS. The percentage of underweighted children was noted 9.5 % in 1993 and decreased to 3.9 % in 2003. Though being too slight, some decrease was also noted in wasted percentage from 1993 to 2003.

Table 2-14: Nutrition Status of Children by Basic Features

	Height by Age		Weight by Height		Weight by Age	
Basic Feature	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below -2 SD[1]
Child's Age (in months)						
<6	0,3	2,2	0,4	1,2	0,2	0,8
6-9	3	5,6	0	0,8	0	1,7
10-11	2,8	10,8	0,4	1,5	1,9	5,7

12-23	1,4	12,4	0,4	0,8	0,5	2,9
24-35	3,5	12,2	0,7	1	1,3	5,2
36-47	6	15,4	0	0,3	0,3	5,1
48-59	5,3	15,4	0,2	0,3	0,6	4,1
Child's Sex						
Male	2,9	10,9	0,4	1	0,6	3,2
Female	4,5	13,6	0,1	0,4	0,7	4,7
Settlement Area						
Urban	2,6	9	0,3	0,7	0,6	2,8
Rural	5,6	18,4	0,3	0,8	0,8	5,9
Region						
West	0,6	5,5	0,5	0,7	0,5	1,9
South	2,7	10,4	0,2	0,4	0,2	2,8
Central	2,6	9,5	0,3	0,8	0,8	2,9
North	3,7	13,0	0,2	0,7	0,0	2,2
East	8,3	22,5	0,1	0,8	1,1	7,7
Total	**3,6**	**12,2**	**0,3**	**0,7**	**0,6**	**3,9**

Source: 1993, 1998 and 2003 Turkey Demographic and Health Survey (TDHS)

These figures apply to those who were born in 0-59 month period prior to the survey date. Each index is expressed as the standard deviation units' number on the intermediate value of the NCHS/CDC/WHO international reference group. Children whose standard deviation (SD) z scores form the intermediate value of the reference group were -2 or -3 (-2SD or –3SD) were classified as undernourished.

[1] Also covers children below -3 SD.

According to the TDHS-2003 Study, it was noted that one of every eight children in under-5 age was stunted and more than ¼ of these children were severely stunted. Weight-by-height z-scores of less than 1 % of under-5 age children were below -2SD. It was also found out that 4 % of under-5 age children were underweighted according to the weight-by-age index (2).

Table 2.14 presents the nutrition status of children by basic features. As indicated by important findings of the study; the percentage of children who are stunted in the first year of life increases outstandingly, it is about 10-15 % until the age of 3 and it exceeds 15 % later. Underweight percentage increases up to 5 % at the end of the first age and then becomes stabile at about 3-7 %. The percentage of wasted children in all ages is too low (2).

As pointed out by the 2003 NBD-CE Study:

Wasting incidence is 62.9/100.000 in total, 64.3 among men and 61.6 among women. Prevalence is 1.9/1000 in total, 2.1 among men and 1.6 among women.

Stunding incidence is 243/100.000 in total, 248.2 among men and 237.6 among women. Prevalence is 15.5/1000 in total, 15.8 among men and 15.3 among women.

Developmental disability incidence is 32.2/100.000 in total, 32.9 among men and 31.5 among women. Prevalence is 20.5/1000 in total, 20.3 among men and 20.8 among women.

Among the first 20 diseases which cause mortality at national level in 0-14 age group, protein energy malnutrition is at the 10th rank with 1.2 %, at the 11th rank among men with 1.1 % and at the ninth rank among women with 1.3 % (14).

437.314 of the burden of disease which is noted in Turkey are caused by the nutritional deficiencies diseases. While nutritional deficiencies has a share of 2.4 % among diseases which cause DALY among men, it is 5.8 % among women. Having a share of 1.6 % among the first 10 diseases which cause DALY at national level in 0-14 age group, protein energy malnutrition is at the 9th rank in total DALYs (7th rank in men with 1.5 % and 10th rank in women with 1.7 %). Protein energy malnutrition, which is not included in the list of first 10 diseases that cause in 0-14 age group in urban areas and both sexes, occupies the 8th rank in rural areas with 1.7 %. As for distribution of disease groups which cause DALY is the Eastern Region, malnutrition has a share of 3.0 % among men and 6.1 % among women while it has a share of 2.1 % among men and 5.8 % among women in the Western Region (14).

Once the 2008 TDHS study is accomplished, it would be possible to see the changes and especially the effects of the Program for Transformation in Health in this field.

2.8 CONGENITAL ANOMALIES

No registry system is available for disabled population in Turkey including those with congenital anomalies. The proportion of population with disability and continuous diseases to entire population is 12.29. While the proportion of people with orthopedic, seeing, hearing, speaking and mental disability is 2.58 %, the proportion of those with a continuous disease is 9.70 % (25).

Table 2.15 presents the proportion (%) of people with congenital anomalies to total disabled population by the type of disability.

Table 2-15: Proportion of People with Congenital Anomalies to the Total Number of Disabled People (%)

Type of Disability	Total Number of Disabled People	People with Congenital Anomalies (%)
Orthopedic	857.631	23,91
Seeing	412.312	20,41
Hearing	252.810	29,49
Speaking	263.007	46,63
Mental	331.424	47,92

Source: TURKSTAT, Turkey Disability Survey 2002

As indicated in the Table 2.15, total number of disabled people is 857.631 and 23.91 % of this population has congenital anomaly. 20.41 % of people with seeing disability, 29.49 % of people with hearing disability, 46.63 % of people with speaking disability and 47.92 % of people with mental disability are congenitally disabled.

Table 2-16: Cause of Congenital Disability at National Level

Type of Congenital Disability	Genetic and Hereditary Deformity	Blood Discordance	Birth Trauma	Baby Lacking Oxygen of During Delivery	Medicines Used by Mother during Pregnancy	Illnesses Infected by Mother during Pregnancy	Insufficient Nutrition of Mother during Pregnancy	Not Knowing	Unknown
Orthopedic	16.96	3.76	9.73	6.11	2.53	3.31	2.04	53.24	2.22
Seeing	23.42	5.38	4.75	4.20	2.30	4.19	2.11	51.91	1.73
Hearing	19.74	6.45	6.03	1.35	1.60	4.41	1.03	54.99	4.40
Mental	22.91	6.56	6.52	10.36	2.14	3.33	2.26	43.91	2.00

Source: TURKSTAT, Turkey Disability Survey 2002

Considering the causes of congenital disability at national level which are presented at the Table 2.16, it could be seen that genetic and hereditary deformity have the highest share in all causes. They are followed by birth traumas.

Table 2-17: Incidence and Prevalence Rates of Congenital Anomalies

	Incidence Rate (100.000)			Prevalence (1000)		
Congenital Anomalies	**Men**	**Women**	**Total**	**Men**	**Women**	**Total**
Abdominal Wall Defect	0,200	0,200	0,200	0,000	0,000	0,000
Anencephaly	3,000	4,800	3,900	0,000	0,000	0,000
Anorectal Atresia	0,200	0,200	0,200	0,100	0,000	0,100
Cleft Lip	0,900	0,900	0,900	0,400	0,400	0,400
Cleft palate	0,400	0,400	0,400	0,200	0,200	0,200
Oesophageal Atresia	0,200	0,200	0,200	0,000	0,000	0,000
Renal Agenesis	0,500	0,500	0,500	0,000	0,000	0,000
Down Syndrome	0,900	0,500	0,700	0,300	0,200	0,200
Congenital Heart Anomalies	77,100	78,300	77,700	6,300	6,200	6,300
Spina Bifida	0,200	0,200	0,200	0,100	0,100	0,100

Source: NBD-CE Study Annex 1-6, 2003

Table 2.17 presents incidence and prevalence rates of congenital anomalies handled by the 2003 NBD-CE Study.

Among the first 20 diseases which cause mortality at national level in Turkey, congenital anomalies have a share of 1.6 in total (which is 1.6 % among men and 1.5 %

among women). Among the first 20 diseases which cause mortality at national level in 0-14 age group, congenital anomalies occupy the 3rd rank in total and both sexes (10.3 % in total, 10.7 % among men and 10.0 % among women). With respect to diseases which cause mortality at national level in urban areas, they are at the 10th rank with 2.2 % while they are at the 17th rank in rural areas with 0.9 %. The case is similar 0-14 age group. Congenital anomalies which are the second cause of deaths in both sexes, in total, in urban areas and in the west occupy the fourth rank in rural areas and in the east (14).

Among the first 20 diseases which cause DALY an national level in Turkey, congenital anomalies are at the 6th rank in total with a share of 3.0 % and in men with a share of 3.1 % and at the 8th rank in women with a share of 2.8 %. With regards to distribution by age groups, congenital anomalies in 0-14 age group are the 3rd burden of disease at national level in total with a share of 10.3 %. Rural and urban areas have an association which is parallel to the cause of mortality. In urban areas, they are the 5th burden of disease (3.5 %), while they are the 2nd in 0-14 age group. In rural areas, they are the 9th burden of disease in total (2.2 %) while they are the 4th in 0-14 age group (14).

2.9 MORBIDITY AND MORTALITY AMONG ADULTS

2.9.1 Crude Death Rate

As presented in Figure 2.24, crude death rate is 6.2 per thousand for 2003-2005 and 6.3 for 2006 according to the data from TURKSTAT.

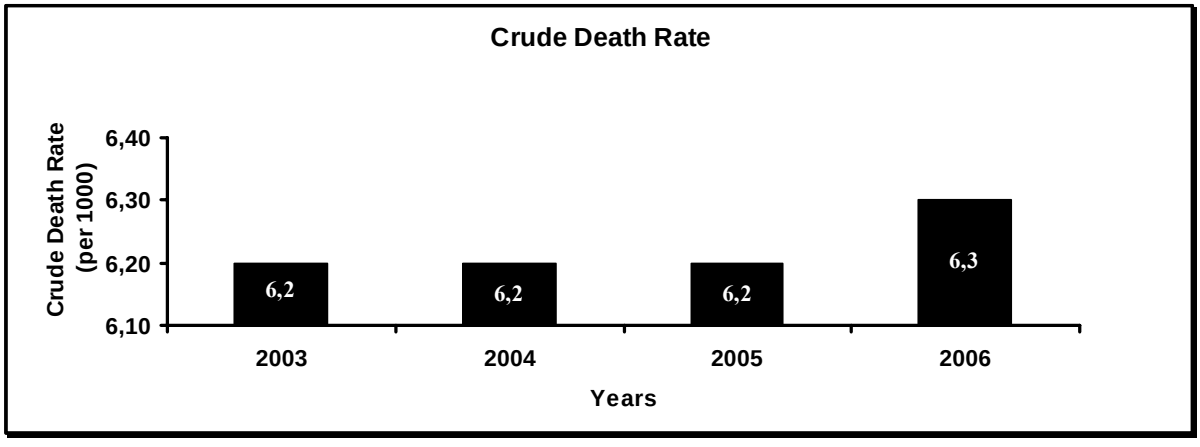

Figure 2-24: National level Crude Death rate between 2003-2006

Source: TURKSTAT (www.tuik.gov.tr) , 2007

Figure 2.25 depicts crude death rate comparison of countries. CDR is 10 per thousand in Sweden, 15 per thousand in Bulgaria, 11 per thousand in Greece and 6 per thousand in Turkey.

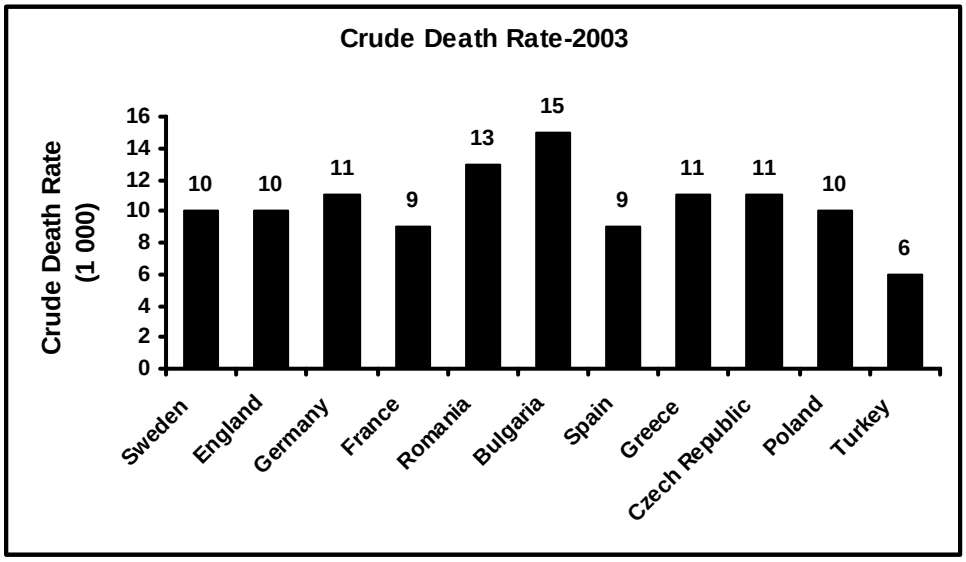

Figure 2-25: CDR Country Comparison-2003

Source: Status of World Children 2005, UNICEF

As seen in Figure 2.26, national level CDR is estimated to be 6.5 per thousand for 2010, 7.0 per thousand for 2020, and 7.7 for 2030.

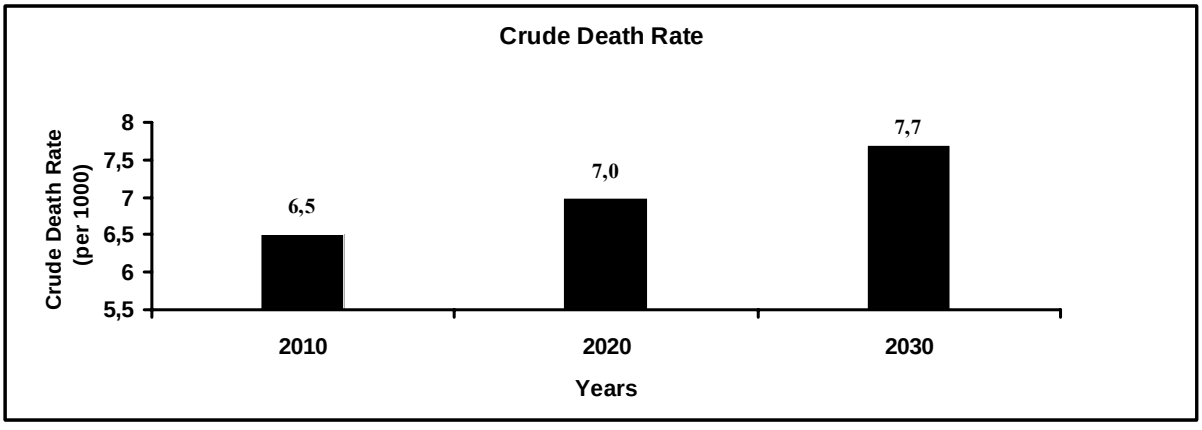

Figure 2-26: CDR estimates for 2010, 2020 and 2030 in the national level

Source: TURKSTAT (www.tuik.gov.tr), 2007

2.9.2 Cardiovascular Diseases (CVD)

Cardiovascular diseases are heart and heart vein disorders including coronary diseases, cerebrovascular diseases, peripheral artery diseases, rheumatoid heart diseases, congenital heart diseases, deep vein thrombosis and pulmonary embolism. Cardiovascular disease is the number one cause of death worldwide. It is estimated that, 17.5 million people died from cardiovascular diseases in 2005, which is 30% of the total number of deaths in the world. 7.6 million deaths were caused by coronary heart diseases and 5.7 million deaths were caused by stroke. More than 80% of CVD occur in low and mid-income countries. It is estimated that 20 million people shall die from CVD in 2015, particularly from heart diseases and stroke (26).

There is not a recording system in respect to cardiovascular diseases in Turkey. Data on this subject are obtained from conducted studies.

Table 2-18: Incidence and Prevalence Rates of Cardiovascular Diseases

	Incidence Rates (100.000)			Prevalence (1000)		
Cardiovascular Diseases	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Rheumatic heart disease	7,800	9,200	8,500	0,400	0,500	0,400
Hypertensive heart disease	21,000	31,400	26,100	15,000	28,000	22,000
Angina pectorisis	840,000	640,000	740,000	41,200	35,000	38,000
Acute MI	167,400	144,900	156,300	0,799	0,490	0,648
Congestive heart failure	220,000	211,700	215,900	0,810	0,540	0,680
Cerebrovascular disease	67,100	72,100	69,600	3,190	3,190	3,190
Long-term stroke	168,800	156,000	162,500	10,900	9,100	10,000
Inflammatory heart diseases	67,600	36,300	52,200	2,000	1,100	1,600
Other Cardiovascular diseases	446,900	407,900	427,700	5,400	5,100	5,300

Source: NBD-CE Study Annex 1-6, 2003

Table 2.18 presents detailed incidence and prevalence rates of NBD-CE study related to cardiovascular diseases.

Figure 2.27 depicts % distribution of deaths in the national level by major disease groups. Cardiovascular disease is the number one cause of death, with 205,457 deaths (47.73% of total causes of death). Among the cardiovascular diseases are ischemic heart diseases, cerebrovascular diseases, rheumatic heart diseases, inflammatory and hypertensive heart diseases. The ratio of deaths caused by cardiovascular diseases is 43.89% (102,386) among male population, and 52.27% (103.071) among female population.

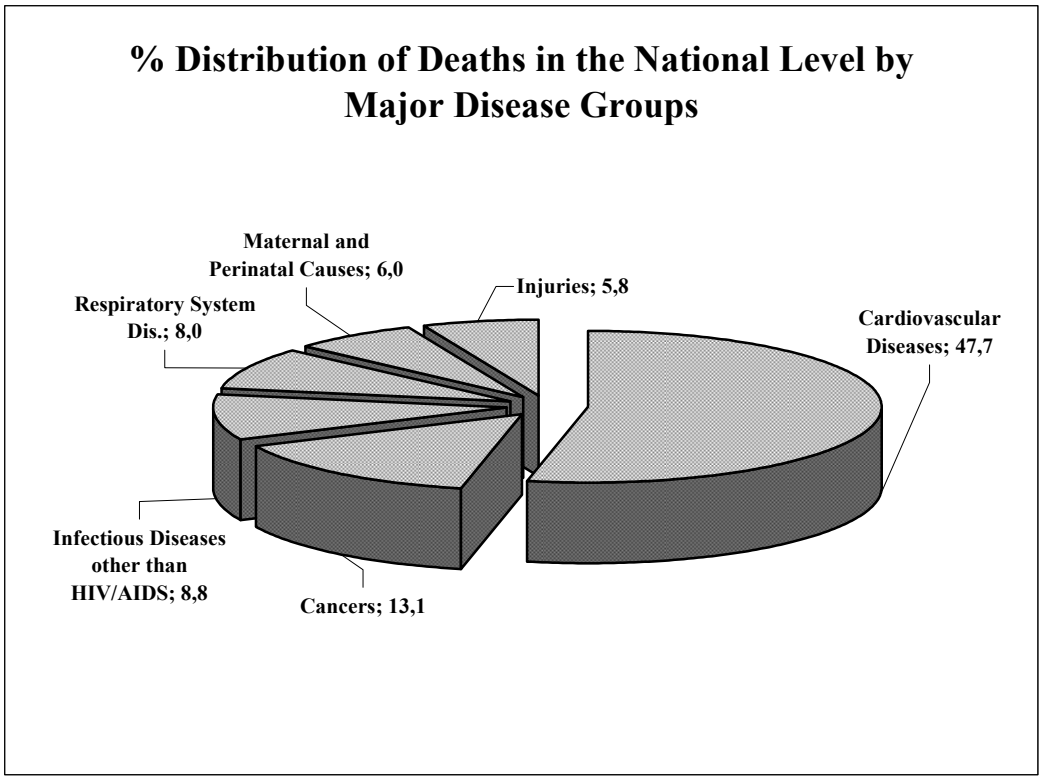

Figure 2-27: % distribution of deaths in the national level by major disease groups

Source: NBD-CE Burden of Disease Study, 2003

As seen in Figure 2.28, the number one in the total burden of disease in the national level (10.802.494 DALY) is the Cardiovascular diseases with a ratio of 19.32 (2,086,527 DALY).

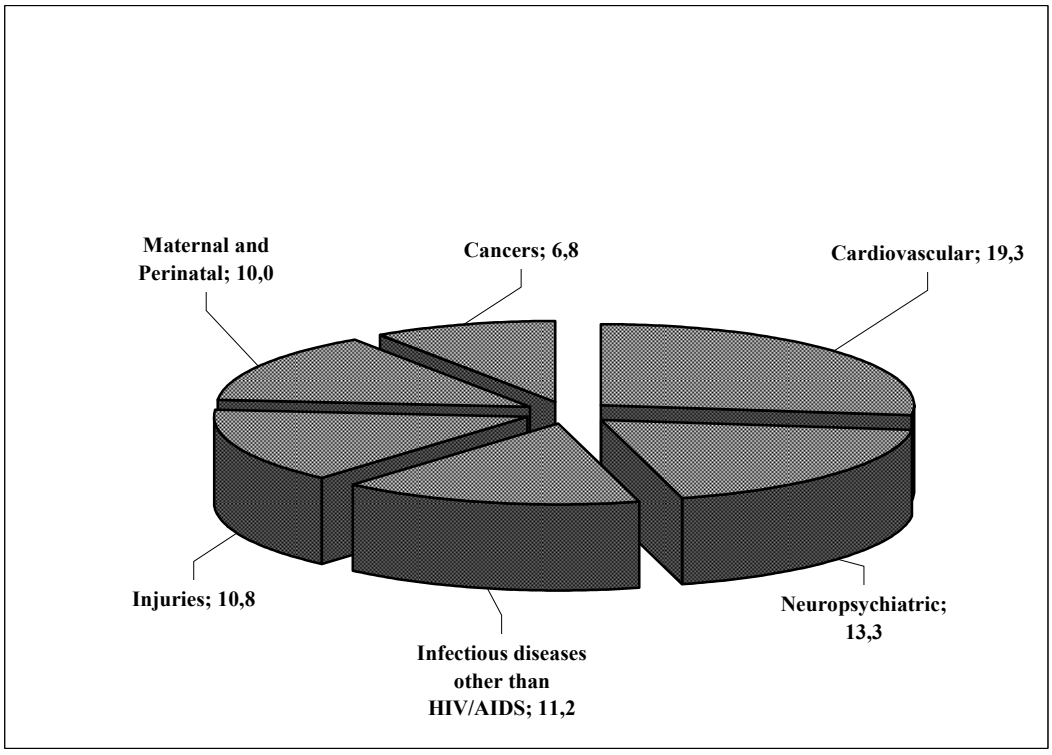

Figure 2-28: Distribution of National level DALY causes by major disease groups (%)

Source: NBD-CE Burden of Disease Study, 2003

Table 2-19: DALY Distribution of Cardiovascular Diseases at the National level

	Total (DALY)	%	Female (DALY)	%	Male (DALY)	%
Turkey	2.086.527	19,32	924.825	18,00	1.161.702	20,51
Urban	1.183.747	18,44	491.141	16,49	692.606	20,13
Rural	911.838	20,80	424.887	19,66	486.951	21,90
West	770.669	22,34	345.225	21,14	425.445	23,42
South	281.310	19,97	121.750	18,31	159.560	21,46
Central	490.688	20,57	217.167	19,15	273.522	21,86
North	221.146	23,08	101.155	21,71	119.991	24,38
East	323.076	12,42	139.716	11,26	183.360	13,49

Source: NBD-CE Burden of Disease Study, 2003

Looking at the DALY distribution of national level cardiovascular diseases in Table 2.19, it is observed that cardiovascular diseases occupy 20.5% of total burden of disease among men and 18% among women. Cardiovascular diseases are the number one cause of disease burden in all regions except east and rural-urban area. It is the fourth in the Eastern region.

Figure 2.29 presents the estimates of deaths from cardiovascular diseases among both sexes in the years 2010, 2020, and 2030. Deaths from cardiovascular diseases are estimated as to be 134.700 in 2010 and 235.567 in 2030 among men; and 123.411 in 2010 and 180.530 in 2030 among women.

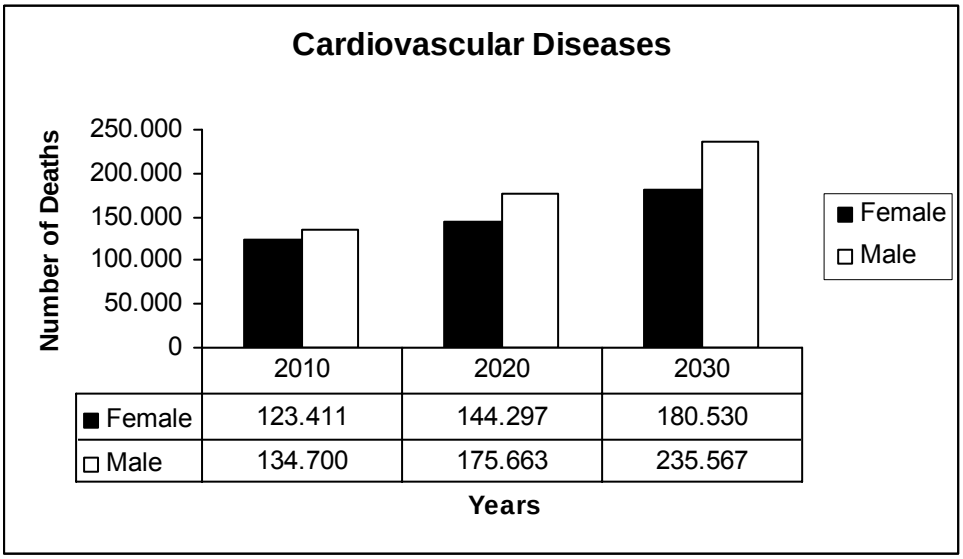

Figure 2-29: 2010, 2020 and 2030 Estimates for deaths caused by Cardiovascular Diseases by sex

Source: NBD-CE Burden of Disease Study, 2003

2.9.3 Ischemic Heart Diseases and Cerebrovascular Diseases

2.9.3.1 Ischemic Heart Diseases

17.5 million people died from cardiovascular diseases in 2005, which is 30% of the total number of deaths in the world. 7.6 million deaths were caused by coronary heart diseases and 5.7 million deaths were caused by stroke. (26).

2003 NBD-CE Study demonstrates that 5.56% of interviewees 18 years old and above were diagnosed angina pectorisis or chest pain by a physician (27).

Ischemic heart disease is the number one cause of death with the ratio of 21.7% in national level; 22.9% among women and 20.7% among men in all age groups. In urban, rural and regional distribution, it is the number one cause of death in total and in both sexes. It occupies the first rank in total and sex distribution of age groups by regions. In the regional distribution, it is the second only among women aged 15-59 in the eastern region (14).

Among the 20 major diseases that cause DALY at the national level, ischemic heart diseases occupy the second rank with 8.0%. Among all age groups, ischemic heart diseases occupy first rank among men with 8.9% and second among women with 6.9%. Among 15-59 age group, it is the first rank cause of disease burden in total and among men, and the third among women. In the age group 60 and above, it occupies the first rank in total and among both sexes. In the urban and rural distribution, it is the second after perinatal causes. In the Eastern region, it has 4.2% ratio and comes after perinatal causes and lower respiratory infections (14).

2.9.3.2 Cerebrovascular Diseases

According to the 2003 NBD-CE Study, cerebrovascular diseases incidence was found to be 69.6/100.000 in total, 67.1/100.000 among men and 72.1/100.000 among women. Prevalence is 3.19 per thousand in total and among both men and women (17).

Among the first 20 causes of death in all age groups in Turkey at the national level, cerebrovascular diseases occupy the second rank with 15.0% (15.7% among women, 14.5% among men). Looking at the age group distribution, cerebrovascular diseases are the second in total causes of death in 0-14 age group with 0.9%, in 15-59 age group with 10.2% and in 60+ age group with 20.7%. In the urban and rural area, cerebrovascular diseases are in the second rank among the causes of death in all age group totals, in both sexes, and in 15-59 and 60+ age group. In all regions except eastern region, it is in the second rank among the causes

of death in all age group totals, in both sexes, and in 15-59 and 60+ age group. In the Eastern region, it comes the third after perinatal causes (14).

Cerebrovascular diseases occupy the third rank in the distribution of 20 major diseases that cause DALY in urban and rural area at the national level in Turkey. Among all age groups, cerebrovascular diseases are in the third rank among men with 6.3% and among women with 5.5%. It is the third among the diseases that cause DALY in 15-59 age group with 5.2%. In the same age group, it is the second among men with 5.9%, and the sixth among women with 4.3%. In the age group 60 and above, it is the second disease that cause burden of disease in total and among both sexes. In urban area, it is the sixth in 15-59 age group with 3.4%, while it is the third in rural area with 5.5%. Looking at the regional distribution, it occupies the second rank in total in the western region, while it is the fourth in the eastern region. Yet, Eastern region differs from other regions in regard to having cerebrovascular diseases as the first cause of the burden of disease among women with 16.2% (14).

Figure 2.30 depicts the % distribution of first 10 diseases that cause death at the national level in Turkey. According to this, ischemic heart diseases with 21.7% and cerebrovascular diseases with 15.0% are the first two causes of death.

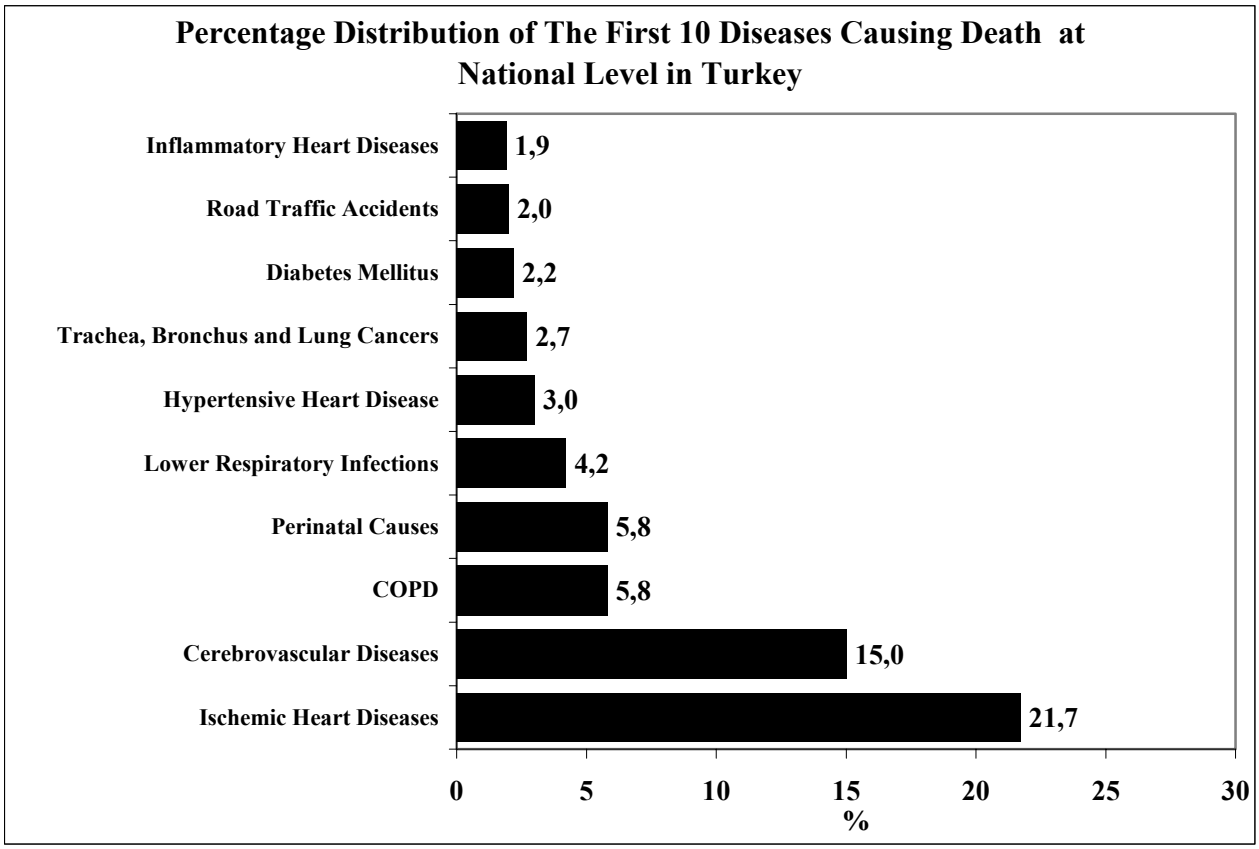

Figure 2-30: Distribution of first 10 Diseases that Cause Death at the national Level (%)

Source: NBD-CE Burden of Disease Study, 2003

Figure 2.31 presents % distribution of first 10 diseases that cause DALY at the national level in Turkey. Among the causes of DALY, ischemic heart diseases (8.0%), and cerebrovascular diseases (5.9%) come second and third after perinatal causes.

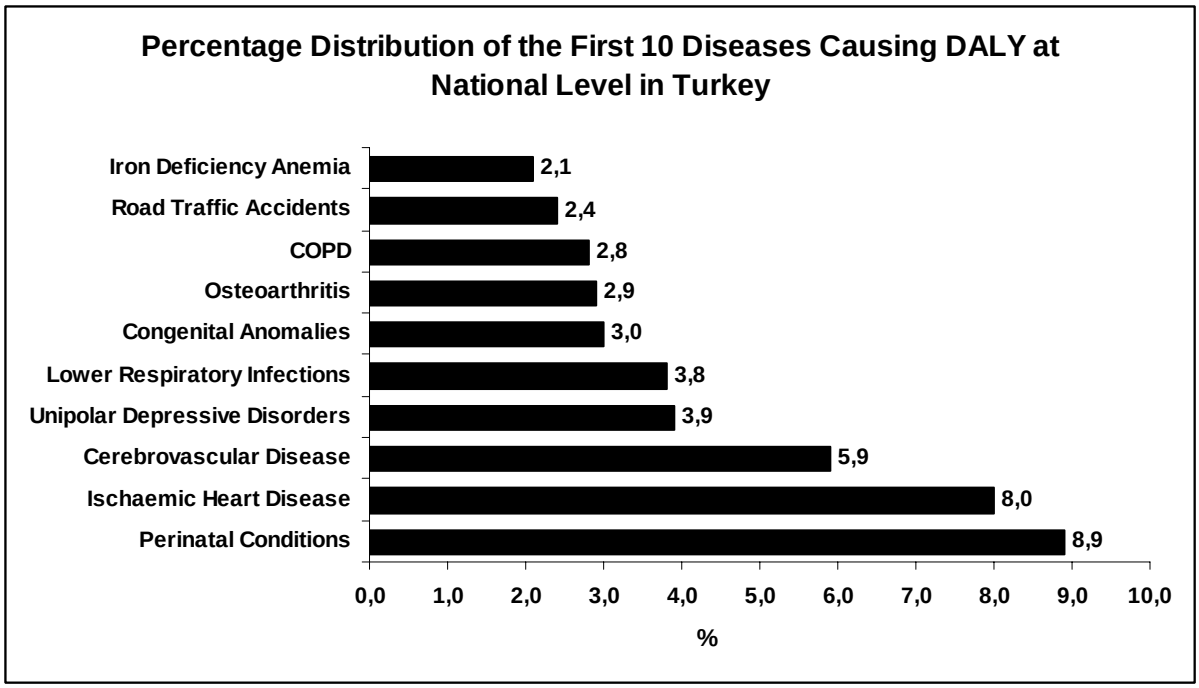

Figure 2-31: Distribution of first 10 Diseases that Cause DALY at the national Level (%)

Source: NBD-CE Burden of Disease Study, 2003

2.9.4 Hypertension (HT)

High blood pressure is one of the 10 major risk factors. It is estimated that high blood pressure is the cause of 13% of total deaths in the worldwide, which means 7.1 million deaths, and cause of 64.3 million DALY (4.4% of total DALYs) (28).

Since hypertension was included in the Turkey's current record system in 2006, it is not likely to find out hypertension prevalence and analyze retrospectively. There are some studies conducted on the issue.

Table 2-20: Hypertension Prevalence in Turkey

	HT Prevalence %		
Study	**Total**	**Female**	**Male**
Turkey Hypertension Prevalence Study	31.8	36.1	27.5
Turkey Obesity and Hypertension Screening (/1000)	37.8	38.5	39.0
TEKHARF 2003/2004		49.1	36.3
NBD-CE Study	13,67	18.25	7.57

Table 2.20 presents the results of studies conducted in Turkey on hypertension. Different methodology of the studies might explain the difference between results.

- According to the results of Turkey Hypertension Prevalence Study, hypertension prevalence is 31.8% in total, 27.5% among men and 36.1% among women in the national level and by sex (29).
- In Turkey Obesity and Hypertension Screening (TOHTA) Study, hypertension prevalence was found to be 37.8 per thousand in total, 39.0 per thousand among men, and 38.5 per thousand among women (30).
- Hypertension prevalence was found to be 36.3% among adult men and 49.1% among women in the TEKHARF Study 2003/2004 cohort (31).
- In the 2003 NBD-CE Study Household Survey, it was found out that, based on self-declaration, 13.67% of 18 years old and above interviewees (7.57% among men, 18.25% among women) had received HT diagnosis by a physician (27).

2.9.5 Diabetes

World Health Organization (WHO) estimates that more than 180 million people worldwide have diabetes. In 2005, an estimated 1.1 million people died from diabetes. Almost 80% of deaths occur in low and middle-income countries. WHO projects that diabetes deaths will increase by more than 50% in the next 10 years without urgent action (32).

According to Turkey Diabetes Epidemiology Study (TURDEP), diabetes prevalence was found to be 7.2% (8.0% among women and 6.2% among men) (33).

In TEKHARF Study, diabetes prevalence on total cohort was found to be 8.1% among men and 8.9% among women (34).

In "Healthy Feeding for Cardiac Health Project" Study that was published in 2004 by the MoH General Directorate of Primary Health Care, total diabetes ratio 11.9% (12.0% among women and 11.6% among men) (35).

According to 2003 NBD-CE Study Household Survey, diabetes prevalence among 18 years old and above people was found to be 4.75% based on self-declaration. Diabetes prevalence by sex is 5.75% among women and 3.42% (27).

There are not any separate forms for chronic diseases among the forms used for data collection in our Ministry. It is assumed that data in existing forms may include repetitions.

In the 2003 NBD-CE study, diabetes incidence was found to be 3820 per 100.000 in total, 3210.2 among men and 4280.1 among women. Prevalence is 55.8 per thousand in total, 46.5 among men and 62.8 among women (17).

Diabetes occupies the 8th rank among the diseases that cause death at the national level. It is the 11th among men and 7th among women. Diabetes is the 6th in total causes of death among 15-59 age group, and 8th in total causes of death among 60+ age group. Diabetes Mellitus constitutes 2.1% of the total causes of death in the urban area and 2.3% of the total causes of death in the rural area. According to the regional distribution, diabetes has a ratio of 2.3% in total causes of death in the western region, 1.8% in the eastern region (14).

Table 2-21: Diabetes Mellitus DALY Distribution at the national level

	Total (DALY)	%	Female (DALY)	%	Male (DALY)	%
Turkey	203.027	1.88	109.869	2,14	93.158	1.64
Urban	114.674	1.79	59.149	1.99	55.525	1.61
Rural	87.807	2.00	49.183	2.28	38.624	1.74
West	72.251	2.09	39.724	2.43	32.527	1.79
South	27.240	1.93	14.435	2.17	12.805	1.72
Central	48.097	2.02	25.949	2.29	22.148	1.77
North	21.789	2.27	12.094	2.60	9.694	1.97
East	33.672	1.29	17.682	1.42	15.989	1.18

Source: NBD-CE Burden of Disease Study, 2003

As indicated in Table 2.21, diabetes mellitus is 12th disease that cause DALY at the national level in all age groups with 1.9% (1.6% among men, 2.1% among women). It is 12th in the urban area (1.8%), while occupies the 11th rank in the rural area (2.0%).

In 15-59 age group, Diabetes does not exist among the first 10 diseases that cause DALY at the national level, however, it is a burden of disease in the 4th rank in 60+ age group with 4.9%. Among the first 10 diseases that cause DALY at the national level and in 60+ age group, it has a ratio of 3.9% among men and 5.8% among women (14).

Figure 2.32 depicts the estimated deaths from diabetes mellitus among men and women for the years 2010, 2020, and 2030. Diabetes mellitus-caused deaths are estimated to be 3.982 among men in 2010, 4.366 in 2020, and 4.868 in 2030. Among women, the estimates are 6.174 deaths in 2010, 6.902 in 2020, and 8.175 in 2030.

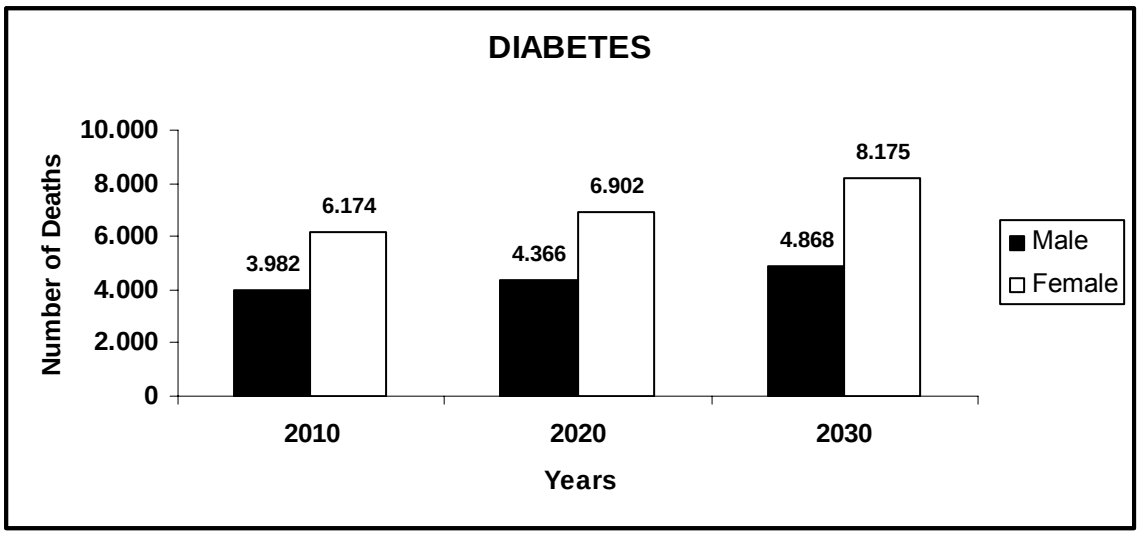

Figure 2-32: Estimates for Diabetes Mellitus-caused deaths among men and women for the years 2010, 2020 and 2030

Source: NBD-CE Burden of Disease Study, 2003

2.9.6 Asthma

According to World Health Organization (WHO) estimates, 300 million people suffer from asthma and 255 000 people died of asthma in 2005. Asthma is the most common chronic disease among children. Asthma is not just a public health problem for high income countries. Over 80% of asthma deaths occur in low and lower-middle income countries. Without urgent action, asthma-caused deaths will increase approximately by 20% in the next 10 years (36).

There are not sufficient data in our notification system related to the disease. Data related to Asthma are obtained from various studies. According to these studies;

- Asthma prevalence is 3.87% among 18+ years old people in Turkey. Asthma prevalence is 3.11% among men and 4.44% among women (27).
- Asthma prevalence was found to be 2.71% among 15+ age group in Denizli province (3.58% among women and 1.84% among men) (37).

In 2003 NBD-CE study, asthma incidence was found to be 204.9 per 100.000 in total, 256.2 among men and 152.2 among women. Prevalence is 38.7 per thousand in total, 31.1 among men and 44.4 among women (17).

In the national level age group distribution, Asthma is among the first 20 diseases that cause death, only among men with a ratio of 0.2% in 0-14 age group. Asthma, as the 7th cause

of death in 0-14 age group in the urban area, does not exist among the first 20 diseases that cause death in the same age group in the rural area. In the 15 – 49 age group national level causes of death ranking, asthma is the 18th with 1.3% ratio. In the same age group, it is the 20th with 1.3% ratio in the urban area. In the rural area, though asthma is 20th rank cause of death among men with 1.1%, and 17th among women with 1.5% in the same age group, it is not among the first 20 diseases in total (14).

Table 2-22: % Distribution of Asthma among First 20 Diseases that Cause Death in regional level by age groups

Age Group	West%	South%	Central%	North%	East%
0-14					
Total	0.3	-	-	0.3	-
Female	0.3	-	-	0.2	-
Male	0.3	0.3	0.2	0.2	-
15-59					
Total	1.3	1.4	1.3	1.3	1.5
Female	1.6	1.7	1.7	1.6	1.9
Male	1.1	1.2	1.1	1.1	-
60 and above					
Total	-	-	-	-	-
Female	-	0.4	0.4	0.4	-
Male	-	-	-	-	-

Source: NBD-CE Burden of Disease Study, 2003

As depicted in Table 2.22, asthma is most frequently seen among 15-59 age group in all regions. Asthma is attributed as a more prioritized cause of death among women than it is among men in the 15-59 age group.

Asthma has a 1.2% ratio among the 20 major diseases that cause DALY at national level in Turkey. Asthma is the 14th within the ranking of 20 major diseases that cause DALY in urban area with %1.3 ratio, and is the 19th in rural area with %1.1 ratio. Among the diseases that cause DALY at regional level, asthma is among the 20 major diseases with %1.2 in the Western, Southern, Central Turkey, %1.1 in the Northern Turkey, and %1.3 in the Eastern Turkey (14).

When the age groups are investigated, asthma is seen among the 0-14 age group in the % distribution of 10 major diseases that cause DALY at national and regional level, however, is not among the 10 major burdens of disease among the 15-59 and above 60 age groups (14).

As seen in Figure 2.33, among the 0-14 age group, asthma is the highest in urban area with the ratio of 1.8% in total, 1.6% among men, and 2.0 among women; and creates a burden of disease in the western region with 1.7% in total, 1.6% among men and 1.9% among women.

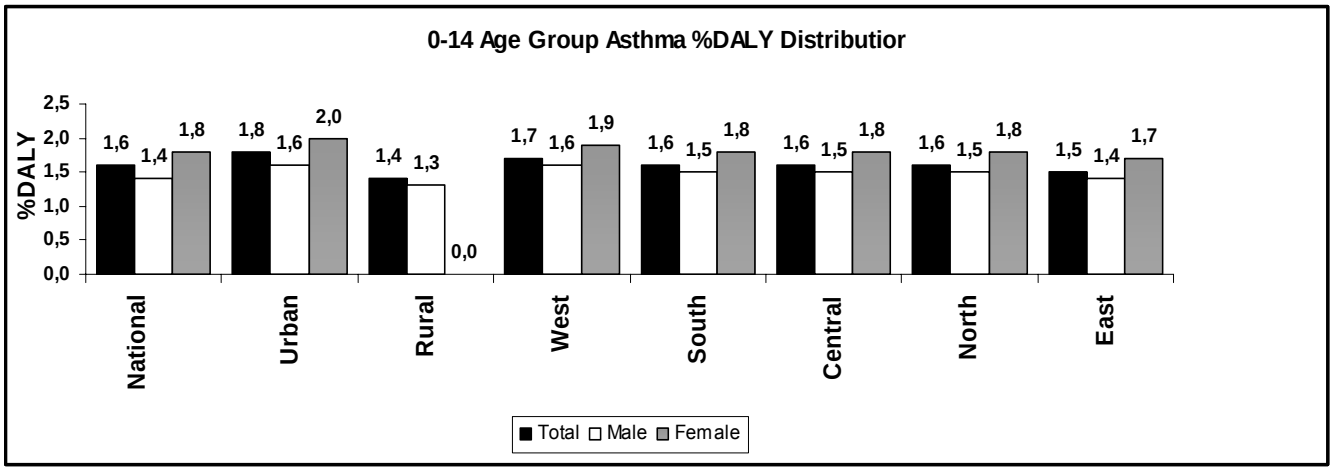

Figure 2-33: % Distribution of Asthma among the first 10 Diseases that cause DALY in 0-14 Age Group
Source: NBD-CE Burden of Disease Study, 2003

2.9.7 Chronic Obstructive Pulmonary Disease (COPD)

According to World Health Organization (WHO) estimates, 80 million people have moderate to severe COPD and 3 million people died of COPD in 2005. WHO predicts that COPD will become the fourth leading cause of death worldwide by 2030 (38).

In 2003 NBD-CE study, COPD incidence was found to be 72.7 per 100.000 in total, 76.8 among men, and 68.5 among women. Prevalence is 10.2 per thousand in total, 8.4 per thousand among men, and 11.9 per thousand among women (17).

COPD constitutes 5.8% of the total diseases among the distribution of first 20 diseases that cause death at the national level and occupies the 3rd rank. In the age group distribution, COPD occupies the 3rd rank among both men and women in 60+ age group. It constitutes 5.3% of total deaths in the urban area, while constituting 6.5% of total deaths in the rural area. It is the 4th in urban area and 3rd in rural area. It is the 3rd rank cause of death in the western, southern, central, and northern regions, and 5th rank cause of death in the eastern region (14).

In a study, 40+ age COPD prevalence in Adana was found to be 19.1% in total, 28% among men, and 10.3% among women (39).

2.9.8 Cancer

Cancer is the most significant death cause in the world. Cancer is the cause for the 7, 6 million deaths (13%) of the total 58 million deaths in 2005 in the whole world. Major cancer types that cause cancer mortality are;

- Lung Cancer (1.3 million death/year);
- Stomach Cancer (near 1 million deaths/year)
- Liver Cancer (662.000 deaths/year)
- Colon Cancer (665.000 deaths/year) and
- Breast Cancer (502.000 deaths/year)

In 2005, 70% of the deaths from cancer occurred in low and middle income countries. The estimated numbers of cancer caused deaths are 9 million for the year 2015 and 11.4 million for the year 2030 (40).

First efforts related to cancer in our country started when the Turkish Association for Cancer Research and Control Institution was founded in 1947. Construction of Ahmet Andicen Oncology Hospital was started in Ankara in 1955. In 1962, the hospital was devolved to the Ministry so as to be operated. In 1967, The Ministry founded Etimesgut Oncology Hospital in Ankara. Cancer had being dealt with at general treatment institutions and evaluated among other diseases until 1962. In 1962, branch office for cancer control was founded within Primary Health Care Services. In 1970, Directorate of Cancer Control was founded under Primary Health Care Services for the purpose of regulating preventive and curative services; implementing, executing, and supervising hospital facilities and programs. In 1970, 1-7 April was accepted as "Cancer Week" and activities have been carried out since that year. Cancer was added among notifiable diseases in 1982. Cancer Control Department was established under the Ministry of Health in 1983 (41).

Cancer cases are recorded through cancer registry centers. “Cancer Registry Center Regulation”, published in December 2000, regulates rules and principles on the organization

of cancer registry centers founded or to be founded by Cancer Control Department under Provincial Health Directorates, on their activities and staff duties, on improving and supervising service quality and efficiency. Directive on starting "Active System" for data collection from some chosen provinces, instead of collecting cancer data nationwide through passive system was published in January 2006. In this scope, in Ankara, İzmir, İstanbul, Bursa, Samsun, Adana, Antalya, Trabzon, Edirne, Van, Erzurum, Şanlıurfa, Eskişehir, Kayseri provinces, cancer data started to be collected through active system. In the direction of decisions taken by the Epidemiology and Cancer Registry Sub-Counseling Board met on 05.01.2006, Istanbul was decided not to be appropriate for active cancer registry anymore (because of population density of the province, immigration circulation and other reasons) and excluded from active cancer registry system and it was decided to accelerate the studies in Ankara, İzmir, Antalya, Trabzon, Samsun, Eskişehir, Edirne, Erzurum to have accurate incidence data in these provinces (42).

The Ministry of Health Cancer Control Department have been establishing centers since 1995 in order to organize trainings for giving information and conscious about cancer to health personnel and the public, to early diagnose cancers such as breast, cervical, colorectal cancer in defined risk groups through national screening programs, and to refer diagnosed patients to curative centers, to perform patient follow up and evaluation, to conduct activities related to social, psychological and medical support within the limits of opportunities. In this scope, 49 Cancer Early Diagnosis and Screening Centers were established in 38 provinces and also in 11 provinces within the scope of projects jointly conducted by the Ministry of Health and European Union. 6 new centers will be opened in 2007 and there will 55 Cancer Early Diagnosis and Screening Centers in total. In addition, to increase cancer awareness of the public through education, to generalize early diagnosis and screening for cancer, to develop new models for cancer control, to eradicate preventable diseases from the society and to reduce mortality of screenable cancers, The Ministry approved on 01.07.2005 that a Cancer Screening and Training Centers integrated to Public Hospitals shall be established in the provinces (41 provinces) where there do not exist Cancer Early Diagnosis and Screening Center or Cancer Screening and Training Center starting from 2005. Thus, each province in Turkey shall have a center for cancer control (42, 43).

National Counseling Committee on Cancer was founded so as to give counseling services for all activities conducted on cancer and to support the Cancer Control Department by recommendations. There are ten more sub-counseling committees which are affiliated with the Committee. Under ongoing efforts to build health complexes and implement family

medicine system, it is also targeted to integrate diagnosis, treatment and registration of cancer. Studies are underway for establishing the National Institute of Cancer and parties came to preliminary agreement on including the topic in the State Planning Organization's Planning Program for the Year 2008-2009 (42).

Figure 2.34 presents national cancer incidence rates in 2000-2003 periods. According to this, cancer incidence was noted 49.29/100,000 in 2000, 60.49/100,000 in 2001, 71.49/100,000 in 2002 and 70.32/100,000 in 2003.

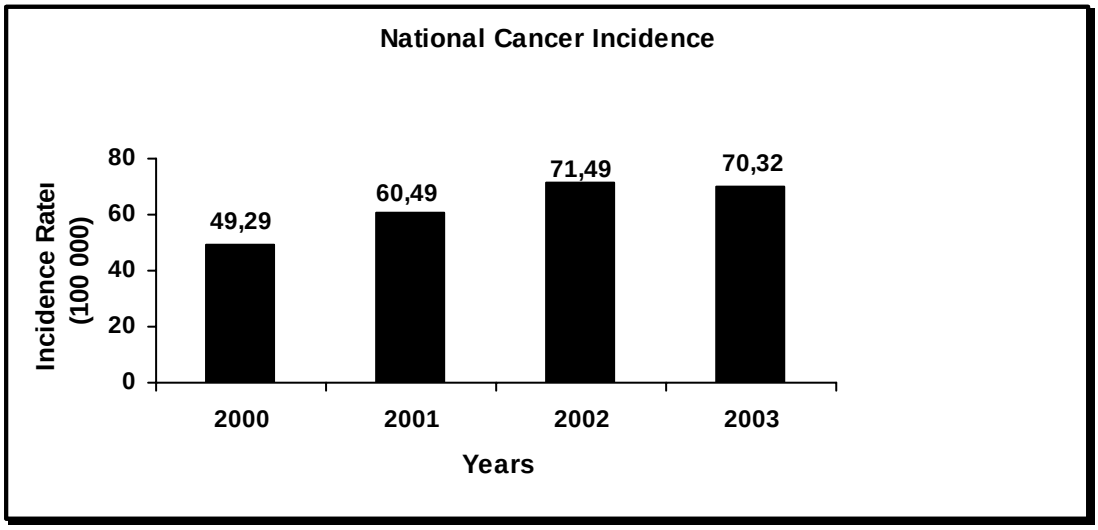

Figure 2-34: National Cancer Incidence in 2000-2003

Source: Turkish Ministry of Health, Department of Cancer Control, 2007

Figure 2.35 presents cancer incidence by gender in 2000, 2001, 2002 and 2003. Cancer incidence which was noted 40.16/100,000 among women and 58.18/100,000 among men as of 2000 was then raised to 58.55/100,000 among women and 77.19/100,000 among men by late 2003.

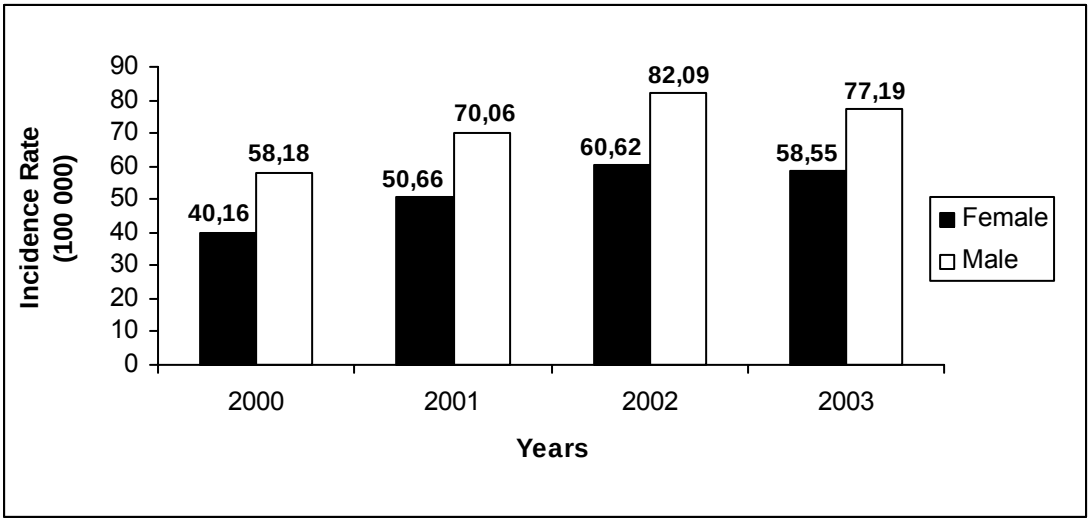

Figure 2-35: Distribution of National Cancer Incidence By Gender

Source: Turkish Ministry of Health, Department of Cancer Control, 2007

Considering distribution of cancer incidence by regions in Turkey as presented in Figure 2.36, incidence rate and cancer incidence were noted highest in the Aegean Region with respectively 70.5/100,000 in 2000 and 105.2/100,000 in 2003. Cancer incidence in the Black Sea Region, which was noted 39.5/100,000 in 2001, was raised to 84.7/100,000 in 2003. Cancer incidence is the lowest in the Southeastern Anatolia.

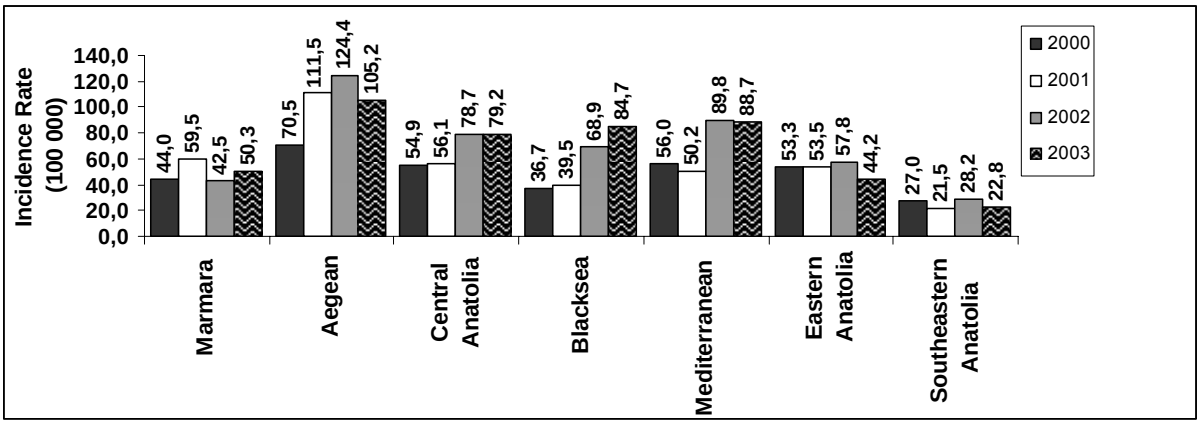

Figure 2-36: Distribution of Cancer Incidence By Regions in Turkey

Source: Turkish Ministry of Health, Department of Cancer Control, 2007

Table 2-23: Most Common Five Cancer Types in Turkey (2003)

ORGANS				INCIDENCE*
Organs		NUMBER OF CASES	PERCENTAGE	Per(100.000)
			%	
Lung	/Lung	7754	15,70	11,04

Breast	/Breast	5828	11,80	8,30
Skin	/Skin	3703	7,50	5,27
Stomach	/Stomach	3448	6,98	4,91
Bladder	/Bladder	2400	4,86	3,42
Others	/Other	26407	53,47	37,60
Total	/Total	49387	100,00	70,32

Source: Turkish Ministry of Health, Department of Cancer Control, 2007

Considering the distribution of the most common cancer type noted in 2003 as presented in Table 2.23, lung cancer is the most common one with an incidence rate of 11.04/100,000. In this context, lung cancer is followed by breast cancer with 8.30/100.000 and skin cancer with 5.27/100.000 incidence rate.

Table 2-24: Incidence and Prevalence Rates of Various Cancer Types by Gender

	Incidence Rate (100.000)			**Prevalence Rate (1000)**		
Malignant neoplasms	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Oral and Oropharyngeal Cancers	20,000	10,000	3,600	0,100	0,000	0,000
Esophageal Cancer	1,800	1,200	1,500	0,000	0,000	0,000
Stomach Cancer	8,000	4,000	6,900	0,100	0,100	0,100
Colon and Rectum Cancer	7,300	5,700	6,500	0,100	0,100	0,100
Liver Cancer	2,400	0,800	1,600	0,000	0,000	0,000
Pancreatic Cancer	2,100	1,000	1,500	0,000	0,000	0,000
Trachea, Lung and Bronchus Cancer	63,600	5,000	34,700	0,300	0,000	0,200
Melanoma and other skin cancers	0,800	0,800	0,800	0,000	0,000	0,000
Breast Cancer	0,000	24,400	24,900	0,000	0,300	0,100
Cervical-Uteri Cancer	0,000	4,800	2,400	0,000	0,000	0,000
Corpus-Uteri Cancer	0,000	6,300	3,100	0,000	0,100	0,000
Ovarian Cancer	0,000	5,900	3,000	0,000	0,100	0,000
Prostate Cancer	5,400	0,000	2,700	0,100	0,000	0,000
Bladder Cancer	11,500	1,500	0,800	0,100	0,000	0,100
Lymphoma and Multiple Myeloma	8,200	6,600	7,400	0,100	0,100	0,100
Leukemia	6,400	5,000	5,700	0,100	0,100	0,100

Source: NBD-CE Study, Annex 1-6, 2003

Table 2.24 presents incidence and prevalence rates by cancer types which were figured out by the NBD-CE Study in 2003.

Turkey, with 56.250 cancer cases, occupies the second rank in distribution of total death numbers by major disease groups at national level. 37.076 deaths among men and 21.174 deaths among women occur due to cancer (14).

Table 2-25: Share of Cancer By Major Disease Groups Among Total Deaths in Turkey

	Total	%	Female	%	Male	%
Turkey	56.250	13,07	21.174	10,74	35.076	15,04
Urban	31.959	13,88	11.221	10,99	20.737	16,19
Rural	24.309	12,14	9.775	10,28	14.534	13,82
West	21.308	14,31	8.091	11,70	13.217	16,59
South	7.567	13,59	2.817	11,20	4.751	15,56
Center	13.318	13,58	4.983	11,26	8.335	15,50
North	5.830	12,85	2.312	10,75	3.518	14,74
East	8.235	9,98	2.976	8,02	5.259	11,58

Source: NBD-CE Burden of Disease Study, 2003

Table 2.25 depicts distribution of cancer at national level, regional level and in urban-rural areas by gender. Only in the eastern region, cancer is not the second but the fourth cause of mortality differently from other regions and urban-rural areas. Cancer cases have a share of 14.31 % in distribution of death numbers by major disease groups in the western region. Cancer-caused deaths in the northern region, though being the least among all other regions (5.830), are equal to 12.85 % of all deaths which occur in the North.

At national level, cancer, which has 6.7 % DALY, is the sixth cause of burden of disease. Cancer cases have a total of 7.6 % DALY among men and 5.8 % among women. It is 6.8 % in urban areas while it is 7.1% in rural areas (14).

Table 2-26: Cancer-Caused DALY Distribution by Regional Level

	Regional Total (DALY)	Total Cancer Cases (DALY)	%	Cancer Male (DALY)	%	Cancer Female (DALY)	%
Western	3.449.677	263.345	7,63	153.763	8,46	109.583	6,71
Southern	1.408.727	102.696	7,29	60.406	8,12	42.290	6,36

Central	2.385.340	173.791	7,29	102.047	8,15	71.744	6,33
Northern	958.088	68.141	7,11	39.005	7,93	29.136	6,25
Eastern	2.600.662	123.247	4,47	76.169	5,60	47.079	3,79

Source: NBD-CE Study, 2003

Table 2.26 presents the share of cancer in DALY distribution of major disease groups at regional level. For the Western Region, 263,345 of 3,449.677 DALY is cancer-caused burden of disease. As for cancer-caused burden of disease distribution by gender, it is 8.46% for men and 6.71% for women in the western region. Eastern Region, though occupying the second rank with respect to total burden of disease, 4.47% of total burden of disease in the eastern region is comprised of cancer cases.

Figure 2.37 depicts expected number of deaths among men and women at national level in 2010, 2020 and 2030 in Turkey. Accordingly, expected number of deaths caused by cancer for men is 44,616 in 2010, 61,076 in 2020 and 89,117 in 2030. Expected number of deaths for women is 25,307 in 2010, 31,099 in 2020 and 39,094 in 2030.

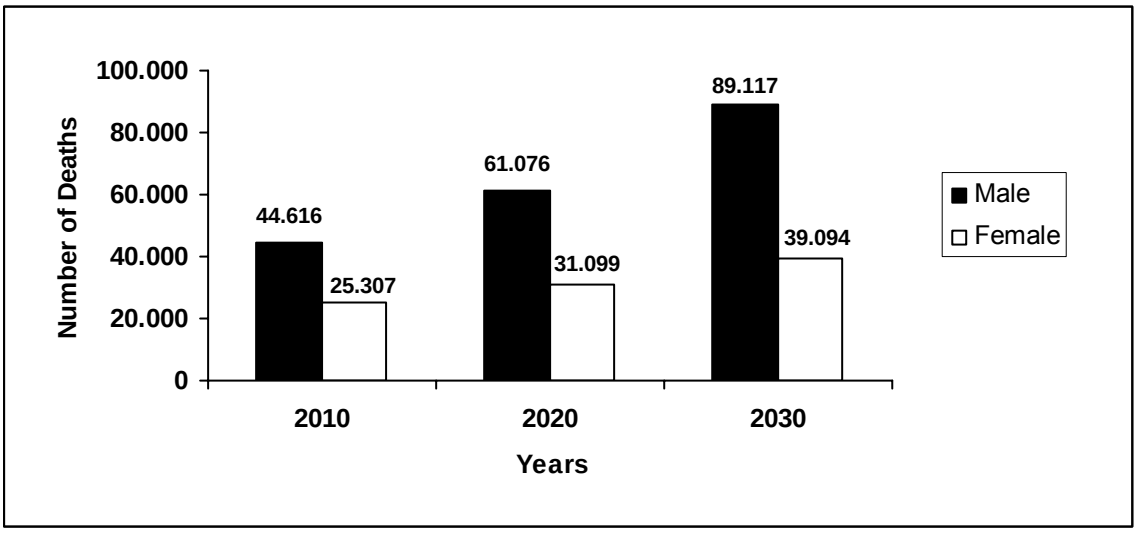

Figure 2-37: Comparison of Cancer-Caused Deaths Numbers among Men and Women at National Level in Turkey in 2000 with Expected Number of Deaths in 2010, 2020 and 2030

Source: NBD-CE Burden of Disease Study, 2003

Table 2-27: Provinces with Active Cancer Registration and Information Center, 2005

PROVINCES	
1	Adana
2	Ankara
3	Antalya
4	Bursa

5	Edirne
6	Erzurum
7	Eskişehir
8	İzmir
9	Kayseri
10	Samsun
11	Trabzon
12	Şanlıurfa
13	Van

Source: Republic of Turkey, Ministry of Health, Directorate General of Primary Healthcare Services, Activity Yearbook 2005

A total of 13 provinces presented in Table 2.27 serve as Cancer Registration and Information Centers.

Table 2-28: Early Diagnosis and Treatment Center of Cancer (KETEM) List and Personnel Status

PROVINCES	Physicians in charge	General Practitioners	Radiology Specialists	Pathology Specialists	General Surgery Spec.	Dermatology Specialists	Gynecology and Obstetrics Specialist
ADANA	1	2	1	2	2	1	1
ANKARA	1	3	1				
ANTALYA		3	1				
BALIKESİR		3	1	1	1	1	1
DİYARBAKIR	1	1	1	1	1		1
EDİRNE	1	1	1	1	1	1	1
ERZURUM	1	2	1	1	1	1	1
GAZİANTEP	1	1	1	1	1	1	1
İSTANBUL		1	1	1	1	1	1
SİVAS	1	2	1	1	1	1	1
TRABZON	1	2	1	1	1	1	1
AYDIN	1	2	1				
BURSA	1	2					
ÇANAKKALE	1	3	1	1	1	1	1
DENİZLİ	1	2	1	1	1	1	1
MUĞLA	1		1	1	1	1	1
K.MARAŞ	1	2		1	1		1
KAYSERİ	1	2	1	1	1	1	1
MALATYA	1	1	1	1	1	1	1
MANİSA	1	1					
İZMİR		3	1		1		1
AFYON	1	1					
AMASYA	1	2	1	1	1	1	
NEVŞEHİR	1		1	1	1	1	1
YALOVA	1		1	1	1	1	1
BOLU	1	2	1	1	1	1	1
KÜTAHYA		2	1	1	1	1	1
RİZE	1	1	1	1		1	1
SAMSUN							
HATAY		2	1	1	1	1	1
BURDUR	1		1		1	1	1
ELAZIĞ		2	1	1	1	1	
BAYBURT	1		1	1	1	1	1
AKSARAY	1	2	1	1	1	1	1
ADIYAMAN	1	1	1	1	1	1	1
KİLİS	1	1	1	1	1		1
NİĞDE	1	1	1	1	1	1	1
GİRESUN	1	1		2			1
ARDAHAN	1	2	2		1		1
KIRKLARELİ	1		1	1	1	1	1
KONYA	1	2	1	1	1	1	1
ÇORUM	1	1	1	1	1	1	1
MERSİN	1		1	1	1	1	1
KOCAELİ	1						
ORDU	1	4	1	1	1	1	1
ISPARTA		1					
MUŞ							
KARABÜK							
KIRIKKALE							
TOPLAM	37	67	39	36	36	31	35

Source: Republic of Turkey, Ministry of Health, Department of Cancer Control, 2007

According to the personnel distribution in 49 early diagnosis and treatment centers for cancer listed in the below Table 2.28, a total of 37 authorized physicians are assigned with cancer control in Turkey.

2.9.9 Tuberculosis

It is estimated that 1.7 million people died of tuberculosis in 2004. WHO African region has both the highest mortality rate and deaths per person. Someone in the world is newly infected with TB bacilli every second. Overall, one-third of the world's population is currently infected with the TB bacillus. 5-10% of people who are infected with TB bacilli become sick or infectious at some time during their life (44).

Recommended method by World Health Organization for TB control is Direct Observation of Treatment (DOT). A Circular was published on July 2006 for the purpose of generalizing DOT method nationwide. According to this, all records of patients diagnosed in provincial level and included in DOT practice were started to be kept in electronic form. Notification by institution under MoH, private and military institutions and university hospitals are collected at the TB control units of Provincial Health Directorates; in-province patients are notified to the TB Control Dispensaries in the province, and out-province patients are notified to respective provincial Health directorates (45).

As depicted in Figure 2.38, national level TB incidence was found to be 26.6/100 000 in 2001, 24.31/100 000 in 2003, 26.02/100 000 in 2005, and 27.61 in 2006.

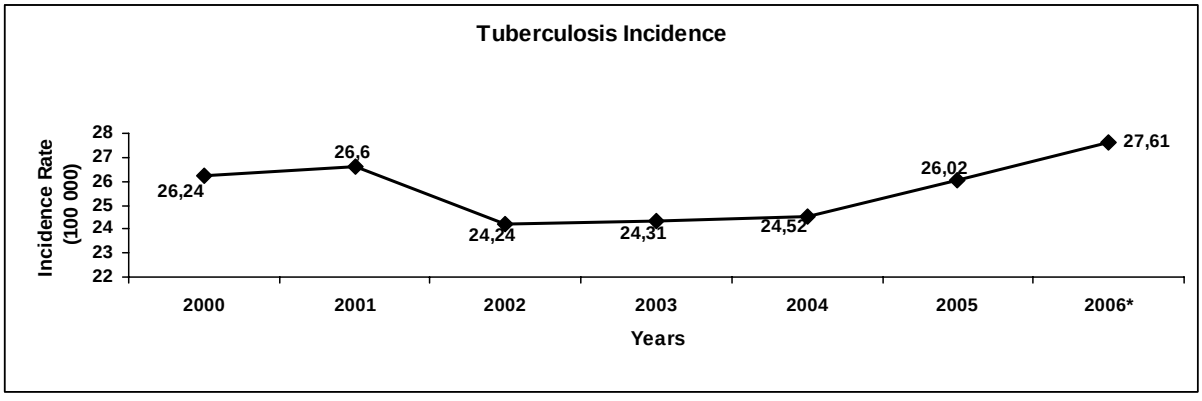

Figure 2-38: TB Case Notification Rates in 2000-2006, Turkey[1]

Source: Republic of Turkey, Ministry of Health, Department of Tuberculosis Control, 2007

*incidence in 2006 was estimated using temporary case numbers.

[1]revised after publication upon the feedback from TB Control department.

In 2003 NBD-CE Study, TB incidence was found to be 34.4 per 100.000 in total, 46.7 among men, and 21.8 among women. Prevalence was 1.0 per thousand in total, 1.4 among men, and 0.7 among women (17).

With a ratio of 1.0% among men, Tuberculosis occupies the 16th rank among the first 20 diseases that cause death at the national level in all age groups, while it does not exist in first 20 causes of death ranking with its ratio in total and among women. In the 0-14 age group distribution among the first 20 diseases that cause that at the national level, TB occupies the 8th rank with 1.4% ratio. In 15-59 age group, it is among the first 10 diseases with 2.0% in total and among both sexes. In the urban area, it occupies the 11th rank in 0-14 age group with 0.9%. In the urban area, it is the 15th cause of death in total with 1.6%; 16th with 1.4% among men; and 11th with 2.1% among women in 15-59 age group. While it does not exist among the first 20 diseases that cause death in the urban area in all age groups, in total, and among both sexes, in the rural area, it occupies the 15th rank in all age groups total, with 1.0% among men and 1.1% among women. In the rural area, it is 9th among the diseases that cause death in 0-14 age group with 1.4%. In 15-59 age group in the rural area, it is 7th with 3.0% in total, 5th with 3.8% among women, and 6th with 2.3% among men (14).

According to the distribution of first 20 diseases that cause death at the regional level, TB has a ratio of 1.0% in total, 1.1% among men and 0.8% among women in the central region; 1.2% in total, 1.4% among men, and 1.0% among women in the eastern region (14).

Table 2-29: Regional Distribution of TB among Causes of Death in 0-14 and 15-59 Age Group

Age Groups	West	South	Central	North	East
0-14					
Total	1,1	1,2	1,7	1,3	1,4
Male	1,1	1,2	1,8	1,5	1,6
Female	1,0	1,1	1,6	1,2	1,2
15-59					
Total	1,7	1,7	2,2	1,7	2,8
Male	1,6	1,8	2,1	1,8	2,8
Female	1,7	1,7	2,2	1,7	2,9

Source: NBD-CE Burden of Disease Study, 2003

Table 2.29 presents the distribution of TB among the causes of deaths in regional level by age groups. In the 15-59 age group, TB seems to have a highest ratio as a cause of death in total in the eastern region, compared to other regions (%2.8). Eastern Region is followed by

Southern region with 2.2%. In the ranking of diseases that cause death in 0-14 age group, TB has the highest ratio (1.7%) in the central region. Central region is followed by the Eastern region (1.4%) and western region (1.3%).

In the distribution of the first 20 diseases that cause DALY at the national level in all age groups, TB occupies the last rank with 1.0%, and occupies the 18th rank with 1.2% among men. TB does not exist among the first 20 diseases that cause DALY in all age groups among women, and in total and among both sexes in the urban area. It is the 14th disease that causes DALY in the rural area. In the rural area, it is the 16th cause of burden of disease with 1.4% among women and 1.3% among men. In 0-14 age group in the rural area, it is among the first 10 causes of DALY only with its ratio among men (1.2%). In 15-59 age group, it exists among the first 10 causes of DALY with 1.2% in total and 2.3% among women, whereas it does not exist among the first 10 diseases with its ratio among men in that age group. Looking at the distribution of TB among the diseases that cause DALY at the regional level, it is among the first 20 diseases that cause DALY in all age groups in the west, south, and north only with its ratio (1.1%) among men. In the central level, it has a ratio of 1.1% in total, and 1.3% among men. In the same region, among 0-14 years-old men, it is the 8th cause of burden of disease with 1.4%. In the eastern region in all age groups, it is 15th in total (1.2%), 11th among men (1.5%). In 0-14 and 15-59 age group, it is the 10th cause if burden of disease (%1.2, and %2.0, respectively) (14).

2.9.10 Malaria

Approximately, 40% of the world's population, mostly those living in the world's poorest countries, are at risk of malaria. Malaria was successfully eliminated from a number of countries in the mid-20th century. Today, malaria exists in tropical regions in the world and causes minimum one million deaths and 300 million acute diseases each year (46).

In accordance with the Decree No: 181 on the Organization and Duties of the Ministry of Health, Department of Malaria Control was established on 13 December 1983 for the purpose of conducting malaria control services in an efficient way in our country and facilitating determination and implementation of plans, programs, and policies. Turkey participated in WHO's Malaria Eradication Program in 1957 (47).

National incidence of malaria for 2000-2006 is indicated in Figure 2.39. Due to increasing surveillance, diagnosis, and treatment studies, national malaria incidence rates dropped from 16.9 per 100.000 in 2000 to 13.1 in 2003, 2.9 in 2005, and 1.01 in 2006. Since

disease notifications were done with standard case definitions starting from 2005, confirmed cases were considered after that date.

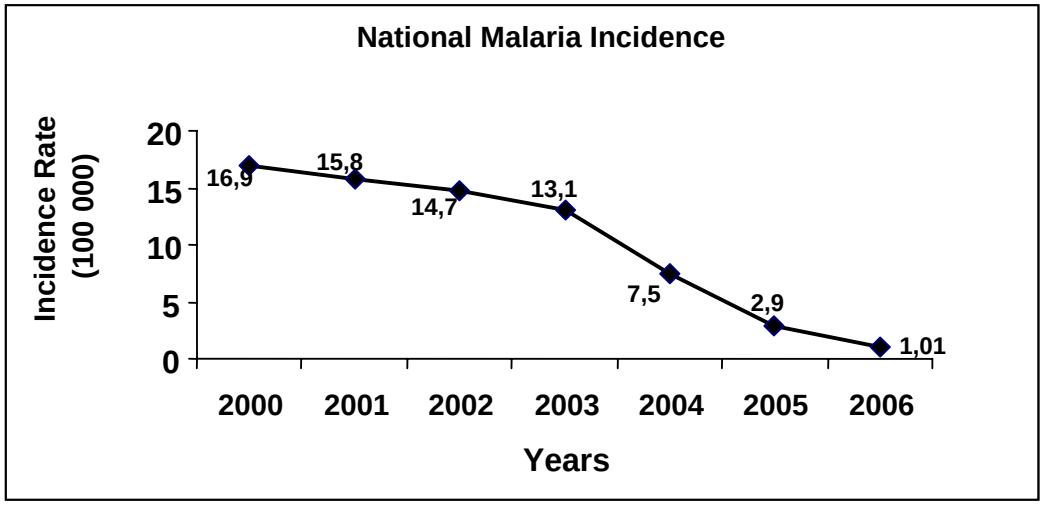

Figure 2-39: National Incidence of Malaria for 2000-2006

Source: Republic of Turkey, MoH, Department of Malaria Control, 2007

Table 2-30: Incidence Distribution in the provinces at risk of malaria, 2000-2005 (100 000)

Provinces	2000	2001	2002	2003	2004	2005
Şanlıurfa	40,2	75,8	82	50	29,8	23,5
Mardin	83	80,9	66,2	41,8	30,2	15,7
Diyarbakır	190,6	194,1	246,8	290,7	163,2	61
Siirt	89,3	70,8	58,4	50,1	39,4	8,6
Batman	1234	1050	815	648,8	340,1	84

Source: Republic of Turkey, MoH, Department of Malaria Control, 2007

Table 2.30 and Figure 2.40 present 2000-2005 incidence distribution in the provinces at risk of malaria. Malaria incidence decreased particularly in Batman and Diyarbakır between 2000-2005. While malaria incidence in Batman was 1234 per 100.000 in 2000, it was reduced to 84 per 100.000 in 2005.

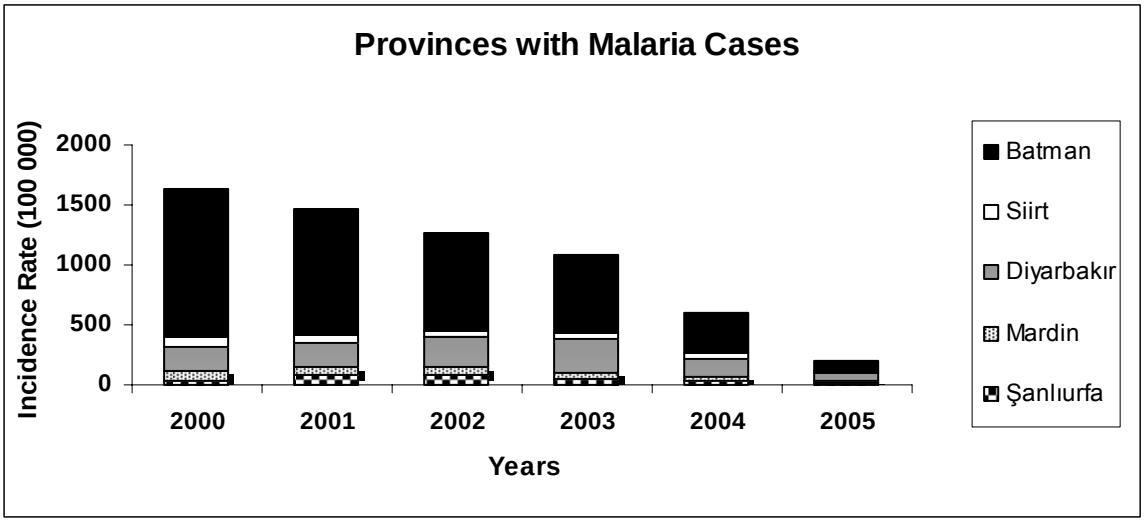

Figure 2-40: Incidence Distribution in the provinces at risk of malaria, 2000-2005

Source: Republic of Turkey, MoH, Department of Malaria Control, 2007

In 2003 NBD-CE study, malaria incidence was found to be 20.0 per 100.000 in total and among both men and women. Prevalence was 0.62 per thousand in total and among both sexes (17).

2.9.11 Anemia

Iron deficiency anemia is the most common malfunction of nutrition in the world. It affects the women and children in developing countries. It is stated that 2 billion people, that is more than 30% of the world population, has anemia (48). Iron deficiency anemia constitutes more than 50% of that number (49).

Table 2-31: Incidence and Prevalence rates of iron deficiency anemia by sex

	Incidence rates (100 000)			Prevalence (1 000)		
Iron deficiency anemia	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Iron deficiency anemia -mild	160,900	239,600	199,700	75,400	261,047	167,200
Medium	120,000	254,600	186,400	45,700	75,800	60,500
Severe	25,100	96,300	60,200	2,900	4,600	3,800

Source: NBD-CE Study Annex 1-6, 2003

Table 2.31 depicts the results of 2003 NBD-CE study on the mild, medium and severe anemia incidence and prevalence in total and among both sexes.

Among the first 20 diseases which cause mortality at national level in 0-14 age group, iron deficiency anemia occupies the 15th rank with a share of 0.4 %. Iron deficiency anemia occupies the 19th rank among the causes of mortality just in 0-14 aged men in urban areas with a share of 0.2 % . It is the 15th cause of mortality in total in 0-14 age group in rural areas (0.4 %) and the 16th in male population (0.4 %). As for 15-59 aged women in rural areas, it is the 15th cause of mortality (1.6 %). In 0-14 aged male population in the western region, anemia causes 0.3 % of all deaths. In 0-14 age group in the eastern region, anemia causes 04 % of deaths (which is 0.5 % among male and 0.4 % among female population) (14).

Iron deficiency anemia, among the first 20 diseases which cause DALY in all age groups at national level in Turkey, occupies the 10th rank with 2.1 %. While it is at the 5th rank among women with 3.8 %, it is not included among men in distribution of national burden of disease. As for distribution of first 10 diseases which cause DALY at national level in 15-59 age group, anemia is regarded as the 5th burden of disease with 2.9 % in total and as the 2nd burden of disease with 5.5 % in women. 2.2 % of total burden of disease in urban areas and 2.0 % of burden of disease in rural areas is caused by anemia. Anemia also causes 2.1 % of DALYs in the West while it is at the 10th rank in the East with 2.1 % (14).

2.10 ACCIDENTS, INJURIES AND POISONING

World Health Organization evaluates injuries in two groups which could be classified as intentional and unintentional injuries.

Intentional Injuries;

- Road traffic injuries
- Poisoning
- Falls
- Fire
- Drowning

Unintentional Injuries;

- Self-injury
- Inter-personal violence

- War

Injury is a primary cause of disability and mortality in all groups except for 60+ age group. Road traffic injuries, self-injury, inter-personal violence, injury in war, drowning, poisoning and fire exposure are among the first 10 causes of mortality in 15-29 age group (50).

In 2002, approximately 1.2 million people lost their lives due to road traffic accidents, which indicates that an average of 3242 people die of traffic accidents in the world everyday. In addition to these figures, it is estimated that 20-50 million people get injured or disabled every year in global terms (51).

In 2004, 494.819 road traffic accidents occurred in Turkey. 3.081 people died and 109.889 people got injured in these accidents while the monetary loss was reported as 760.614.565 YTL (52).

In 2005, 2094 intentional killings were reported. People under the age of 18 were involved in 162 of these cases. Similarly, 1619 cases of suicide were reported at the same year and people under the age of 18 were involved in 122 of these cases (53).

As presented in the Figure 2.41, childhood poisoning cases constitute 56 % of the cases which are reported to the Ministry of Health-affiliated Refik Saydam Hygiene Center Presidency's Poisoning Research Directorate.

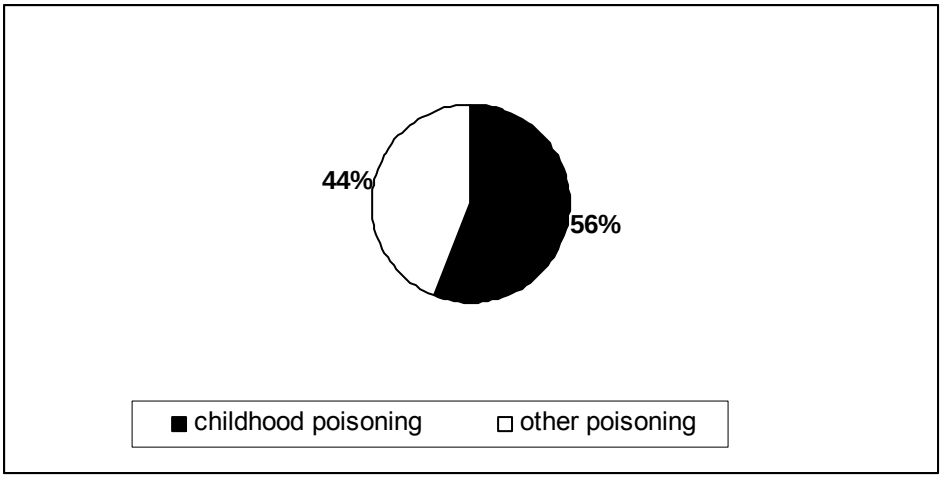

Figure 2-41: Share of Poisoning Cases in the Applications Made to Refik Saydam Hygiene Center Presidency's Poisoning Research Directorate

Source: Republic of Turkey, Ministry of Health, Refik Saydam Hygiene Center Presidency, Poisoning Research Directorate, 2007

In all poisoning cases which are reported to the Poisoning Research Directorate, first rank is occupied by medicines which are used for curative purposes, second rank by domestic

chemicals and third by pesticides. 98 % of childhood poisoning is caused by orally taken chemicals, 16 % is caused by respiration and 0.4 % by touch (skin). As for sex-specific distribution by age, poisoning is the most common cause in 1-9 aged boys, and in 10-14 and 15-19 aged girls. As for childhood poisoning for suicide purpose, it is the most commonly seen among the girls in 15-19 age group. It was noted that averagely 13.60 % of total applications made in 1995-2004 period were poisoning cases which occurred from triscyclic antidepressants (54).

In the 2003 NBD-CE Study, the incidence of poisoning was found to be 33.7 per 100.000 in total, 30.7 per 100.000 among men and 36.8 per 100.000 among women. Prevalence, on the other hand, was found to be 0.002 per thousand in total, 0.002 per thousand among men and 0.003 per thousand among women (17).

Crude mortality rate in Turkey is 6.3 ‰. Group III diseases constitute 0.4 of mortality rate in total. Given the age groups at national level, deaths, which occur from intentional and unintentional injuries which are included in the Group III diseases, are mostly seen in 15-29 age group (8972 deaths). With a share of 5.81 %, injuries occupy the sixth rank among distribution of total causes of mortality at national level by basic disease groups and sex. Injuries, both intentional and unintentional, are the sixth cause of mortality in rural areas and eastern region while they are the fifth cause mortality in all other regions (14).

Total burden of disease is 159.3 DALY/1000 people according to the burden of disease distribution at national level. As for distribution by disease groups, Group III diseases constitute 17.2 of 159.3 DALY/1000 in general in Turkey (14).

Intentional and unintentional injuries constitute the biggest burden (509,469DALY) mostly in 15-29 age group (14).

Figure 2.42 and Figure 2.43 indicates 2010, 2020 and 2030 estimates of the number of deaths which occur from the unintentional injuries, accidents and intentional injuries at national level in Turkey.

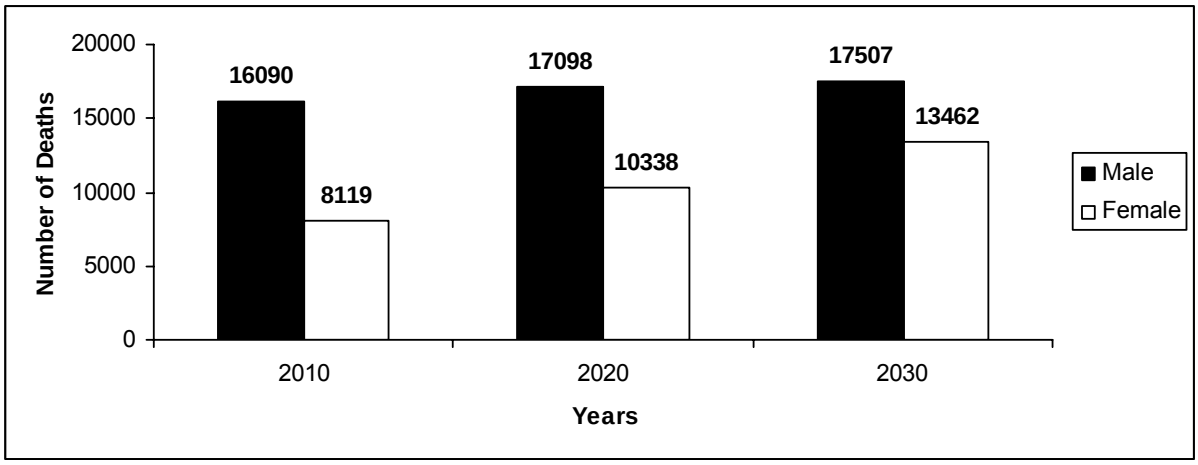

Figure 2-42: Number of Deaths Estimated for 2010, 2020 and 2030 which Occur From Unintentional Injuries and Accidents at National Level in Turkey

Source: NBD-CE Burden of Disease Study, 2003

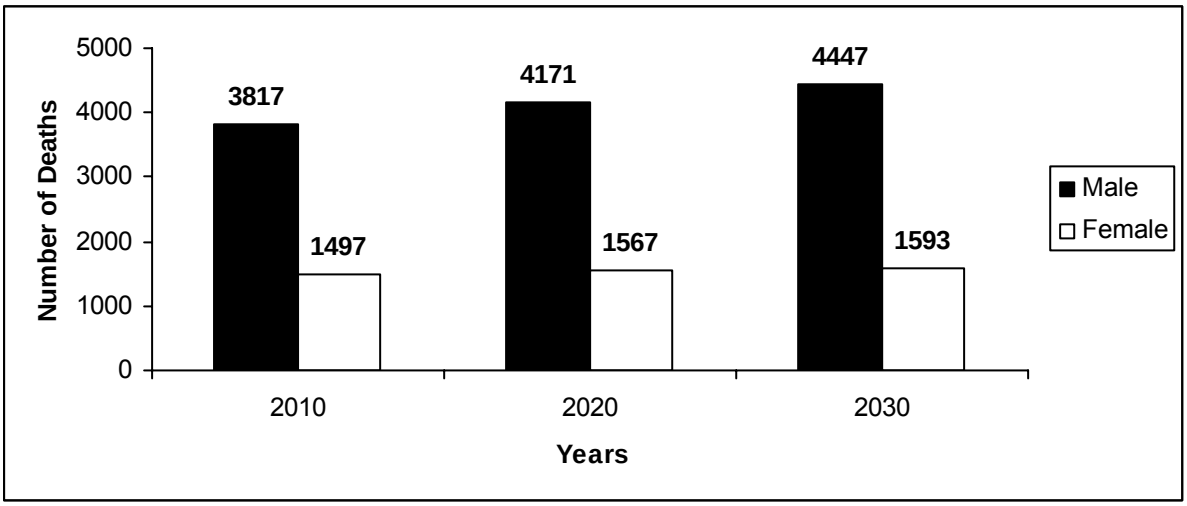

Figure 2-43: Number of Deaths Estimated for 2010, 2020 and 2030 which Occur From Intentional Injuries at National Level in Turkey

Source: NBD-CE Burden of Disease Study, 2003

2.11 DISASTERS

A disaster is, in most basic terms, is a natural, technological or man-made hazard which bears physical, economic and social losses for people, affects them and their society by halting or delaying daily routine and human being's activities, and which is too difficult for people to overcome with their own resources and opportunities.

As indicated in the Figure 2.44, earthquakes, with a share of 64 %, are the most commonly seen natural disasters in our country. They are followed by landslides with 16 % and by floods with 15 %.

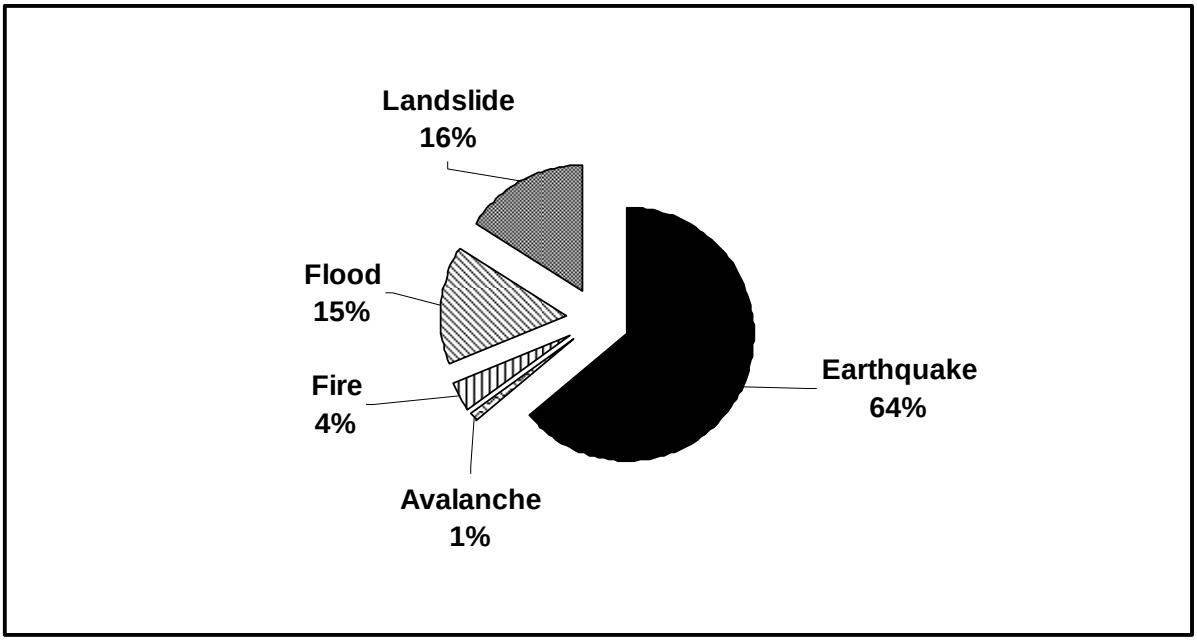

Figure 2-44: Distribution of Natural Disasters in Turkey

Source: Republic of Turkey, Ministry of Public Works and Settlement, Activity Report by General Directorate of Disaster Affairs, 2007

Turkey is a country which is located between the active fault lines and thus subject to major earthquakes from times to times. There is brief information on the size of the earthquakes which occurred between 1900 and 2005 in Turkey based on the data which was obtained from the General Directorate of Disaster Affairs:

- 1170 earthquakes of 5.0-6.0 magnitude,
- 155 earthquakes of 6.0-6.9 magnitude,
- 34 earthquakes of 7.0-8.0 magnitude.

These figures indicate that an earthquake of 5.0-6.0 magnitude occurs in every month, an earthquake of 6.0-6.9 magnitude occurs in every 8 months and an earthquake of 7.0-8.0 magnitude occurs in every 3 years in Turkey.

66 % of Turkish territory is located in the 1st and 2nd level earthquake zones and 34 % in the 3rd level earthquake zone according to seismic map. So, 70 % of population lives in the 1st and 2nd level earthquake zones and 30 % in the 3rd level earthquake zone (55).

A total of 65.000 Turkish citizens lost their lives and 125.000 of them got injured in 128 major earthquakes which occurred in the last 96 years in our country. 510.000 buildings were collapsed, as well. Primary losses of our country during the Eastern Marmara Earthquake (except for the secondary and tertiary losses) were equivalent to our 1-year development (that is 5-7 % of GNDP) (56).

Table 2-32: Disasters and Their Damage which Occurred in 1999-2006 in Turkey

No	Province	Date of Disaster	Type of Disaster	Number of Victims			Number of Casualties (Dead)
				Severe	Mild	Slight	
1	Marmara Region	17.08.1999	Earthquake	90.770	123.027	125.013	17.480
2	Düzce	12.11.1999	Earthquake	20.705	13.948	15.026	763
3	Zonguldak	17.08.1999	Earthquake	114	314	961	
4	Erzurum	03.12.1999	Earthquake	255	318	597	
5	Çankırı	06.06.2000	Earthquake	2.102	661	2.486	
6	Afyon	15.12.2000	Earthquake	1	21	261	6
7	Afyon	03.02.2002	Earthquake	4401	1.733	9.785	42
8	Tunceli	27.01.2003	Earthquake	67	179	859	1
9	Bingöl	01.05.2003	Earthquake	6385	3.313	15.047	176
10	Malatya	13.07.2003	Earthquake	392	0	922	0
11	Denizli	23-26.07.2003	Earthquake	60	125	0	
12	Antalya	23-26.12.2003	Flood	13	0	2	5
13	Gaziantep	23-26.02.2003	Rain-Snow	0	0	26 offices	1
14	Ankara	20.06.2004	Tornado	5	17	15	3
15	Batman	04.05.2004	Fire	6 offices	10 offices	31offices+2	3
16	Rize	25.12.2003	Fire	4	0	0	1
17	Trabzon	03.08.2005	Flood	18	6	88	7
18	Kastamonu	12.07.2005	Fire	2	0	0	3
19	Kastamonu	05.08.2005	Fire	1+1	0	0	1
20	Artvin	28.09.2006	Fire	17+12	0	0	1
21	Batman	30.10-01.11.2006	Water Flood	401	29	1.313	10
22	Diyarbakır	30.10-01.11.2006	Water Flood	60	0	279	23
23	Şanlıurfa	30.10-01.11.2006	Water Flood	128	0	657	4
24	Şırnak	30.10-01.11.2006	Water Flood	83	0	606	4

Source: Republic of Turkey, Ministry of Public Works and Settlement, General Directorate of Disaster Affairs, 2007

Table 2.32 gives information on disasters and their damage in 1999-2006 in Turkey.

Under the Project of Health Organization for Disasters, the National Medical Rescue Teams (NMRT) were set up in 2004 so as to give medical rescue services by well-trained and equipped voluntary teams which would take part in all disasters and primarily in earthquakes. The Project aims to minimize deaths, which are likely to occur due to any possible delays in rescue, by ensuring coordination between the medical rescue teams and research-rescue

teams. As of 2005, 1672 voluntary health personnel in 51 provinces work in the National Medical Rescue Teams (57).

Figure 2.45 presents the occupational distribution of the medical teams' personnel as of 2005.

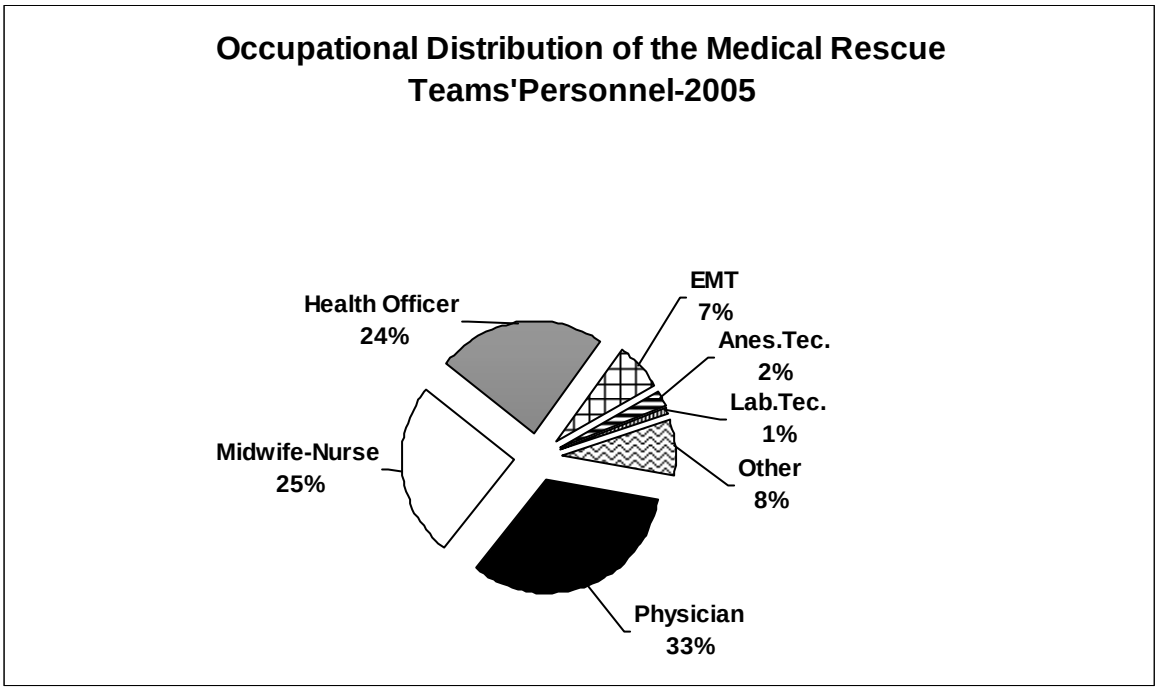

Figure 2-45: Occupational Distribution of the Medical Rescue Teams' Personnel-2005

Source: Republic of Turkey, Ministry of Health, Study Yearbook of General Directorate of Primary Care Services, 2005

Figure 2.46 presents region-based total personnel distribution of the medical rescue teams as of 2005.

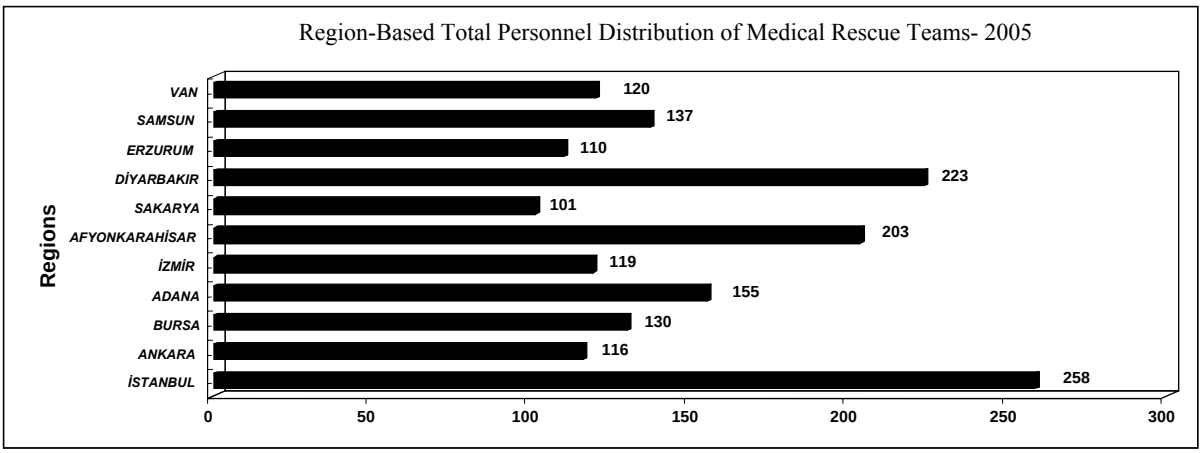

Figure 2-46: Region-Based Total Personnel Distribution of Medical Rescue Teams -2005

Source: Republic of Turkey, Ministry of Health, Study Yearbook of General Directorate of Primary Care Services, 2005

2.12 MENTAL HEALTH

Under the Ministry of Health organization, suicide attempts which were reported at all state hospitals across the country were kept under record for the first time in 2004 in order to monitor the population which attempted to commit suicide and form a data basis on this subject. Besides, "Psycho-Social Support to Suicide Attempts in Emergency Service and Crisis Intervention Program" was developed and put into implementation on 1 February 2006 in the emergency service at one pilot hospital in all of 32 pilot provinces in which the physical infrastructure and personnel organization was completed. Today, all patients who are inclined to committing suicide or attempted to commit suicide and all other people who are affected by other crisis cases (family violence, losses – loss of beloved, loss of status, loss of health and etc. - , mortal diseases, loss of an organ, divorce and bankruptcy), events of abuse, tough living conditions which occur from human being or nature-borne causes (migration, traffic accidents, examination stress, fire, earthquake, flood) are addressed by this program. As of 2007, the said program is being implemented at 82 hospitals in 49 provinces within the framework of the second pilot study (58).

Table 2-33: Mental Health Disorders

	Female		Male		Total	
	Number	%	Number	%	Number	%
Panic disorders	22	0,5	7	0,2	29	0,4
Agoraphobia	38	0,9	10	0,3	48	0,6
Generalized anxiety disorder	33	0,8	17	0,5	50	0,7
Depressive Attack	221	5,4	76	2,3	297	4,0
Dysthymia	90	2,2	26	0,8	116	1,6
Unipolar affective disorders-mild	91	2,2	28	0,8	119	1,6

Hypochondriasis	31	0,8	11	0,3	42	0,6
Alcohol Dependence	4	0,1	57	1,7	61	0,8
Obsessive-compulsive disorders	26	0,6	8	0,2	34	0,5
Social phobia	96	2,3	38	1,1	134	1,8
Specific Phobia	157	3,8	46	1,4	203	2,7
Somatization disorders	15	0,4	1	0	16	0,2
Having any single mental health disorder	919	22,4	369	10,9	1288	17,2

Source: Turkey Mental Health Survey, 1998

Table 2.33 presents the information on mental health disorders according to the data which was obtained from the Turkey Mental Health Survey. According to this, some type of mental disorder was noted in 17.2 and depressive attack was noted in 4.0 % of the interviewees.

Table 2-34: Incidence and Prevalence Rates of Neuropsychiatric Diseases by Sex

	Incidence Rates (100.000)			**Prevalence Rates (1000)**		
Neuropsychiatric Disorders	**Male**	Female	Total	**Male**	Female	Total
Unipolar Depressive Disorders	**1824,600**	3573,600	2687,600	**16,000**	26,300	21,100
Dysthymia	**14,900**	22,900	18,900	**3,000**	6,000	4,500
Bipolar Affective Disorders	**2,000**	4,000	3,000	**4,600**	4,600	4,600
Schizophrenia	**9,900**	10,300	10,100	**4,700**	4,800	4,700
Epilepsy	**54,500**	60,000	60,000	**6,600**	4,100	5,200
Alcohol use Disorders	**17,300**	1,000	9,200	**21,300**	3,300	12,400
Alzheimer and Other Dementias	**47,200**	69,100	58,000	**2,800**	4,000	3,400
Parkinson Disease	**4,900**	6,600	5,800	**0,500**	0,800	0,600
Multiple Sclerosis	**2,200**	2,600	2,400	**0,300**	0,400	0,400
Drug use Disorders	**8,770**	7,200	7,980	**2,800**	1,000	2,000
Post-Traumatic Disorders	**2,900**	8,000	5,300	**2,100**	5,700	3,800
Obsessive-Compulsive Disorders	**2,000**	5,100	3,500	**6,300**	8,100	7,200
Panic Disorders	**5,000**	8,000	6,400	**0,500**	0,600	0,500
Insomnia (Primer)	**71,000**	96,800	83,700	**3,800**	5,200	4,500
Migraine	**78,700**	177,400	127,400	**28,800**	62,100	45,200
Mental Retardation	**9,200**	8,800	9,000	**5,000**	5,000	5,000
Other Neuropsychiatric Disorders	**3440,400**	3363,400	3402,400	**38,800**	38,700	38,700

Source: NBD-CE Study Annex 1-6, 2003

Table 2.34 presents the incidence and prevalence rates of Neuropsychiatric disorders by sex.

According to the 2003 NBD-CE Study Household Survey, 831 people were diagnosed with depression (7.43 %) and 10.341 were not diagnosed with depression (92.44 %) with respect to data on +18 aged population which was examined in terms of depression. 15 interviewees did not answer this question. 79.2 % of depression-diagnosed people were

women while 20.8 % were men. 35-44 age group turned out to be the group which was diagnosed with depression most often. This age group constituted 29 % of all patients with diagnosis of depression (27).

Among causes of mortality at national level in Turkey, neuropsychiatric disorders are at the second rank with 1.41 % (1.53 % in female population and 1.32 % in male population) (14).

As for distribution of the first 20 causes which cause DALY at national level in Turkey, unipolar depressive disorders are at the fourth rank. As the burden of disease, unipolar depressive disorders are at the ninth rank in men while they are at the fourth rank in women by sex. They are significant burden of disease causes especially in 15-59 age group. In distribution of the first 10 diseases which cause DALY at national level in Turkey in 15-59 age group, unipolar depressive disorders are the second in total with 7.0 % and the first among women with 9.8 %. They are the fourth cause of burden of disease among men with 4.5 % (14).

2.13 LIFE STYLE

2.13.1 Obesity

There are more than 1 billion overweighed adults in the world and minimum 300 million of them are obese. Being a major factor of both global chronicle burden of disease and disability, obesity is a chronicle disease which does not only affect adults but also children in both developing and developed countries. Obesity and overweight are major risk factors for type 2 DM, cardiovascular diseases, HT, paralysis and some cancer types (59).

Since studies on collecting obesity data are very new in Turkey, no data can be obtained from the reporting system for now. Data can only be obtained from the studies which are conducted on the subject. Accordingly;

- As evaluated by the study on "Turkish Adults Hearth Disease and Risk Factors Study" (TEKHARF) in 2000, obesity prevalence was noted 43.0 % in female population with and 21.1 % in male population (60).
- Among married women in 15-49 age group, obesity was found to be 18.8 % in 1998 and 22.7 % in 2003 (2,61).

- In self-declaration based answers of the 18+ aged population, obesity was found to be 12.02 % in total, 14.49 % among women and 9.70 % among men (27).
- In the survey report on "Healthy Feeding for Cardiac Health Project" which was issued in 2004, obesity was reported as 35 % in total, 21.2 % among male population and 41.5 % among female population (62).

Obesity is also a risk factor for chronicle diseases which are significant to burden of disease calculations in Turkey and thus needs to be considered when conducting studies to decrease the burden of disease.

For fight with obesity, Obesity Prevention and Physical Activities Branch Directorate was founded under the Department of Nutrition and Physical Activities at the Ministry of Health.

Apart from all these, the WHO European Ministerial Conference on Counteracting Obesity was held by the Ministry of Health on 15-17 November 2006 in İstanbul. On 16 November 2006, Prof. Dr. Recep Akdağ -esteemed Turkish Minister of Health- and Mr. Marc Danzon -Director of the WHO Region for Europe- signed the ""European Charter on Counteracting Obesity" on behalf of the WHO Region for Europe countries. So, all participants undertook the commitment to strengthen the fight with obesity and prioritize the issue in the political agenda of governments.

2.13.2 Tobacco Consumption

According to the WHO, tobacco is the second cause of mortality in the world. Smoking directly causes one of ten deaths among adult population, which is equivalent to 5 million deaths every year (28). Smoking is also a major risk factor for minimum 2 reasons which cause to early deaths (cardiovascular system diseases and some cancers). Besides, it facilitates respiratory system diseases, low birth weight (smoking during pregnancy) and bad health among infants (63).

Recent studies in Turkey have proved that smoking rate is 30 % in 15+18 age group (64). The MoH's General Directorate of Primary Care Services-affiliated Mental Health Department conducted a survey in order to find out *"the attitudes and behaviors of high school students in Turkey as for smoking, alcohol and narcotic drugs use"* and completed the survey in October 1995. In this survey, Mental Health Questionnaires on smoking and alcohol consumption were given to interviewees who were selected by random sampling method in 24 provinces. Results of the survey indicated that 20.1 % of 12.781 students

smoked while 79.9 % did not (58). In a sampling in Ankara, it was noted that 8.2 % of secondary school students at the age of 13 experienced smoking at least once (65).

Table 2.35 presents distribution of smoking in 18+ aged population by sex and by whether they use tobacco products or not.

Table 2-35: Distribution of 18 + Aged Population by Sex and by whether They Use Tobacco Products or Not

	Use of Tobacco Products							
	Everyday		Not everyday		Not Using		Total	
	Number	%	Number	%	Number	%	Number	%
Sex								
Male	2368	49,38	88	1,84	2339	48,78	4795	100
Female	1124	17,59	103	1,61	5163	80,80	6390	100
Total	**3492**	**31,22**	**191**	**1,71**	**7502**	**67,07**	**11185**	**100**
n=11204 Unknown=19								

Source: NBD-CE Study Household Survey, 2003

As presented at the Table 2.35, 31.22 % of interviewees smoke everyday and 67.07 % does not some. 33.07 % of urban people, 28.62 % of rural people, 49.38 % of men and 17.59 % of women use tobacco products. .

According to the 2003 Turkey Demographic and Health Survey, 28 % of married women in 15-49 age group declared that they sometimes or regularly smoked. As for pregnancy, 15 % of pregnant women and 20 % of breast-feeding women stated that they smoked (2).

33.4 % of 18+ aged individuals in Turkey do smoke according to the results of the "Family Structure Survey" which was conducted by TUIK in 2006. While 50.6 % of men smoke, 16.6 % of women smoke (66).

There are significant differences between the OECD countries as for smoking. To compare the percentage of everyday smokers in the 15+ aged population, Canada (17 %), the USA (18 %), Sweden (18 %) and Australia (%20) are the countries with the smallest percentage while Greece (35 %), Hungary (34 %), Luxemburg (33%) and Turkey (32 %) are the countries with the biggest percentage (63).

"**WHO Framework Convention on Tobacco Control**", the first international agreement on worldwide tobacco control which was prepared against the threat by the increasing use of tobacco and tobacco companies' marketing strategies in developing countries, was signed on 21 May 2003 in Geneva, in the 56th World Health Assembly of the World Health Organization. Adopted by the GNAT on 25 November 2004, the Convention

(with the law number 5261) was issued in the Official Gazette dated 30 November 2004 and no. 25656.

In order to plan the studies to be conducted within the framework of the Convention on Tobacco Control and to protect our people and especially the youth by taking tobacco consumption under control, the Ministry of Health prepared the National Tobacco Control Program so as to cover the years 2006 – 2010. Primary objective of the program is to bring the percentage of 15+ aged non-smokers in Turkey above 80 % and to make the it almost 100% among the population under 15 age (58).

2.13.3 Alcohol

Excessive amount of consumption gives a series of damage to health. Much alcohol consumption raises the risk factors for liver cirrhosis and some cancer types as well as cardiovascular diseases and stroke (63).

On annual basis, 1.8 million deaths and 58.3 million life years lost (YLL) are associated with alcohol consumption. Alcohol consumption-borne risk factors constitute 6.2 % of total burden of disease in developing countries (67).

According to the 2003 NBD-CE Study Household Survey, 64.8 % of men and 92 % of women have never used alcohol in their lives. On the other hand, 0.5 % of rural population and 0.2 % of urban population consume alcohol too much and very often. Besides, the ratio of people who have never had alcohol in their lives is higher in urban areas (80.6 %) when compared to rural areas (79.3%). Considering all interviewees, people, who have never used alcohol in their lives, have the highest share with 80.1% (27).

Given distribution of the first 10 diseases which cause DALY at national level in 15-59 age group by sex in Turkey, ischemic heart diseases occupy the first rank among male population while alcohol consumption-related disorders occupy the sixth rank with 3.1 % (14).

Considering total absolute alcohol quantity to measure the use of alcohol, Table 2.36 presents the liter-based quantity of alcohol consumption per capita in 2003-2006 period.

Table 2-36: Alcohol Consumption in 15+ Aged Population (Liter per Capita) 2003-2006

Years	Absolute amount of alcohol consumed (lt.)	Per Capita Liter in 15+ Aged Population

2003	44 543 059	0,91
2004	69 361 035	1,36
2005	67 333 967	1,30
2006	68 734 693	1,30

Source: Tobacco, Tobacco Products and Alcoholic Beverages Regulatory Authority (www.tapdk.gov.tr), 2006

2.13.4 Narcotic Substances

There are approximately 25 million people all over the world who are addicted to narcotic drugs and 15-64 age group constitutes 0.6 % of the population. According to the 2004 data, 28 % of adult population (15-64 age) uses tobacco and 5 % uses illegal drugs (4 % uses Indian hemp/cannavis satiba and 1 % uses amphetamine-like stimulants, cocaine and opium). Approximately half of the 5 % population (2.7 %) uses drugs in regular terms (at least once in a month) (68). In-depth studies on drugs use are not available in Turkey. Except for a few number of questionnaires which were given with small samples, there is only one study which was conducted face-to-face. In a study which was conducted in 72 provinces in 2002, 1.3 % of interviewees stated that they used narcotic drugs at least once in their lives. The same study indicated that drugs use is higher in 15-24 age group when compared to 25+ aged population (69). The first study which addressed primary and high school students was carried out in 1991. The questionnaire which was given to 1500 high school students pointed out that 2.6 % of the interviewees used any kind of narcotic drugs for at least once in their lives and 0.7 % of them used hashish (70).

2.14 REPRODUCTIVE HEALTH AND SEXUALLY-TRANSMITTED DISEASES

2.14.1 Crude Birth Rate

As seen in the Figure 2.47, crude birth rate decreased from 19.7 per thousand to 18.7 per thousand in 2006.

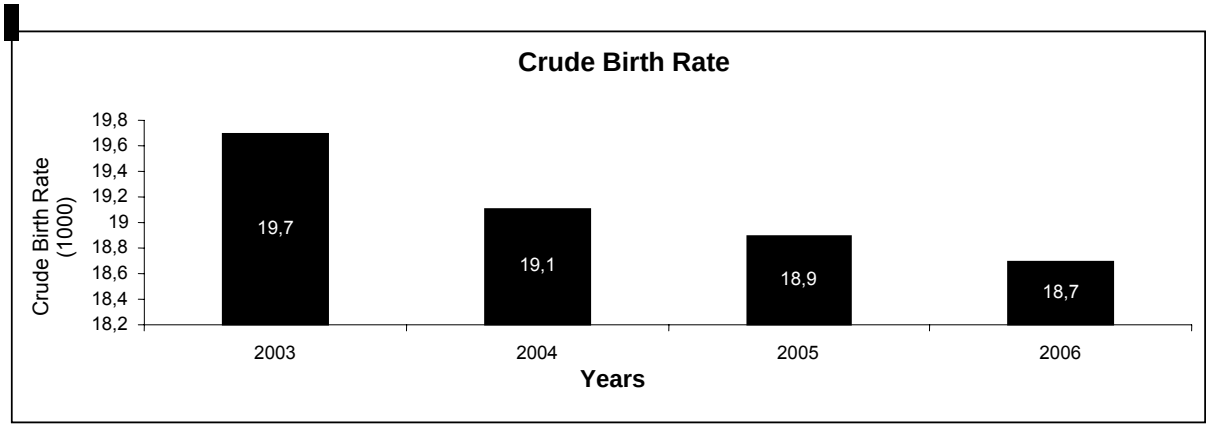

Figure 2-47: Crude Birth Rates in Turkey in 2003-2006 Years

Source: 2003 Turkey Demographic and Health Survey, 2004-2006 TURKSTAT (www.tuik.gov.tr)

Figure 2.48 presents the crude birth rates and it is predicted that the crude birth rate will decrease to 13.8 per thousand in 2030. The estimation of crude birth rate is 17.5 per thousand for 2010.

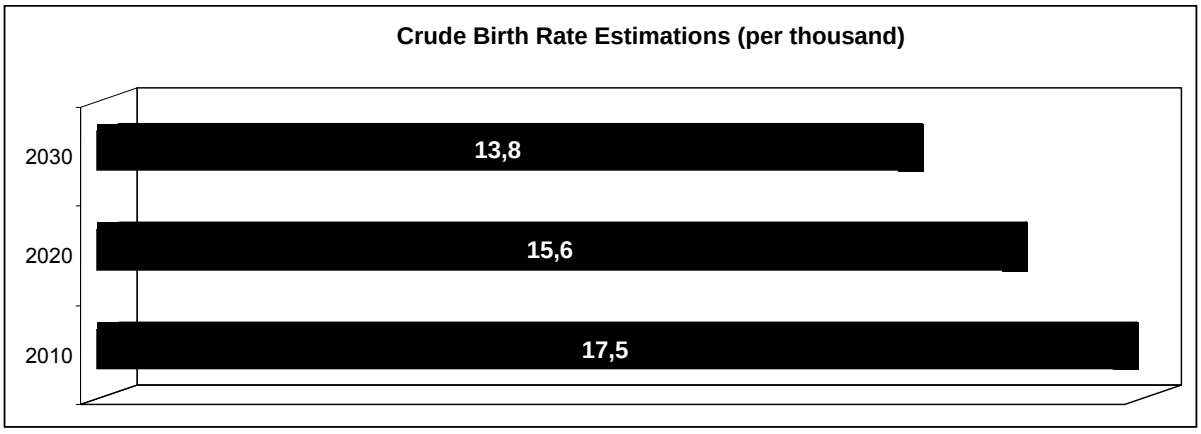

Figure 2-48: Turkey Crude Birth Rate Estimates for 2010-2030 Years

Source: TURKSTAT (www.tuik.gov.tr), 2006

2.14.2 Total Fertility Rate

Figure 2.49 presents total fertility rate in 2003-2006 period. Total fertility rate, which was noted 2.23 per women in 2003, decreased to 2.18 in 2006.

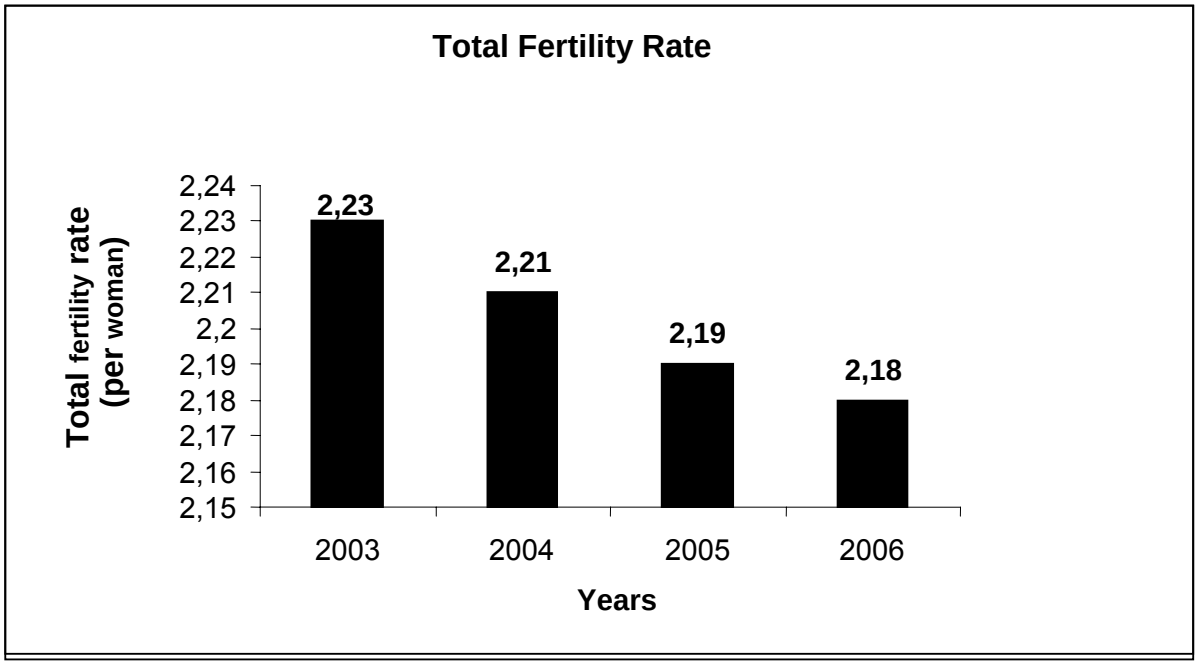

Figure 2-49: Total Fertility Rate in 2003-2006 Years

Source: 2003 Turkey Demographic and Population Survey, 2004-2006 TURSKTAT (www.tuik.gov.tr)

As indicated in the Figure 2.50, total fertility rate in Turkey is estimated 2.12 per women in 2010, 2.01 in 2020 and 1.92 in 2030.

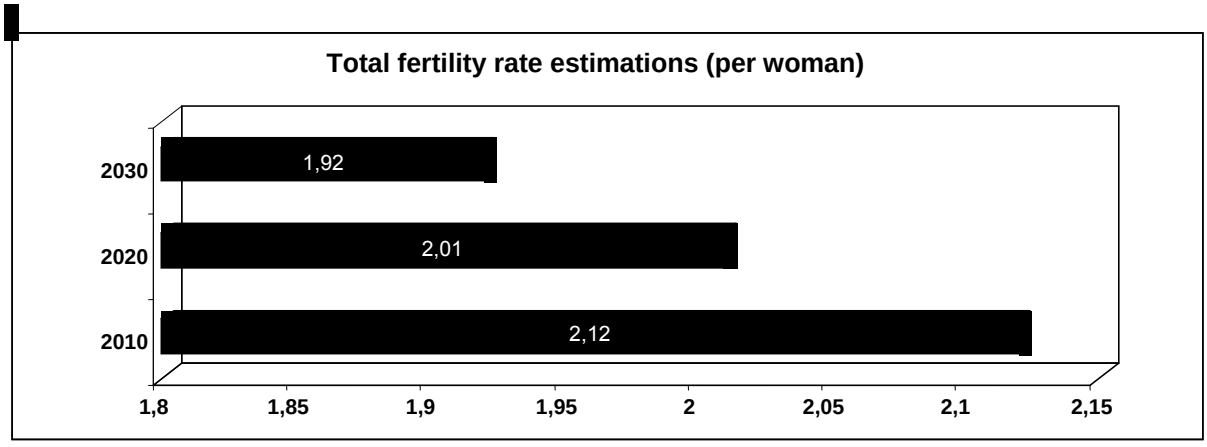

Figure 2-50: Turkey Total Fertility Rate Estimates for 2010-2030

Source: TURKSTAT, (www.tuik.gov.tr) 2006

2.14.3 Age at First Birth

For 25-49 aged women in Turkey, the age of mothers at first birth is approximately 22 (2).

2.14.4 Teenage Pregnancy

According to the TDHS 2003 results, 8 % of the 15-19 aged women adopted fertility behavior and 6 % of these women had children while 2 % of them were pregnant to their first children at that time (2).

2.14.5 Induced Abortion

Table 2-37: Induced Abortions by Basic Features

Percentage of married women who experienced induced abortion by basic features, Turkey 2003	
Basic Features	**Ever had an induced abortion**
Age	
15-19	4,5
20-24	4,2
25-29	12,3
30-34	21,4
35-39	30,7
40-44	37,8
45-49	41,0
Settlement Area	
Urban	26,0
Rural	18,7
Total	23,9

Source: Turkey Demographic and Health Survey 2003

According to the TDHS 2003 results presented at the Table 2.37, the percentage of married women who had abortion was noted less than 5 % in under 25 age group while it reached up to 41 % in 45-49 aged women by continuously increasing in 30+ aged women's group.

2.14.6 Information on Family Planning

Table 2-38: Statistics on the Use of Family Planning Methods-TDHS 2003

	TDHS -1988	**TDHS-1993**	**TDHS-1998**	**TDHS-2003**
Contraceptive Method				
Use of Any Method	63,4	62,6	63,9	71,0
Use of Any Modern Method	31,0	34,5	37,7	42,5
Pill	6,2	4,9	4,4	4,7
IUD	14,0	18,8	19,8	20,2
Condom	7,2	6,6	8,2	10,8

Female sterilization	1,7	2,9	4,2	5,7
Other Modern Methods	2,0	1,3	1,1	1,1
Any Traditional Method	32,3	28,1	26,1	28,5
Periodic abstinence	3,5	1,0	1,1	1,1
Withdrawal	25,7	26,2	24,4	26,4
Other Traditional Methods	3,1	0,9	0,6	1,0
Not Using Any Method	36,6	37,4	36,1	29,0

Source: Turkey Demographic and Health Survey 2003

Table 2.38 presents the percentage distribution of married women by the contraceptive methods used. While 63.4 % of married women used any contraceptive methods in 1988, this ratio increased up to 71 % in 2003. As could be seen at the table, the percentage of women using modern methods have increased by years whereas that of women using traditional methods declined.

2.14.7 Sexually-Transmitted Diseases

As indicated in the Figure 2.51, gonorrhea incidence among sexually-transmitted diseases reported in 2005 and 2006 was reported 0.74 per 100.000 in 2005 and 0.56 per 100.000 in 2006. Syphilis incidence was reported 0.56 per 100.000 in 2005 and 0.79 per 100.000 in 2006.

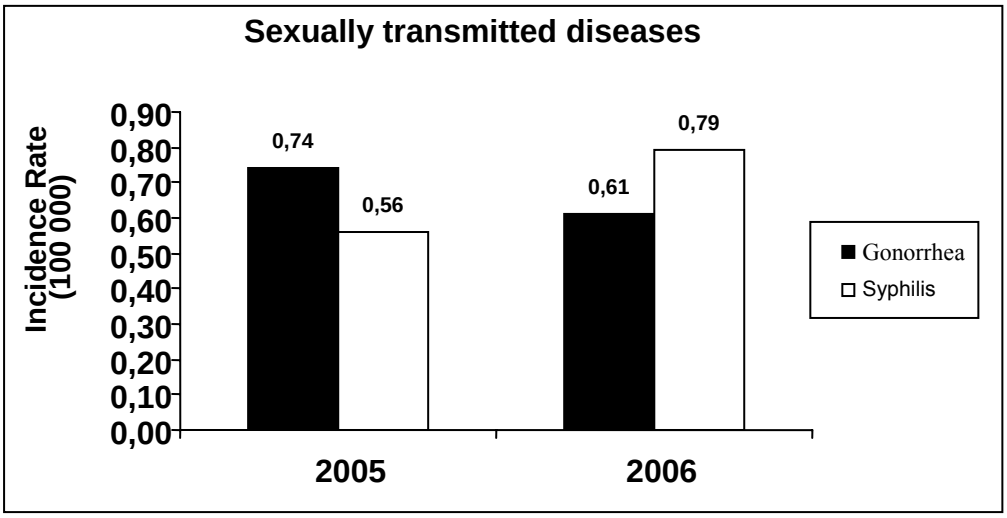

Figure 2-51: Incidence of the Sexually-Transmitted Diseases 2005-2006

Source: Republic of Turkey, Ministry of Health, General Directorate of Primary Health Care Services, 2007

Table 2-39: Incidence and Prevalence Rates of Sexually-Communicable Diseases

	Incidence Rates (100.000)			Prevalence (1000)		
Sexually-Communicable Diseases	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Gonorrhea- Cervitis	0,000	286,900	141,600	0,000	0,300	0,200
Syphilis-Congenital Syphilis	0,200	0,200	0,200	0,000	0,000	0,000
Primary	26,700	32,200	29,400	0,0133	2,012	0,999
Secondary	8,500	10,200	9,300	0,059	0,072	0,065
Tertiary-Neurological	0,100	0,100	0,100	0,011	0,013	0,012
Chlamydia	0,000	369,500	182,300	0,000	1,200	0,600

Source: NBD-CE Study Annex 1-6, 2003

Table 2.39 presents the incidence and prevalence rates of sexually-transmitted diseases by sex.

Sexually-transmitted diseases except for HIV/AIDS are responsible for 79 of 430.459 mortality causes at national level in Turkey. They cause 43 deaths among men and 36 deaths among women at national level as for distribution by sex. Deaths which are caused by the sexually-transmitted diseases except for the HIV/AIDS are the most common in 0-4 age group (24 deaths) in the western and eastern (24 and 21 deaths respectively) region (14).

Sexually-transmitted diseases - except for the HIV/AIDS – cause 39.660 DALY in distribution of burden of disease at national level in Turkey. 31.874 DALY of total burden of disease belongs to female population. The biggest burden of disease in both sex-age groups is noted in 15-29 age group, on the other hand. Burden of disease in urban areas doubles that in rural areas. As for regional distribution, the highest burden of disease is noted in the west with 13.370 DALY (14).

2.14.8 HIV/AIDS

Number of deaths due to AIDS and the HIV virus are inclined to increase. According to 2006 data, 39.5 million people live with the HIV. This table contains infected adults and children with 4.3 million new cases (71).

HIV-AIDS prevalence rates in 2000-2005 are presented in the Figure 2.52. While the prevalence for 2000 is 0.02 per thousand it is 0.03 in thousand in 2005.

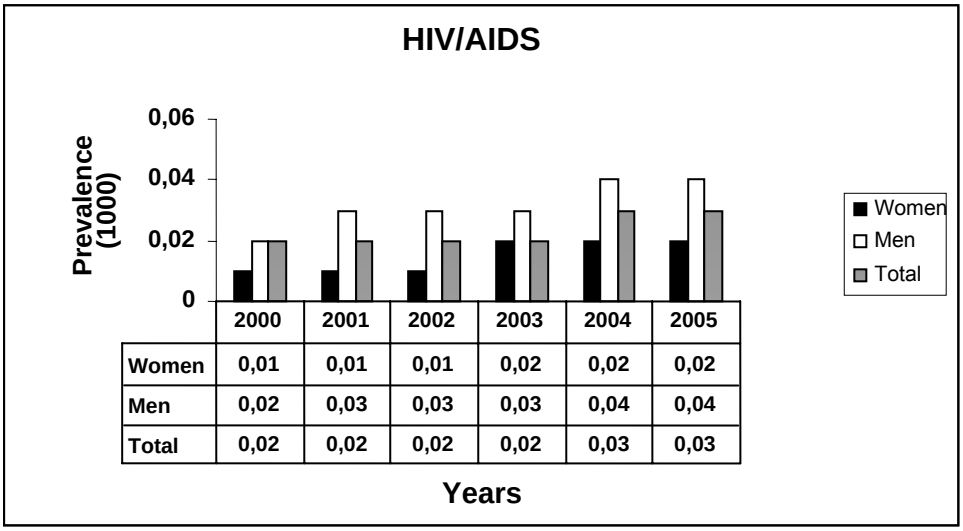

Figure 2-52: Prevalence Rates of the HIV/AIDS Cases and Carriers by Sex and Years (100.000)

Source: Republic of Turkey, Ministry of Health, General Directorate of Primary Health Care Services, 2007

Figure 2.53 presents the national level HIV/AIDS incidence rates in 2000-2005. The incidence rate was 0.23 per 100.000 in 2000 and 0.46 in 2005.

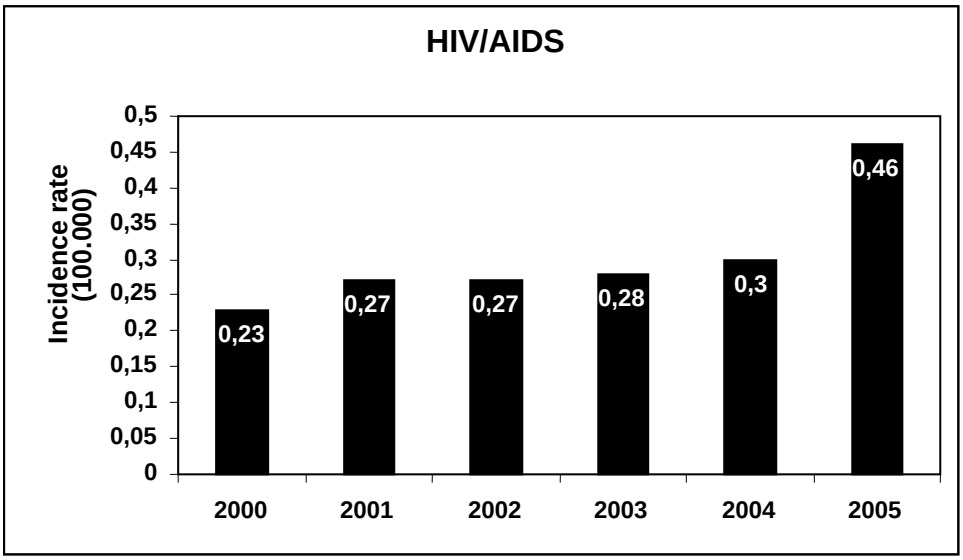

Figure 2-53: Incidence of HIV/AIDS Cases and Carriers at National Level in Turkey in 2000-2005 (100.000)

Source: Republic of Turkey, Ministry of Health, General Directorate of Primary Health Care Services, 2005

Table 2-40: Incidence and Prevalence Rates of HIV/AIDS by Sex

	Incidence rates (100.000)			Prevalence(1000)		
HIV/AIDS	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
HIV/AIDS	1,800	0,300	1,100	0,200	0,030	0,100

AIDS	0,900	0,200	0,600	0,000	0,000	0,000

Source: NBD-CE Study Annex 1-6, 2003

Table 2.40 presents the incidence and prevalence rates of HIV/AIDS by sex. HIV/AIDS incidence is 1.1 per 100.000, 1.8 among men and 0.3 among women. Prevalence rate, on the other hand, is 0.1 per thousand in total, 0.2 among men and 0.03 among women.

HIV/AIDS is the 14th cause of mortality in total and in both sexes as for distribution of nation-wide numbers of death cases by disease groups and sex. HIV/AIDS also constitutes 0.02 % of total burden of disease reported in Turkey (which is 0.03 % among men and 0.01 % among women) (14).

A survey indicated that 0.8 % of sex workers, 1.2 % of homosexual men and 1.5 % of intravenous drug users (addicts) were HIV positive. However, these findings do not reflect a representative distribution at risk groups (72).

2.15 WOMEN'S STATUS

2.15.1 Literacy among Women

Figure 2.54 presents the percentage of literate women at national level by years. The percentage, as a result of the successful programs which were conducted by the Ministry of Education and the MoE-supported non-governmental organizations as well as the greater importance which was attached by decision-makers, increased from 67.4 % in 1990 to 79.6 % in 2004.

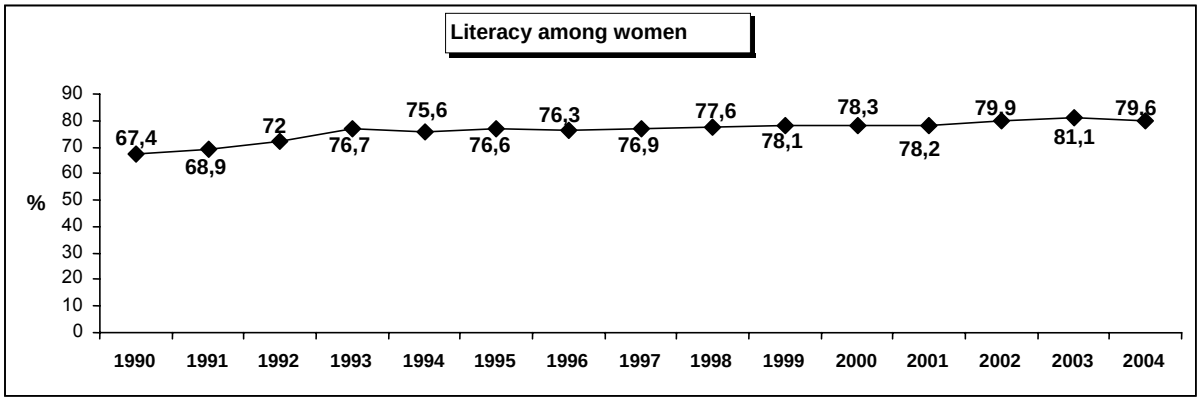

Figure 2-54: Literacy among Women in Turkey

Source: TURKSTAT Demographic and Development Indicators (www.tuik.gov.tr), 2006

2.15.2 Women's Enrollment at University

Figure 2.55 presents the status of women's enrollment at university at national level in Turkey. Women's enrollment at university is inclined to increase in parallel with the increase in the percentage of literacy, as well. The percentage of women's enrollment which was noted 9.17 % in 1997/98 education term raised to 13.53 % in 2002/03 term and finally to 14.41 % in 2005/2006 term.

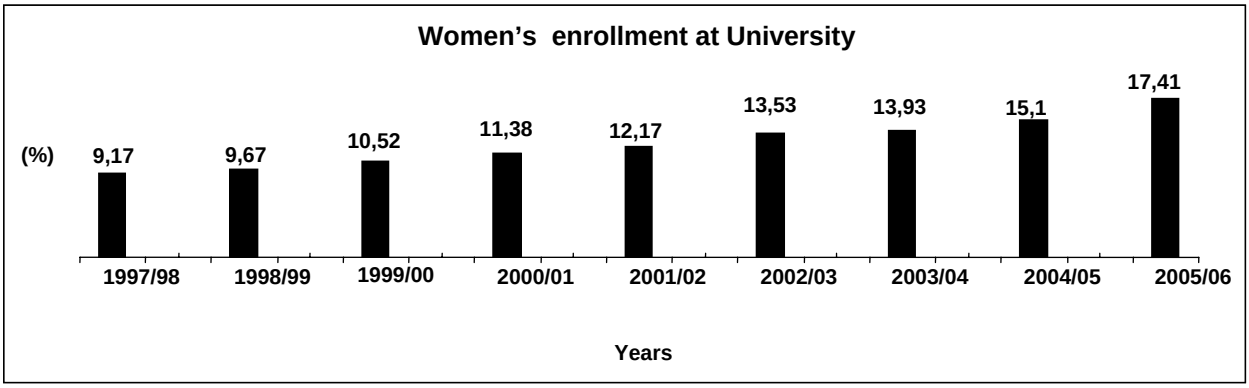

Figure 2-55: Women's Enrollment at University in Turkey

Source: TURKSTAT (www.tuik.gov.tr) Net School Enrollment by the Education Level (8-year compulsory education [(1)])

Schooling percentages in 1997 and following years were calculated by the latest population projection based on the results of 2000 General Census.

Net Schooling Ratio: Net schooling ratio is found by dividing the students in theoretical age group in the respective education type into the total population in theoretical age group in the particular education type which the students belong to.

2.15.3 Women's Labor Status

Figure 2.56 indicates that women's labor force participation was 34.2 % in 1990 but then it declined to 30.9 % in 1995 and finally to 26.6 % in 2000.

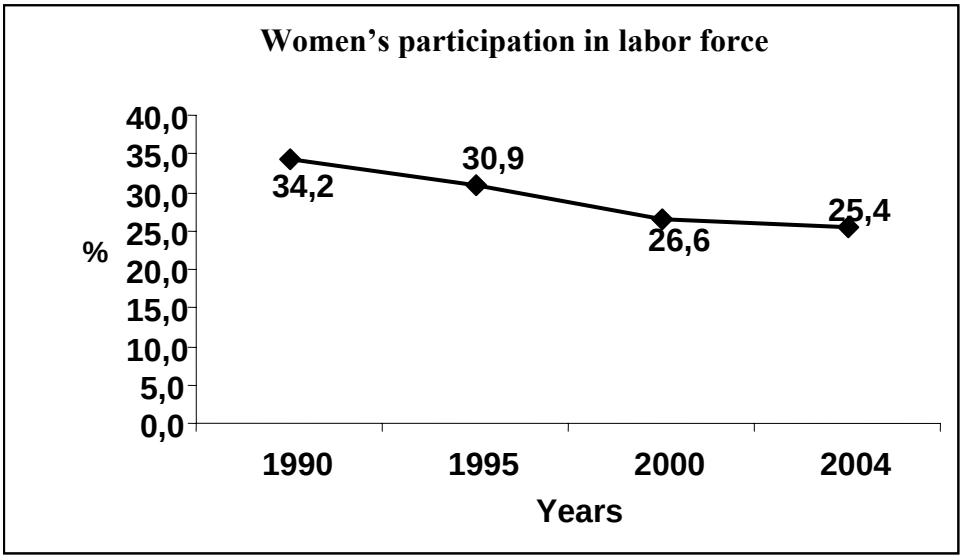

Figure 2-56: Women's Labor Force Participation in Turkey

Source: TURKSTAT (www.tuik.gov.tr), 2007

A national study found out that 7.99 % of 12+ aged women had a paid job (27).

According to the results obtained from the 2004 Household Labor Survey, the percentage of women's labor force participation was found to be 25.4 % across Turkey. (73).

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CHAPTER 3 HEALTH CARE SYSTEM

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The Ministry of Health executes and implements health care services in Turkey. In addition, sectors other than health sector are also interested in health policies. These sectors are ready to cooperate with the Ministry of Health in the activities planned to achive objectives. In accordance with Article 56 of the Turkish Constitution, the Ministry of Health is legally responsible for health care services. MoH is obliged to determine the standards and to coordinate the activities.

Recently, there is an increased tendency in terms of recruiting other sectors in the process of health policy development. Besides, other sectors develop their health related policies in cooperation with health sector. The cooperation between sectors has created new partnerships between public institutions such as MoH, State Planning Agency, TURKSTAT, Higher Education Council and non-governmental organizations, and strengthened current partnerships.

In this book, health care systems are examined in detail starting from the development of health organization in Turkey.

3.1 HISTORICAL DEVELOPMENT OF TURKISH HEALTH SECTOR (1)

3.1.1 1920-1938 Period

MoH, which was established in 1920, has made legal arrangements in many fields in the period between 1920 and 1938. When taking the conditions of that period into consideration, the aims of these arrangements were;

- Solving the post-war problems,
- Supporting health personnel in quality and quantity,
- Establishing the structure starting from centre to villages,
- Spreading preventive healthcare services

Vertical organization regarding the communicable diseases, mainly malaria, syphilis, trachoma still continues to exist within the current organization.

Hygiene Center Presidency and School of Public Health Directorate, dispensaries, institutions, regional laboratories, health stations, health centers, and health posts are structures exist today, though have been applied some changes.

The following laws, which were issued in the same period, still present in the current regulation although they have been exposed to various changes;

- Law No: 38 on Forensic Medicine (1920)
- Law No: 992 on Bacteriology and Chemistry Laboratories (1927),
- Law No: 1219 on the Practice of Medicine and its Branches (1928)
- Law No: 1962 on Pharmaceuticals and Medical Products (1928),
- Law No: 1593 on General Hygiene (1930)
- Law No: 3017 on the Officers and the Organization of the Ministry of Health and Social Aid (1936)
- Law No: 3153 on Treatment with Radiology, Radium and Electricity and Other Physiotherapy Institutions (1937).

3.1.2 1938- 1960 Period

Legal arrangements and practices were carried out to strengthen the central structure and develop policies with social content.

"Extraordinary Malaria Control Law" which aimed to struggle against malaria, smallpox, syphilis and leprosy epidemics emerged after the Second World War has been issued and disease-focused vertical organizational structures specific to diseases were further expanded. Labor Insurance Law, which forms the basis of Social Insurance Organization, was established in 1945, thus the monopoly of the MoH in the field of service and employment has been removed.

Studies regarding the establishment of the RF have also been carried out in this period and the coverage of social security has started to be expanded. Hospital services executed by Special Provincial Administrations and local authorities are transferred to the MoH. Region-based institutional organizations were also performed in this period. Regional Numune

Hospitals, maternal-child health centers, tuberculosis, and mental health hospitals were also established in this period. Spreading of health centers have also accelerated in these years.

Many laws made in these years are still in force and constitute the basis of our health organization. For instance;

- Law on Opticianry and Opticians (1940, No: 3958)
- Law on Turkish Medical Association (1953, No: 6023)
- Law on Pharmacists and Pharmacies (1953, No: 6197)
- Law on Nursing (1954, No: 6283)
- Law on Turkish Pharmacists Association (1956, No: 6643) are some of these laws.

3.1.3 1961-1980 Period

Different health policies have started to be discussed in this period but socialization of health services has been adopted. The Law on the Socialization of Health Services numbered 224 has come into force in 1961 and this law has application areas since 1963. Health policies applied until 1980 were formed within the context of this law.

Vertical organizations were partially decreased and structures giving different health services were integrated within the health centers. Socialization was started with pilot practices.

After 1960, planned period was started and five years development plans became one of the most important elements in determination of health policies. Programs based on socialization policies were also constructed in the First Five Years Development Plan.

Discussions on Universal Health Insurance concept, which would be talked about for years, were started in these years. Draft Law on Universal Health Insurance was first prepared in 1967 but could not be sent to the ministerial board. Establishment of Universal Health Insurance was expected in 1969 in the Second Five Years Development Plan; Universal Health Insurance draft was submitted to the Grand National Assembly of Turkey but not accepted. The draft was re-submitted to the Grand National Assembly of Turkey in 1974 but it could not be discussed.

All laws, regulations and circulars prepared in this period aimed arrangements based on the main basis of socialization.

3.1.4 1980-Today

1982 Constitution includes arrangements parallel to 1961 Constitution in health services and administration. Article 60 says that, everybody "has social security right and the state undertakes this responsibility". Universal Health Insurance is included in Article 56 of the 1982 Constitution with the expression "Universal Health Insurance can be established".

1980s witnessed to the efforts for expansion of socialization policies started in 1961. With the increase in health finance management, universal health insurance issue again came into the agenda in 1987 but legal arrangements regarding this issue could not be completed. Main Law of Health Services was issued at the same year. However, arrangements on this law could not be implemented until today.

SPO made a master plan regarding health sector and First National Health Congress was held in 1992 in line with this plan and re-structuring process was started. In the Second National Health Congress held in 1993, national health policies were determined and Green Card project for poor people not covered in social security system was started.

In parallel to the resolutions of the Second National Health Congress held in 1993 some arrangements have been made up to now, unfortunately expected consequences could not be obtained. No results have been obtained from the studies regarding privatization and autonomization of hospitals.

The Program for Transformation in Health was initiated as of the beginning of 2003, and the transformation in health system was started with this program which included new approaches and issues planned and appeared in development plans. Detailed information on the subject can be seen under the title "Health Reforms" in this book (2).

3.2 ORGANIZATIONAL STRUCTURE OF HEALTH SYSTEM IN TURKEY

Turkish health system has a highly complex structure. The actors in Turkish heath system are public, semi-public and private and philanthropic organizations. Table 1 presents actors which take part in health system directly or indirectly by their status in delivery of services, or finance of services, and administrative decision-making.

Table 3-1: Health Organizations and Institutions by Functions in Turkey

POLICY -MAKING	**DELIVERY OF HEALTH CARE SERVICES**
Grand National Assembly of Turkey (TBMM)	**Public**
State Planning Organization	Ministry of Health
Ministry of Health	University Hospitals
Higher Education Council (HEC)	Ministry of Defense
Constitutional Court	
	Private
ADMINISTRATIVE DECISION-MAKING	Private Hospitals
Ministry of Health	Foundation Hospitals
Provincial Health Directorates	Minority Hospitals
	Independent GPs / specialists
HEALTH SERVICES FINANCING	Out-patient Treatment Clinics
Ministry of Finance	Laboratories and Diagnostic Centers
Social Security Organization (SIO	Pharmacies
Bag-Kur, RF)	Medical Devices and Equipment Sellers
Private Insurance Companies	
Self-financed institutions	**Non-governmental organizations**
International Agencies	Kızılay (Red Crescent)
	Foundations and Associations

Source: Turkey Health Report, School of Public Health Directorate,2004, Ankara, p. 29

Ministry of Health, universities and private sector are health service providers in Turkey. As for financing, the most significant structure is the Social Security Organization. However, unification process for RF, SIO and Bag-Kur is not completed yet. Another issue is related to health policies, in which State Planning Organization, Ministry of Health, health managers, private sector and non-governmental organizations play significant.

3.2.1 Ministry of Health

Ministry of Health is primarily responsible for making health sector policies, implementing national health strategies through programs and directly delivering health care services. MoH is the main provider of primary and secondary care, maternal and child care and family planning services. MoH is also the single provider of preventive care services by means of its primary and secondary care in-patient and specialized facilities (health centers, health posts and hospitals). All other public hospitals, dispensaries and other health care facilities were devolved to the MoH by the Law No. 5283 which came into effect on 19.02.2005. In this respect, the SIO became an agency which merely finances health care services given to its beneficiaries by the MoH. As of 2005, the Ministry of Health had 795 hospitals, 6,203 health centers and 6,088 health posts, which is twice as much in the former decade (Table 3.2). Yet, some health posts do not work actively due to the lack of personnel and equipment.

Table 3-2: Ministry of Health Institutions, 2005

Institution	*Number*
Total	**14.053**
Hospital	795
Health Center	6.203
Village Health Station	6.088
Local Policlinic	138
MCHFP Center	234
Tuberculosis Control Dispensary (as of August 2007)	247*
Regional TB Laboratory	21
Airport Ins. Cent.	17
Borders Health Ins. Center	15
Coastal Health Ins. Center	49
Refik Saydam Hygiene Center Presidency	1
Regional Hygiene Institute	7
Provincial Public Health Laboratory	79
District Public Health Laboratory	31
Institute of Malaria	2
Malaria Control Laboratory	6
Malaria Laboratory	80
Health Protection Station	2
Harbor-City Bacteriology Ins.	2
Regional Directorate of Main Equip. Supply	1
Directorate of Equipment of Region	18
Directorate of Equipment of Province	5

Source: Ministry of Health Strategy Development Presidency, 2005

*was corrected after the publication upon the feedback of TB Control Department.

Ministry of Health organization consists of the Minister, the Undersecretary, five Deputy Undersecretaries and their affiliated bodies (Figure 3.1). Administrative units are General Directorate of Primary Care Services, General Directorate of Curative Services, General Directorate of Maternal-Child Health and Family Planning, General Directorate of Pharmaceuticals and Pharmacy, General Directorate of Health Education, General Directorate of Personnel, General Directorate of Borders and Maritinal Health, and Department of European Union Coordination, Press Consultancy, Department of Information Processing, Department of Budget, Department of Foreign Affairs, Public Relations Coordination Office, School of Public Health Directorate, Legal Affairs Consultancy, Department of Administrative and Financial Affairs, Monitoring and Evaluation Unit, Department of Cancer Control, Project Management and Support Unit, Refik Saydam Hygiene Center Presidency, Secretariat of Defense, Department of Malaria Control, Department of Strategy Development, Inspection Council Presidency and Department of Tuberculosis Control (4).

MINISTRY OF HEALTH
CENTRAL ORGANIZATION/ ORGANIZATION CHART

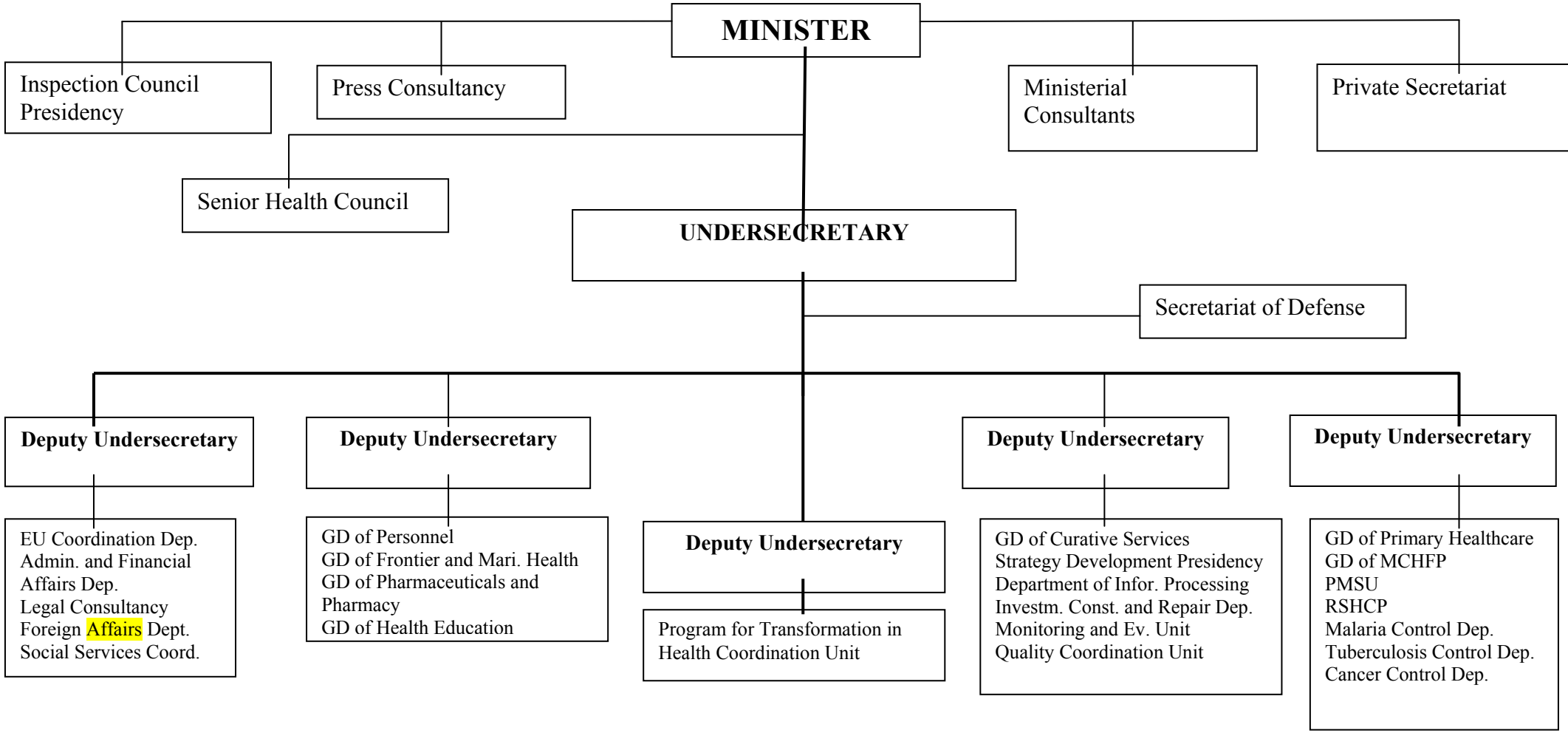

Figure 3-1: Ministry of Health Central Organization Chart

Source: http://www.saglik.gov.tr/TR/dosyagoster.aspx?DIL=1&BELGEANAH=17997&DOSYAISIM=teskilat.JPG, 11.06.2007

These units do also work in Ministerial procedures based on the respective legislation, implementing policies and conducting activies planned for Health Transformation, relations with international organizations and agencies and assigning personnel with tasks abroad. Ministry has a vertical organization in which responsibility is downwards and distributed between directorates in provinces, health centers and health posts to some extent, as well.

In 81 provinces, provincial health directorates are responsible for administering health care services provided by the MoH. Provincial health directors are responsible to the governor for administrative issues and to the Ministry of Health for technical issues. Managers at the MoH hospitals are responsible to the General Director of Curative Services and managers in health centers are responsible to the General Director of Primary Care Services (Figure 3.2).

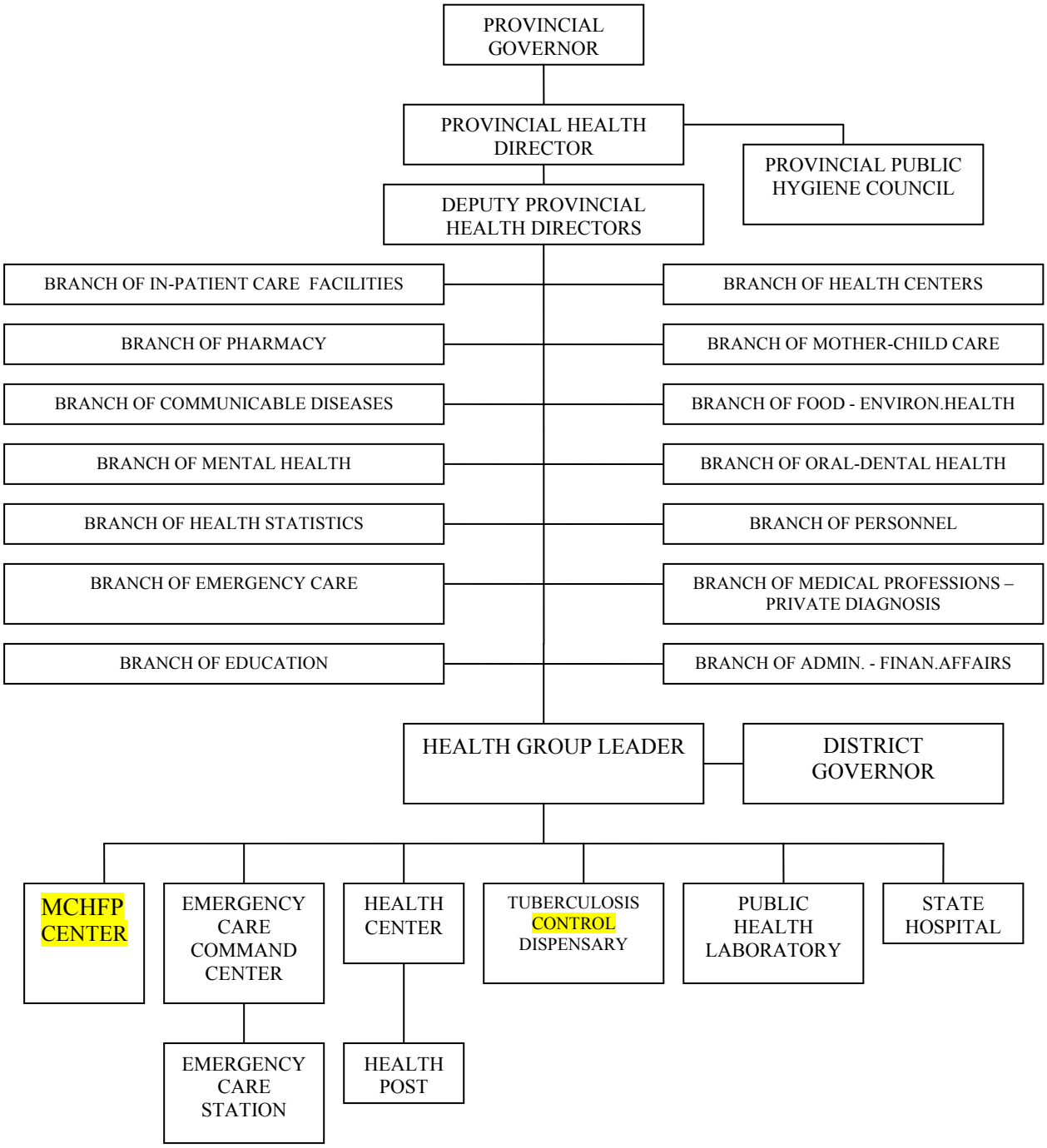

Figure 3-2: Ministry of Health Rural Organization Chart

Source: http://www.saglik.gov.tr/TR/Dosyalar/Tasra_kucuk.jpg, 11.06.2007

The central organization of the MoH has responsibility for the provincial health directors. More specifically, the General Director of Personnel has the ability to retain or delegate powers to the provincial directors.

The employment process for all ministerial personnel is determined and executed by the Personnel General Directorate. New graduate physicians are assigned to work in compulsory service system. Compulsory service system issue was revived on 05.07.2005 with

the changes made in Law No: 5371. The new graduates of health personnel appointments are based on MoH's pre-identified available positions. New graduate physicians and nurses (including midwifes) are appointed to work in appropriate and available positions determined and announced by the Ministry of Health. Graduates choose three places they want to work and appointments are made according to the overlap between graduates' prioritized preference listing and appropriate positions. Appointments are generally valid for two years. However this depends on the place of appointment, new appointment cannot be demanded before two years. Contracted personnel are also appointed through point appointments and contact is signed with them for one year.

Service grades are taken into account for preferred places of appointment.

The new appointment system differs from former systems and was started to be implemented so as to provide a more fair and transparent practice. It is also possible to make some special agreements providing additional income opportunity as a motivation tool to encourage physicians for filling vacant positions.

Amendment No: 5581 on Some Laws and Decrees was passed on 15.2.2007 after the article on practice of foreign origin physicians in Turkey was annulled.

3.2.1.1 Health Managements in the Provinces

MoH-affiliated provincial health directorates are administered by physicians. Health centers and health facilities are subject to the supervision by Provincial Health Directorates. Provincial Health Director is responsible for planning and implementing health care services in provinces and is obliged to take approval from both provincial governor and the MoH central organization. Physicians are employed by General Directorate of Personnel by point appointment, which means that personnel is first assigned with task in a certain province and then his/her task is specified by the Provincial Health Directorate according to the need in that province. Then, Provincial Health Directorate might transfer personnel to another health care facility temporarily or permanently, if necessary. Health personnel (except physicians) is appointed to a particular province and Provincial Health Directorate executes task distribution within that particular province.

Operational costs of health centers, by supplies and consumption level in the past, are funded by Provincial Health Directorates. Apart from this, Health Group Leaders are responsible for administrating a group of health centers in regions. However, they do not have clarified job descriptions (7).

3.2.2 Ministry of Labor and Social Security

The core of the Ministry of Labor and Social Security evolved within the Ministry of Economy in the 1930s. In accordance with the Law No: 2450 (27 May 1934) on the Organization and Duties of the Ministry of Economy, "Bureau of Labor and Laborers" was established under the Ministry. The Bureau was transformed into the Department of Labor in accordance with the Labor law No: 3008 on 8 June 1936.

The Ministry of Labor was established based on Article 1 of the Law No: 3271 on Organizing State Departments as Ministries, upon the Prime Minister's proposal No: 6-376/6 and date 7 June 1945 with the Presidential note no: 4/591 and date 7 June 1945, and was followed by the Law No: 4763 (22 June 1945) on the Establishment and Duties of Ministry of Labor (8).

Law No: 4841 and date 28 January 1846 on the Establishment and Duties of the Ministry of Labor (O.G. 30 January 1946) presented a broader definition on the duties, and regulated central and provincial organizations than Law no. 4763.

Later, the Ministry of Social Security was established in accordance with the Presidential Note dated 17.11.1974 and numbered 4-1040, and Social Insurance Organization and Bag-Kur operated under the Ministry.

In accordance with the Decree Law No: 184 and date 13 December 1983 on the Organization and Duties of the Ministry of Labor and Social Security (O.G. 14 December 1983), the Ministry of Labor and the Ministry of Social Security were unified and reorganized as the "Ministry of Labor and Social Security". Law No: 4841 was repealed by Decree Law No: 184.

The Decree on Amending Decree No: 184 on the Organization and Duties of the Ministry of Labor and Social Security and Decree on the Organization and Duties of the Ministry of Labor and Social Security was changed and Law No: 3146 was entered into force on 09.01.1985.

Later, with the Decree No: 618 that was passed on 04 October 2000, the Ministry was restructured and the Presidency of Social Security Organization and General Directorate of Labor Health and Security were established, and General Directorate of Foreign Affairs and Foreign Labor Services were restructured.

Foreign organization of the Ministry was developed upon the necessity created by regular Turkish labor dispatch to the industrialized European Countries since the early 1960s.

Labor Consultancy is provided by our Embassies and Labor attachés exist within Consulate Generals for the purpose of providing help and support in terms of living and working in a different culture for the Turkish Labor force in Germany and other European countries.

The Duties of the Ministry are:

- To take measures regulating working life and facilitating work peace between employers and employees,
- To explore existing and possible problems in the working life and to find out ways for solution,
- To survey essential measures for providing man power necessitated by economy and to guide implementation of these measures,
- To take measures that will provide employment and increase quality of life for the workers,
- To make sure that measures for labor health and security are taken,
- To supervise work life,
- To take necessary measures for social justice and social prosperity,
- To implement social insurance services against various physiologic, economic and social risks,
- To provide opportunities for social security and to take necessary measures for generalization and improvement of social security opportunities,
- To seek solutions for the problems related to working life and social security of Turkish workers abroad, to protect and improve their rights and interests,
- To take measures protecting workers and promoting labor in order to improve working life,
- To collect and publish labor statistics.

It has been decided that RF, Social Insurance Organization (SIO), and Bag-Kur (starting from 2008, Green Card budget is included in this scope) shall be unified under Social Security Organization which is an autonomous institution. Studies related to integration are in progress and is planned to be completed in three years (9).

3.2.2.1 Social Insurance Organization (SIO)

SIO is a social security organization which covers blue-collar workers in public and private sector and is affiliated with the Ministry of Labor and Social Security. SIO, through its

health insurance applies to industrial accidents, occupational diseases, illness, birth, disability, old age and casualty. SIO was first founded as an "Insurance Organization for Workers" in 1946 and then took its final shape by the enforcement of the Social Security Legislation in 1965.

Until 2005, SIO was an organization which gave both insurance and treatment services across the country with its 118 hospitals, 219 health stations (similar to the MoH-affiliated health posts) and 189 dispensaries. SIO health facilities, together with all other public health facilities, were devolved to the Ministry of Health by the Law No. 5283 enacted on 19.02.2005. SIO members can use MoH Health facilities as well as University and private health care services. SIO, prior to the devolution of health facilities, did not used to provide and pay for preventive health care services. However, all MoH facilities were made available for the use of SIO members, thus primary health care services were included in the payment coverage. SIO health services are funded by premiums paid by employees and employers. Generally speaking, SIO facilities are established in industrial regions where many "blue collar" workers who utilize SIO services reside.

While a single system is used to collect both employee and health insurance premiums (accidents and occupational diseases; birth, disability, senectitude, and death insurance), health premiums and health expenditure are separately identified in SIO accounts. SIO has two other sources of funding in addition to premiums: income from fees paid on behalf of non-members using SIO facilities (for example Bag-Kur members), and income obtained through co-payments. With the last recent changes the social security and health insurance functions of SIO were separated and distinct branches for each established. The issue of health insurance continues to be conducted within the structure of Social Insurance Organization.

SIO, as required by the Law No. 5502 on the Social Insurance Organization which was adopted on 16.05.2006 as a result of social security reforms conducted so far, was devolved to the Social Security Organization with all its central and rural organization personnel, officers and workers, real properties and securities, service buildings, materials, supplies, equipment, vehicles, receivables, debts, rights, subsidiaries, records, registries and other documentation in hard and / or soft copies, and tasks, as well.

A SIO member needs to complement 90 work days in order to use health insurance for himself and 120 work days for his/her dependants. Studies are carried on to trim down this period to 30 work days (10).

3.2.2.2 Social Security Organization for Artisans and the Self-Employed (Bag-Kur)

Bag-Kur is an insurance system which serves to self-employed people. It was first founded for self-employed people by the Law No. 1479 in 1971 but then covered unemployed people, housewives, elderly people, foreign residents in Turkey (Turks who have a foreign country passport) and unemployed spouses of Turkish people working abroad. In 1983, self-employed farmers were also covered by Bag-Kur (Law No. 2926). In 1985-86, health insurance was included in the insurance system, as well. Farmers can also benefit from health insurance since February 1999.

Bag-Kur has offices in 81 provinces across Turkey. Out of 6.566 positions in Bag-Kur only 4.666 are filled up (11).

Bag-Kur, with respect to organization structure, became a semi-autonomous body affiliated with the Ministry of Labor when the Ministry of Social Security and Ministry of Labor were unified in 1983, which was an expected result of a sound and reasonable approach to general administration. Bag-Kur, though under the Ministry of Labor, has financial and administrative autonomy.

The scope of Bag-Kur's service coverage includes medical examination of an insured person (and his dependants), laboratory tests for diagnostic purposes, and associated in-patient and out-patient treatment. Insurance assistance operates until the patient has recovered or for a period of 90 days. All contributors to Bag-Kur have the same entitlement to benefits covering all outpatient and in-patient diagnosis and treatment.

Bag-Kur does not own health facilities, but contracts with other service providers. At present, Bag-Kur has contracts with some health facilities including the MoH, local governments, university hospitals, private hospitals, and NGOs such as the Red Crescent Society. The contracts are either for specific services such as dialysis, cardiovascular, or dental services, or for general medical services. In addition, Bag-Kur also has contractual arrangements for prescriptions with a range of relevant societies such as the physician sections of Chamber of Commerce, and trades and crafts organizations.

Premiums in Bag-Kur system are determined by this organization. In patient care is included in this scope. In terms of out-patient care, active members pay 20% (contribution rate), and retired members pay 10% of the amount of the prescribed medicine just like RF and SIO members. Co-payments are also required for spectacles and some other goods and

services. Bag-Kur makes agreements with Turkish Pharmacists' Association for covering basic needs and with opticians for covering standard eyeglasses.

There are 3.36 million members of Bag-Kur in the scope of Laws No: 1479 and 2926. Considering the dependants of the members, the number reaches to 16 million people. Until very recently, Bag-Kur premium payments were very low, but Bag-Kur has taken some serious steps to increase its premium payments (12).

Bag-Kur, as required by the Law No. 5502 on the Social Security Organization which was adopted on 16.05.2006 as a result of social security reforms conducted so far, was devolved to the Social Security Organization with all its central and rural organization personnel, officers and workers, real properties and securities, service buildings, materials, supplies, equipment, vehicles, receivables, debts, rights, subsidiaries, records, registries and other documentation in hard and / or soft copies, and tasks, as well.

3.2.2.3 Government Employee's Retirement Fund

Government Employee's Retirement Fund (RF) was founded by the Law No. 5434 in 1950 in order to provide white-collar employees (government employees) and military personnel with retirement and disability pension. Coverage was extended then and members of local administration council, parliamentary /deputies, military school students and all government employees were covered. RF does not collect a certain amount of health insurance premium from working or retired members. The system is supported by the state budget in general. RF covers the health expenses of all retired government employees requiring only 10% co-payment for the prescribed medicine from its members.

It is noteworthy to indicate that active government employees are not included in this scope. Their health expenses are directly financed by the state budget's 180 and 181 budgetary items. This active government employees are included in RF only after they get retired. We would like to emphasize this situation since it is commonly misunderstood.

Besides, among the basic features of RF, there are retirement payment for the people who get retired due elder age, payment for disabilities caused by working environment or war, repayment of cut offs, collected and cumulative payments, retirement and marriage premiums covering hospital expenses and 90% of prescription expenses, exemption from co-payment for chronical diseases' prescribed medicine if there is council report, spectacles, hearing aids, payments to the spouse and descendants of deceased member, payment for indigent people, people over 65 in accordance with the law No: 2022 (by RF in behalf of Treasury) and limited payment for war victims in accordance with the Law: 3480. The practice of health services

utilization by the people over 65 years terminated in January 2005, however these people can easily get Green Card if they are not a member of any other social security institution.

RF, as required by the Law Social Security Organization No. 5502 adopted on 16.05.2006 as a result of the social security system reforms, was devolved to the Social Security Organization with all its central and rural organization personnel, officers and workers, real properties and securities, service buildings, materials, supplies, equipment, vehicles, receivables, debts, rights, subsidiaries, records, registries and other documentation in hard and / or soft copies, and tasks, as well (13).

3.2.3 Green Card

The “Green Card” program was introduced as a mechanism to ensure targeted delivery of health services to the poor who have little or no capacity to pay for health services. Enacted under Law No: 3816 which was passed in 1991 and enacted in 1992, it provides free health care services to its beneficiaries. In accordance with the Law No: 3816 on "Covering Treatment expenditures of people without ability to pay by means of Green Card" that was amended by the Law No: 5222 that was passed in GNAT on 14 July 2004 and entered into force upon publication in the Official Gazette on 21 July 2004, utilization of health services by green card holders became possible. With this regulation, Green Card holders shall be able to receive in-patient treatment in the in-patient health care institutions in Turkey as well as out-patient treatment and their treatment, test, wound dressing, tooth extraction expenses are covered from the general budget.

Green Card Practice is considered as a temporary solution until the adoption of Universal Health Insurance.

To qualify for a Green Card, an individual should be a Turkish citizen, not be covered by any social security system, and have a monthly income of less than one-third of the minimum wage (excluding taxes and social security premiums) as determined by Law No: 1475. The Green card program does not cover medical treatment expenditures of passive insured people like soldiers and students of higher education. On the other hand, those who are entitled to receive free health services under any other law can continue to make use of this facility even if they do not apply for the green card. According to Law No: 3816, the rights of the people are protected by the law. Those who cannot pay for health services and are not able to get a Green Card can have state-financed health care under Law No: 3294.

Applications for Green Cards are finalized in the districts by the Councils of Provincial Administration. The Councils determine eligibility based on verification of

applicant's incomes, and make recommendations to the provincial Governor who then issues the Green Card. Today, approximately 12.5 million citizens utilize Green Card practice (as for the end of 2006). Green Card holders are the least in Bilecik, Bolu, Karabük, Yalova and Bayburt, respectively. Diyarbakır, Van, Şanlıurfa, İstanbul and Adana are the provinces where the number of green card holders is the highest (as for the end of 2006).

The Green Card program is managed by the MoH. Medical treatment expenditures are determined by a regulation issued by the MOH. The Green Card program is financed via general taxes, and health expenditures of green card holders shall continue to be covered from the appropriation in the transfer item of the MOH budget until 2008. Yet, when UHI starts to be implemented commencing from 2008, resource reserved for health expenses of Green Card holders shall not be allocated to MoH budget, and payments related to those expenses shall be made by Social Security Organization.

Approximately 16.93% of the population in Turkey is green card holder. Based on residential distribution of 2000 Census, green card holders of 2005, and former green card holders starting from 2003 were recalculated, greed cards of those who were counted twice, of deceased members and of the members who have a different social insurance were invalidated, thus a more accurate estimation was done. The decrease observed since 2003 in the number of green card members is due to the cancellation of green cards that were formerly given to people who were not entitled to green card.

End of year expenditures of Green Card have continuously exceeded the amount of net commencing allowance in the budget and in the last few years, there recorded a huge drift between initial figures and end of year expenditures. Actual cause for this drift is the fact that initial estimations were low and unrealistic. The estimations are done by the Higher Health Coordination Council on the basis of the number of green card holders and estimated annual average health expenditures and in accordance with Article 9 of the Law: 3816. However, although the number of members and the amount of expenditures increase, this situation is not revealed in the estimations. 2002 Estimates are lower than 2001 estimates.

Total population shall be covered with the Universal Health Insurance and an a specific amount of premium payment shall be required. Premiums of Green Card holders shall be disbursed by the state. Through an income appraisal, whose premiums the state shall disburse and whose premiums shall be covered by themselves will be specified. In such an income appraisal, the fact whether the family's monthly income per person is lower than 1/3 of the new minimum wage shall be examined. Premiums of families who have monthly

income lower than this limit shall be covered by the state, thus family members shall be able to utilize health services in the scope of Universal Health Insurance.

3.2.4 Universal Health Insurance

Having the social state consciousness, the government, within the framework determined by laws, is responsible for making sure that all sectors of the public receive health service. The issue has being discussed for fifteen years; however, realistic and serious steps have been taken since a few years back.

The below criteria may be useful in understanding the future plans on the issue.

3.2.4.1 Basic Principles of Universal Health Insurance

There are some vital points in the planned system. Related details might be seen below.

- Primary Level Health Care Services
  1. In Family Medicine system, primary level health care services shall be provided in a way that individuals can receive preventive service and their health situations shall be kept recorded.
  2. This model shall promote diagnostic centers (laboratories etc.) where the public shall receive free service and their detailed diagnostic processes shall be operated.
  3. Except from emergency cases, co-payments are used to encourage the public to utilize primary level health services as the first contact point.
- Secondary Level Health Care Services
  4. Along with current practice, a finance model shall be formed in which institutions shall maintain contracts, gain their administrative/financial autonomy, and accomplish balance between their income and expenditures.

Objectives of UHI System

1. Same quality health insurance shall be provided for the whole population.
2. A health system in which participation shall be obligatory, premiums shall be determined according to income, and services shall be provided on the basis of real needs.
3. Premiums of poor population shall be disbursed from the state resources allocated for social aids.
4. All kind of preventive medicine practice shall constitute the basis of health policy.
5. A modern controlling and monitoring system shall be formed for the efficient use of public resources.

Management of Health Service Procurement

1. It shall lay the foundation for the system to assure social security in order to subsidize people who can not afford to pay premiums instead of transferring financial resources to health care facilities and personnel in order to subsidize services.
2. Health care services shall be procured on contract basis in order to have control over the costs and process in health financing.
3. Internationally- accepted insurance principles shall form a basis for disbursement of health expenditures.
4. Modern monitoring and measurement procedures shall be used to describe the proper costs of services which would also help to identify the amount of premiums in a realistic way.
5. Ministry of Health-developed scientific and medical criteria, and diagnosis and treatment guidelines shall be utilized in order to have financial control over health services financing.
6. Options such as home care and special daily curative procedures shall be preferred in case of out-patient treatment in order to decrease costs in some circumstances (14).

3.3 ORGANIZATION STRUCTURE OF HOSPITALS

3.3.1 State Hospitals

State hospitals are managed by chief physicians who are accompanied by chief nurses and hospital managers. Clinic and laboratory chiefs at in-patient facilities and training hospitals, clinic and laboratory specialists at general hospitals and specialty branch chiefs or specialists at medical specialty hospitals are appointed among those who have distinguished themselves in the administration and managed by the chief physicians to be assigned by the Ministry of Health. Chief physicians also act as scientific directors at medical specialty hospitals (tertiary care) and rehabilitation centers. Chief physicians, as much as possible, take care of and steer clinical and scientific laboratory studies at other facilities as well. All administrative personnel at the MoH hospitals is appointed by the Ministry of Health. With recent devolutions, provinces have been granted authority on appointment of administrative assistantships. Those at university hospitals, however, are appointed by the Higher Education Council (HEC). Generally, there are human resources department at the hospitals, which operate directly under the hospital director and deal with personnel and administrative issues.

3.3.2 Private Hospitals

There is not a specific format in terms of the organization and administration of private hospitals. Through opening the path for private services in the health system, the idle capacity was utilized for the benefit of the public. RF members and active government employees as well as Bag-Kur and SIO members can now utilize these institutions.

For the purpose of strengthening their structure, private hospitals started to practice professional hospital administration and management. In the recent years, public health service providers have attempted for similar applications in this scope. These institutions which are operated with cost-reducing methods introduced new regulations for increasing the service quality, and they started to employ full time health personnel.

Recent changes made in the regulation on the Support for Government employees in terms of health service and funeral expenditures (17.04.2003, Official Gazette No: 25082) enabled the referral of government employees and RF members to private health institutions which have a contract with the Ministry of Health. As of the end of 2006, 305 private hospitals provide service with their 13.707 beds, and the ratio among the total number of beds is 7% (15).

3.3.3 Financial Autonomy at Health Institutions

Hospitals are funded by two sources: by the Ministry of Health for personnel and personnel care expenses to some extent and by revolving fund for additional expenses and additional personnel expenses. Ministry of Health funds personnel and care expenses directly from the Ministry budget while revolving fund obtains income from payments made by the Social Security Organizations (SIO, Bag-Kur and Green Card) and private patients. Hospitals allocate 15% of their net income to the Ministry of Defense, 4% to MoH, and 1% to Social Services and Child Protection Institution.

While revolving funds are collected in fund-creating institutions, managers of the MoH-affiliated hospitals are directed by the Ministry of Health-affiliated General Directorate of Curative Services. Therefore, at least 50 % of revolving funds – if hospital does not have any other need- could be used to increase salaries. Additional payments are made based on the performance assessment criteria.

3.3.4 Supply of Health Services

Health services in Turkey are supplied by public and private providers. The key health service provider is the MoH (Table 3.3) and its efficiency increased as a result of devolution of SIO hospitals. Health services that was formerly provided by other ministries (Defense, Transportation, National Education), by some public institutions and municipalities have been devolved to the MoH. University hospitals are also among the service providers.

Table 3-3: Hospital Distribution, Turkey, February 2007

BRANCH	GENERAL	TRAINING	TOTAL
Ministry Of Health's Hospitals			
State Hospitals	604	27	631
Obstetrics and Gynecology Hospitals	58	6	64
Children's Hospitals	7	3	10
Ches Diseases Hospitals	18	4	22
Higher Specialty Hospital	1	4	5
Mental Health Hospitals	9	2	11
Physical Treatment Hospitals	8	2	10
Oncology Hospitals	1	1	2
Emergency Asist. and Traumatology Hospitals	4		4
Bone Disease Hospitals	2	1	3
Venereal Disease Hospitals	1		1
Leprosy Hospitals	2		2
Dental Diseases Hospitals	1	1	2
Occupational Diseases Hospitals	2		2
Eye Diseases Hospitals		2	2
District Hospital	36		36
Total	754	53	807
University Hospitals	-	-	56
Private Hospitals	-	-	305
Municipality Hospitals	-	-	6
Foundation and Association Hospitals	-	-	19
Hospitals owned by foreigners	-	-	3
Hospitals for Minority	-	-	5
General Total	-	-	1202

Source: MoH, General Directorate of Curative Services, 2007

MoH is the major provider of primary and secondary health care and essentially the only provider of preventive health services. MoH operates an extensive network of health facilities providing primary, secondary and specialized inpatient and outpatient care. Public sector health facilities are complemented by a smaller network of private facilities providing both inpatient and outpatient care.

3.3.4.1 Public Sector Healthcare Services: Primary Level Outpatient Treatment Institutions

Following the above described model, the MoH has established almost 6.088 health posts and 6.203 health centers. For maternal and child care and for preventive services, MoH also runs a number of vertical programs. To help implement these programs, particularly in urban areas, MoH also operates a series of specialized centers and dispensaries (234 MCH-FPC, 247* tuberculosis control dispensaries (as of August 2007) and a small number of other specialized dispensaries. These dispensaries, with their specialized personnel, offer preventive and curative health services and training for health personnel from other primary care units. However, as they depend administratively and financially on different MoH departments not on MoH's regular primary care facilities, coordination and integration of services at the field level often leaves to be desired. Within the framework of preventive care, health centers also deal with TB, malaria, family planning and maternal and child care (17).

Institutions which were providing health services are mainly concentrated in industrial regions in western provinces where SIO beneficiaries are more in number. These were devolved to the Ministry of Health in 2005. The devolution can be assumed as a step within the Program for Transformation in Health, for single source provision of the service, universal health insurance, and family medicine system transformation.

3.3.4.2 Primary and Preventive Healthcare Services

General Structure

MoH is the major provider of primary and secondary health care and essentially the only 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. According to this law, primary care implies that national policies influence the location of physician practice so that they are distributed throughout the population rather than concentrated in certain geographic areas. Although primary care centers are aimed to be distributed throughout the population rather than concentrated in certain geographic areas, in practice, it is hard to realize this aim.

* Was revised upon the feedback sent by the Department of Tuberculosis Control after the publication.

With respect MoH recordings, rural health posts are to serve an average of 1,500 people and there are three kinds of health centers. Current regulations provide for rural health

posts to be managed by a midwife who is to provide primary health care and family planning services, attend deliveries and make monthly visits to ascribed households. Rural health posts are attached to and supervised by a health center. Rural health centers are to serve a population of 2,500 and have a staff of eight, including a general practitioner, a nurse, a health officer, two midwives and support staff. District health centers, expected to serve a population of 5,000 are to be staffed by a team of about 16 health professionals (including four general practitioner one of whom is the physician in charge, a dentist, a pharmacist, an environmental health technician, several health officers, a laboratory technician, two nurses, and two midwifes). At the Provincial health centers, expected to serve a population of approximately 10,000 and a population of 20,000 moreover in case of need, additional units can be opened upon the approval of Governorships and proposal of Provincial Health Director regardless of the population.

The main functions of health centers are the prevention and treatment of communicable diseases, immunization, maternal and child health services, family planning, public health education, environmental health, patient care and the collection of statistical data concerning health. In addition to providing preventive and primary health care services, health centers are intended to be the first contact point for anyone needing health care and to refer those needing more specialized care to higher institutions.

24 hour coverage at the health centers exists by legal obligation in some areas in the case of necessity (tourism area or emergency health units so far above 20 km.) and these areas are determined with ratification of MoH. According to the Circular published on 28.08.2003, determination of health centers and related units working 24 hours are being organized by Provincial Health Directorates upon the approval by the governorships, while they take into account; population of the region, socio-economic structure, access to health institution and service productivity. According to the same circular, the expenses regarding staff, transportation, security, heating and food of health centers and related units of which work hours expanded to 24 hours are being covered by Provincial Health Directorates. Health centers and related units working 24 hours are obliged to provide all services of health centers and “Emergency Service”. Health centers having no inpatient institution and are in districts, which serve “Emergency Service” in addition to their routine services, are organized by Provincial Health Directorates and performed with approval of Governorships by meeting staff support, transportation, security, heating and eating etc. needs of these health centers. Routine services of these centers are being continued in working hours. It is not expected from them to give routine services beyond their working hours except “Emergency Service”.

Working hours of the staff at Primary Level Health Care are regulated by Governorships. This regulation organizes working hours of the staff as to be not more than weekly working hours. Health centers are still serving 24 hours.

On the other hand, emergency and forensic medicine services are given in 24 hours in all types of health facility and all over the country. The name and telephone number of the physician who is charged to give forensic medicine services is written on the door of health center and cannot leave his/her mission area before his/her duty is over for 24 hours.

As directed by the Ministry of Health-issued circular dated 22.10.2002 detailed information notes, brochures and pamphlets which give information on the health centers and their services are dispensed to houses and apartments which are located in areas with more than one health center.

Under the Program for Transformation in Health, the Family Medicine was first started as pilot practice in Düzce and was extended to 11 provinces then. Gradual transition to the family medicine system is envisaged for all provinces in Turkey in future years.

General practitioners in provinces where the family medicine is implemented are primary care health employees who work in health centers together with dentists at some places. Except for the Maternal and Child Health and Family Planning Centers, usually specialists are not available in primary health care facilities. In addition to general practitioners, pediatricians, gynecologists, obstetrics and public health specialists could be also assigned in the Maternal and Child Health and Family Planning Centers.

As of late 2006, a total of 97.796 physicians including 50.063 specialists and 47.733 general practitioners (including assistants) do work actively (18). The fact that the proportion of general practitioners to specialists is low implies that the number of general practitioners is inadequate and thus it is difficult to give qualified and wide-scope services in primary care. Since Turkey needs more specialist physicians in general and even a lot more in some branches, medical schools will certainly have to increase the number of medical school graduates on annual basis.

According to the 2006 figures, a general practitioner earns approximately 800-850 USD and a specialist earns approximately 900-950 USD (in Ankara province). These figures do not include the additional payment received from the revolving funds. A primary care physician’s occupational income is (0,8:1) when compared to a specialist physician. This low ratio (0,8:1 or lower) seems to encourage specialty in medicine, which might diminish the number of general practitioners while increasing the number of specialists in medium term.

Yet, it is considered that the family medicine system would promote the economic conditions of general practitioners when they become family physicians.

Financing and Revolving Fund at Primary Health Care Services

Basically, treatment in the Ministry of Health institutions is free to all regardless of whether the citizens have any insurance system or not. Yet, patients are required to pay the amount not covered by the institution for the medicines (active workers 20%, retired 10%).

Considering the serious problems in operational budgets of the institutions, the Ministry of Health started revolving fund implementation. The regulation on this purpose was accepted in 2001 and 45 provinces took Ministry of Finance approval to establish revolving funds in their institutional structure (1.11.2001). Later, resolving funds were structured for primary health care services in all provinces, and accounting departments of similar Health institutions were unified. Revolving funds of primary health care institutions are covered by their diagnosis, treatment and rehabilitation services provided for civil servants or people who are covered by SIO, RF, or Bag-Kur. Preventive services shall continue to be free for all. Those not having insurance shall continue to receive free treatment but the costs of those having insurance will be paid by the social security agency they belong. To avoid any discrimination against people without any insurance, the revolving fund shall be protected and managed by the provincial health directorates, not by the institutions having a revolving fund system.

3.3.4.3 Management of Primary Healthcare Institutions

Health centers under the Ministry of Health are directed by a physician. Ministry of Health Primary Health Care Institutions do not have a budget on their own and directing physicians (the head physician) cannot take any decision concerning the health center personnel. Health centers are subject to the control of provincial health directorates. Provincial Health Director is responsible for managing and daily planning of primary health care institutions' activities; and obliged to take Ministerial approval as well as provincial governor's approval concerning health care services.

Regional level health Group Presidencies are formed rather due to administrative reasons. The Head Physician of the group asks for the required supplies from the provincial health directorates and allocates them to health centers and so manages the administration and coordination between all health centers.

3.3.4.4 Utilization Rate

Although they have increased somewhat over the past years, contact rates of Turkey's population with MoH's primary care facilities remain low, indicating that many people make use of alternative facilities. The average annual visit per capita to a health center is 1,46. Turkey National Health Accounts Study for 1999-2000, Household Spending Research results showed that annual utilization for health centers and hospitals in total per person is 4,2. Nonetheless, it is also known that total utilization per person in 2006 exceeded 5.

Visits to MoH primary care facilities only account for % 31 of total outpatient visits to public sector health facilities. There is no recent nation wide data which shows what percentage of the population makes use of MoH primary care facilities, but a number of studies carried out mostly in urban areas, illustrated that a minority (maximum one quarter) of people surveyed in these areas make use of MoH health centers.

Table 3-4: Regional Distribution of some indicators related to policlinic, laboratory, labor and monitoring services provided at health centers, Turkey, 2005

	Av. Number of policlinics per person	*Av. Number of lab. Per policlinics*	*Referral rate (%)*	*Av. Number of monitoring per infants (0-11 months)*	*Av. Number of monitoring per children (1-6 ages)*	*Av. Number of monitoring per pregnant women*	*Av. Number of monitoring per new mothers*	*Labor and delivery without health personnel assistance (%)*
REGIONS								
Marmara	1,35	0,12	9,24	3,51	0,85	1,45	0,54	0,52
Aegean Region	2,07	0,23	9,25	8,06	1,86	4,82	1,82	1,35
Mediterranean	1,68	0,13	8,69	5,92	1,73	3,11	1,17	2,51
Central Anatolia	1,46	0,26	10,93	5,66	1,87	2,91	1,08	1,94
Black sea	1,63	0,21	9,93	5,80	2,02	2,92	1,08	2,10
Eastern Anatolia	0,92	0,16	18,78	4,09	1,79	2,03	0,72	16,34
Southeastern Anatolia	0,98	0,11	11,66	2,58	1,07	1,10	0,49	12,93
Turkey	**1,46**	**0,18**	**10,23**	**4,80**	**1,48**	**2,41**	**0,91**	**4,24**

Source: Ministry of Health, General Directorate of Primary Health Care, 2005

3.3.4.5 Service Quality and Patient Satisfaction

There is no recent national data indicating patient satisfaction from primary level health institutions. Some studies in specific health regions show that 10% of the MoH's health center utilizers are not satisfied with the service they received. Dissatisfaction is mostly due to the technical opportunities at health centers. Satisfaction rates among residents living close to the health centers are higher than those who have to travel a long route to receive service. Low utilization rates of health centers per person, and high number of out-patients at secondary level health institutions demonstrate that the bulk of population are not satisfied with health center services.

3.3.4.6 Family Medicine Practice

Family Medicine is being gradually implemented under the Ministry of Health's Program for Transformation in Health. A Family Physician is described as the physician of all members in a family from the eldest person to the child even not burn yet. In this scope, individual preventive health measures and out-patient care services are included in family medicine, too. Family Medicine System is the simplest and most modern one of a few systems in which such kind of services are given in an integrated and harmonized way.

A family physician is responsible for the health, health problems and diseases of all family members varying from the fetus to the eldest person in a family. Directing his/her patients to other specialists, dentists and dieticians for health problems which go beyond the borders of primary care, family physicians play a coordinating role. Thus, they also act as a health counselor and protect the rights of people who consult with them.

Thanks to the family medicine system, patient's satisfaction increased and patient-physician relation became continuous in the countries in which family medicine was implemented. To give example, a family medicine's relation with his/her patient lasts for about 8-13 years in Denmark and Australia.

Family physicians are usually located close to the family residence and thus easily accessible. They know the society to which they serve with all its dimensions and evaluate family, environmental and professional relations. They are the only ones who best know the health status and living conditions of people and thus know how to apply preventive health care and health training to these people. These physicians evaluate the people under their responsibility not within the framework of a certain disease but with an integrated approach. In other words, they see and evaluate people as an integral part of the environmental risks, health conditions, psycho-social environment, other acute or chronicle health problems.

Family medicine records are invaluable data sources for health surveys. They give out significant success in the chain of referral. Thanks to the family medicine system, diseases could be handled and treated in the appropriate care level. If a patient needs to be referred to an upper care level, he/she is directed to the appropriate medical specialty branch and facility with his/her health information. So, secondary care services, which bear higher costs, could be used more efficiently and economically. From this point of view, it could be alleged that family medicine also avoids misdirection, chaos, unnecessary health expenditures, excessive patient load in secondary care and patient's suffering.

Family medicine is a multi-disciplinary approach, that is, it adopts an integrated health service's approach than having prejudices on an organ or system. Physicians communicate with their patients on the basis of mutual trust. They deal with the physical, psychological and social aspects of health problems. When giving family medicine services, people are not regarded as "patients" but as "individuals". Thus, family physicians – in cooperation with their team – are liable with promoting the health status of individuals. Family physicians and other family medicine professionals would not only give curative services to the ill individuals who apply to them but also provide all people – regardless if they are ill or not- with health care services.

Characterized with being individual-centered, integrated, continuous, family and society-oriented, family medicine is the hard core of the health system. Thanks to the family medicine, health care needs of elderly people, who increase in number every other day, will be met more easily by family physicians who know them very well and who are easily accessible.

It could be asserted that this approach will help to diagnose diseases more rapidly and accurately and to select the most appropriate treatment method. Thus, health status of all individuals will be followed; patients will be provided with easy access to physicians and will receive services quickly. By means of this system, patients will no longer seek for care and treatment in extra-system access ways. (20).

On the other hand, family medicine is assumed to be inferior compared to the education on other medical specialty branches and practices or to have a lower profile. Since family medicine system requires more family physicians, general practitioners and other system-compatible physicians will start their practices after some specific training but more family physicians will be needed in middle-term. When the scope of family medicine system is extended, working physicians will be incorporated to the system. The existing health labor force obliges all these.

Why Family Medicine?

1. A family medicine is located close to his/her patient and can easily reach his/her home.
2. A family physician knows his/her patient and society in close.
3. Individuals can communicate with family physicians better, which facilitates to give medical health counseling services.

4. Individuals are allowed to select their family physicians and they do not have to make out-of-payment to receive care.
5. Unnecessary referrals from primary to secondary care would be avoided.
6. Long waiting queues would be shortened at hospitals and quality of health care services would be improved.
7. A good health registry system could be based on the Family Medicine System.
8. Sources could be allocated more effectively.
9. Government, by means of a well structured Family Medicine System, could establish a more fair and rational primary care system.
10. Individuals' satisfaction with health care services would be increased.
11. The existing Primary Care system is far from being functioning well and patients are usually referred to upper care level.
12. Patients usually prefer secondary care facilities, which lead to long waiting lists and unnecessary work load.
13. In addition to diagnosis and treatment, patient follow-up is a problematic issue in the current system.

Studies on Family Medicine in Turkey were started in early 2003. Preliminary studies were carried out in July 2003 and the system was put into effect by the Law on the Pilot Study of Family Medicine which was issued in the Official Gazette dated 09.12.2005. First Studies were commenced in Düzce which was identified as a pilot province on 03.01.2005. The system was structured on provincial basis at first hand, then initial studies were started (16.09.2005). Studies which were conducted by the end of the first year were rather impressive. Compared to the previous years, the utilization of Family Medicine facilities increased by two times. Similarly, public interest in Family Medicine was outstandingly high, too.

As the second step, Family Medicine was implemented in Eskişehir and then in Denizli in the early 2006. The pilot study was extended to 11 provinces in the first half of 2007.

3.3.4.7 Public Sector Health Services: Secondary Level Outpatient Care

Visits to hospital-based outpatient care facilities have increased by 22.5% in 2004-2005, and by 16.1% in 2005-2006 (15). Table 3.5 states the number of patients consulting

hospital-based outpatient institutions. The number of patients referred to higher order facilities by MoH health centers equals only about 9% of the outpatient visits of MoH hospitals outpatient facilities. This indicates that the large majority of people who use hospital outpatient facilities go there directly and do not ask opinion of a primary care physician's advice on where to go. It is expected to diminish this unfair situation that cause increase in health expenditures and unnecessary workload through family medicine model.

Table 3-5: Policlinic status of visits to hospitals in Turley by Institutions, 2002-2006

		POLICLINIC		INPATIENT		Inpatient ratio
Institutions	**Years**	**Number**	**% increase**	**Number**	**% increase**	**percent (%)**
MoH	2002	66.231.841		2.806.588		4,2
	2003	68.957.525	4,1	2.896.540	3,2	4,2
	2004	91.257.412	32,3	3.522.173	21,6	3,9
	2005	164.758.149	80,5	5.081.539	44,3	3,1
	2006	189.422.137	15,0	5.379.198	5,9	2,8
University	2002	8.823.361		781.990		8,9
	2003	9.637.840	9,2	838.486	7,2	8,7
	2004	10.685.275	10,9	921.735	9,9	8,6
	2005	11.493.879	7,6	1.025.614	11,3	8,9
	2006	12.588.872	9,5	1.165.277	13,6	9,3
Private (1)	2002	4.407.122		529.511		12,0
	2003	5.033.572	14,2	586.961	10,8	11,7
	2004	6.187.371	22,9	637.731	8,6	10,3
	2005	10.804.981	74,6	871.329	36,6	8,1
	2006	15.277.331	41,4	1.215.520	39,5	8,0
SIO	2002	43.561.287		1.363.191		3,1
	2003	44.977.045	3,3	1.382.636	1,4	3,1
	2004	43.911.817	-2,4	1.338.260	-3,2	3,0
	2005	0		0		
	2006	0		0		
Public (Other)	2002	1.293.748		26.983		2,1
	2003	1.127.136	-12,9	31.894	18,2	2,8
	2004	809.366	-28,2	20.901	-34,5	2,6
	2005	243.265	-69,9	33.032	58,0	13,6
	2006	252.085	3,6	4.656	-85,9	1,8
TOTAL	**2002**	**124.317.359**		**5.508.263**		**4,4**
	2003	**129.733.118**	**4,4**	**5.736.517**	**4,1**	**4,4**
	2004	**152.851.241**	**17,8**	**6.440.800**	**12,3**	**4,2**
	2005	**187.300.274**	**22,5**	**7.011.514**	**8,9**	**3,7**
	2006	**217.540.425**	**16,1**	**7.764.651**	**10,7**	**3,6**

* Private section includes hospitals belonging to Foundation-Association, Foreign, Minority and individuals.

Source: MoH, General Directorate of Curative Services, 2006

Majority of cases do not require complex investigation and treatment and could thus well be treated at the primary care level. Treatment at primary level is normally significantly cheaper than treatment at outpatient facilities. The excessive use of outpatient facilities potentially result in unnecessarily high treatment costs and inefficient use of resources. People generally consult to a hospital although they do not need to, due to the views about general

practitioners at health centers, insufficiency in those institutions regarding tests and analysis, and the opportunities at hospitals for detailed examinations and possibility to consult different specialists on the same day.

The overcrowding of hospital outpatient facilities has led to an extremely heavy workload of doctors in such facilities, particularly at provincial hospitals and at hospitals in large urban areas. After some arrangements made in the scope of PTH, the number of policlinics both at hospitals and health centers were multiplied by a few times, and it is tried to reduce the overcrowding ate hospitals through procurement of service from private service providers with idle capacity.

3.3.5 Public Sector Health Services: In-patient Care

3.3.5.1 Evolution of Hospital Capacity

Ministry of Health and universities are the main public providers of inpatient care. As of the end of 2006, MoH Hospitals have 67.7% of the total number of beds in all hospitals. Devolved SIO hospitals are included in this ratio. It is 15.1% for university hospitals. Through latest arrangements made in the scope of PTH, (through Law dated 19.01.2005), all institutional hospitals, dispensaries, etc. (160 hospitals, 225 dispensaries) were devolved to the Ministry of Health (15).

3.3.5.2 Hospital Size

The size of hospitals in Turkey varies significantly and ranges from health stations with less than ten beds to hospitals with over 1,800 beds. In 2003, health stations were devolved from the General Directorate of Curative Services to the Primary Health Care Services, and thus in-patient treatment services are no longer available in those stations. It caused a significant decrease in the number of small scale hospitals. However, there are still many small scale hospitals. More than half of the hospitals in Turkey have 100 or less beds. On the other edge of the distribution are 32 hospitals with 600 – 1000 beds, and 2 hospitals with more than 1000 beds (Table 3.6). Approximately 1/3 of the beds are in hospitals with a capacity of more than 600 beds. Number of beds in the table is permanent bed numbers, and Ministry of Defense hospitals and Foreign Hospitals are not included (15).

Table 3-6: Distribution of Hospitals by the number of beds, 2006

	0	0-30	30-50	50-100	100-200	200-400	400- 600	600-1000	Above 1000	TOPLAM
Mediterranean Region										
TOTAL	1	6	11	20	15	13	6	6		78
Eastern Anatolia										
TOTAL	1	16	27	20	22	9	5	1		101
Aegean										
TOTAL	3	16	8	32	18	20	8	5		110
Southern Anatolia										
TOTAL	1	6	11	12	16	3	2	4		55
Central Anatolia										
TOTAL	3	39	17	32	19	22	7	7	1	147
Marmara										
TOTAL	5	7	13	36	42	22	15	7	1	148
Blacksea										
TOTAL	5	22	25	39	35	32	8	2		168
OVERALL TOTAL	19	112	112	191	167	121	51	32	2	807

Source: MoH, General Directorate of Curative Services, 2006

The distribution of admissions across providers is in relatively close concordance with their respective shares of hospital beds; MoH hospitals account for 3/5 of all hospital admissions, close to two thirds of all births and about half of all surgeries. Admission by universities account for only 13 % of hospital admissions, yet 1/5 of large surgical interventions take place at these hospitals. Foundation and private hospitals account for a disproportionate share of surgeries, particularly large ones, compared to their share of beds in the system. Table 3.7 depicts the labors and deliveries at health institutions by years.

Table 3-7: Labor and Delivery at Health Institutions, 2002-2005

Years	Labor and Delivery		
	Ministry of Health	**Other**	**Total**
2002	482.957	323.410	806.367
2003	465.422	322.784	788.206
2004	533.100	291.343	824.443
2005	667.838	170.340	838.178

Source: MoH, Transformation in Health still continues, 2007

3.3.5.3 Hospital Occupancy

The country's average hospital occupancy rate has increased from 53% in the mid-1980s, to 57% in the mid-1990s, 60% in 2000 and 64.9% in 2004, decreased to 64.5 % in 2005, and 64.4 % in 2006. While the average length of stay has dropped somewhat from 6.7 days in 1985, to 6.4 days in 1995, 5.9 days in 2000 and 5.7 days in 2004, 2005'te 5.4 days in 2005 and 5.1 days in 2006 (15).

3.3.5.4 Hospital Financing

MoH and University hospitals are financed from two sources, contribution from the budget and revolving funds. In addition, some hospitals, also receive some funding from local health foundations funded through donations from the local community. Revolving funds receive their resources from service fees paid by the social insurance organizations and private patient payments.

Hospital Financing according to the results of 1999-2000 National Health Accounts Study is presented in Figure 3.3. The issue pointed out here a small part of public hospitals' budgets are financed by state budget, considering the fact that SIO hospitals have been devolved to the MoH. Budget financing of university hospitals is relatively low, and this fact has been influential in terms of hospital autonomization.

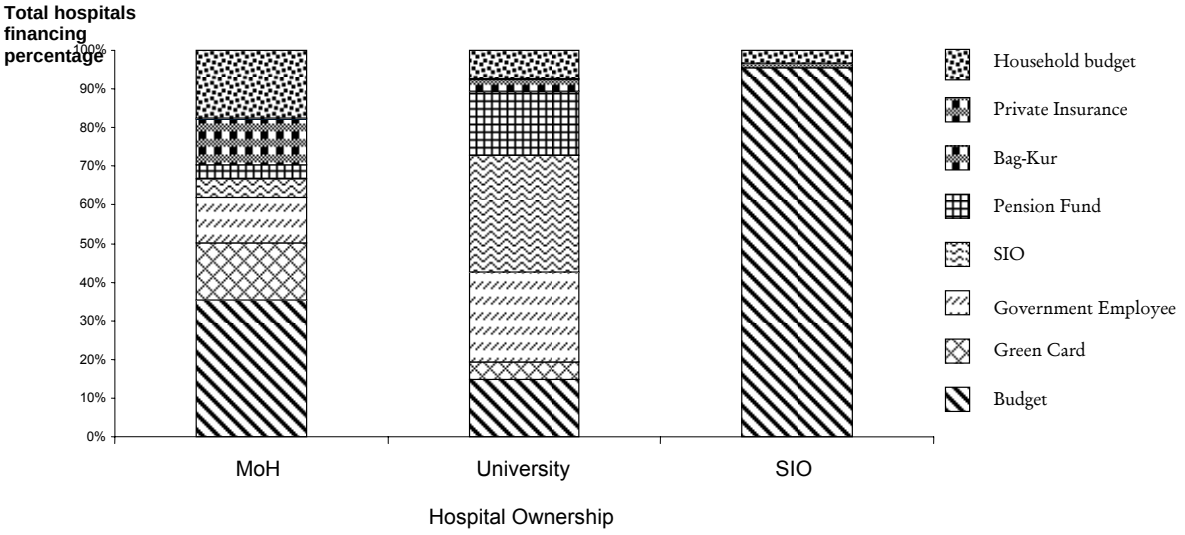

Figure 3-3: Hospital Financing

Source: MoH, School of Public Health, National Health Accounts Study, 2004

The resources of revolving funds are collected and kept at the facility level. Revolving fund budgets of MoH hospitals and their execution need to be approved by MoH's General Directorate of Curative Services. Revolving fund budgets of University hospitals require the approval of the Rector of the University, upon a proposal and recommendation made by the hospital. Up to fifty percent of revenues from MoH revolving funds can be used for performance based salary payments to health personnel, provided the hospital has no other outstanding bills. In reality a significantly smaller share generally goes to staff expenditures. Revolving fund resources have grown of increasing importance for the financing of both MoH and University Hospitals.

3.3.5.5 Hospital Management

At all public/state hospitals, chief physician is responsible for management and administration in general, who is accompanied by chief nurse and hospital managers who is liable with some kind of technical and personnel stuff. All administrative personnel at the MoH hospitals are is appointed by the Ministry of Health. Chief physician at a university hospital, however, is appointed by the university President in consultation with the Faculty of Medicine Dean at the said university. Other University hospital management staffs are appointed by the hospital's chief physician and confirmed by the University President. The key criteria for the selection of the chief physician are generally his length of service and reputation as a doctor, rather than his managerial capacity. Chief physicians do not need to go through any specialized management training. While they used to continue to practice as physicians at the hospital or in private practice, thus decreasing the time and effort devoted to hospital management, Law No: 5371 published in the Official Gazette dated 05.07.2005 and Article 4 of the Law No: 2368 which was published in the Official Gazette dated 05.07.2005 were amended. In Accordance with the Law No: 5371, health managers and chief physicians are no longer allowed to practice privately.

Service fees at all public health care institutions including University Hospitals are determined by the Ministry of Health. Administrative Board at the Universities may demand additional payment for the consultations and/or examinations performed by faculty members.

Managers at public hospital have limited autonomy. As for the MoH hospitals, the budget should be approved by General Directorate of Curative Services and the Ministry of Finance representative at the MoH Budget Department. Revolving fund budgets should also be approved by General Directorate of Curative Services. In order to make any kind of changes in allocation, necessary amendments should be made to the budget first and they should be approved by the central administration then. Personnel expenses are directly met by the central budget. Other expenses, like in many other Ministries, are met by the budget following the approval procedures. However, they need to be approved by the MoH General Directorate of Curative Services, Ministry of Health, Ministry of Finance and other account departments/authorities first. Then, the Ministry of Finance submits these expense and payment items to the local MoF representative in respective province who will make payment to the hospital administration.

Managers at the MoH hospitals have further autonomy regarding revolving fund-financed expenses. As for the management of revolving fund, hospital managers can set up

their own revolving fund systems. Yet, these systems should be approved by the MoH General Directorate of Curative Services sooner or later.

Except that the revolving fund-approving authority is the Presidency at universities, university hospitals follow a procedure similar to that of the MoH hospitals. Consulting the Executive Board and the Faculty of Medicine Dean, the Presidents decides additional allocation to be made to the budget. Presidential decision, within the framework of the general university budget, is approved by HEC later.

Regarding public hospitals' budgeting process for general budget funds, hospital managers do not have the chance to take initiative to ensure more effective services. These hospitals are allocated with budget in accordance with the estimations based on their past consumption while the allowance for procurement of equipment and maintenance of fixed assets in general is a constant amount identified on daily basis and per approved number of beds. Personnel expenditures are identified on the basis of personnel number. Quantity of services given and severity of cases or both are not usually included in the budgeting process. Hospitals, which are bound with revolving funds for their operational costs (except for salaries) and basic investments, do have more initiative to maximize delivery of services, and ensure effective allocation of sources.

3.3.6 Performance Based Payment System In the Ministry of Health Implementations

Our experience so far has proved that inoculating health personnel with the principle and responsibility of giving productive and qualified health care services to patients – though being a pre-requisition- is not adequate alone. We also know how the search for models that would maintain such responsibility of health personnel occupies the agenda of policy-makers in health. Ministry of Health, on the other hand, has put a signature on some rapid changes in the last few years in health system. These changes aim to build a system which contains and offers the ways for keeping the motivation of health employees high and has the capability to use the instruments that would foster delivery of productive and qualified health care services.

Of these new implementations, performance-based additional payment system is unique since it aims to build a payment and pricing structure that would encourage health employees to provide their customers with productive and qualified health care services. The performance-based additional payment system, which was first implemented at 10 pilot hospitals in the second half of 2003, was generalized to the entire country in 2004 so as to cover all primary care facilities. The implementation process has two phases. One-year first phase which covered 2004 enabled the adaptation of health employees and facilities to the

new system and built the infrastructure of supervision mechanisms to perform and sustain the measurement of performance. Observing these changes and experiences, easily-measurable and limited number of quality criteria were identified and put into effect in 2005.

3.3.6.1 Measurement of Individual Performance

Directives which envisaged to identify the individual performance in primary care facilities and hospitals and to make payment based on this performance level were among the preliminary implementations in the first phase.

Labor-intensive medical services were rated according to their quantity and quality, and the monthly scores made physicians' services measurable with respect to quantity.

Individual services of physicians were made measurable as far as possible. Patient-physician relations were strengthened and patients were granted the right to prefer their physicians which had positive effects on the system's functioning.

Given the fact that health care service is a matter of team play, non-clinic physicians and other health professionals, whose services could not be rated, were given scores depending on the average score of their facilities. So, total performance of facilities were reflected on all their employees.

All employees – depending on their scores- took up legal shares in revolving funds on monthly basis. So, employees had a share in the surplus value which was produced by their facilities.

When measuring physicians' scores, distinction between free/private physicians and public full-time physicians was respected and thus full-time work in public sector was encouraged.

Physicians of the respective branches were awarded on condition that they performed well in taking the initiatives to prevent hospital infections.

Also it is apparent that a registry and information system is needed to monitor the quantity and quality of services well. In this context, hospital information systems became more common so as to collect monthly data in regular terms, keep employees' services under record, convey such information to the reimbursement agencies and to ensure a more realistic and transparent rating at all health care facilities. Yet, hospital information systems were not established since they were a condition of this directive but they were a natural result of the process. Thanks to the system, health care services were recorded numerically in details for the first time.

The afore-mentioned directive does not measure the financial performance directly. However, the monetary value of the measured scores is in parallel with the surplus monetary value which is produced by a facility on monthly basis. Therefore, this implementation is indirectly related to financial performance such as decreasing costs per unit, saving current expenditures, taking hospitalization dates under control and promoting investments in curative devices and infrastructure.

At training and research hospitals, clinic chefs, deputy chefs, head assistants and specialists are given additional scores providing that their scientific publications reach to a certain extent in number. Similarly, clinic chefs and deputy chefs at training and research hospitals are given additional scores on condition that they certify the theoretical and practical program which they apply together. Thus, the criteria of making scientific publications and competitive performance in specialty training are used as an instrument, too.

Commissions in the Provincial Health Directorates (on behalf of primary care facilities) and at hospitals which consist of representatives of different professional groups identify the amount of additional payment to be made to the personnel by considering the balance of incomes-expenditures, cash stocks and needs. So, personnel from various groups and classes participate in the management, which serves as an instrument that fosters on-site management.

Self-control is adopted and applied in all facilities by inspection boards which are responsible for recording services regularly, controlling bills that are sent to institutions, supervising the compatibility of services with the standards and principles and evaluating these services and all other proceedings with respect to quantity and quality. Negative attitudes and behaviors which are noted during performance measurement might be punished, as well.

As for geographical and demographic characteristics, primary care facilities are classified according to their distance from centers, transportation facilities, and etc., and assignment in deprivation areas is awarded with additional performance.

In primary care services, the number of baby and pregnant follow-ups, vaccination, new-born screening tests and the use of modern family planning methods are also used as the performance criteria. So, preventive health care services are encouraged by awards (21).

3.3.7 Private Sector Health Services: Out-patient Care

Private outpatient services are provided in five different settings: (i) private physicians who work on a full time basis in private practice; (ii) public sector physicians who work part-time in private practice; (iii) private policlinics and medical centers and private hospitals; (iv) private services provided in public facilities, and (v) health services provided by so called occupational physicians engaged by private companies with 50 or more employees.

According to Ministry of Health estimates, there are 17.872 physicians working exclusively in the private sector (14.497 specialists and 3.375 general practitioners) (18).

Physicians working in the public sector prefer to increase their income through working additionally in the private sector. Therefore, the possibility of private practice by public doctors helps the public sector keep the necessary number of doctors engaged despite low public sector wages. Also, due to revolving fund regulation in the MoH hospitals, there is an observed increase in the number of fulltime physicians. As of the end of 2005, the number of full-time physicians exceeds the number of part-time physicians (21). Full-time physician ratio is 61% as of 2007.

Private Practices

Doctors operating in private practice can either operate as a private physician or as a limited company. The latter provides fiscal advantages. Doctors operating on a private basis outside a company must pay a "minimum standard of living tax" independent of their earnings as private physicians, while doctors operating under the umbrella of a limited company are taxed like any private sector company depending on their actual earnings. Therefore, many doctors operating in private practice have proceeded to establish a limited liability company; others have had to close down their private practice because they could not afford to pay the minimum standard of living tax. Anyone who is a Turkish citizen and has a medical degree can open a private practice by registering with the provincial chamber of the Turkish Medical Association (TMA) and obtaining a tax ID number from the Ministry of Finance.

Private Policlinics and Medical Centers

Policlinics are private health institutions where minimum two physicians, regardless of the distribution of their specialty areas, provide service in one or more specialty branches

and/or as GPs through basic examination services and other minimum support services, in addition, dentistry services may be provided, if wished.

Centers; are private health institutions where continuous and regular out-patient diagnostic and treatment services are provided through minimum standard equipment and personnel support. Centers are formed of medical centers, special branch centers, and diagnostic centers.

Medical Centers: are private health institutions where continuous and regular out-patient diagnostic and treatment services are provided for 24 hours through advanced equipment and personnel support. Private health institutions operate in minimum four specialty areas through a specialist for each branch; internal diseases, Gynecology and Obstetrics, pediatrics, general surgery, which employs minimum two permanent physicians; one in internal diseases or pediatric branches and one in Gynecology and Obstetrics and general surgery branches; with dentistry unit and a dentist.

Specialty Branch Center: are private health institutions providing in-patient diagnostic and treatment services with advanced equipment and personnel support for a specific age or sex group and related to a specific disease or an organ or group with minimum two specialists, one of whom is permanent physician, in minimum two specialty branches.

Diagnostic Centers: In the framework Law No: 3153 on Radiology, Radiom, and Electrical Treatment and Other Physiotherapy Institutions and Law No: 992 on Opening Conventions of Public Bacteriology and Chemistry Laboratories where Clinical Investigation and Analysis are conducted, diagnostic centers are private health institutions opened by more than one specialists and that provide diagnostic service with special equipment and in accordance with their special regulations.

Doctors working in these establishments must be Turkish citizens. Assistant doctors working in public institutions are not allowed to work in private policlinics or medical centers. Policlinics and medical centers must be headed by a physician who is in charge of overall administration and management.

In the year 2000, MoH for the first time issued a circular on governing private policlinics and medical centers. Until then these establishments were essentially unregulated. The new regulations put private policlinics and medical centers under the supervision of the provincial health directorates and give them the power to issue and revoke licenses. They stipulate that inspectors of the provincial medical directorate must inspect policlinics and medical centers at least four times a year and that the latter can issue fines or revoke an

establishment's license on a temporary or permanent basis if it does not comply with the regulations. Policlinics are supposed to follow relatively strict reporting requirements and the director should submit a timetable of doctors on duty to the provincial health authority on a monthly basis. The directors should also seek permission from the authorities when going on leave. In practice these requirements are rarely complied with due to several reasons.

Occupational Doctors

Turkish law requires that all private enterprises with more than fifty workers employ a so called occupational doctor. If the enterprise has less than 700 employees, occupational doctors can be engaged on a part-time basis; otherwise they have to be employed full-time. Occupational doctors must be hired through the local chamber of Turkish Medical Association- (TMA). Their primary responsibility is to ensure that occupational health risks at the work place are minimized, but in practice they usually are the first contact point for employees who need medical care. TMA currently has about 8,000 occupational doctors registered and runs training programs for them.

Private Diagnosis and Laboratory Services

There are a growing number of private laboratory and diagnostics facilities, one third of which provide radiology and similar diagnostic services (Table 3.8). Import and operation of diagnostics equipment is ill regulated and little supervised. We do not have clear information on technical knowledge and education of those operating these devices.

Table 3-8: Number of Private Laboratories, 2005

Branch	**Number**
Radiology	1383
Nuclear medicine	83
Physiotherapy	611
Bio-chemistry	810
Microbiology	974
Patalogy	241
Radiotherapy	17
Total	**4119**

Source: Ministry of Health, SDP (Strategy Development Presidency), 2005 Statistics

Agreements with social security institutions constitute the business volume of many private facilities and there are controversies about the ability of these facilities in terms of their tendency to fill high amount of prescription and tests requiring high technology.

Utilization of Private Health Services

No reliable data on the share of outpatient visits provided by private facilities is available, there is no recent study conducted on the issue. With the regulations in the scope of the Program for Transformation in Health, service procurement from private health care providers, which is idle capacity, has been realized. Due to the implementation of new regulations, SIO and Bag-Kur members started to utilize private health institutions from which only government employees used to benefit formerly.

A survey done in the early 1990s demonstrated that 14% of the population preferred private sector as the first contact point. Besides, regional differences are important in this predilection. Survey results indicate that while private service demand is 6% in Eastern Anatolia, the ratio is 20% in Marmara and 16% in Central Anatolia. There is not an observed difference between the urban and rural regions in terms of private supplier preference. According to the survey results, preferring private providers depends on the person's status of insurance: While 40% of Bag-Kur members favored private service, 17% of SIO, and 10% of RF members utilized private service. Though there are not more recent data on preference of providers in the national scale, considering the fact that almost 1/3 of the total number of physicians work in the private sector at least as part-time physicians, the role of private sector in health care services, particularly in terms of out-patient services, become visible.

Fees for Private Medical Services

TMA sets base prices for all outpatient medical services provided by the private sector, including laboratory and diagnostic services. Fees are set on a provincial basis and adjusted twice a year. TMA only sets a minimum price which is obligatory for all private service providers, above that private provider are free to charge as much as they want. The purpose of setting a floor rather than a ceiling price is to prevent unfair competition by private physicians, according to TMA and MoH. If it is contracted institution, the patient needs to pay for the difference between fees. However, TMA minimum price schedule was turned into reference schedule with the Law No: 5477 that amended TMA Law No: 6023 in 2006. Minimum and maximum rates are obligatory and if not abided, are subject to sanction. Reference rates are recommended but not subject to sanction if not abided.

Non-governmental Organizations

Apart from foundation hospitals, only a handful of NGOs are active in the health sector and their focus is primarily on family planning and/or maternal and child health issues. In addition, there are some associations, which focus on a particular health condition such as diabetes or cancer. They provide limited health services.

3.3.8 Private Sector Health Services: Inpatient Care

Non-public hospitals are grouped into four categories in Turkey: private hospitals (i.e. hospitals owned by Turkish citizens and established as a corporation), foundation hospitals, hospitals owned by ethnic minorities and hospitals owned by foreigners. Private hospitals are the dominant group among non-public hospitals and account for 82% of non-public capacity. They have grown significantly during the 1990s, and their capacity almost doubled between 1995 and 2000; and increased by 25.2% between 2000-2005. Foundation hospitals are significantly less dominant in terms of number and capacity (9% of non-public hospital capacity), although they have grown at a moderate rate over the 1990s.

Private hospitals are heavily concentrated in the three largest cities - only one third of private hospital capacity is outside Ankara, Istanbul and İzmir. Istanbul alone accounts for having half of all private hospitals. On the other hand, private hospitals in Eastern and Southeastern Anatolia are less in number. In recent years, a significant number of private specialty hospitals (e.g. ophthalmology, orthopedics, physical therapy or micro-surgery) have been opened, particularly in Istanbul. Until the mid-1990s, private hospital establishments were supported by government loans. A numerical increase has been achieved due to the provision by social security institutions that their beneficiaries could utilize private sector service. However, private sector seems to have a tendency towards opening private policlinics or medical centers in places where there is less population.

3.3.8.1 Hospital Fees

Inpatients at private hospitals are charged with daily room fees according bed categories. Room, food, cleaning, and routine nursing care are included in daily room fees. These services cannot be invoiced out of daily room fees.

In December, Price Determination Commission that is formed in the Ministry sets daily bed rates of the private hospitals based on the Ministry's hospital categorization, separately for each class, identifying lower and upper limits, as to be valid from the beginning of the new year. Rates are announced by the Ministry. If required by the Ministry, lower and

upper limits of the daily bed rates can be reset by the same commission within the year. Criteria like price index and service costs are taken into account when determining bed rates.

Private hospitals determine their daily bed rates as long as they do not exceed the lower and upper limits of bed rates announced by the Ministry. Private hospitals need to notify their determined bed rates to the Ministry no later than 31 January.

Price Determination Commission meets with the presidency of Ministry's Undersecretary and with the participation of General Directorate, Ministry's Legal Consultant, representatives from the Ministry of Finance, Competition Authority, TURKSTAT Presidency, Turkish Union of Chambers and Commodity Exchanges, TMA's central council, and an association acting in the area of private hospitals. Written correspondence on the date and location of the meeting is provided to the members fifteen days prior to the meeting. General Directorate conducts secretariat services of the Price Determination Commission.

Private hospitals reserve 3% of their beds, provided that minimum 1 bed, for the treatment of poor and needy, and this number is indicated in their licenses.

These beds are reserved for the free of charge treatment of patients referred by the highest administrative authority in the hospital zone or by the directorate among the poor and needy people complying with the criteria determined by Social Aid and Solidarity Promotion Fund, and poor and needy patients who consult to the private hospital as emergent cases and who cannot be referred to another institution due to medical reasons.

Information about these patients are recorded in Non-paying Patient Information Form and sent to the directorate once in three months.

The provincial health directorate, chief doctor of the general hospital or of health centers are expected to decide which patients are to be admitted in the reserved beds, but it may not be the case in practice.

3.3.8.2 Legal Framework and Supervision

All non-governmental hospitals have been carrying out their activities in accordance with the law on private hospitals that has been in force since 1933 and was updated by the Ministry of Health in 1983. As for the regulations on private policlinics, the focal point of the laws and regulations applied to private hospitals is oriented to the provision of minimum physical standards, staff and hardware. According to the law, private hospitals are subject to Ministry of Health supervision. Licensing and supervising these hospitals is conducted by

local authorities of the Ministry of Health (provincial health directorates). So the necessary procedure is determined; minimum hospital competencies and hospital manager's responsibilities are determined and supervised (minimum conditions required from hospitals managers are determined by the law: having graduated from School of Medicine, having two years experience at a state hospitals and five years experience in total). The more the Ministry of Health pays attention to the physical standards to which the private hospitals have to conform, the more information shall be obtained on minimum number of workers, hardware and pharmaceutical needs, which institutions determine realistic cost-based prices, how to collect the allotments, which documents to publish and keep, and reporting necessities.

Private Hospital License is given in the name of the owner but not the institution. Thus, when the property changes hand, the license should be renewed. Besides the general purpose license, private hospitals are not given a single license covering all their activities; they have to take out different licenses for different departments and this is possible only through an intensive and time consuming procedure.

To inspect the hospital conditions before granting the license is obligatory and this inspection is carried out by the provincial health directorate. These inspections cover the physical condition and equipment standards specified in the regulations. After the hospital start its activities, frequency of monitoring become sparse. There are controversies that inspections are carried out on physical, equipment, and personnel standards regardless of the quality of service provided. Due to the lack of standards in treatment, the case does not seem unordinary.

3.3.9 Patients' Rights and Liability Policy

Patient rights are defined in the Ministry of Health Regulation noticed in 1998 (Official Gazette no. 23420, 1.8.1998). The regulation says that the patient has the right to choose the medical institution and the persons to receive treatment with his free will (in compliance with current social security arrangements); has right to be informed accurately on his condition, treatment options, the recommended treatment and the possible outcome in case he does not receive treatment. In addition to these, the regulation also defines patient's rights for privacy, physician's responsibilities on those, the requirement that patient's consent should be taken if the patient's life is in peril, and what the patient should do if he thinks that his rights are violated.

If a patient thinks that his rights are not protected or he received wrong treatment, what he should do depends on whether he receives the treatment at a public institution or at a

private institution. If the patient has been treated at a public institution and thinks that his rights have been violated, he may sue the institution. If the patient has incurred material, physical or psychological loss due to wrongdoing by a physician on duty at a public institution, he should contact his complaint to the authorities and demand compensation. If the health care institution does not find the patient right nor does response to his complaint, the patient may file a lawsuit in a year. Yet, the patient cannot take a legal action against the physician individually; he may only sue the institution. If the court decides in favor of the patient, compensation for the patient is paid by the Ministry of Health and the defendant Health institution. Later, the institution may take action against the accused physician.

If the patient has received treatment at a private institution, he may directly sue the physician. The Regulation is not implicit about whether the patient may file a lawsuit against the private institution or not. When initiating legal process against the physician on duty at a private institution, the patient may send a complaint file to TMA which has the power to prohibit the physician from practicing for up to six months. Another option is to lay a claim to the Higher Medical Council under the Ministry of Health. If the council supports this claim, the patient may resort to litigation. The third option is to directly seek redress in court. In such cases, the court generally calls TMA or HMC to appear in the court and generally acts upon their advice. According to data from TMA, each year 400 lawsuits are filed in which physicians involved yet only half the cases result in conviction of the physician. The main reason behind the low number of convictions is the lack of concrete evidence to prove malpractice. In most cases, arbiter hospital opinion might be required.

Ministry of Health Information Center, MHIC, which was formed by the Ministry of Health in 2003 and has been continuing its activities since January 2004, can be reached by the patients directly using 184 MHIC call center, and incoming complaints are evaluated and necessary proceedings are done. To enforce Patient's Rights (1998), "Directive on Patient Rights at Health Care Institutions" was prepared and put into force on 15.10.2003. As of 05.11.2005, a special unit was established within Curative Services General Directorate and the unit initiated its activities. Since that date, in-service training is emphasized to promote the importance of patient rights and to raise awareness on the issue.

3.3.10 Pharmaceuticals Sector

3.3.10.1 Drug Policy

Cost-effective use of limited sources in compliance with the principles of rational drug use and in consideration with quality and pharmacoeconomic practices and providing as many people as possible with fair and equal access to medicines constitute the framework of the national drug policy. Though, details are not clarified yet, there are ongoing efforts to achieve quality, access to and rational use of drugs. However, there is still much to do. These three goals, on the other hand, are essential for the pharmaceuticals sector, re-imbursement agencies and health professionals.

Under the Program for Transformation in Health, studies are going on to find out solutions to problems experienced in drug policy implementation and management in medicine selection for re-imbursement lists, regulative strategies for effective source management, implementation of generic medicines policy, monitoring and effecting providers' behaviors, expectations of the pharmaceuticals industry and society, and balancing the drug policy objectives.

Increase of total pharmaceutical expenditure's share in total health expenditures by years, increasing deficit of the re-imbursement agencies and the necessity to meet such deficits from the general budget aroused the need to take some measures in order to lessen pharmaceutical expenditures.

Circular dated 1991 and no. 75304 was the first regulation in Turkey which aimed at solving these problems. According to this circular, maximum 5 items of medicines could be prescribed and treatment period was limited to 10 days. "Negative list" was first implemented in this period, too. Negative list presented the list of medicines that could not be prescribed by physicians. In 2001, the items of medicines that could be prescribed was decreased to 4. In 2003, patient's co-payment was cut off at its source and regulations were made on antibiotic prescription at in-patient hospitals. With 2004 fiscal year's Budget Implementation Directive (BID), it was decided that some medicines in this groups could be prescribed by only the specialists of respective branches and they could be prescribed by others in compliance with treatment scheme only in case of a health report. On 10 February 2005, "positive list" was put into implementation. On the same date, bio-equivalent medicines were first implemented with 77 active substances and the limit was identified 30 %. On 25 May 2005, co-payment was introduced for the green card beneficiaries. On 1 July 2005, bio-equivalent medicines practice was extended and 77 medicines groups were increased to 333 medicines groups. On

20 December 2005, prescription rules and positive medicines lists were combined and extended to as to cover all re-imbursement agencies. By the late 2005, all social security institutions obliged generic medicines substitution for pharmacists. In other words, pharmacists are obliged to prescribe the most inexpensive medicine no matter what medicine is prescribed by physicians. As of 29 April 2006, the quota in bio-equivalent medicines is 22 %.

In 2006, the fourth phase of the e-health project was completed and inventory of all physicians in Turkey were identified. In May 2006, discount rate of 3.5 to 4.5 % was put into implementation depending on the revenues of pharmacies. With this implementation, total profit of pharmacies was considered and policy-makers tried to keep balance. In April 2006, a new implementation was started, which introduced the obligation to get health reports from three specialists of the same branch for long-term treatment prescribed medicines in order to avoid abuse. For the same purpose, physicians' liberty to prescribe was limited, some medicines were distracted from the re-imbursement list and some medicines which were prescribed by general practitioners were not reimbursed in accordance with the Budget Implementation Directive. A directive which was issued in April 2006 introduced co-payment for expensive medicines, as well.

Public pharmaceuticals expenditure the share of which increased up to 42 % in total public health expenditure in the past years were then decreased to 36.6 % in 2006 thanks to the measures taken. (Table 3.9). However, it is still a problem that the share of imported drugs is inclined to increase and they cost approximately half of total sum.

Table 3-9: Share of Pharmaceutical Expenditures in Total Health Expenditures of Public and Social Security Organizations (%), 2000-2006, Turkey.

	2000	2001	2002	2003	2004	2005	2006
SIO (SOCIAL INSURANCE ORGANIZATION)	48,8	47,9	47,9	48,8	47,7	48,1	47,4
BAĞ-KUR (SELF EMPLOYED PEOPLE'S RETIREMENT FUND)	62,8	63,5	60,3	62,7	58,8	56,4	48,8
RF (GOVERNMENT EMPLOYEES' RETIREMENT FUND)	57,5	60,6	59,8	60,7	58,8	54,9	46,0
PUBLIC EMPLOYEES	51,6	52,6	49,0	47,8	49,6	38,7	33,0
GREEN CARD	15,3	19,2	13,9	18,2	12,0	42,1	31,8
Share of Pharmaceuticals Expenditure in Total Health Expenditure of Social Security Organizations	51,9	52,0	50,1	51,5	50,2	49,2	43,9
Share of Pharmaceuticals Expenditure in Total Public Expenditures on Health	40,2	41,4	40,5	42,2	40,9	38,5	36,6

Source: Ministry of Health, School of Public Health, Medicines Report for Official Purpose, 2007

Limitation on physicians' prescribing contradicts with the goal to provide fair and equal access to medicines. Patients flow to hospitals also increased due to the pharmaceuticals that they could obtain by specialists' signatures or reports. Thus, patients were provided with direct provision of drugs from pharmacies as long as provision was available. It is considered that e-health studies would help to overcome bureaucratic implementations that lead to excessive work load at health care facilities and pharmacies. Regulating studies are underway on this issue. Being an example to these studies, putting a single specialist's signature on a prescription for long-term treatment medicines was accepted adequate as of 2007.

In order to lessen expenditures on drugs, studies were conducted in order to promote the access to medicines and generalize rational drug use. On 14 February 2004, Decree on Pharmaceuticals was put into effect which introduced reference price for the first time in human-use medical products (taking as the basis the most inexpensive price in five EU Member Countries: France, Italy, Spain, Portugal and Greece). So, 1 % to 80 % decrease was achieved in more than 900 products. On 1 March 2004, the Value Added Tax (VAT) was deducted from prescribed medicines. On 14 December 2004, Public Pharmaceuticals Purchase Protocol was signed and discount rates were identified. On 1 January 2005, the VAT deducted from non-prescribed medicines. At the same date, out-of-patient prescriptions were first disbursed for the green card beneficiaries. On 19 February 2005, after devolution of the SIO hospitals to the MoH, the SIO beneficiaries were given the right to buy medicines from free pharmacies. On 15 July 2005, an average of 8.83 % discount was made in medicines prices according to the provisions of the Decree on Medicines.

Studies on rational drug use are mostly conducted under the School of Public Health shelter. Three "Rational Drug Use Training for Trainers" were held in 2001 and one "Rational Drug Use Training for Trainers" was held in 2006. So, a total of 193 participants who consist of physicians working in the field and academicians working at universities were trained on rational drug use and capacity was built in this field. Besides, 1048 physicians were given training on rational drug use practices in the health project provinces. Being an outcome of these trainings, rational drug use was taken into the coverage of curriculum of 18 medical schools. Being part of the MoH-conducted activities, the School of Public Health organized two pharmacoeconomy trainings (first in 2002 and second in 2006) in cooperation with the World Health Organization and the Ministry of Health. In 2003, "Diagnosis and Treatment Guidelines for Primary Care 2003" were published and distributed to all general practitioners working in the field and its revision was started in December 2006. Updated and extended guidelines shall be made ready for use and distributed to physicians in 2007.

There are still some deficiencies regarding pharmacoeconomy and rational drug use. The Cabinet's Resolution dated 30/05/2006 and no. 10508 on this issue stated that "the "Rational Drug Use" principle would be activated so as to provide people with access to clinical findings and individual characteristics-compatible medicines in the most suitable way, period and dosage". There is need to carry out studies in order to take major steps on rational drug use for the administrative structuring, monitoring and evaluation, and trainings.

3.3.10.2 Pharmaceuticals Consumption

Consumption of pharmaceuticals had a rapid increase in 1990s and 2000s in Turkey. Domestic production increased by 36 % in 1995-2000 period (on the basis of bottles produced). Import of produced medicines increased three times (based on dollar). Figure 3.4 presents relative ratio of medicines at various treatment groups in 2006, in Turkey. Antibiotics are the most used medicines in Turkey. Though it is normal in developing countries where infectious diseases are common, anti-hypertensive, cardiovascular medicines, cancer medicines and psycho-pharmaceuticals are used more than antibiotics in the OECD countries. Higher ratio of antibiotics use in Turkey indicate that Turkish physicians are inclined to prescribing antibiotics and medicines in general. In Turkey, antibiotics are prescribed in one of every three prescriptions (24) while it is 0.56 % in the Netherlands, 0.73 % in Italy and 0.85 % in France (25). Not only physicians but also patients should be trained on rational use of drugs since they also ask for prescription. In Turkey, where medicines could be given with no prescription, medicines providers should participate in the process, too.

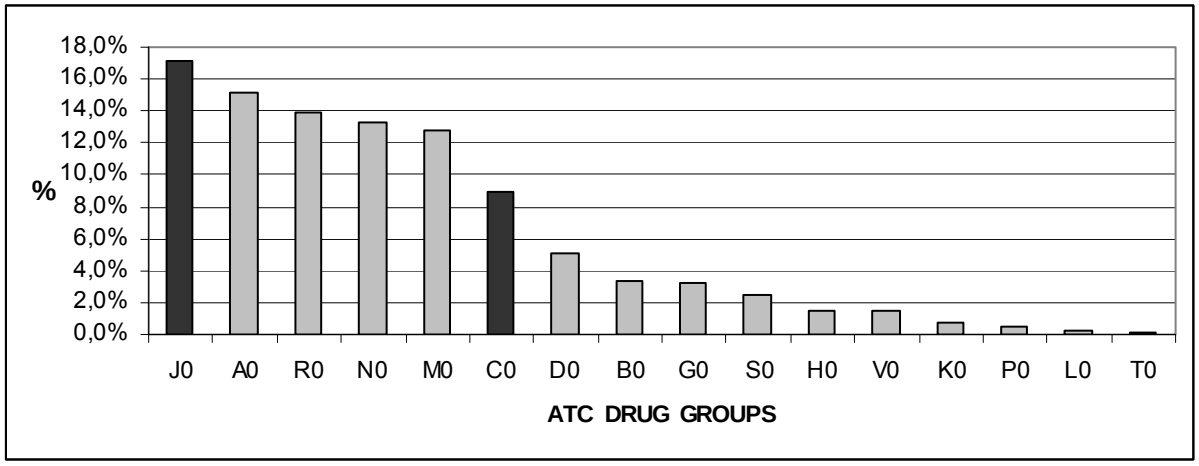

Figure 3-4: Box-Based Distribution of Medicines Sold %, Turkey, 2006

Source: IMS Health Data, March 2007

ATC major anatomic groups are listed below:

A0 Alimentary tract and metabolism

B0 Blood and blood forming organs

C0 Cardiovascular system

D0 Dermatologicals

G0 Genito-urinary system and sex organs

H0 Systemic hormonal preparations, excluding sex hormones and insulins

J0 Anti-infectives for systemic use

K0 Hospital solutions

L0 Antineoplastic and immunomodulating agents

M0 Musculo-skeletal system

N0 Nervous system

P0 Antiparasitic products, insecticides and repellents

R0 Respiratory system

S0 Sensory organs

T0 Diagnostic agents

V0 Various

According to the "Burden of Disease and Cost-Effectiveness Study" which was conducted by the School of Public Health, Table 3.10 presents the first ten diseases that cause Disability Adjusted Life Years (DALY) in Turkey.

Table 3-10: Distribution of First 10 Diseases Which Cause DALY at National Level in Turkey %, Turkey 2000

	Causes of DALY	**% (According to Total DALY)**
1	Perinatal Cases	8,9
2	Ischemic Heart Diseases	8,0
3	Cerebrovascular Diseases	5,9
4	Unipolar Depressive Disorder	3,9
5	Lower Respiratory System Infections	3,8
6	Congenital Anomalies	3,0
7	Osteoarthritis	2,9

8	COPD	2,8
9	Road Traffic Accidents	2,4
10	Iron Deficiency Anemia	2,1

Source: Ministry of Health, School of Public Health, National Burden of Disease and Cost Effectiveness Study, 2004

As for amount of medicines per capita, cardiovascular medicines occupy the first rank in the world (28). However, first rank is occupied by antimicrobial medicines (17 %) and sixth rank by antibiotics (9 %) in Turkey although burden of disease distribution such a presentation (26). Though selling ratio of antimicrobial medicines has had a decrease when compared to previous years, it is not satisfactory.

Of these medicines groups, systemic antimicrobial medicines are significant in terms of resistance to antibiotics. Thus, it would be more helpful to examine these medicines separately.

The share of boxes of total systemic antimicrobial medicines sold in total sold boxes of medicines is presented in the Figure 3.6. In 2001, the share of antimicrobial medicines in total medicines sale was decreased from 18.66 % to 17.09 %.

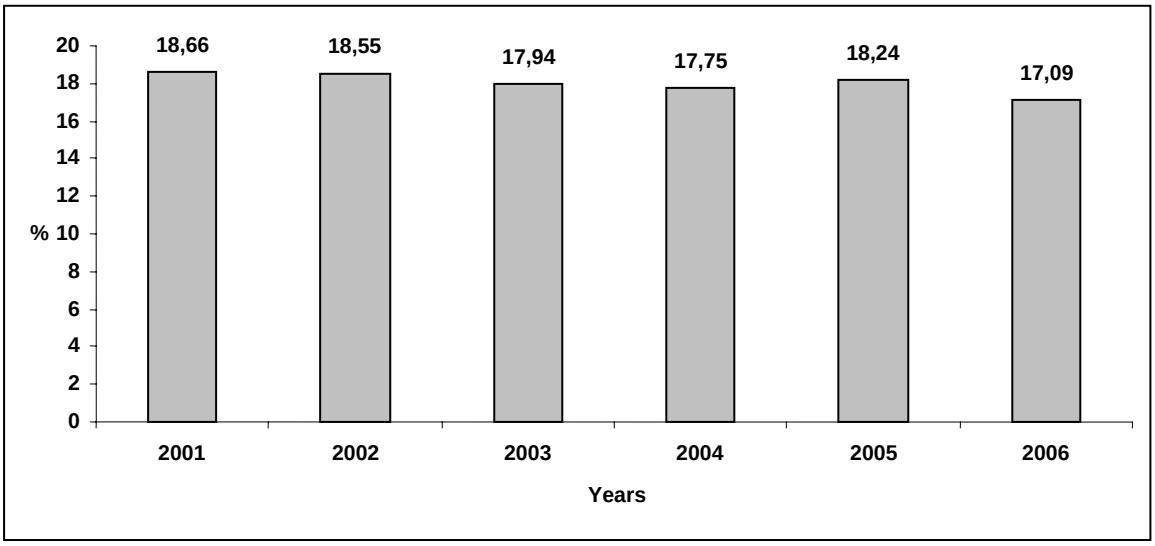

Figure 3-5: Distribution of Total Systemic Antimicrobial Medicines Boxes in Total Medicines Boxes %, Turkey, 2001-2006

Source: IMS Health Data, March 2007

Antibiotics are usually prescribed without necessary laboratory tests. Thus, it is difficult to prescribe the best antibiotic for a specific bacterial infection, which leads to

ineffective treatment. In some cases, antibiotics are prescribed although there is no bacterial infection case. Apart from these, antibiotics could be sold even without prescription at pharmacies if consumers accept to make out-of-pocket payment.

There are ongoing discussions which allege that primary care could be ineffective in antibiotics prescription and secondary care physicians prefer prescription than effective consultation. Prescription is also encouraged by those who are covered by health insurance. When public sector physicians prescribe medicines, active employees can obtain medicines with 20 % and retired personnel can obtain medicines with 10 % co-payment easily. It is thought that 80 % of the cost of sold medicines in Turkey was disbursed by the public sector by means of the social security institutions in 2006 (co-payment of 20 and 10 % is included in the 20 % share which is not met by the public sector). Thus, public sector is almost the only purchaser in the pharmaceuticals sector considering these co-payments (23).

Studies which aimed at ensuring fair access to medicines and diminishing increasing medicines expenditures tried to keep things in balance. Implementations in 2005 and 2006 targeted to achieve the national medicines policy, as well.

Contrary to basic health care services provided by the public sector, pharmaceutical sector is almost owned by the private sector. Pharmaceutical raw materials, medicines and other supplies are produced, imported, kept and stored by the private sector. There are some exceptions listed in the following:

- SIO Medicines and Medical Substances Industrial Factory (29) which operates in accordance with the Article 20, which was amended by Law No. 2158, of the Law no. 4792 on Social Security Organization, has facilities and opportunities to control tablets, capsules, liquids, coated tablets and serums. SIO makes use of such facilities to provide its beneficiaries with medicines. Before devolution of SIO hospitals to the Ministry of Health and the times when SIO beneficiaries could receive medicines from outside, this factory used to produce more than 20 types of medicines which met 3 % of SIO's medicines consumption. (30).

- Ministry of Defense-affiliated Medicines Production Factory of the Army produces some medicines that use used in in-patient and out-patient treatment of the Turkish Armed Forces (TAF) personnel.

- TGB (Turkish Grain Board) Alkaloid Factory in Bolvadin/Afyon produces various opium alkaloids also including opium poppy capsules (31).

As of 2005, 52 of 300 companies are multinational corporate. 11 multinational companies have production facility in Turkey. National companies usually focus at generic production. Public share in the sector is too little to respect. Considering market distribution of products depending on if they are original or generic, generic and domestic products occupy higher volume but have lower value. From public finance's point of view, original and import products produces higher cost per unit for the public sector. In 2006, 17.2 % of medicines that are sold in Turkey are original, 12 % are imported generic, 4.5 % are domestic original, 63.7 % are domestic generic, 1.8 % blood products and 0.8 % is vaccines (32). There are 9 companies which produce medicines raw materials. Eight of them are owned by the private sector and one by the public sector. Of medicines substance producing companies, one company has 100 % and other has 89 % foreign capital (31). Although there are about 300 pharmaceutical companies in Turkey, production and supply is focused in some regions; the biggest 25 companies (together with some corporate mergers and sub-companies of these 25 companies) – directly or indirectly- possess 75 % of total medicines market on the basis of costs (26).

3.3.10.3 Drug Licensing and Pricing

Pharmaceutical industry is inspected by the Ministry of Health-affiliated General Directorate of Pharmaceuticals and Pharmacy which approves the use of medicines in Turkey and gives license to medicines and their production facilities. General Directorate of Pharmaceuticals and Pharmacy do also fix drug prices at all levels (factory price, wholesale and retail sale price).

Ministry of Health, as required by the Law on Pharmacy and Medical Products no. 1262 and the Basic Law on Health Care Services no. 3359, takes necessary measures and identifies maximum price in order to provide users with medical products for human use in proper conditions. By the Price Directive dated 2004, the Ministry of Health was authorized to identify the prices of medicines and the Ministry of Finance to check if these prices were compatible with the respective rules and principles. In order to make assessment of products' prices, "Price Assessment Commission" is convened, in coordination with the Ministry of Health, with representatives from the Ministry of Finance, State Planning Organization and Treasury Undersecretariat in every three months so as to make recommendations to the

Ministry of Health for increasing, decreasing or fixing prices. If exchange rate has more than 5 % change in at least 30 days, then the Price Assessment Commission is called for a special meeting upon the Ministry of Health's invitation in order for prices of products to be re-assessed. Secretarial work of the said commission is conducted by the Ministry of Health (33, 34).

When identifying the VAT-excluded retail sale price of original products, a new implementation was commenced in 2004, which is called Reference Price implementation. According to this, the most inexpensive prices in two of five EU Member Countries (France, Italy, Portugal, Spain and Greece) are taken as the basis. In 2005, the implementation was changed and according to the new implementation, the VAT, pharmacist's and pharmaceutical storekeeper's sale price is deducted from the factory price – or retail sale price, if former is not available- in the most inexpensive country and the obtained figure refers to the Reference Price (33). 1 % to 80 % decrease was achieved in more than 900 products (35). As required by the Cabinet's Resolution dated 12/06/2007, the Decision on Pricing of Medicines for Human Use no. 2007/12325 was amended and then issued in the Official Gazette dated 30 June 2007. According to this amendment, the Ministry of Health identifies minimum 5 and maximum 10 EU Member Countries in order to set reference price. The afore-mentioned amendment shall come into effect on 1 August 2007(34).

In the Communiqué dated 2004, reference price was described as the maximum price of a certain medicine which was to be found by taking average of factory prices in two most inexpensive countries and which was 90 % for original and 70 % for generic products. According to the same Communiqué, if the factory price in the country of origin was less than the generic product's price, then the factory price in the country of origin would be accepted as reference price for that generic product (33).

By the Decision no. 2007/12325, the term "reference price" was replaced by the term "sale price for storekeeper". This is the discount-excluded lowest sale price for storekeeper for original products which are licensed and sold in the identified countries. However, countries where the respective product is produced or imported are not included in reference countries. If there is sale price for storekeeper in the countries which is lower than the reference country prices, then the price in the country with smaller sale price for storekeeper is accepted as the reference price. Original products might have a "sale price for storekeeper" on condition that they do not exceed the reference price. Generic products, on the other hand, might have a "sale price for storekeeper" up to 80 % of the reference price. Identified storekeeper's and pharmacist's profits and the VAT are added to the sale price for

storekeeper, which is asked by the company in accordance with the reference price list, in order to determine retail sale price (Table 3.11). Medicines are brought to pharmacies, which are last destinations of sale, by medical storekeepers. Depending on the price of medicines, storekeepers add up profits varying from 2 to 9 %. Pharmacies put medicines into service after adding up 10-25 % profits to prices (Profit ratio was changed to 10-12 % by the Decision on Pricing of Medicines for Human Use no. 2007/12325 which was issued in the Official Gazette dated 30 June 2007). The amendment shall come into effect on 1 August 2007 (34).). At the last stage, pharmacies apply 3.5-4.5 discount ratios for patients with health insurance. However, such discount shall not apply to out-of-pocket purchases. It is not possible to follow all processes of medicines starting with production and ending with consumption since barcode reading is not available. Thus, no data is available on the amount of sales by spot storekeepers. Other problem is "surplus goods" which might even lead to deviations when making calculations. There are ongoing efforts to solve such problems, set up a barcode reader's system and establish a national medicines data base.

Table 3-11: Graduated Profit Ratios of Storekeepers and Pharmacists

Of the sale price for storekeeper;	**Storekeeper's (%)**	**Pharmacist's (%)**
Up to 10 YTL (Including 10 YTL)	9	25
Between 10- 50 YTL (Including 50 YTL)	8	24
Between 50-100 YTL (Including 100 YTL)	7	23
Between 100-200 YTL (Including 200 YTL)	4	16
Above 200 YTL	2	10*

Source: Communiqué on Pricing of Medical Products for Human Use dated 03 March 2004 and no. 25391
* *Changed* to 12 % by the Decision on Pricing of Medical Products for Human Use no. 2007/12325 which was issued in the Official Gazette dated 30 June 2007. Shall come into effect on 1August 2007.

"Re-imbursement Commission" is established in coordination with the Ministry of Finance by the Ministry of Health, State Planning Organization, Treasury Undersecretariat, Social Security Organization, Government Employees' Retirement Fund and Self Employed People's Retirement Fund representatives in every 6 months so as to convene, take NGO' views and make recommendations to respective ministries. Secretarial work of the Commission was conducted by the Ministry of Finance (33) before but according to the Decision no. 2007/12325, it shall be conducted by the Social Security Organization from 1 August 2007 on. Accordingly, the "Re-imbursement Commission" coordination was transferred to the Social Security Organization. State Planning Organization and Treasury

Undersecretariat's representatives shall not take part in the commission. Taking into consideration the views of pharmaceutical sector and respective non-governmental organizations, the Commission shall identify the rules and principles of re-imbursement and the directive to identify the rules and principles of the commissions work shall be issued by the Social Security Organization in consultation with the Ministry of Finance and Ministry of Health. The Commission, upon the Social Security Organization's invitation, might be called for a special session and convenes in every two months, otherwise (34).

License owners or applicants are obliged to apply to the Ministry of Health with a Price Declaration Form when they ask initial price and a change in reference. Euro is the currency of the reference price according to the new regulation. Communiqué on Pricing of Medical Products for Human Use dated 3 March 2004 and no. 25391 states that pricing shall be made in 90 work days following the company's completion of required papers and this period might be extended for 60 work days in case of too much applications and work load (33). According to the new medicine price communiqué, the Ministry of Health has to conclude the procedures for obtaining first price in 60 days. The period, however, might be extended for 30 days in case of heavy work load. Applicants are liable to submit all papers accurately and companies shall compensate all public damage likely to occur from false statement (34).

Scientists assigned in price monitoring and licensing commissions do work voluntarily, which seems to be a factor that diminishes the speed and efficiency of commissions which need to be rather dynamic, in fact.

The fact that the National Medicines Agency, which is envisaged by Five Year Development Plans which are prepared by the SPO, has not been established yet is another problem. In the framework of EU harmonization efforts, our country should set up certain standards although member countries are allowed for domestic laws and implementations to some extent. It is clear that it is essential to found a medicines agency in Turkey which shall set up certain standards in the country, implement medium and long-term drug policy, and ensure coordination and cooperation with the pharmaceuticals sector, social security institution, non-governmental organizations and other government bodies. Problems such as the production, licensing, pricing, import, advertising, control, rational use of medicines, research and development studies on medicines and conducting necessary pharmacoeconomic analyses, intellectual property and increase in medicines costs-caused burden on the government budget and social security institutions could be solved easily by such a commission which shall host scientists, as well as other specialists.

It is the responsibility of Turkish Pharmacists' Association to ensure that prices are compatible with the retail sale price which is identified by the Ministry of Health. Considering that 90 % of medicines are provided by the public sector, it would be clear to see that insurance proceedings should be inspected, too. Ministry of Health controls quality of medicines by analyzing the samples which it takes from production facilities and retail sale centers.

According to the figures obtained from Turkish Pharmacists' Association dated 16 January 2007;

- Total number of pharmacies is 22,152,
- Total number of pharmacists is 25,500 (32).

Anybody who obtains a pharmacy degree could apply to provincial health directorate and open a pharmacy. Provincial health directorate is obliged to control papers – if all submitted accurately- and come to a decision in thirty days following the application. Everybody who runs a pharmacy should be a member to Turkish Pharmacists' Association. According to the laws, only pharmacists are allowed to open pharmacies in theory but there are pharmacies which seem to be owned by pharmacists and run by non-pharmacists, in fact in practice. This is a very common case especially in the eastern provinces. In order to find a solution to this problem, Paragraph (h) of the Article 5 of the Law on Pharmacists and Pharmacy Services was amended on 9 December 2004. According to this amendment, "the report which is given by the Regional Pharmacy Chamber on if the pharmacy is simulated shall be given with necessary proofs in latest 10 days following the application. If the report is not given by the end of this term, then the case of simulation is examined and concluded by the Provincial Health Directorate in 10 days." (36).

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CHAPTER 4 MEDICAL TECHNOLOGY AND E-HEALTH

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4.1.INTRODUCTION

Technology is a very significant phenomenon which plays major role in development and empowering of countries. In Turkey, various institutions and agencies conduct studies on technology. This chapter both aims to ensure an overall glance at the issue and to broaden readers' point of view through world-wide experiences and examples.

Developed and developing countries make social, economic and technologic plans for the future. They consider some criteria such as the current status within the country, country needs and private sector when making such plans.

Turkey started to make development and technology plans in 1980. Science and technology policy was issued for 1983-2003 term, however, could not be put into practice. In 1993, technology and development plan for 1993-2003 was re-issued. Higher Council of Science and Technology (HCST) was also established in this term. (1).

In the 2000s, two major foresight studies were conducted on health. First one was conducted by the Scientific and Technologic and Research Council of Turkey (STRCT) and the second by the Turkish Academy of Sciences (TAS). In both studies, panels were held and analyses were made in order to find out which technologic issues had priority and how competent the universities and private sector were in Turkey.

All these efforts, from past to present, aim at shaping the future. Universities and private sector actors should take part in the process while the state provides necessary financing.

Technologic progress has influenced the provision and quality of diagnosis and treatment services and re-shaped medicine. Although medicine has a very long history, improvements in medical technology have made many devices available for diagnosis, treatment and rehabilitation like in no other centuries. So, important improvements has been made in treatment of certain diseases (2).

It is clear that technologic developments have an effect on service provision of health sector. The countries which do not make necessary investment in technology, on the other

hand, are obliged to buy technology from other countries, which turns out to be an important factor that increases health expenditures.

There is little medical device production in Turkey. Medical supplies and spare parts are rather produced. Vision 2023 Project, which is conducted by the STRCT, needs to be put into effect. Otherwise, it would be difficult for us to catch up with the high-tech countries.

Technology development has become a sector in health. Large companies make investments in technology and conduct R&D activities for necessary researches.

Countries should set targets when making future plans for technologic investments. They should also plan policies and infrastructure when making development plans. Realization of these plans depends on the priorities of science-technology, engineering disciplines and fields of research as well as the public support.

Information, advanced material technology, biotechnology, nanotechnology, telecommunication and network technologies are areas of priority. The progress in these areas is increasingly expanded towards the field of medicine.

Technology foresight studies have not only technical but also socio-economic and political aspects. Technologic development is very important for a country's strength. If medical technology investment and planning is not forward-looking, then countries get dependent on others, which may later turn out to be the loss of a gigantic power.

4.2.TECHNOLOGY FORESIGHTS IN THE WORLD

To take a glance at technologic studies which were conducted in the world, developed countries started the process in 1950s, identified and announced their technologic goals in compliance with their priorities.

First technology forecast was made in late 1950s for the U.S. defense sector by the RAND Corporation which also developed Delphi query and scenario analysis. It was followed by the studies which were conducted for the US Marine and Naval Forces in 1960's. technology forecast was made by some private corporations, as well. However, the concept of "Technology Foresight" which is used commonly today, was first produced in Japan (3).

Japan made forecast technology not only for its defense industry but also for all other aspects relevant to the country. A Japanese team was sent to the U.S. for an on-site examination. Countries did not only conduct technological studies but also monitored and followed the studies of other countries.

Japan founded the Science and Technology Agency (STA) and started studies to forecast the next 30 years in science and technology. This study had participation not only from public agencies but also from private companies and they all used the Delphi query. They updated the foresight study in every five years (3).

Foresight in the Netherlands had a rather different form than other European countries. Studies were conducted on the basis of decentralization and by use of various methods. These studies were fully integrated with the existing policy processes and focused on certain fields. History of technology foresight in the Netherlands is older then that of Britain and Germany. Studies were first started in the 1970's so as to analyze and strengthen the relation between science and society and a great many foresight studies have been conducted since the 1980's on a variety of fields (such as agriculture, environment and health). Foresight Steering Committee was established in 1992 so as to coordinate all these studies.

Foresight studies are conducted mainly on chemistry, transportation and infrastructure, agriculture, energy, nanotechnology, informatics, legislation research, health and social sciences (3).

In Germany, very few foresight studies were conducted until 1990. Studies were started in 1990 as a result of the importance that other countries gave to such studies, and as a result of stagnation and structural crisis that had occurred in the country. These studies are known as "Technology At The Threshold Of the 21st Century". At the first stage, Fraunhofer Institute for Systems and Innovation Research (ISI) was established. This institute examined foresight studies in other countries and especially in Japan and the USA (3). So, the institute conducted a technologic foresight study in parallel with the country's needs.

Scientific Policy Research Unit (SPRU) was established in Britain to conduct foresight studies like other developed European countries and follow these countries. So, Britain followed the studies conducted in France, Germany, the US and Japan and planned its own foresight studies (3).

Table 4-1: Beginning Date of National Technology Foresight Programs of Some Countries, 1970-2001

YEAR	COUNTRY
1970	Japan
1982	USA
1985	Germany
1989	Australia
1991	Republic of Korea, the Philippines
1992	Netherlands, New Zealand

YEAR	COUNTRY
1994	Italy, France, Britain
1995	India
1996	Indonesia, Canada
1997	Thailand, Finland, Hungary, Republic of Southern Africa, Nigeria
1998	Austria, Ireland, Sweden, Spain
2000	Bolivia, Brazil, Mexico, Venezuela
2001	Czech Republic

Source: The Scientific Technologic and Research Council of Turkey, Study Report on Technology Foresight and Country Examples, 2001

4.3.NATIONAL TECHNOLOGY STUDIES IN TURKEY

Studies on science and technology in Turkey were started in 1960 in order to identify policy goals. As a result of these studies, the STRCT was founded in 1963. technology foresight studies were first conducted in 1980s by the State Planning Organization (SPO) and STRCT. Turkish Science Policy: 1983-2003 was developed by the participation of approximately 300 scientists and experts, which was the first concrete step towards a well-defined and detailed science and technology policy.

Like in many other European countries, a special unit was set up in Turkey in order to make technology foresight and follow-up progress in other countries. This unit is called Higher Council of Science and Technology (HCST). The council made some plans in the light of the country's needs. However, the studies which were conducted in 1983 could not be put into implementation. Decisions that were made in 1983 covered the next 20 years. In 1993, "Turkish Science and Technology Policy: 1993-2003" document was prepared (1). This project constituted one of the main topics of the 7th Five – Year Development Plan (1996-2000).

Technologic developments are important to economics and social life in a country. It is important for economic growth and social welfare (1).

In post-1993 period, social benefit is in the center of foresight ability. In other words, social development of science and technologic plans were to be supported and economic gain was to be obtained. Therefore, it was essential to establish the "National Innovation System".

Considering the post-1993 papers on Science and Technology Policy, foresight to set up the National Innovation System is emphasized as well as some generic technologies such as 'information technology", "advanced materials technology", 'biotechnology and gene engineering" that are labeled as "higher priority" for Turkey. Certainly, Turkey had to identify and focus at specific fields in this wide spectrum in order to meet her needs. So, a great many

studies were conducted later by many public and private sector agencies such as STRCT, TAS, TATD, TAEI, and specialists in the field. (1).

4.4.MEDICAL TECHNOLOGY IN THE WORLD

When we look at the studies conducted by various countries on medical technology, we could see that these studies mostly focus on cancer, biotechnology, nanotechnology, material technologies and e-health (4).

In June 1997, Japan published a study for which she targeted the year 2025. According to the report, Japan put emphasis on primarily cancer and AIDS in health, medical care and social aid context. Cancerogenic mutation mechanism, metastasis, effective treatment and anti-HIV vaccine are the most interesting topics in this report.

Another interesting point is that the tenth important activity of twenty most important activities in Information Technology is “medical care providing robots at homes and hospitals” and making these robots “available for practical use” for Japan. Though not being included in this 20-item priority list, “development of medical information systems” is a subject which is attached much importance (4).

A Technology Foresight Study has being conducted in Britain which targets the year 2020. Within the framework of this study, a report was issued on health-specific foresights in “Medical Care Panel”. “Repair, Regeneration and Transplantation” chapter of the report discusses the need to develop strategies to support stem cell research and development studies, identify basic technologies for future development of stem call-based treatments and to gain the government’s support for all these steps (4). In other health-specific chapters of the same report it is stated that material technology should be developed and integration should be ensured with biology and other branches of science.

Prospective technology analyses which are prepared as guidelines by the European Council for the EU Member States point out to the almost same results. To give an example, Joint Research Center, which was founded by the European Council for “Prospective Technology Studies” in Spain, conducts Futures Project. The analyses made under the “Life Sciences” title state that “recent developments in life sciences, especially in modern biotechnology and genetic engineering do have the potential to influence human being’s health, food production and industrial manufacturing”. Prospective Technology Map, which was created by the same Center, respects the foresights of Japan and England as for life sciences (4).

After the afore-mentioned examples, we could assert that countries, which would like to shape their future, foresee to improve their knowledge and skills, generally in the Science and Technology categories of health listed below: (Ceyhan hanim; aslinda cumle degismedi ama yapistirirken kolaylik olsun diye hepsini isaretledim)

- Genomics; especially Genetic Profiling and DNA Analysis, Cloning, Genetically Modified Organisms;
- Genetics and Biotechnology-Based Treatment Technologies;
- Computer Simulations and Molecular Imaging Technologies-Based Medicines Development Technologies;
- Biomedical Engineering; especially Tissue Engineering that aims at developing tissues and organs for human being, Artificial Tissue and Organ Engineering which also aims at developing tissues and organs for human being and Bionics, Biomimetics, Applied Biology and Surgical and Diagnostic Biotechnology;
- Medical Informatics/Robotics;
- New Material Technologies; Biomedical Material Technologies and Nanotechnology in this context (4).

4.5.FUTURE HEALTH TOPICS IN THE WORLD

Future health topics all over the world shall be discussed in the following sections.

4.5.1. Pharmacogenomics

It is the branch of science which studies the relations between human genetics and pharmaceuticals. Individual-specific treatment methods shall be developed in the future. Treatments shall be based on the DNA structures. It shall be possible to develop more effective treatment methods by considering metabolism speed and other factors of medicines. People shall be treated with methods which are peculiar to them (5).

4.5.2. Researches on Gene Treatment

The structure of gene and its products shall be clarified. Diseases which occur due to non-well functioning gene(s) shall be detected and treated by making use of other normal and well-functioning genes. These studies are conducted for these purposes (5).

4.5.3. Researches on Genetic Diagnosis

Researches on genetic diagnosis aim to discover genetic structures of individuals diagnose congenital and genetic diseases and develop new diagnostic and treatment methods (5).

4.5.4. Stem Cell Researches / Researches on Stem Treatment

Stem cell researches have shown a very rapid progress all over the world but it is still subject to hot discussions of ethics. If ethical suspects are removed regarding the isolation of stem cell from embryo, these treatment methods could create a great potential in medicine. Organ creation studies are conducted in laboratories by making use of stem cell. Though there are findings that adult cells could be used for the same purpose, embryonic stem cell researches deserve the utmost importance both on national and international level (5).

4.5.5. Minimal Invasive Surgical Researches

They are related to adjustment of surgical techniques and equipment so as to create fewer traumas for patients and development of new techniques to this end. Thus, new equipment should be produced. Technologic and scientific developments in other fields and especially in nanotechnology have great influence on this field (5).

4.5.6. Biotechnology and Gene Technologies

There is rapid progress in molecular biology, cell biology and genomics. As a result of this, there is a world-wide outbreak in biotechnological practices in health and agriculture. Studies are underway for a healthy and qualified life.

Developed countries have managed to make economic benefits out of these opportunities and become leading actors in biotechnology sector. The case is similar in the Asian countries (5).

4.5.7. Mechatronics

Mechtronics supports innovative technologies with softwares (5).

The progress which has been made so far indicates that today's human being-interacted and computer-based mechatronic systems will become more human being-integrated and transform into biorobotics and bioautomation. In order to ease human being's life and functions and to make it more effective and inexpensive, mechatronic systems will integrate with biotechnology and "biomechatronic systems" will be born in the future (5).

4.6.1. Nanotechnology

Nanotechnology refers broadly to the field of applied science and technology whose unifying theme is the control of matter on the molecular level in scales smaller than 1 micrometer normally 1 to 100 nanometers, and the fabrication of devices within that size range. (6)

In other words, nanotechnology refers to inter-disciplinary research and development studies on the examination of design, production, installment, characterization of nanometer-scaled equipment and miniature functional systems (7).

It is planned to use nanotechnology in defense, health, energy, and textile, electronic and photonic material sciences.

4.6.1.1. Nanotechnology in Health:

Nanotechnology and biotechnology develop together, which promotes knowledge in molecular biology every day. Methods are developed to find new treatment methods for cancers, infections and allergies. Considering diameter of a DNA molecule in our cells is 2 nm and diameter of antibody prototypes in our blood varies between 15 and 50 nm, we could easily comprehend the size of innovations which would be brought to the field of medicine and nano-science by nano-biotechnology in the future.

Studies are underway varying from nano implants to clever medicines release systems, nano-bio machines to nanofabrication of DNA chips for bioinformatics and genomics, mesenchymal stem cell-based organ engineering to monoclonal antibodies and use of DNA-rooted ligants with quantum particles for nano-imaging purposes. (8).

4.6.1.2. Nanotechnology in the World

Nanotechnology creates a the gap between developed and developing countries too much to fill. Welfare, national defense power and economics of developed countries with nanotechnology will certainly have more dominance in international arena. In this context, nanotechnology seems to be the last opportunity for Turkey to catch up with the world-wide developments which has not been successful in industrial, microelectronic-informatical revolutions on time. Personnel should be empowered, training opportunities and knowledge should be promoted for success, which will contribute to social welfare, economic power and cultural integration of Turkish people. A report which was prepared for the 6th European Union Framework Program states that Turkey and Malta are the only countries in Europe which do not have a national nanotechnology plan. However, Turkey started to conduct studies to found a National Nanotechnology Center after the Vision 2023 Report (9).

A fund with a budget of 15 million USD/year, which shall be allocated for nano-science and nanotechnology, shall be returned back to the national economy only in a few years. More than 700 companies all over the world are interested in nanotechnology and respective studies. There are a great many countries which pretend to lead for nanotechnology in international arena (9).

Asian countries are rather competitive and fast in nanotechnologic developments (9).

As for nanotechnology financing, Japan raised her financial support to 120 million USD in 1997 and to 750 million USD in 2002. The European Union, on the other hand, shall provide more than 1 billion USD for nanotechnology financing in 2002-2006 (9).

Japanese government mobilized financial sources for nanotechnology which was incredibly high when compared to the past. European Union, which fell behind the USA and Japan in this field, announced nanotechnology and nanoscience as a priority in the 6th Framework Program so as to build capacity for competition with these two countries in ten years' time and allocated a budget of 1.3 billion Euros in the last four years for researches and studies in this field. Yet, it is asserted that this budget is too little to compare with the national budgets of the Member States. Public and private agencies in country basis, on the other hand, plan to make expenditures that are 7-8 times bigger than the Union's budget allocated to this end (9).

500 researchers, all of whom hold doctorate degrees, work at Heraklion Research Center which is located in Crete Island of Greece, and these studies are supported by the European Union up to millions of Euro (9).

Israel took her steps very quickly and gathered so many respected and prominent scientists at nanocenter facilities. Ireland, in spite of her little population, allocated a budget of 630 million Euros for nanotechnology (9).

The US government has invested more than 1,5 billion USD in nanotechnology since 2000. It was planned to spend 3 billion USD for nanotechnology research and development studies to be conducted in 2003 (9).

4.6.1.3. Nanotechnology in Turkey

State Planning Organization (SPO) decided to found a national nanotechnology center at Bilkent University in 2005 and allocated 11 million YTL initially. SPO plans to activate the National Nanotechnology Research Center with new sources and to facilitate nanotechnology studies (10). It is also planned to complete the construction of NNRC Building in 2007.

Due to the high cost of nanotechnology researches, developed countries have prefered single resource collection and making them available for public use through joint studies and projects. 100 million USD was spent for each one of five nanotechnology research centers which were supported by the US Department of Energy and which started their activities in 2006. On the other hand, the equipment which is used in nanotechnology researches in Turkey is inadequate both in quality and quantity. Nanotechnology studies could not be fostered without necessary equipment. In the last few years, there seems to be an increase in the equipment which is provided by STRCT and SPO sources. There are ongoing efforts to conclude the equipment infrastructure work at National Nanotechnology Research Center (NNRC). Depending on the sources, adequate equipment will have been provided by late 2007 (10).

Considering articles published on nanotechnology in Turkey, we would see that they are too little in number and we know that a number of nanotechnology articles are published in Greece and Israel, and Iran has also started nanotechnology studies on Iran (10).

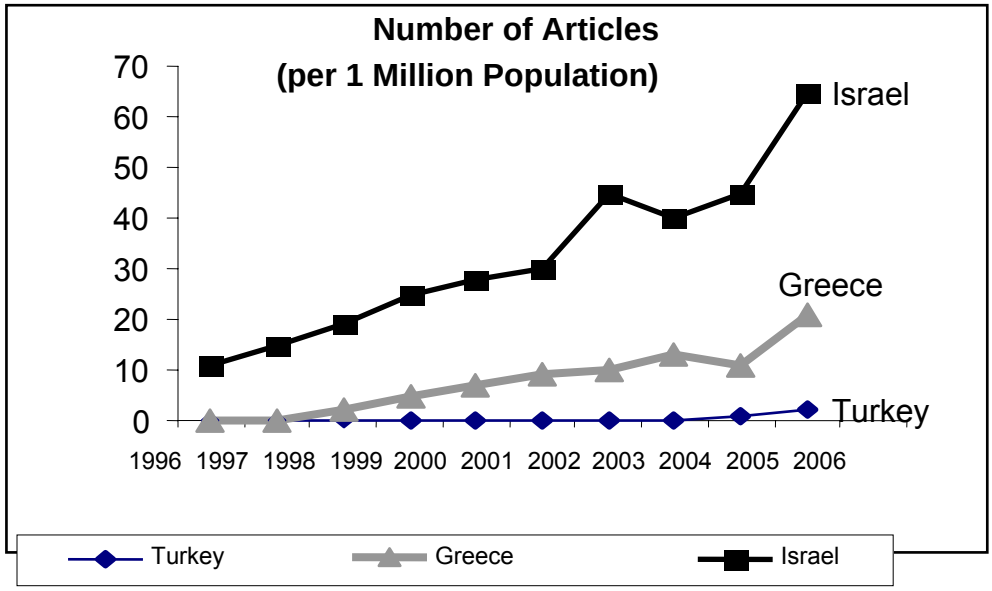

Figure 4-1: Distribution of Articles on Nanotechnology in Israel, Greece and Turkey By Years, 2007

Source: Bayındır, M.Bilim ve Ütopya, Access: 05 May 2007

Some Nanotechnology Research Centers in Turkey:

- Anadolu University, Advanced Technologies Research Unit
- Middle East Technical University, Nanotechnology and Nanobiotechnology Research Center
- Bilkent University, National Nanotechnology Center
- Gebze Higher Technology Institute Nanotechnology Center (7)

Science-Technology Policies and Targets Recommended for Turkey:

- The lack of trained personnel is an issue that should be addressed. Today, there are master of science and doctorate programs in nanoscience and nanotechnology at universities in many countries, which is very critical to obtain adequate number of specialists in this field. Turkey should immediately develop such academic programs, give financial support to students in these programs and finance post-doctorate researches (11).
- Research infrastructure should be built for universities and small, medium and large-scaled industrial facilities. Legal adjustments should once be made in order to make such studies and researches widespread. Research centers should be increased in number and researches which are conducted or financed by industrial facilities should be supported and encouraged.
- It is also essential to generalize and improve techno parks for nanotechnology (11).
- Now, companies which are located in Technology Regions are exempted from tax for their revenues obtained from R&D (Research and Development) studies. Besides, TMEB (Technology Monitoring And Evaluation Board), which is an affiliated body of STRCT gives almost 50 % grant to R&D projects and TATD (Turkish Association for Technological Development) gives few months' loan for R&D financing. Such support is undoubtedly valuable but it is too tough for small-scaled companies to benefit from this opportunity. Companies are reimbursed only in 6-9 months after they made payment on their own first. Thus, a great many small-scaled companies could not utilize such benefits (11).
- In order to encourage and empower companies which could make a quantum leap in nanotechnology, grants should be given as financial support to projects that might "turn into a product", "create a prototype" or that aim "to make researches" like the "Small Enterprise Grant", which is given in the USA. Such projects in the USA are given grants amounting up to 750,000 USD. Small-scaled companies which could not implement such projects on their own resources are expected to test innovative ideas and turn them into products later on. Similar R&D support is also given in European countries such as Britain, Ireland, France, Germany and etc. and plays a very important role in empowering small-scaled companies. This financial support might be limited to 250,000 USD for our country. Projects should be assessed by arbiters consisting of academicians and businessmen and companies should be set free as much as possible to make payments throughout the process (11).

4.7.1. e-Health Tele-Care and Tele-Medicine

e-Health: Generally refers to the use of telecommunication (distant communication in electronic environment) and information technologies together in health sector. Tele-care and Tele-medicine is included in e-health, too (5).

4.7.1.1. Tele-Medicine in Turkey

Tele-medicine is not in systematic and common use in Turkey, yet. There are few centers which implement tele-medicine in some fields and particularly in transfer of radiological images. Ministry of Health, however, started the studies on tele-medicine and organized the "1st Health Informatics Congress" in November 2006 (12).

There are also ongoing studies on e-transformation, tele-medicine and electronic prescription system which are conducted by the Ministry of Health-affiliated Information Processing Department and General Directorate of Health Education. E-transformation is a World Bank-financed project. Thanks to this project, inter-hospital data transfer will be possible by using national and international health information processing standards. Data collection center will be founded and thus health records will be kept easily. Within the framework of e-health actions, projects are developed which would use inter-hospital teleradiology and telepathology services for health care facilities which are either difficult to access or which do not have adequate number of personnel. Under this project, there are 9 sender and 6 receiver hospitals and project tender has already been eventuated. It is planned to implement Tele-Medicine System in late 2007.

4.7.1.2. e-Health Studies in Turkey

E-Health studies were started by the Program for Transformation in Health in 2003 and first concrete step was taken with the introduction of Family Medicine Information System in August 2004.

E-Health refers to the use of information and communication technologies to provide all people and patients with increased access to qualified, efficient and effective health care services. Tele-care and tele-medicine are the components of e-health. e-Health uses electronically-transferred, stored, processed and re-produced digital data for clinical, educational and managerial purposes (12).

On 30 January 2003, a study was started to build inter-sectoral cooperation and health information infrastructure with the participation of public agencies, universities and private sector representatives. 10 study groups which were coordinated by respective agencies were formed so as to conduct studies (12).

When creating e-Health actions, the following Turkish Information System study groups were utilized (12).

- Action Plan Study Group, Coordinator Agency: Ministry of Health
- Data Dictionary and Standards, Coordinator Agency: Medical Informatics Association
- Number-Based Personal Health Identifier, Coordinator Agency: Ministry of Health
- Health Data Model and Minimum Health Data Set, Coordinator Agency: Hacettepe University
- Confidentiality and Security of Records, Coordinator Agency: Turkish Physician's Association
- Early Warning Systems, Coordinator Agency: Ministry of Health
- Special Health Network, Coordinator Agency: Turk Telecom Inc.
- Tele-medicine, Coordinator Agency: STRCT
- Training, Coordinator Agency: Hacettepe University, Middle East Technical University (METU)
- General Monitoring and Coordination, Coordinator Agency: SPO

Thanks to these study groups, registries in health care facilities shall be kept under electronical record according to the principles of confidentiality and privacy, and shall be submitted to people and health professionals in patients' referral processes if necessary (12).

Thanks to the inter-sectoral cooperation in developing National Health Information System, health data will be quickly turned into information and help decision-makers in planning of health care services delivery.

Data to be obtained through health automation projects (standards identified) will guide for planning, understanding and supervising of health service delivery activities during Management and Decision Support process.

Efficiency of preventive care services will be increased since public health data will be updated and easily accessible (12).

People will be supported to benefit from health care services in an effective and permanent way. Rapid measures will be taken against national and international health threats. Turkey will be able to obtain health data which is comparable with the World Health Organization (WHO), Organization of Economic Cooperation and Development (OECD) and

the European Union countries' health data, updated and on time data exchange with the international organizations will be possible. Integration of institutions in delivery, financing and provision of health care services to the national information system will save resources (12).

Thanks to the new project consortiums in e-health practices and cooperation at international level, knowledge shall be accumulated at national level and thus Turkey shall have a place among the leaders of international programs (12).

Ministry of Health Studies

Ministry of Health has completed or ongoing studies and projects such as Turkish Health Information System/e-Health, Core Source Management System (CSMS), Basic Health Statistics Module (BHSM), Patient's Follow-up System (PFS) and Uniform Accounting System (UAS). These projects which support researches that aim to develop health information technologies encourage co-operation and exchange of information among health care facilities, formation of electronic patient's records and promotion of access to health care services by using mobile technologies for health. Effective use of new-technologies based information systems shall provide safer and more qualified health care services at lower costs (12).

4.7.1.3. Application of Tele-Medicine in the World

When it is difficult to diagnose or opinion of a specialist physician is needed, patient does not go to physician's office, instead sends data via tele-medicine, which saves money, time and sources. Teleradiology has been used for 30 years in the USA. Teleradiology refers to sending medical images such as X-rays or MRI scans for a radiologist's assessment. This is one of the most common fields of tele-medicine that is used in the US health care system which allows full reimbursement (13).

Apart from sending diagnostic results via tele-medicine, tele-surgery, which refers to surgery by robot surgeons via distant command, has gained speed, as well. Tele-medicine also paves the way for in-service trainings for health care professionals (13).

If the case is a rare one or if wide-scope examination is needed, then tele-medicine allows to make use of sources which could be found in more than one center. "Human genome database", which is the most important research of the last few years, is a very good example (13).

It decreases costs keeping the patient away from hospital when treatment needs to be closely monitored. Other opportunities include monitoring patients at home (in case of diabetes and asthma).

In terms of assessment of patients in big disasters and accidents, triage decision and pre-transfer planning, considering the natural disasters which occurred or likely to occur in Turkey, we could easily say that tele-medicine is one of the important projects for our country (13).

In the context of population health and preventive medicine, it might be possible to set up databases on the Internet and brief both physicians and community (13).

4.7.1.4. Future of Tele-Medicine and Its Effects on Medical and Health Practices

Tele-medicine has had a rapid change during the last few years. Researches on tele-medical practices also increase in number. It is thought that all these changes would effect health system radically.

Tele-medicine shall save time and money. Physicians would be trained by tele-medicine and update their knowledge constantly. They would also get in touch with physicians in other provinces to discuss about diagnosing. Patients' information shall be collected and access to that information would be easy. It is considered to be a major step to alleviate health expenditures (14).

There are still some important obstacles (legal and regulatory barriers) on accepting the use of tele-medicine in traditional medical facilities. Yet, these barriers have started to lose their effect. There are also researches and studies indicating the extent to which tele-medicine treats patients and decreases cost of health care services. Being an indicator of an increasingly maturating industry, tele-medicine is going through a transition period. People have quite positive attitude towards tele-medicine and all indicators show that it would become a very good marketing area (14).

Tele-medicine Implementations in the Future;

2005

- Electronic clever cards that contain health record of people shall come into use (Germany)
- Electronic health records shall be accessible (United Kingdom) and they shall be fully functional (Germany)
- Online identification systems shall be used for electronic patient's identity, digital TV shall be used for medical services (Ireland) and prescriptions shall

be written so (Germany) (5).

2010

- Inexpensive telematic sensors shall be used which let remote follow-up of patients (Germany)
- Long health records shall be kept and monitored electronically (European Union/PRISMA Project, Institute for Alternative Futures)
- Health professionals shall be given long-term electronic trainings (Deloitte and Touche) (5).

2015

- Biochips which are developed for Microsystems shall be put into service (Canada)
- Chip cards shall be used in telematic connections between ambulances and clinics (Austria)
- Information technologies shall be combined with neurophysiology (Austria) (5).

2020+

- By means of e-Health, individuals' health shall be protected at home (Norway)
- Computers shall be commonly used for surgery and emergency (United Kingdom) (5).

4.6.RESULT

Technology follow-up and investments are very important for Turkey because we import technology from other countries, which costs too much and has a major share in national health expenditures. The situation also leads to the increase in the costs of health service delivery. To give an example, Turkey's foreign trade volume in medical devices and supplies sector was approximately 815 million USD according to 2004 data of the Foreign Trade Undersecretary, accounting for 54 million USD from export and 760 million USD from import. Import/export ratio is equivalent to 8 %, exceeding even the imbalance between import and export in Turkey (15).

Hospitals could purchase medical devices using their revolving funds as well as from the Ministry of Health's General Budget or Department of Strategy Development's revolving fund transfer. Among the medical devices produced in Turkey are spare parts and supplies mostly.

Total sum of expenditures which are made from three different sources for medical devices, medical supplies and pharmaceutical purchases could not be known completely and accurately due to the accounting system used and the fact that they are not recorded in details under separate expenditure items complicates the process of monitoring. Expenditure items have been recorded in details since 2002. So, it is possible now to monitor expenditure on pharmaceuticals, medical devices and medical supplies made from revolving fund resources, in detail (16). In 2006, 1.554 million YTL was spent for medical device purchases and

repairment from revolving funds. Table 4.2 presents the expenditures made for medical device and medicines purchases from revolving fund in 2006 (18).

Table 4-2: Revolving Fund Expenditures for Medical Devices and Medicines in 2006

TYPE OF EXPENDITURE	Million YTL
Total expenditure on pharmaceuticals	384,14
Total expenditure on medical supplies	1.010,27
Total expenditure on medical devices	94,75
Total expenditure on medical device repairments	65,43
TOTAL	**1.554,58**

Source: Ministry of Health, Department of Strategy Development Data, 2007

Distribution of some medical devices in Turkey is presented in the following;

Table 4-3: Distribution of CT and MRI Devices at State Hospitals By Regions

REGION	Population (Million)	Number of CTs	Number of MRIs
Central Anatolia	12.308	40	11
Marmara	19.538	49	16
Aegean	9.507	43	11
Mediterranean	9.532	31	11
Black Sea	8.265	29	8
Eastern Anatolia	7.128	19	5
Southeastern Anatolia	6.695	11	3
TOTAL	**72.973**	**222**	**65**

Source: Republic of Turkey, Ministry of Health, Directorate General of Curative Services, 2006 data

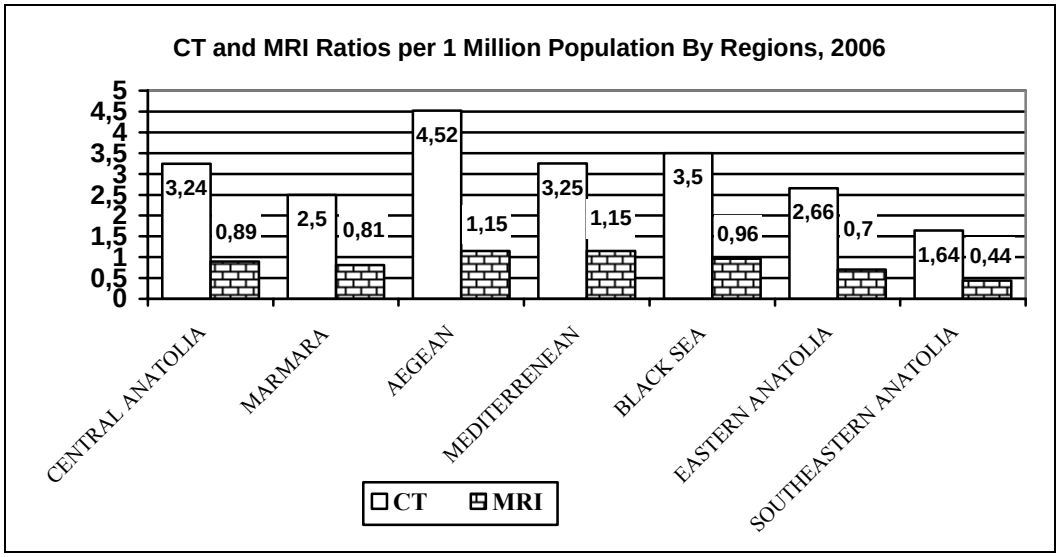

Figure 4-2: CT and MRI Ratios per 1 Million Population By Regions

Source: Republic of Turkey, Ministry of Health, Directorate General of Curative Services, 2006 Data

Examining the distribution of devices at state hospitals, it is seen that CT ratio is relatively high in the Aegean and Black Sea Regions and MRI ratio is high in the Aegean and Mediterranean Regions. In the Southeastern Anatolia, both MRI and CT ratios are relatively low when compared to the other regions. Accordingly, distribution is not balanced among regions.

If university hospitals and private health care facilities are considered, increase is seen in CT and MRI ratios per 1 million population in Turkey. Table 4.4. and 4.5 present the distribution of all MRI and CT devices by regions in Turkey and Figure 4.3 presents the number of devices at state hospitals only. Data belongs to the year 2006 and obtained from General Directorate of Curative Services, Biomedical Engineering Department, Market Surveillance and Inspection Branch.

Table 4-4: CT Numbers By Regions

REGION	**Population (Million)**	**Number of CT devices**			
		State Hospitals		**State Hospitals**	
Central Anatolia	12.308	40	15	24	79
Marmara	19.538	49	222	36	307
Aegean	9.507	43	8	9	60
Mediterranean	9.532	31	4	5	40
Black Sea	8.265	29	5	7	41
Eastern Anatolia	7.128	19	1	5	25
Southeastern Anatolia	6.695	11	3	0	14
REGION	**72.973**	**222**	**258**	**86**	**566**

Source: **Republic of Turkey, Ministry of Health, Directorate General of Curative Services, 2006 Data**

Table 4-5: MRI Device Numbers By Regions

REGION	**Population (Million)**	**Number of MRI devices**			
		State Hospitals	**Private Hospitals**	**University Hospitals**	**TOTAL**
Central Anatolia	12.308	11	30	14	55
Marmara	19.538	16	66	9	91
Aegean	9.507	11	18	6	35
Mediterranean	9.532	11	6	4	21
Black Sea	8.265	8	11	3	22
Eastern Anatolia	7.128	5	8	4	17
Southeastern Anatolia	6.695	3	9	1	13
TOTAL	**72.973**	**65**	**148**	**41**	**254**

Source: Republic of Turkey, Ministry of Health, Directorate General of Curative Services, 2006 Data

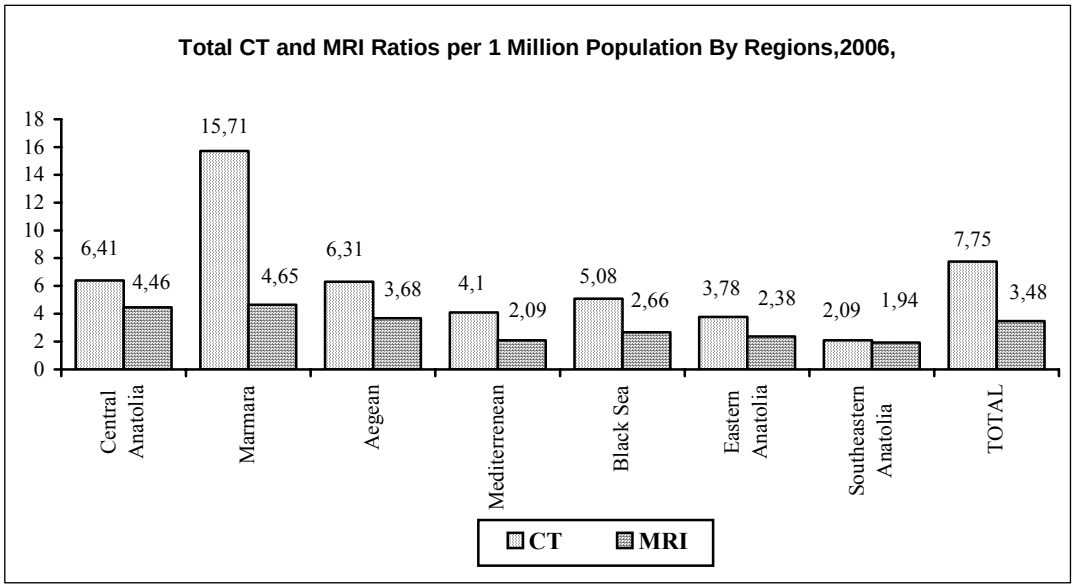

Figure 4-3: CT and MRI Device Ratios per 1 Million People By Regions
Source: Republic of Turkey, Ministry of Health, Directorate General of Curative Services, 2006 Data

Examining the regional distribution of CT and MRI devices, it is seen that there are differences in terms of device distribution by regions. To give an example, the number of devices per 1 million population is very different in Marmara and Southeastern Region.

Since most private facilities and university hospitals are located in the Central Anatolia and Marmara Region, number and ratio of devices is quite high. On the other hand, CT and MRI device ratios are rather low in the Eastern and Southeastern Anatolia.

According to the OECD Health Data, CT and MRI device numbers per 1 million population in the OECD countries are indicated in Table 4.6 (Most data belongs to 2004 and some to the previous years).

Table 4-6: CT and MRI Device Ratios per 1 Million People in the OECD Countries

Countries	Ratio of Devices per 1 Million People	
	CT	MRI
Austria	28,5	14,9
Belgium	29,8	6,8
Czech Republic	12,6	2,8
Denmark	14,6	10,2
Finland	14,2	14,0
France	7,5	3,2
Germany	15,4	6,6
Greece	17,1	2,3
Hungary	6,8	2,6
Iceland	1,71	17,1

Countries	Ratio of Devices per 1 Million People	
	CT	MRI
Italy	20,6	10,2
Luxemburg	28,8	11,1
Poland	6,3	1,0
Portugal	12,8	3,9
Slovakia	8,7	2,0
Spain	13,3	7,7
Sweden	14,2	7,9
Switzerland	17,9	14,3
Turkey	**7,3**	**3,0**
Britain	7,0	5,0

Source : OECD Health Data, 2006

According to the 2004 data, average of MRI device ratio in 11 OECD Member States is 9.1, while it is 3.0 in Turkey, which refers to a rather low level when compared to OECD countries.

CT ratios per one million people in 2003 is 15.11 in 18 Member States and 7.3 in Turkey, which means that Turkey has fallen quite behind the OECD average.

In Europe, 8.6 % of GNP is spent for health. 6.4 % of this is spent for technology. In the US, health has a share of 13.9 % in GNP and medical technology has a share of 5.1 %. As it could be easily seen here, enormous investments are made in medical technology and great benefits are created (20).

Developments in medical technology have led to a radical change in understanding of individual and community health in terms of preventive and curative medicine. Technologic developments facilitated the invention of innovative devices and equipment, and various disposable supplies put a severe burden on health care facilities and individuals, too. Therefore, it costs a lot to protect community's and individuals' health.

The fact that production is not adequate in Turkey and the country is dependent on import creates a meaningful import cost. In Turkey, there are personnel trained at the engineering and basic science departments not only in terms of theoretical infrastructure but also in research and development issues, and there exist respected universities where education and training are provided in high quality. Besides, some of medical devices and supplies are domestic products though not providing an adequate amount in total (4).

To conclude, material support and necessary legal adjustments shall certainly contribute a lot to the improvement and international reputation of Turkish medical technology industry. In this respect, the "Medicine and Medical Devices Agency", which will

be founded by the Ministry of Health, will contribute to the development of a national policy on medical devices.

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CHAPTER 5 HEALTH SECTOR FINANCING

Hüseyin ÖZBAY MD., Hasan Gökhun ÖNCÜL MD., Mecit GÖKÇİMEN MD. Spec., Hakan OĞUZ ARI, Salih MOLLAHALİLOĞLU MD.

5.1 HEALTH SECTOR FINANCING

5.1.1 Health Expenditures

Health System financing in Turkey has a complicated structure (Figure 5.1). This structure is one of the important factors which complicate effective functioning of the system. Health expenditures, in this complicated system, are financed by public and private sector sources. Expenditures by the central government, local administrations and social security form public sector expenditures. Private sector expenditures, on the other hand, are household out-of-pocket payments, companies' payments for personnel, private health insurance and non-governmental organizations' expenditures for households. .

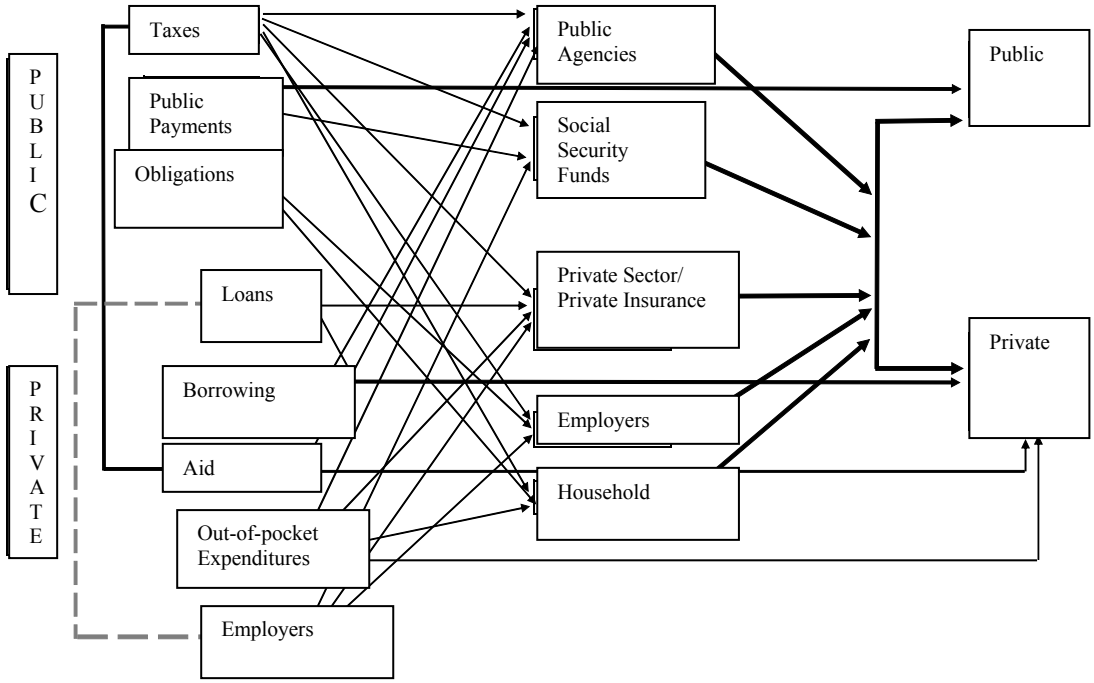

Figure 5-1: Financial Flow Chart of Turkish Health System

Source: Turkey's National Health Accounts According to the OECD Health Accounts System 1999-2000, MoH, RSHMB, School of Public Health Directorate, 2004.

Social Insurance Organization (SIO), Bag-Kur (Self-Employed People's Retirement Fund/BK) and Government Employees Retirement Fund (RF) are financed by premiums

while health expenditures of the Green Card beneficiaries and actively working personnel are financed by the budget. In fact, SIO, Bag-Kur and RF are primarily financed by the premiums that they collect. In the last few years however, they are being financed by the general budget to some extent due to the deficits in their budgets. Table 5.1 presents budget transfers made to the Social Security Organizations. The amount which was allocated to these agencies was noted as 7 % in 2000 and increased up to 13 % in 2006, which refers to two-fold increase. Transfers made to the Social Security Organizations are not only relevant to health expenditures but also to all budget deficits of the respective agencies.

Table 5-1: Budget Transfers to Social Security Organizations by Years, 1999-2006, Turkey (Thousand YTL)

Year	*SIO*	*BAĞ - KUR*	*GERF*	*TOTAL*	*SHARE IN BUDGET EXPENDİTURES (%)*	*SHARE İN GNP (%)*
1999	1.111.000	796.145	1.035.000	2.942.145	10,5	3,8
2000	400.000	1.051.460	1.775.000	3.226.460	6,9	2,6
2001	1.108.000	1.740.000	2.675.000	5.523.000	6,9	3,1
2002	2.386.000	2.622.000	4.676.000	9.684.000	8,4	3,5
2003	4.808.617	4.930.000	6.145.000	15.883.617	11,3	4,5
2004	5.757.000	5.273.000	7.800.000	18.830.000	12,4	4,4
2005	7.507.267	6.926.000	8.889.300	23.322.567	14,7	4,8
2006	8.257.000	4.330.000	10.035.000	22.622.000	12,9	4,0

Source: Social Security Report, MoH, RSHCP, School of Public Health Directorate, 2007.

Ministry of Health and the SIO, which had been both service providing and financing agencies, were exposed to some structural changes so as to undertake only one of these two roles. In the past, health expenditures of the Green Card beneficiaries were financed by the MoH-allocated sources. Yet, they will be financed by the Social Security Organization from 2008 on as a part of the Universal Health Insurance system. SIO, which had played both service providing and financing role until 2005, devolved its affiliated health care facilities to the Ministry of Health and became just a financing agency by the Law on "Devolution of Some Public Agencies-Affiliated Health Care Facilities to the Ministry of Health" no. 5283.

5.1.1.1 Studies on Health Financing and National Health Accounts

Turkey recognized the need for scientific analysis of health financing structure so as to guide health policy decisions, and thus determined to develop National Health Accounts. Fragmented structure of health care finance in Turkey is thought to be one of the biggest

obstacles on health care reforms and review studies. Turkey also needs to obtain information and data on sources, flow of funds, distribution of these funds between health needs and services in order to review health care services system one more time (1).

Policy makers have attached utmost importance to definition and measurement of health expenditures in the last years. In health sector, as in other sectors, sources are limited to achieve national goals. Therefore, policy makers and planners in health sector should know the availability of sources and possible limitations which play active role in achieving goals. Such approach would certainly raise the awareness of decision-making bodies and groups in health sector to obtain accurate and complete information on the quantity and distribution of sources in the sector, flow direction and dimension of these sources, and past trends and prospects for the future. Main objective of studies which focus on estimating health expenditures is to give out such information and data (1).

In most developing countries, estimation of health expenditures is a very new process. Difficulties encountered in historical development or in making estimations on health expenditures hindered the studies on retrospective and present estimations on National Health Accounts. From a general point of view, data which health managers and planners could access or use are obtained from general budget sources in these countries (1).

To look at the case from a historical perspective, when states traditionally undertook public responsibility in health after the World War II, they only committed to undertake the provision of service at first hand. Thus, they ignored the activities conducted by non-public sector agencies at first. Yet, they decided to seek for alternative ways for delivery and financing of health care services once they recognized that public sector did not have adequate sources to respond to increasing health needs. The most outstanding approach in the recent years is to adopt a broader perspective which covers both public and private sector in health system, which originates from the need to have in-depth information on the entire health system. In addition to these, it would be necessary to obtain further data on who asks for and utilizes health care services for discussions on benefits, distribution of costs and equity. Such information and findings, on the other hand, could not be obtained from budget (1).

The term “National Health Accounts” was proposed so as to imply that these accounts were specific to health sector only. The accounts which give out detailed information on health sector financing are also instruments that could be utilized to improve health management capacity and achieve a more effective management in health. The accounts, in

the simplest definition, describe the flow of both public and private expenditures that are made in health sector within a country. So, it would be possible to analyze the sources and direction of expenditures within health sector systemically. The approach was developed in order to analyze a country's expenditures for health care and other relevant services in a certain period and it is used in many countries, today (1).

National Health Accounts, in most basic terms, indicates the sources and exploitation of health expenditures and makes connections by using matrix tables. In countries where the accounts are developed, new strategies could be developed for the sector, distribution of sources and prioritization of criteria could be identified on the basis of scientific and objective data. In general, National Health Accounts define the flow of expenditures made in both public and private sector. They help health managers to obtain data which would figure out the operations and functioning in health sector. At this point, main objective is to measure total size of expenditures and to present them systemically so as to help health managers to comprehend the flow of sources between different units in health system. It could be asserted that National Health Accounts, which define the sources, exploitation and channels of all funds in health sector, have three main goals that could be briefed in the following (1):

- To find out the amount of expenditures by sources and destinations
- To point out to the role of health expenditures in macro-economics
- To make comparison that could help with explaining differences between countries.

National Health Accounts are not only documents which describe the existing situation but also very important instruments which are used to improve managerial capacity in health sector. With these instruments, it might be possible to identify and monitor new strategies for the sector and make assessment of the interventions made. Besides, they could lay the foundation for evaluating distribution of sources within the sector and guide planning and implementation of cost-effectiveness analyses and priority identification methods. If detailed satisfactorily, they could also lay out the flow of sources between households and institutions. Identifying the scope of such expenditures is rather important to find out the real dimension and priorities of health sector especially in countries where private health expenditures have significant share in expenditures for health (1).

National Health Accounts focus on expenditures which are made in a certain period. In this framework, all expenditures and activities which overlap health-specific goals and/or needs - regardless of their economic objectives – are included in National Health Accounts. To give example, routine health care services that are given to prisoners in jails are accepted

as health expenditures in National Health Accounts. It is a hot discussion in National Health Accounts literature to draw a framework for expenditures and to determine what expenditure for health is and what is not. However, all expenditures that are made for protection and promotion of health, for care and nutrition which aim to protect or promote health are regarded as health expenditures (1).

National Health Accounts put emphasis on the amount of expenditure made for a certain group/groups in an integrated manner. In this sense, there are three main groups which are defined in National Health Accounts (1).

- Institutions which are final financing sources
- Institutions which transfer sources from final financing sources to service providers
- Service providers.

Financing sources used in National Health Accounts are divided in to 6 main groups (1):

- Public sector – Ministries and other administrative units
- Public sector - Other government agencies
- Private sector – Firms and enterprises
- Private sector – Non-governmental organizations
- Households
- Foreign sector

National Health Accounts are similar to National Revenue Incomes with respect to basis and mentality. They are both originated from the same need but they are different in data that they give out and need. These two approaches will be briefly discussed in the following (1).

From a general point of view, National Health Accounts and National Revenue Accounts are very similar. National Revenue Accounts try to give information on all sectors in economics while National Health Accounts deal with health sector only. National Revenue Incomes target to define economic outputs, expenditures and income, and to associate them with each other in a systemic way. Primary objective is to help with the process of identifying public policies (1).

Most concepts and methods developed for National Revenue Accounts were directly adapted to National Health Accounts. Double count of payments or transfers and separation of capital expenditures and current expenditures are examples to this. Similarity between National Health Expenditure estimations and national revenue and production accounts is essential for the consistency of macro-economic analyses. Sources which are exploited for health sector could not be used for another sector. Both parties should be consistent since a primary goal of National Health Accounts is to digitize health expenditures by associating them with total sources (1).

A great many similarities between National Revenue Accounts and National Health Accounts made some authors think that information on health expenditures could be estimated by means of National Revenue Incomes. Some characteristics of health sector, on the other hand, indicate that this approach would not be accurate and it would be necessary to develop a method specific for health sector. Following part will discuss the reasons for National Revenue Accounts' being insufficient to estimate health expenditures on their own (1).

Economic classifications used in National Revenue Accounts may not be satisfactory for health sector analysis. Main principle of National Revenue Accounts is to put similar activities in the same economic classes. Public, production sectors, households and capital are included in this classification. It is assumed that economic change between categories could be found out by this approach and it would be adequate. However, National Health Accounts are rather interested in economic goal – that is promotion of health- than economic nature of the activities conducted. Health care services produce their own unique activities which could be put in all of the classes mentioned above. National Health Accounts, in general, were developed to help with the analysis of productive activities. Thus, classifications and methods in this system may not be always consistent with service-specific sectors such as health sector (1).

No matter what description is used for health expenditures and sector, it would be inadequate to present basic concepts and classes of National Revenue Accounts. These accounts may not provide satisfactory analysis of health sector which consists of services since they were developed for economic growth and thus focus on productive activities and scope of production. For instance, National Revenue Accounts makes state expenditures based on institutional classifications. All expenditures which are made by a certain unit are gathered under the functions of that unit. To give example, medical care services given to the army are grouped under national security while those are given at schools are grouped under

education. Similarly, hospital care services are not separated for in-patient and out-patient care. However, such separation is essential for a detailed analysis of the sector (1).

As for the history of National Health Accounts, the accounts collected by the United States of America go back to 1964. More than 40-year experience of the US, health system of which is rather complicated, provides valuable data especially for developing countries. OECD studies are another respected source of reference for National Health Accounts. OECD method, which will be briefly discussed under Health Accounts System, is applied in many countries today varying from developed to developing countries (1).

Studies on National Health Accounts are relatively new in developing countries. Health services financing was at minimum level in these countries in late 1970s and early 1980s but the economic crises which occurred in the 1980s showed that they had to conduct new studies on limitations of national and international sources and on ways to use these limited sources more effectively. In developing countries, first systemic study on health expenditures was conducted by the World Health Organization (WHO) in late 1960s. Following that period, the World Development Report, which was issued in 1993, commenced the studies on health expenditures in developing countries in leadership of the WHO. As a result of the World Bank's and other international organizations' growing attention in the issue, National Health Accounts were taken to the agenda of other developing countries, too. Latin American countries, Egypt, Sri Lanka and Poland developed National Health Accounts and made in-depth analysis of health expenditures soon (1).

Becoming one of the major industries in the OECD countries, health care services created the need for obtaining data and making analyses on how sources were used and how productivity, equity and effectiveness could be facilitated in exploitation of sources. Therefore, Health Accounts System which was developed in the OECD countries analyzed health expenditures systemically. This chapter aims to give brief information on Health Accounts System which will lay the foundation for National Health Accounts project (1).

Health Accounts System draws a framework to analyze and report health expenditures and financing by tables associated with each other. Principally, Health Accounts System aims at helping decision-makers by answering these three questions (1).

- Where does money come from? (Source of financing)
- Where does money go? (Health care service providers)

- What kind of goods and services are produced and what kind of goods and services are procured?

In Health Accounts System, National Health Accounts are analyzed in compliance with the International Classification for Health Accounts which has three categories:

- Health care services by functions
- Health care services by service providers
- Health care services by financing sources

Main objectives of the OECD's Health Accounts System could be briefly explained as in the following.

- To develop health accounts which are convenient for international comparison by using standard tables
- To identify internationally accepted borders of health care services and main categories based on these
- To separate primary health care service functions from health-specific functions and to put emphasize on inter-sectoral characteristic of health with respect to economic and social policies in various fields
- To form tables that could analyze the flow of financing in health care services
- To draw a framework that would help to report health care services in consistency by the time
- To draw a framework that could be used for health care service analyses from an economic perspective, which is consistent with National Revenue Accounts.

Studies on systemic analysis of health expenditures in Turkey were started in the 1990s and the Ministry of Health's Project Coordination Unit-issued reports on health expenditures presented dimension and distribution of health care services in public and private sector. These reports rather made analysis of data on public sector, which were valuable sources of information at that period. Yet, they were not comprehensive and detailed studies could not be carried out on public and private health expenditures which managed to represent Turkey (1).

The need arouse to make a detailed and internationally accepted methods-based analysis in order to figure out the existing status of health financing reforms in Turkey which made efforts to this end since early 1990s. For this purpose, the Ministry of Health decided that National Health Accounts should be developed in the leadership of the Ministry-affiliated School of Public Health. Then, the School of Public Health, in cooperation with Harvard University School of Public Health and Hacettepe University, School of Health Administration, conducted Turkish National Health Accounts study (1).

The study, with its expected results, commenced a new period in Turkish health sector. Enhancement of National Health Accounts capacity in the country took a very important step to ensure the sustainability of this initiative. Besides, the household survey planned gave out very important findings so as to present dimensions of a major pillar of private sector expenditures for health. The studies aimed to help health decision-makers and planners to make decisions on the basis of scientific evidence (1).

To ensure sustainability, TURKSTAT and School of Public Health (SPH) continue to collaborate in NHA in compliance with the OECD standards according to HAS (Health Accounts System) (1).

5.1.1.2 Total Health Expenditures

Total Health Expenditures (THE) consist of the OECD'S HAS-compatible total current expenditures and investment expenditures on health. Current health expenditures contain all curative, rehabilitative, preventive and public health services as well as the expenditures on medicines, medical supplies and treatment equipment and salaries of health personnel which are necessary for management and public delivery of these services. They do not contain research and development and health education activities, environmental health services and food, hygiene, drinking water and investment costs which are defined in association with health but not direct health care services in fact. Figure 5.2 presents the change in Current Health Expenditures, Total Health Expenditures and GDP by years in 1999-2006 periods. Examining the graphic, it could be seen that changes in health expenditures and in GDP are parallel to each other (1).

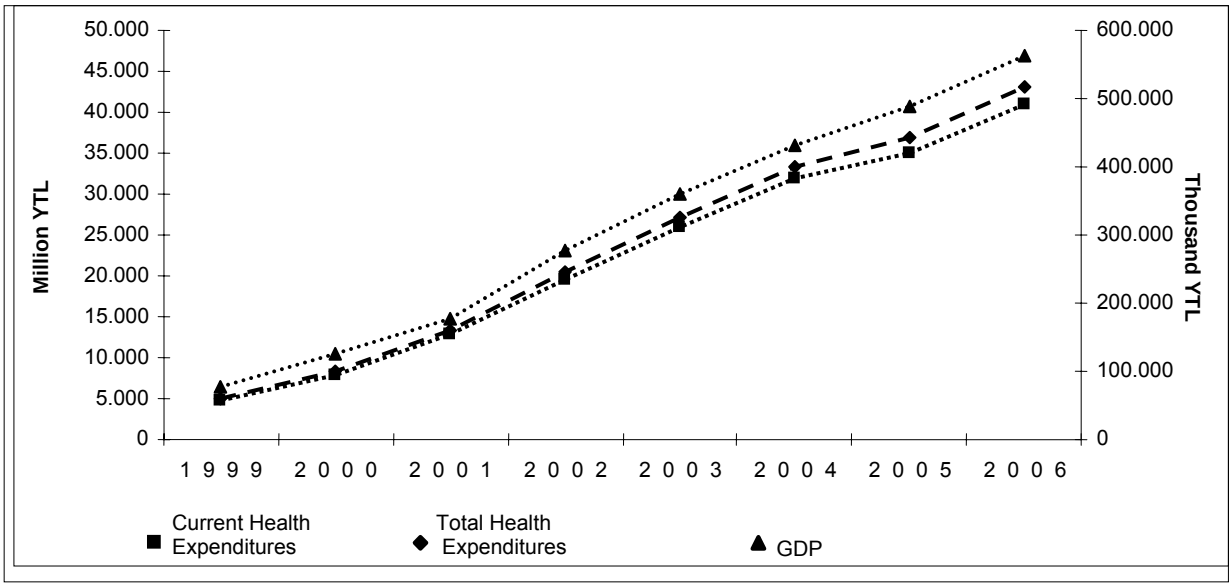

Figure 5-2: Change in Current Health Expenditures, Total Health Expenditures and GDP by Years, 1999-2006, Turkey

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

Central government and Social Security Organizations are the main financing sources of health expenditures as it could be seen in National Health Accounts in 1999-2006 periods. For private sector, on the other hand, household out-of-pocket expenditures are the most outstanding financing sources. While 61.1 % of THE in 1999 was made by the central government and Social Security Organizations, the proportion increased up to 72 % in 2006. While household out-of-pocket expenditures were noted 29.1 % in the same year, it decreased to 19 % in 2006 (See Figure 5.3). While the share of public health expenditures in total health expenditures had about 18.5 % increase, that of private sector health expenditures had a decrease of 29.0 % in 2006 in comparison with 1999. The category of "other" which could be seen in the Figure 5.3 includes private health insurance companies, private funds, non-profit organizations that serve to households and foundations and associations (1).

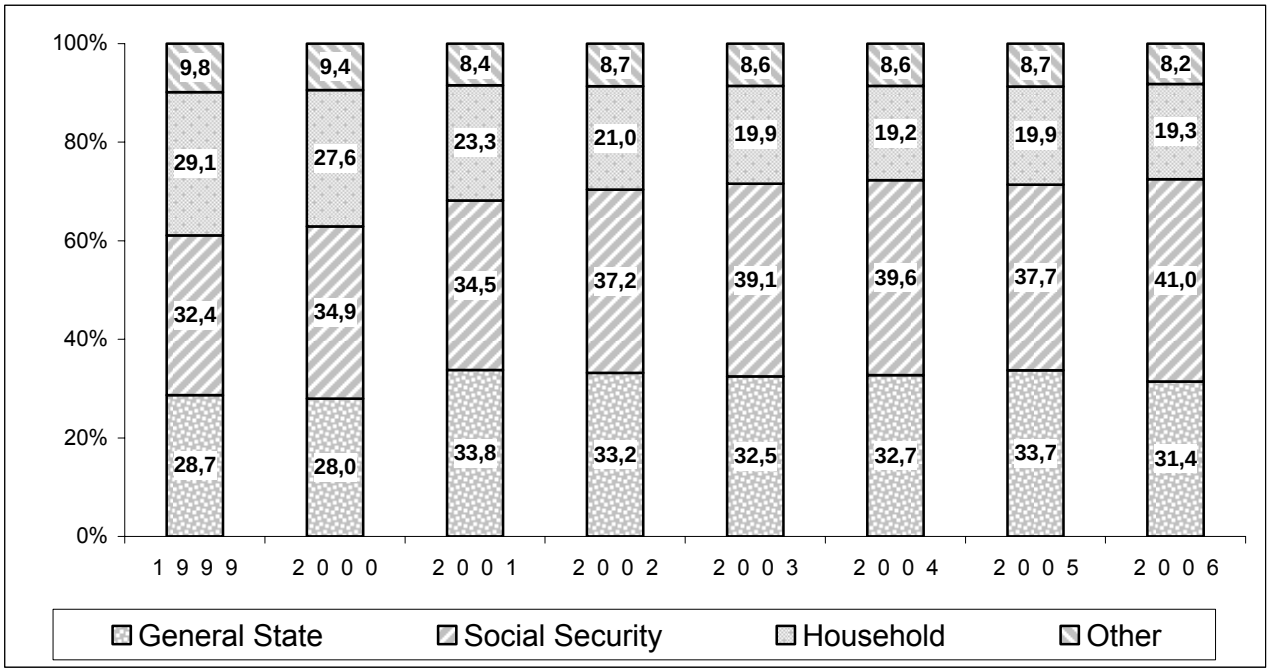

Figure 5-3: Distribution of Total Health Expenditures by Financing Sources (%), 1999-2006, Turkey

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

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The share of Social Security Organizations in THE which was about 32 % in 1999 increased up to 41 % in 2006 which indicated 9 % growth. Table 5.2 indicates the respective change in 1999-2006 periods.

Table 5-2: Share of Social Security Organizations in THE by Years (%), 1999-2006, Turkey

	1999	2000	2001	2002	2003	2004	2005	2006
Share of Social Security Organizations in THE by Years	32,4	34,9	34,5	37,2	39,1	39,6	37,7	41,0

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

Ministry of Health-affiliated School of Public Health concluded National Health Accounts for 1999-2000 years and TURKSTAT concluded National Health Accounts for 2001-2004 years, which proved that some values changed outstandingly. Studies for 2005-2006 years were conducted by the School of Public Health.

Turkish Total Health Expenditures (THE) was 8.248 million YTL in 2000, health expenditure per capita was approximately 122.3 YTL or 195 USD, in other words. It is 463 USD according to the Purchasing Power Parity (PPP). Table 5.3 indicates respective values noted in 1999-2006 period (1, 3, 4, and 5).

Table 5-3: Distribution of Total Health Expenditures by Financing Agencies, 1999–2006, Turkey

	1999	2000	2001	2002	2003	2004	2005	2006
GDP (million YTL)	**77.415**	**124.583**	**178.412**	**277.574**	**359.763**	**430.512**	**487.202**	**576.322**
Current Health Expenditures in GDP (%)	**6,2**	**6,3**	**7,2**	**7,0**	**7,3**	**7,4**	**7,2**	**7,1**
Total Health Expenditures in GDP (%)	**6,4**	**6,6**	**7,5**	**7,4**	**7,6**	**7,7**	**7,6**	**7,5**
Share of Private Sector in Total Health Expenditures (%)	**38,9**	**37,1**	**31,8**	**29,6**	**28,4**	**27,7**	**28,6**	**27,6**
Household Out-of-Pocket Expenditures in Total Health Expenditures (%)	**29,1**	**27,7**	**23,4**	**21,0**	**19,9**	**19,2**	**19,9**	**19,3**
Share of "Other" in Total Health Expenditures (%)	**9,8**	**9,4**	**8,4**	**8,7**	**8,6**	**8,6**	**8,7**	**8,2**
Public Expenditures in Total Health Expenditures (%)	**61,1**	**62,9**	**68,2**	**70,4**	**71,6**	**72,3**	**71,4**	**72,4**
Social Security Expenditures in Total Health Expenditures (%)	**32,4**	**34,9**	**34,5**	**37,2**	**39,1**	**39,6**	**37,7**	**41,0**
Share of Investments in Total Health Expenditures (%)	**4,0**	**4,4**	**3,9**	**4,9**	**4,4**	**4,0**	**5,5**	**4,9**
Current Expenditure per capita(YTL)	**75,5**	**122,3**	**194,6**	**294,8**	**385,5**	**463,0**	**513,6**	**592,0**
Current Expenditure per capita (USD)	**171**	**185**	**155**	**185**	**247**	**310**	**381**	**391**
Total Expenditure per capita (USD)	**178**	**194**	**161**	**194**	**259**	**323**	**381**	**411**

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

While the share of total health expenditures in GDP was 6.4 % in 1999 it increased up to 7.7 % in 2006 (Figure 5.4) (1, 5).

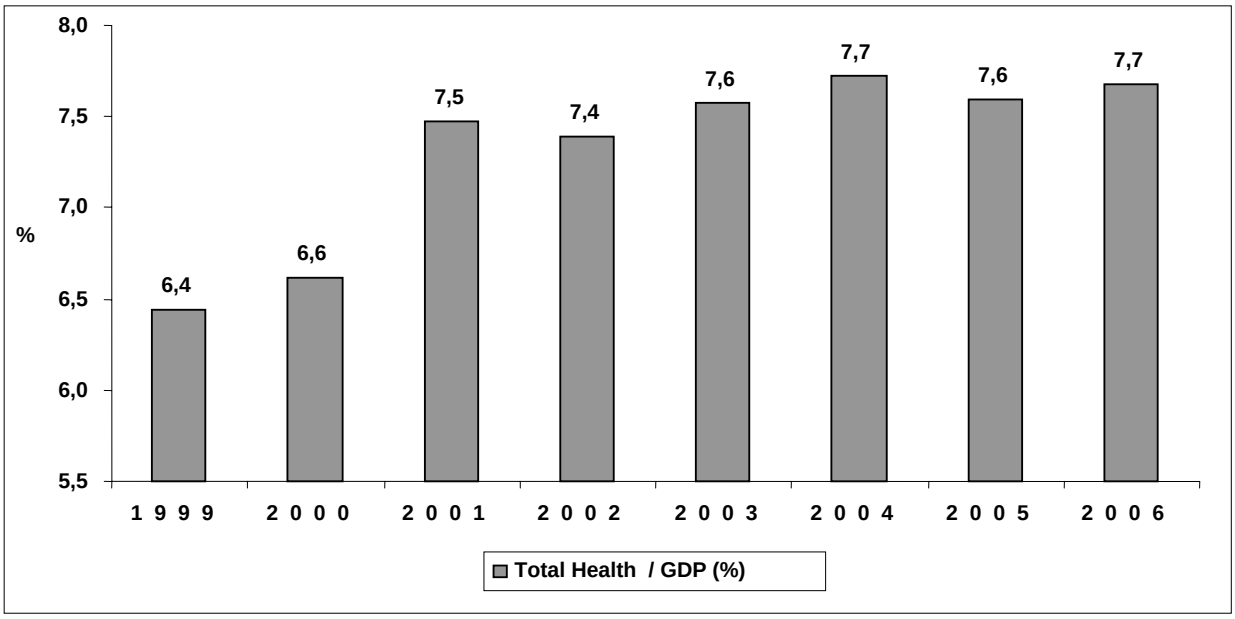

Figure 5-4: Share of Total Health Expenditures in GDP, 1999-2006, Turkey

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

Table 5.4 presents the change in Total Health Expenditures in GDP in 1999-2004 years for Turkey and other OECD countries. OECD average rose from 8 % to 9 % in 2004 while Turkish average had an increase of 1.3 % (See Table 5.4, Figure 5.5) (1, 3, 4, 5).

Table 5-4: Distribution of Total Expenditures Share in GDP by Years, 1999-2004, OECD Countries

	1999	2000	2001	2002	2003	2004
Australia	84	88	89	91	92	96
Austria	96	94	95	95	96	96
Belgium	85	86	87	89	101	-
Canada	90	89	94	97	99	99
Czech Republic	67	67	70	72	75	73
Denmark	85	83	86	88	89	89
Finland	69	67	69	72	74	75
France	92	92	93	100	104	105
Germany	103	103	104	106	108	106
Greece	96	99	104	103	105	100
Hungary	73	71	73	77	83	80
Iceland	93	92	93	100	105	102
Ireland	62	63	68	72	72	71
Italy	78	81	82	83	84	87
Japan	74	76	78	79	80	-
Korea	47	48	54	53	55	56
Luxemburg	58	58	64	68	77	80
Mexico	56	56	60	62	63	65
Netherlands	80	79	83	89	91	92
New Zealand	76	77	78	82	80	84
Norway	94	85	89	99	101	97
Poland	59	57	60	66	65	65
Portugal	87	94	93	95	98	101
Slovakia	58	55	55	56	59	-
Spain	73	72	72	73	79	81
Sweden	84	84	87	91	93	91
Switzerland	105	104	109	111	115	116
Turkey	*64*	*66*	*75*	*74*	*76*	*77*
England	71	73	75	77	78	81
USA	131	133	140	147	152	153
OECD Average	*80*	*80*	*83*	*86*	*88*	*90*

Source: OECD Health Data, 2006

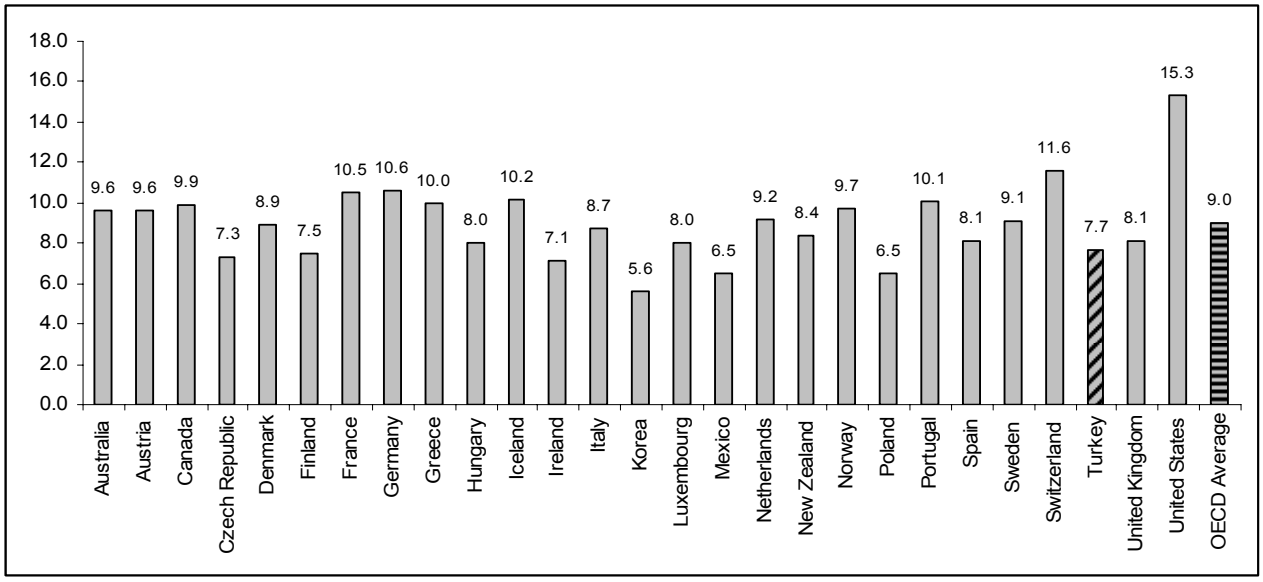

Figure 5-5: OECD Countries' Total Health Expenditures in GDP (%), 2004

Source: OECD Health Data, 2006

Considering per capita total health expenditures in the OECD countries, Turkey occupies the last rank with 580 PPP USD. The USA is the country with the largest amount of expenditure per capita. The average of total health expenditures per capita is 2.619 PPP USD. Turkey, with 580 PPP USD, is far beyond the average (Figure 5.6) (6).

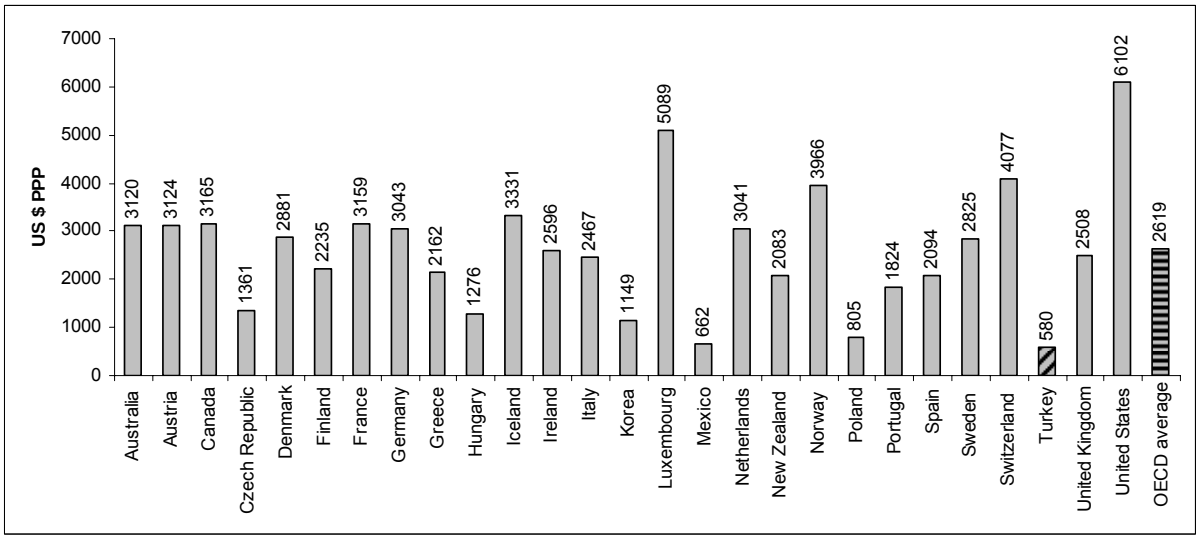

Figure 5-6: **Comparison of Total Health Expenditures per person in the OECD Countries with Purchasing Power Parity, 2004 (PPP USD)**
Source: OECD Health Data, 2006

5.1.2 Public Health Expenditures

Public health expenditures are the expenditures which are financed by the Ministry of Health, General Directorate of Borders and Maritinal Health, universities, Social Aid and Solidarity Encouragement Fund, other ministries, public agencies, local administrations, and social security agencies that are the SIO, RF and Bag-Kur. Private health expenditures are the expenditures which are financed by out-of-pocket payments, medicines and treatment costs that are paid by individuals and households, and individuals and companies that pay premiums to private insurance systems. Table 5.5 presents public health expenditures according to the outcomes of the National Health Accounts Study which was conducted for 1999-2006 years (1).

Table 5-5: Health Expenditures in Public Sector, Turkey 1999-2006

	1999	2000	2001	2002	2003	2004	2005	2006
CPHE (million YTL)	2871	4865	8584	13448	18322	22682	24935	29150
CPEH/GDP (%)	3,7	3,9	4,8	4,8	5,1	5,3	5,0	5,1
PIE (million YTL)	176	325	513	997	1288	1337	2081	2134
PIE/GDP (%)	0,2	0,3	0,3	0,4	0,3	0,3	0,4	0,4
TPHE (million YTL)	3047	5190	9097	14445	19510	24019	26426	31284
TPHE/GDP (%)	3,9	4,2	5,1	5,2	5,4	5,6	5,4	5,4
STATE BUDGET (million YTL)	28185	46705	81759	115682	140455	140121	146018	175304
TPHE/ STATE BUDGET (%)	10,9	11,1	11,3	12,5	13,9	17,0	18,1	17,8

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

Acronyms: CPHE: current public health expenditure, PIE: public investment expenditure, TPHE: Total Public Health Expenditure, GDP: gross domestic product

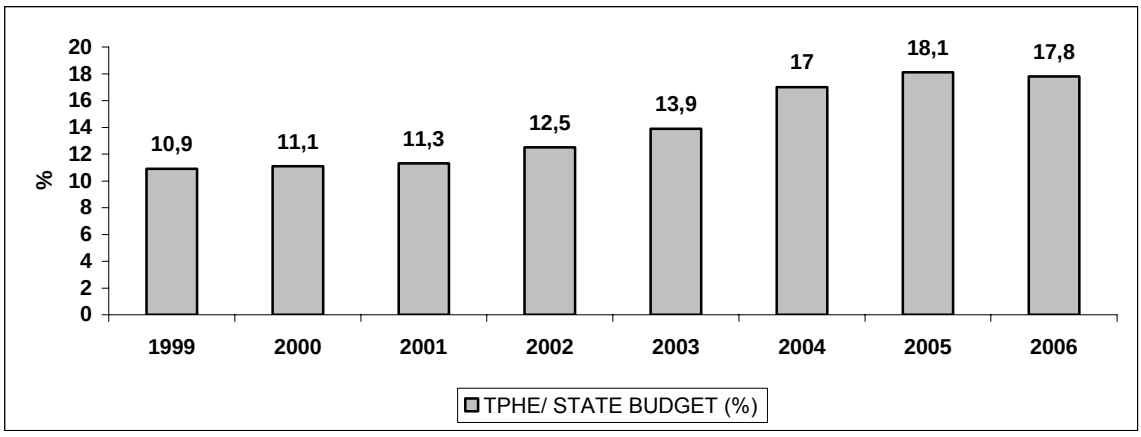

Figure 5-7: Share of Total Health Expenditures in State Budget by Years (%), 1999-2006, Turkey

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004

Examining the share of Total Public Health Expenditures in government's budget, it increased from 10.9 % in 1999 to 17.8 % in 2006 which referred to an increase of 7 % (Figure 5.7) (3, 4, and 5).

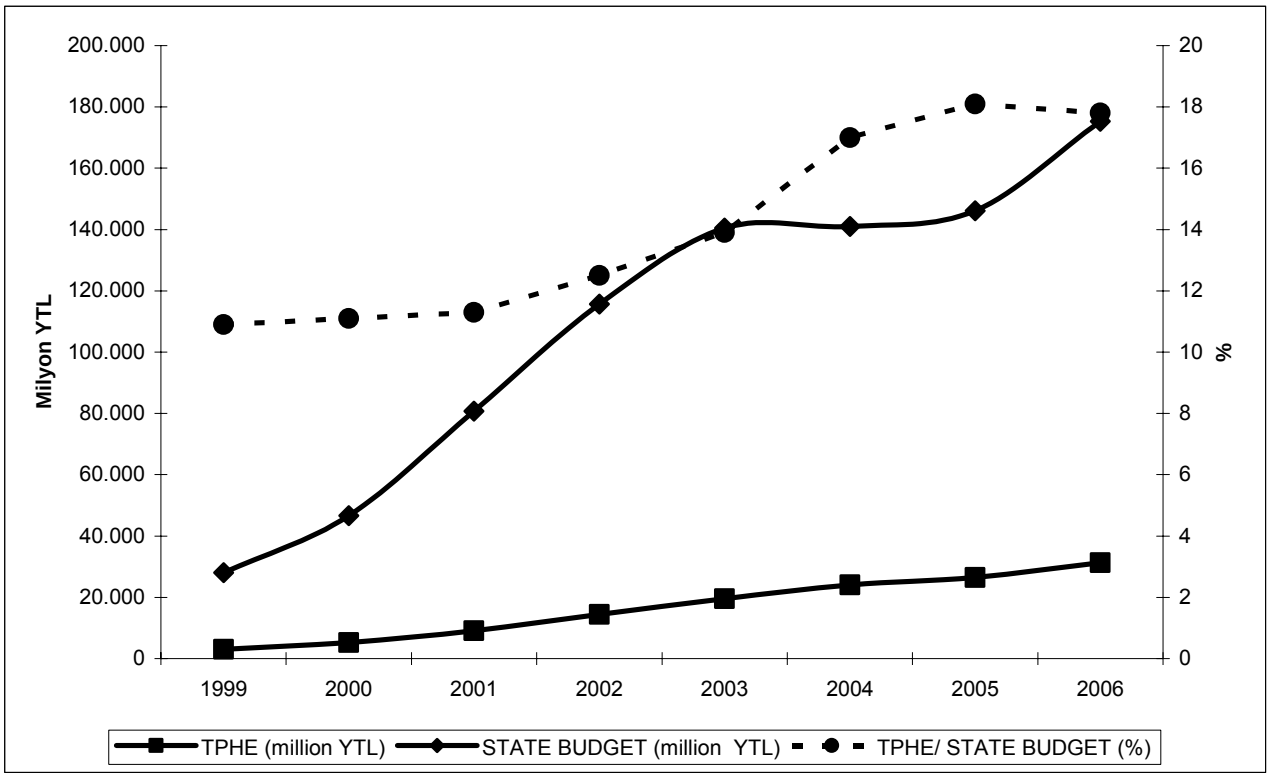

Figure 5-8: Change in Total Public Expenditures on Health, State Budget and Share of Total Public Expenditures on Health in State Budget by Years, 1999-2006, Turkey
Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

As it could be seen in the Figure 5.8, the share of Total Public Health Expenditures in government's budget was in a horizontal line in 1999-2002 years but had an increasing trend in post-2003 period. A rather outstanding increase was noted in the government's budget after 2000, too (1, 3, 4, and 5).

Thinking public sector health expenditure per capita (1, 3, 4, 5);

- Current health expenditure was noted 338 YTL in 2005 (251 USD-385 PPP USD) and total health expenditures were noted 367 YTL (272 USD-417 PPP USD).
- Current health expenditure was noted 399 YTL in 2006 (277 USD- 434 PPP USD) and total health expenditures were noted 429 YTL (298 USD- 465 PPP USD).

If the share of public sector health expenditures in GDP is examined, it would be seen that the share increased from 3.9 % in 1999 to 5.4 % in 2006. To compare with the ODCE countries, Turkey made less public expenditures than the OECD average which was noted 6.4 % in 2004. Iceland is the country with the highest amount of public expenditures (8.5 %) (Table 5.6, 5.7 and Figure 5.9) (1, 3, 4, 5).

Table 5-6: Share of Total Public Health Expenditures in GDP by Years (%), 1999-2006, Turkey

	1999	2000	2001	2002	2003	2004	2005	2006
Share of TPEH in GDP %	*3,9*	*4,2*	5,1	5,2	5,4	5,6	5,4	5,4

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

In the OECD Health Data 2006, 2004 Turkey data was seen as 5.5 in the Table 5.7, however, the figure was changed to 5.6 as a result of the revisions as in the Table 5.6, and Turkey conveyed that piece of information to the OECD in order for the accurate figure to be published in the OECD Health Data 2007 (6).

Table 5-7: Distribution of Total Public Health Expenditures in GDP by Years (%), 1999-2004, OECD Countries

	1999	2000	2001	2002	2003	2004
Australia	5,8	6,0	6,0	6,2	6,2	6,5
Austria	6,7	6,6	6,6	6,7	6,8	6,8
Belgium	6,5	6,5	6,6	6,7	7,2	-
Canada	6,3	6,3	6,6	6,7	6,9	6,9
Czech Republic	6,0	6,1	6,3	6,4	6,7	6,5
Denmark	7,0	6,8	7,1	7,3	-	-
Finland	5,2	5,0	5,2	5,5	5,7	5,7
France	7,0	7,0	7,1	7,8	8,2	8,3
Germany	8,2	8,2	8,3	8,4	8,5	8,1
Greece	5,2	5,2	5,8	5,6	5,6	5,3
Hungary	5,3	5,0	5,0	5,4	6,0	5,8
Iceland	7,8	7,6	7,7	8,3	8,8	8,5
Ireland	4,5	4,6	5,1	5,4	5,6	5,7
Italy	5,5	5,8	6,1	6,2	6,2	6,5
Japan	6,0	6,1	6,4	6,4	6,5	-
Korea	2,2	2,2	2,8	2,7	2,8	2,9
Luxemburg	5,2	5,2	5,6	6,1	7,0	7,3
Mexico	2,7	2,6	2,7	2,7	2,8	3,0
Netherlands	5,0	5,0	5,2	5,5	5,8	5,7
New Zealand	5,9	6,0	6,0	6,4	6,3	6,5
Norway	7,7	7,0	7,4	8,2	8,5	8,1
Poland	4,2	4,0	4,3	4,7	4,5	4,5
Portugal	5,9	6,8	6,7	6,9	7,2	7,4
Slovakia	5,2	4,9	4,9	5,0	5,2	-
Spain	5,3	5,2	5,2	5,2	5,5	5,7
Sweden	7,2	7,1	7,4	7,8	7,9	7,7
Switzerland	5,8	5,8	6,2	6,5	6,7	6,8
Turkey	3,9	4,2	5,1	5,2	5,4	5,5
England	5,8	5,9	6,2	6,4	6,7	7,0
USA	5,7	5,8	6,3	6,6	6,8	6,9
OECD Average	5,7	5,7	5,9	6,2	6,3	6,4

Source: OECD Health Data, 2006

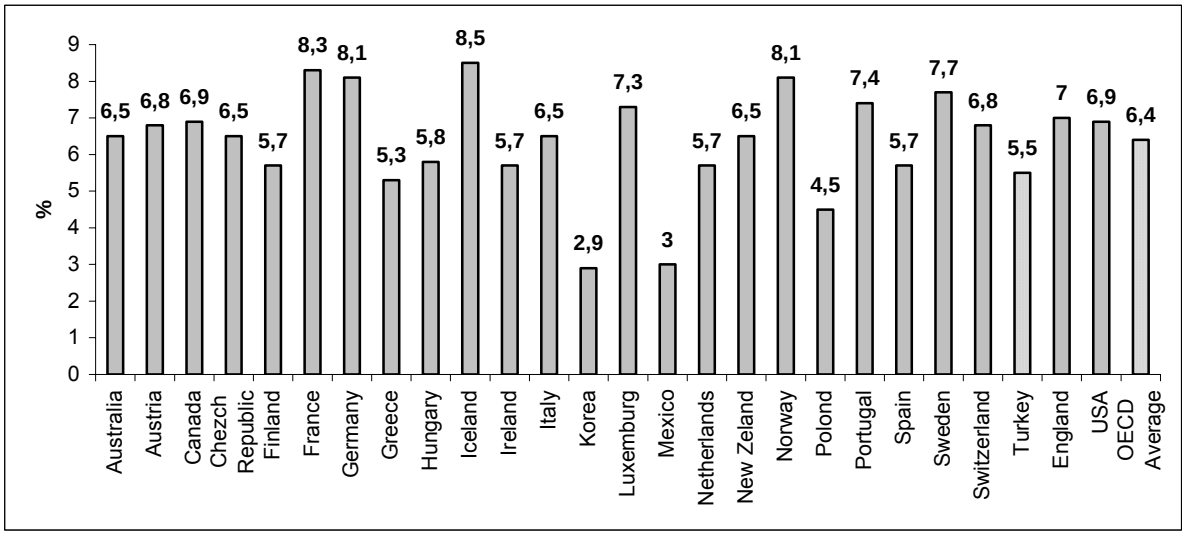

Figure 5-9: Share of Public Health Expenditures in GDP of the OECD Countries (%), 2004
Source: OECD Health Data, 2006

5.1.2.1 Ministry of Health Expenditures

The share of the MoH health expenditures in total health expenditures fluctuated in years. It was 16.2 % in 1999 and 19.8 % in 2006. At the same period, the proportion of the MoH expenditures in the consolidated budget increased from 2.9 % to 4.9 %. It increased from 1 % to 1.5 % in the Gross National Domestic Product, as well.

Table 5-8: Ministry of Health, Public Health Expenditure of Health Budget, Total Expenditures for Health, Consolidated Budget and Distribution by GDP, 1999-2006, Turkey

THOUSAND YTL	1999	2000	2001	2002	2003	2004	2005	2006
Ministry of Health Budget (Expenditure) (Including the Green Card)	805.246	1.139.513	1.821.581	3.038.946	3.674.262	4.461.250	6.769.154	8.535.254
Public Health Expenditure	26,4	22,0	20,0	21,0	18,8	18,6	25,6	27,3
	3.047.000	5.190.000	9.097.000	14.445.000	19.510.000	24.019.000	26.426.000	31.284.000
Total Health Expenditures	16,2	13,8	13,7	14,8	13,5	13,4	18,3	19,8
	4.985.000	8.248.000	13.337.000	20.524.000	27.259.000	33.237.000	37.013.000	43.197.000
Consolidated Budget	2,9	2,4	2,3	2,6	2,6	3,2	4,6	4,9
	28.084.685	46.705.028	80.579.065	115.682.350	140.454.842	141.020.860	146.097.573	175.303.995
GDP	1,0	0,9	1,0	1,1	1,0	1,0	1,4	1,5
	77.415.000	124.583.000	178.412.000	277.574.000	359.763.000	430.511.000	487.202.000	576.322.231

Source: School of Public Health, 2007

5.1.2.2 Social Security Organizations

SIO, Bag-Kur, Green Card, RF and actively working government employees are the main pillars of the social security system in Turkey (2).

SIO (Social Insurance Organization)

SIO provides private sector employees and public sector workers with insurance. SIO services are financed by the premiums that are paid by employees and employers. However, they might be also financed by the government's budget in case of deficits. Though both pension and health insurance premiums are collected by the single system, health premiums and expenditures are indicated separately in the SIO's accounts. SIO insurees make use of the SIO services mainly for access to health care services (2).

SIO insurance has two types: long term and short term. Short term insurance covers job accidents, occupational diseases, birth and illness while long term insurance covers disability, old age and death (benefits for dependants of the dead). All of them will be explained in the following parts (2).

a) Short Term

Job Accidents and occupational diseases: A job accident is a case which gives physical or psychological harm to an insuree during or after its occurrence. Occupational disease is an illness, disability or a psychological problem which is originated from the work conditions that are required to perform that job and which gives temporary or permanent harm to insuree. There is no time limit for premiums so as to give financial aid to an insuree who has had harm due to a job accident or occupational disease. Premiums vary between 1.5-7 % depending on the category of work place and danger of job. Premiums are paid by only employers (2).

Birth (Labor): Birth insurance also covers an insured woman and uninsured wife of an insured man. Birth insurance also applies to legal abortions and stillborn. Employers should have paid insurance premium which is equivalent to 1 % of income or insurance premium for minimum 90 days (for male employees) or 120 days (for female employees) in a year that is prior to birth so that an insuree benefits from birth premium and other advantages (2).

Disease: It is valid for all kinds of diseases except for the cases which are included in job accidents and occupational diseases. In addition to the insuree, his/her spouse, dependent children, those who earn income from disability, retirees and their spouses, children and parents are also covered by insurance in different conditions than disease insurance. Insurees should have paid for minimum 90-day disease insurance premiums in one year prior to the onset of disease so that they benefit from some advantages such as "Health Aid", "Standards-compatible Provision, Installment, Repair and Renewal of Prosthesis SIO Devices and Equipment", and "Seeking Treatment and Examination Opportunities Abroad". If an insuree

paid premiums for minimum 120 work days in a year prior to the onset of disease, the insuree's spouse and children could also take advantage of disease insurance (2).

In general, disease insurance premiums correspond to 11 % of income. 6 % is paid by employer and 5 % by employee. For apprentices, it is 4 % (Article 3-II-B of the Law no. 506) and it is paid by apprentice and employer equally (2).

b) Long Term

Benefits in case of disability, old age and death to the deed's dependents: Disability, old age and death premiums are 20 % of income. 55 % is paid by employer and 45 % by employee. It is 22 % for mine workers (2).

Total burden average of the SIO premiums, including employer's and employee's premiums in addition to the contribution which is made to the unemployment fund, is about 41 %. Employees contribute 40 % while employers contribute about 55 %. Remaining 5 % is funded by the government's budget (2).

Three groups are covered by the SIO. First group is subject to the Law no. 506 and there are three systems eligible for them: compulsory insurance, optional insurance and collective insurance. People who are employed by one or more than one employers with a service contract are "compulsorily insured". People who work according to the Law no. 506 are "optionally insured" until their work contract is terminated. SIO might annul its contract with employers, employees, associations, foundations, commercial unions and other organizations. Thus, uninsured people, in parallel with the general provisions to be approved by the Ministry of Labor and Social Security, might be covered by various insurance groups such as job accidents , occupational diseases, illness, birth, disability, old age and birth insurance (2).

Apprentices are included in the second group which is subject to the Law no. 3308 and 506 (Article 3-II-B). according to the principle of apprenticeship contract, an apprentice is a person job skills and experience of whom are promoted in a certain field. As required by this definition, all apprentices are insured against job accidents, occupational diseases and other illnesses in accordance with the Law no. 506. As mentioned in the Law no. 1475, insurance premium is 4 % of 50 % of the fixed minimum wage depending on the age of the insuree (2).

Third group, which is subject to the Law no. 2925, is comprised of people who are not covered by any social security law and who do not receive disability, old age or service disability aid. These people join the SIO insurance system on their own will (2).

Those who are except for optional and compulsory insurance - also including their spouses and children – are insured by the SIO health insurance (2).

Bag- Kur (Self-Employed People's Retirement Fund)

There are two groups which need to be insured with Bag-Kur. First group consists of artisans, craftsmen, tradesmen, businessmen and the second group consists of self-employed people and farmers. All these people have to be insured according to the Law no. 1479. Accordingly, they make use of long-term insurance benefits in case of old age, disability, death and illness. Members of the second group are those who are not covered by any insurance scheme and agricultural workers who do not work under directions of an employer by a contract. They are insured in accordance with the Law no. 2926. Members of the second group, just like those in the first group, take advantage of various insurance aids and benefits. Both groups are "insured compulsorily" (2).

Housewives who do not work outside, wives of Turkish men working abroad and foreign people living in Turkey could also benefit from "optional insurance" of Bag-Kur (2).

Bag-Kur has two insurance systems that is long-term and short-term. Short-term covers health insurance while long-term covers disability, elderlyhood and death insurance. For both systems, monthly premium is about 40 % of monthly income. Half of this amount is saved for short-term and remaining is saved for long-term insurance. People who are subject to the provisions of the Law no. 1479 pay premium every month while others who are subject to the provisions of the Law no. 2926 pay premium in every four months (2).

All insurees and their dependents are covered by Bag-Kur health insurance. In order to benefit from health insurance, an insuree should pay premiums for minimum 8 month, should not have a previous insurance registry and should have not paid long-term insurance premiums. Those who have the qualifications that are required for Bag-Kur health insurance and already benefit from other social security systems can not become a member to Bag-Kur (2).

All insurees benefit from all kind of out-patient and in-patient treatment aids. Bag-Kur does not have its own health care facilities but procures these services from other facilities on contract basis. At this point, costs of services are determined independently by health care facilities which offer those services (2).

Government Employees' Retirement Fund (RF)

RF, the Government Employees Retirement Fund, was established in 1950 by the Law No 5434 to provide social insurance for public personnel and military personnel in case of retirement and disability, and for their widows and orphans in case of their death. RF is mainly financed by cuts from salaries of actively working personnel. Differently than SIO, RF does not have its own service providing facilities but procures service from public and private sector providers. The gap between income and expenditures is funded by the central government sources.

According to the Provisional Article 139 of the Law no. 5434, people who receive pension, ordinary and work disability benefit, their dependents, family members and those who receive orphan's and widow's pension could be medically examined and treated based on the respective laws ands regulations until they are taken under the cover of Universal Health Insurance. RF, which is the oldest of three social security agencies in Turkey, is liable not only to provide public personnel with social security but also to undertake some of the state's social aid tasks (2).

5.1.2.3 Green Card

"Green Card" program was developed for those who can not afford to buy health care services or who are not covered by any insurance system. By the Law no. 3816 which was issued in 1991 and enacted in 1992, Green Card beneficiaries are provided with free-of-charge health care services. Besides, the Law no. 5222 which was adopted on 14 July 2004 in the Parliament issued on 21 July 2004 in the Official Gazette removed the obstacles on the Green Card beneficiaries' access to out-patient care services as required by the amendment made to the Law on "Paying Treatment Costs of the Poor by the Green Card" no. 3186. As a result of such arrangements, the Green Card beneficiaries could receive in-patient care services in Turkey and costs of examination, diagnosis, wound dressing and tooth extraction are paid by the general budget (2).

Green Card seems to be a temporary solution which might be helpful until the universal health insurance is put into implementation (2).

In order to obtain the Green Card, the applicant should be a Turkish citizen, should not be covered by any other insurance scheme and should have less income (excluding taxes and social security premiums) than the fixed minimum wage which is identified by the Law no. 1475. Green Card does not meet treatment costs of people having a passive status like army personnel (soldiers) and university students. On the other hand, people who could receive

free health care services as required by a certain law could make use of the program even if they do not apply in special circumstances. According to the Law no. 3816, personal rights of people are guaranteed by the law. In accordance with the Law no. 3294, the government finances health care services that are given to those who can not afford such services or who can not get the Green Card (2).

Provincial Administration Council handles and concludes the Green Card applications. The Council, considering the applicant's level of income, resolves if the application is convenient and makes recommendations to the Provincial Governor who will award the applicant with the Green Card finally. Today, approximately 12.5 million Turkish people do benefit from the Green Card implementation (as of late 2006). Bilecik, Bolu, Karabük, Yalova and Bayburt are some provinces with the smallest number of the Green Card beneficiaries. Most Green Card beneficiaries, on the other hand, live in the provinces of Diyarbakır, Van, Şanlıurfa, İstanbul and Adana (as of late 2006) (2).

Green Card program is implemented by the Ministry of Health. Expenditures which occur due to treatment are met in accordance with the Ministry of Health-issued regulation. Green Card program is financed by general taxes and the Ministry of Health. Health expenditures of the Green Card beneficiaries will be transferred from the Ministry of Health budget until 2008. However, the UHI will come into effect in 2008 and treatment costs of the Green Card beneficiaries will be governed by the Social Security Organization, then (2).

End-year expenditures were higher than the income obtained by the Green Card implementation and extreme deviation was noted between the figures which were first identified in the last few years and the figures which were obtained at the end of the year. It is mainly due to the fact that preliminary projections were inconsistent with realities and thus underestimated. Higher Health Coordination Council, according to the Article 9 of the Law no. 3816, makes estimations based on the number of Green Card beneficiaries and estimated annual health expenditures average. Although there is an increase in the number of the Green Card beneficiaries and amount of expenditures, that increase is not reflected on the estimations. The estimations made for the year 2002 are lower than those made for the year 2001 (2).

By the Universal Health Insurance, entire population will be covered and asked to pay certain amount of premium. Premiums of the Green Card beneficiaries, however, will be paid by the government. Upon assessment of people's income, authorities will identify who will pay premiums and whose premiums will be paid by the government budget. To this end, it

will be detected if monthly income per capita in a family is less than one-third of the fixed minimum wage. Premiums will be paid by the government for families which have lower income and family members will benefit from health care services given under the Universal Health Insurance (2).

5.1.3 Private Sector Expenditures for Health

Private sector expenditures for health refer to the expenditures that are made by households, private insurance companies, non-profit institutions and individuals to procure health care services.

Private health expenditures have an important share in total health expenditures. In 1999-2006 periods, private sector's share in total current health expenditures was gradually decreased. The share of private health expenditures was 38.1 % in 1999 and 27.1 % in 2006. out-of-pocket health expenditures of households constitute the biggest part of private sector health expenditures. The share of out-of-pocket expenditures in private sector expenditures has decreased since 1999. Out-of-pocket expenditures of household in private sector expenditures were found to be 74.8 % in 1999 and 69.9 % in 2006. While the share of household out-of-pocket expenditures was 29.1 % in 1999, it declined to 19.3 % in 2006 (1, 3, 4, and 5).

Table 5-9: Private Sector Total Health Expenditures (million YTL), 1999-2006, Turkey

	TOTAL CURRENT HEATLH EXPENDITURE	GENERAL : STATE	PRIVATE SECTOR	HOUSEHOLD OUT-OF-POCKET EXPENDITURE	OTHER PRIVATE
1999	4985	3047	1938	1449	488
	100,0	*61,1*	*38,9*	*29,1*	*9,8*
2000	8248	5190	3058	2280	778
	100,0	*62,9*	*37,1*	*27,6*	*9,4*
2001	13337	9097	4240	3114	1126
	100,0	*68,2*	*31,8*	*23,3*	*8,4*
2002	20524	14445	6079	4300	1779
	100,0	*70,4*	*29,6*	*21,0*	*8,7*
2003	27259	19510	7749	5414	2335
	100,0	*71,6*	*28,4*	*19,9*	*8,6*
2004	33237	24019	9218	6372	2846
	100,0	*72,3*	*27,7*	*19,2*	*8,6*
2005	37013	26426	10587	7354	3233
	100,0	*71,4*	*28,6*	*19,9*	*8,7*
2006	43197	31284	11913	8357	3556
	100,0	*72,4*	*27,6*	*19,3*	*8,2*

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

Table 5-10: Share of Private Sector Current Health Expenditures in GDP by Years (%), 1999-2006, Turkey

	1999	2000	2001	2002	2003	2004	2005	2006
PRIVATE SECTOR CURRENT EXPENDITURES /GDP %	2,5	2,4	2,4	2,2	2,2	2,1	2,2	2,1

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

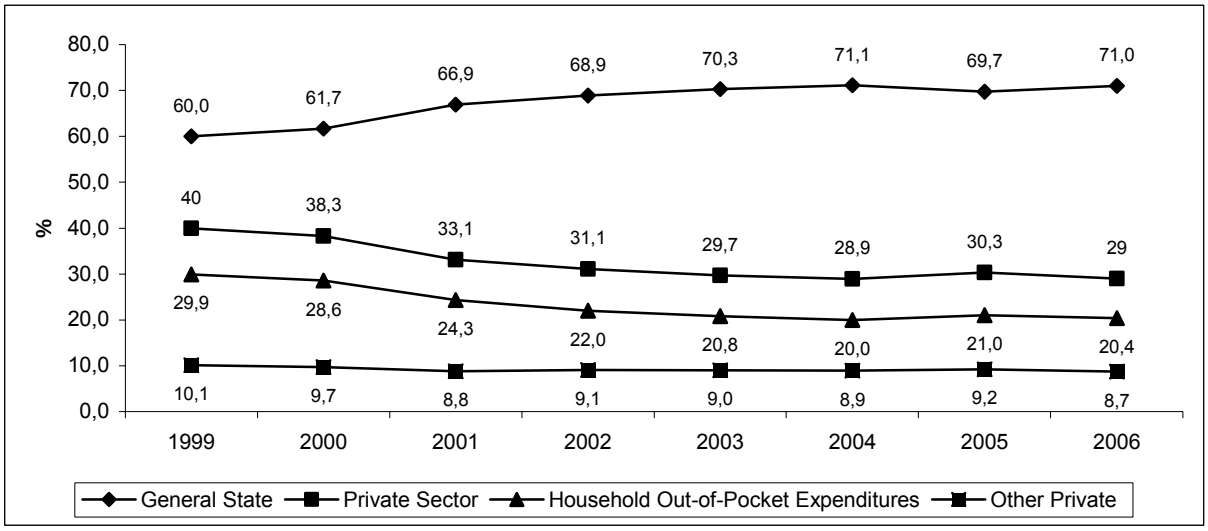

Figure 5-10: Share of Private Health Expenditures in Current Health Expenditures, 1999-2006, Turkey

Source: National Health Accounts Study, School of Public Health, 1999-2000
National Health Accounts Study, TURKSTAT-SPH, 2001-2004
National Health Accounts Study, SPH, 2005-2006

With a share of 2.1 %, Turkey makes less expenditure than the OECD average when compared to the international data in private sector. Private sector has an average of health expenditures that is 2.6 %. However, it would be seen that the United States of America is quite different than other countries and thus increases the average as in Figure 5.11. Health expenditures of the private sector in the OECD countries have an average of 2.4 % if calculated without including the United States (6).

Table 5-11: Distribution of Private Sector Current Health Expenditures Share in GDP by Years, (%), 1999-2004, OECD Countries

	1999	2000	2001	2002	2003	2004
Australia	2,5	2,7	2,9	3,0	3,0	3,1
Austria	2,9	2,8	2,9	2,8	2,9	2,8
Belgium	2,1	2,1	2,0	2,2	2,9	-
Canada	2,7	2,7	2,8	3,0	2,9	3,0
Czech Republic	0,6	0,6	0,7	0,7	0,8	0,8
Denmark	1,5	1,5	1,5	1,5	-	-
Finland	1,7	1,7	1,7	1,7	1,8	1,8
France	2,2	2,2	2,2	2,2	2,3	2,3
Germany	2,1	2,1	2,2	2,2	2,3	2,4
Greece	4,5	4,7	4,6	4,7	4,8	4,7
Hungary	2,0	2,1	2,3	2,3	2,3	2,3
Iceland	1,5	1,6	1,6	1,7	1,7	1,7
Ireland	1,7	1,7	1,7	1,8	1,6	1,5
Italy	2,3	2,3	2,1	2,2	2,2	2,2
Japan	1,4	1,4	1,4	1,5	1,5	-
Korea	2,6	2,6	2,6	2,6	2,7	2,7
Luxemburg	0,6	0,6	0,6	0,7	0,7	0,8
Mexico	2,9	3	3,3	3,5	3,5	3,5
Netherlands	3,0	2,9	3,1	3,3	3,4	3,5
New Zealand	1,7	1,7	1,8	1,8	1,7	1,9
Norway	1,6	1,5	1,5	1,6	1,6	1,6
Poland	1,7	1,7	1,7	1,9	1,9	2,0
Portugal	2,8	2,6	2,6	2,6	2,6	2,7
Slovakia	0,6	0,6	0,6	0,6	0,7	-
Spain	2,0	2,0	2,1	2,1	2,3	2,4
Sweden	1,2	1,3	1,3	1,4	1,4	1,4
Switzerland	4,7	4,6	4,7	4,7	4,8	4,8
Turkey	*2,5*	*2,5*	*2,4*	*2,2*	*2,2*	*2,1*
England	1,4	1,4	1,3	1,3	1,1	1,1
USA	7,4	7,4	7,7	8,1	8,4	8,5
OECD Average	*2,3*	*2,3*	*2,3*	*2,4*	*2,5*	*2,6*

Source: OECD Health Data, 2006

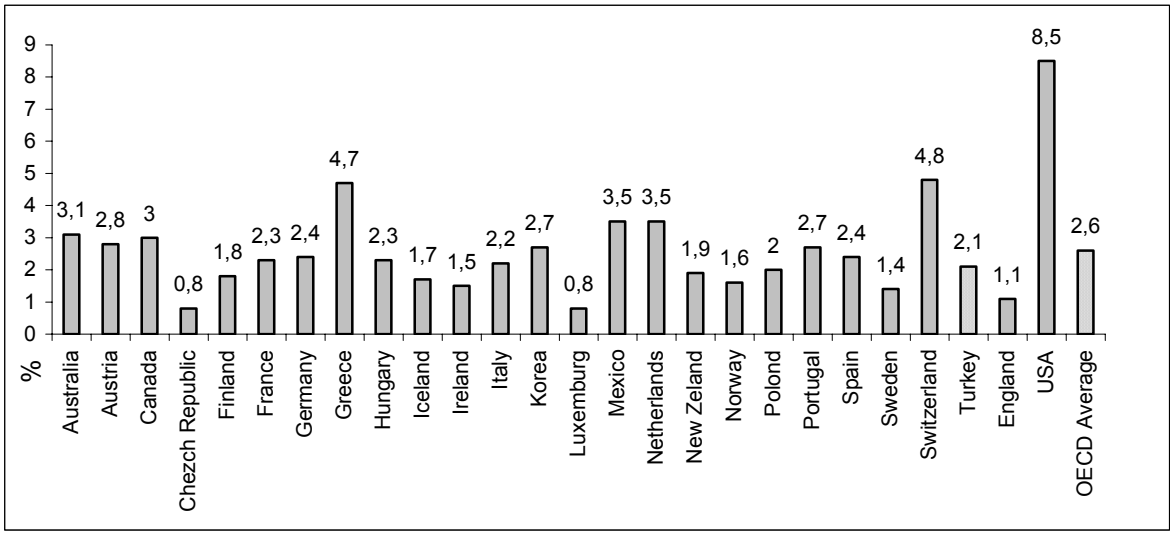

Figure 5-11: Proportion of Private Sector Current Health Expenditures in the OECD Countries to GDP (%), 2004
Source: OECD Health Data, 2006

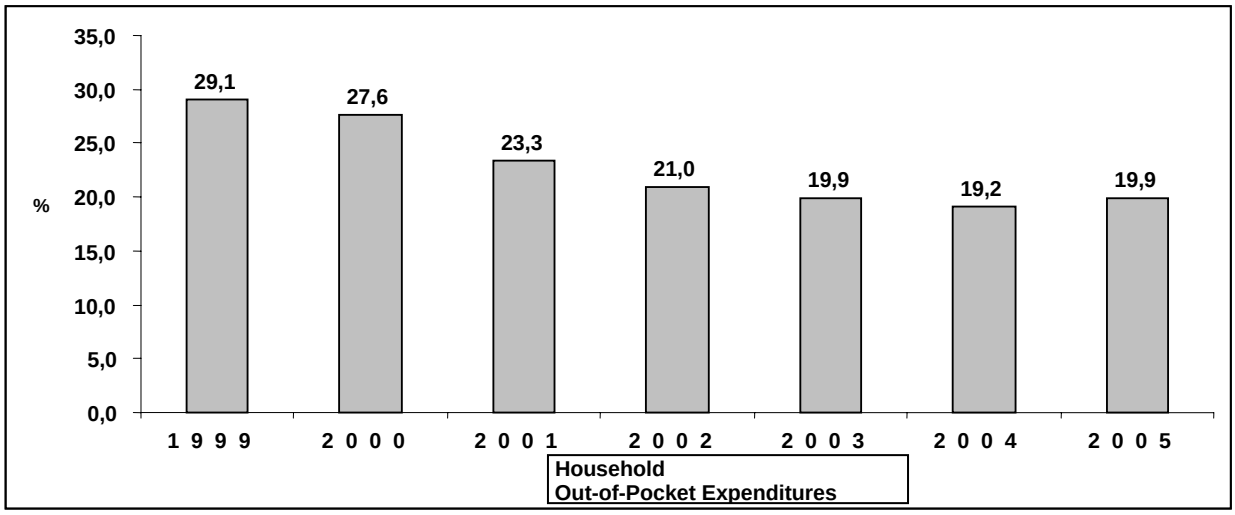

Figure 5-12: Share of Household Out-of-Pocket Health Expenditures in Total Health Expenditures (%) (%), 1999-2005, Turkey

Source: OECD Health Data, 2006

As seen in the Figure 5.12, household out-of-pocket expenditures was 29 % of Total Health Expenditures in 1999 and 19.9 % in 2005.

As for household out-of-pocket health expenditures among the OECD countries, Turkey has 19.3 % expenditure which is close to the OECD average. Of all the OECD countries, Mexico occupies the first rank with 51 %. Luxemburg makes the lowest expenditure of 7 %.

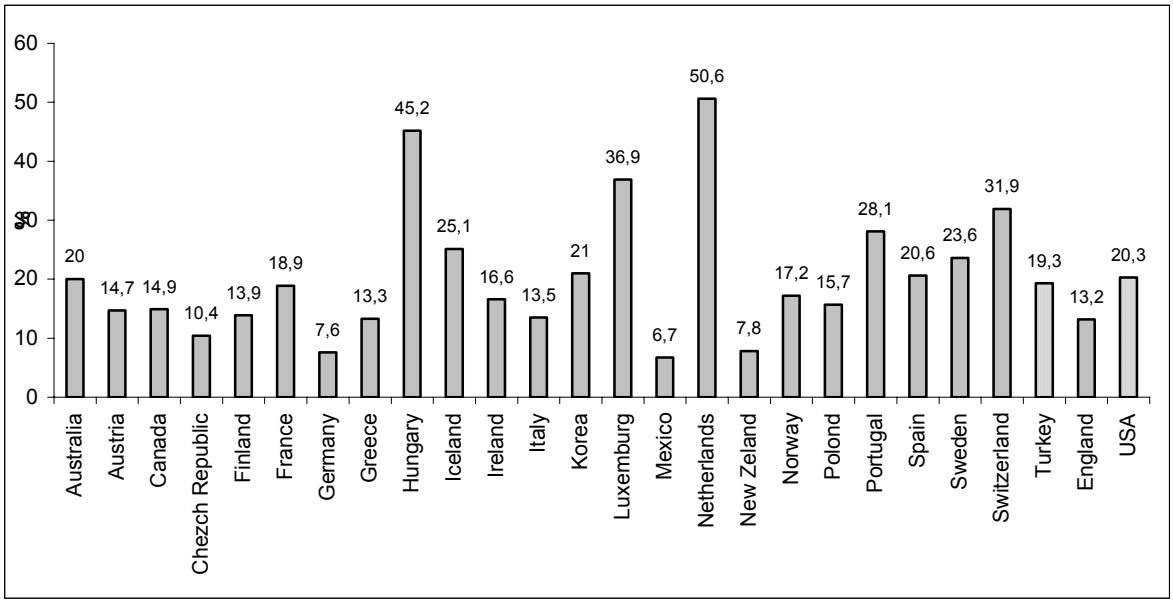

Figure 5-13: Proportion of Out-of-Pocket Health Expenditures in the OECD Countries to Total Health Expenditures (%), 2004
Source: OECD Health Data, 2006

When compared with respect to purchasing power parity, Turkey occupies the last rank with 112 USD PPP. Switzerland is the country which makes the highest level of expenditures per person. In out-of-pocket health expenditures per person, OECD average is 461 USD PPP dir (Figure 5.14) (6).

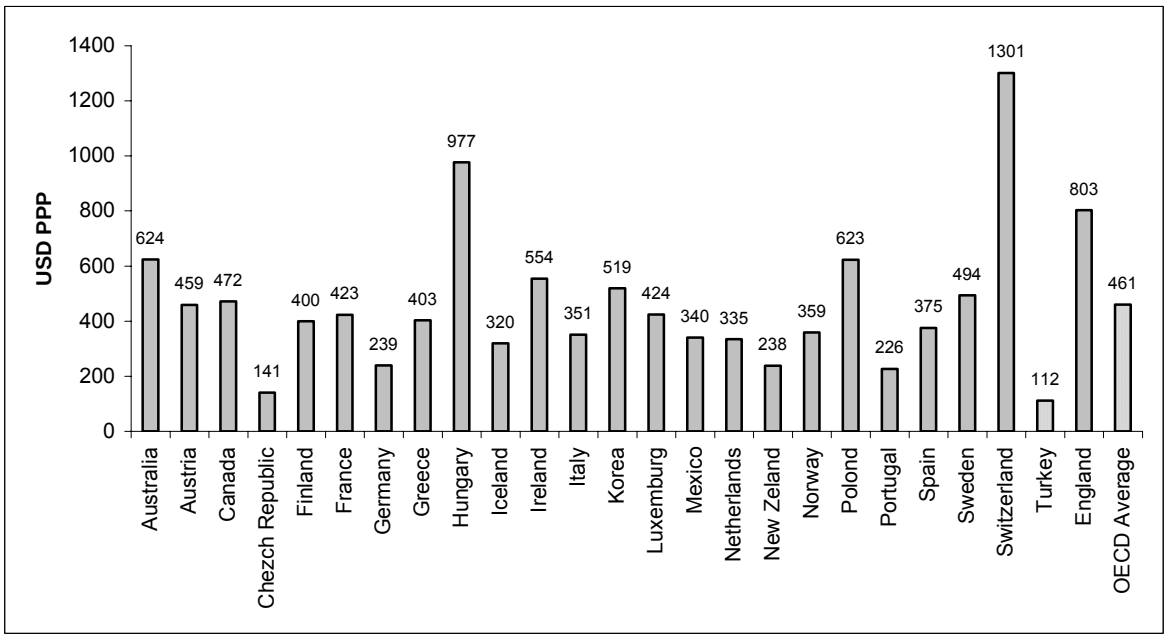

Figure 5-14: Out-of-Pocket Health Expenditures per Capita in the OECD Countries USD SGP, 2004

Source: OECD Health Data, 2006

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CHAPTER 6 HUMAN RESOURCES PLANNING IN HEALTH SECTOR

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"It is main objective of the health policy to enable people's joining economic and social life as healthy individuals and to help with improving the quality of their lives" (1) When stepping into the 21st century, the most important goal is to provide people with not only longer but also better qualified health. 21st Century Goals of the World Health Organization's Regional Office for Europe (WHO-EURO) puts emphasis on the main principles of planning, delivering and evaluating results of health care services, equality for all groups within a society by considering people's needs and problems, and participation and solidarity at all levels.

Labor force planning is one of the most prioritized factors that effect development of a country. Labor force planning for health is also an important part of this planning. Health Labor Force Planning for Health should be a kind of planning which is based on the existing, short-tern, medium-term and long-term health needs of a society with well-defined geographical, cultural and social needs of a society and which foresee other needs that might rise. All actions related to the production, use and management of health labor force which might give cost-effective health care services that improve health status within a society should be coordinated well. Proper and qualified human resources are needed for a well-functioning health system. In order to better plan and organize health care services that are given to people, health care personnel should have competence in health care services approaches and practices, gain a professional point of view and learn modern techniques. Thus, proper and qualified human resources are needed for well-functioning of the health system.

6.1 POLICIES AND PLANS

In the last few years, people and decision-makers have better understood the significance of human resources planning for country's development. Needs-oriented health labor force planning was analyzed under the topic of "Health for All" and handled in the Government's Program and Public Administration Reform which was defined in the Urgent Action Plan.

Health labor force policies and strategies were handled by the State Planning Organization's (SPO) 5-Year Development Plans (as 7-year development plans from 2006 on) on macro level and by the Ministry of Health's studies on micro level. Ministry of Health was authorized as the coordinating body liable with training and employment of health care personnel by the Main Law on Health Care Services No. 3359 and the respective regulations.

In the late 1990's, health policies and other health-specific issue were dealt in international public health congresses, national health policy studies were published but they did not manage to be effective since they were not approved by the Parliament. At that period, health reforming efforts were empowered by the SPO, loan was received from the World Bank to build infrastructure and "National Health Policy" and the Program for Transformation in Health (PTH)" were included in the governments' action plans. In brief, "health policies" were identified in parallel with the country's development plans after 1960 and dealt by the organization laws and regulations of the respective ministries. Today, policies and plans are maintained and updated for "Health for All" objective; however, some problems exist in coordination and implementation.

SPO, MoH, education facilities and respective sectors in our country conduct studies to identify National Health Policy in Turkey. National-scaled studies such as the "Specialty Commission's Report on Health Care Services in the 8th Development Plan" which was prepared by the SPO and TIBA (Turkish Industrialists' and Businessmen's Association), and "9th Development Plan" and "Healthy Generations: Proposals for Applicable Solutions in Health Reform" were conducted so as to improve the quality of health care services and identify priorities.

The said studies pointed out to the existing status and problems in the health sector, handled sectoral strategies and recommendations for solution, and also discussed two major problems. First one of these problems is that labor force in Turkey could not be trained in due numbers and in a health system-compatible way according to the country's needs while second one is that trained labor force could not be distributed in balance among regions for some reasons. It was noted that health labor force planning was based on population and such planning led to imbalanced distribution among occupations, institutions and regions. It was emphasized that these factors prevented effective use of labor force and created problems. As a solution, it was recommended to plan man in accordance with work force methods and needs-oriented as envisaged by the WHO (demand+need+population+target). In the same study, it was discussed that monitoring-evaluation-supervision mechanisms had shortcomings, legislation was not satisfactory and rapid changes in training and employment policies had a

negative effect on service delivery. Emphasis was put on the fact that tasks and responsibilities of the MoH had to be re-arranged as a matter of priority and the MoH had to be left behind its service-producing role and be re-shaped as an institution which identified and monitored health policies, supervised and standardized delivery of health care services. According to this study, accreditation, competence and training standardization should be provided for pre and post-graduate education facilities, and the need for continuous training should be met for all health-specific occupations at all levels. The said studies put a light on the need for need-oriented health labor force planning both in training and employment aspects, inter-sectoral cooperation to set up mechanisms that would promote public policies and equipping health care personnel with necessary knowledge, skills and capability. As in all developed countries, preventive health care services should be given importance, all studies should be supported in parallel to this, family medicine system should be adapted to domestic conditions in our country and supervision and planning role of the MoH should be enhanced.

In the last few years, MoH has attached greater importance to the employment of proper quality and quantity labor force for equal and fair delivery of services across the country, reducing the imbalance among regions and increasing the capacity of health care facilities more than ever. In the last years, significant progress has been made in health system thanks to the effective policies implemented. Considering staffing rate across the country, it could be seen that there are problems in the employment of physicians and non-physician health personnel. It is difficult to appoint physicians of adequate number of quality in small settlement areas.

In order to solve the problem of imbalanced distribution and employment, the Ministry of Health General Directorate of Personnel (MHDGP) identified the criteria of regions, service groups and service points, set objective criteria for personnel appointments and set up a tight control mechanism for excuses with the new “Regulation on Appointment and Transfer”.

As required by the Law on Employing Contracted Personnel in Disadvantaged Places and Amendment to Some Laws and Decree Laws dated 10 July 2003 and no. 4924, compulsory service was introduced for physicians and contracted personnel was put into effect so as to recruit necessary personnel in necessary places. With the changes made in 2004, provinces were divided into regions according to the index of development and regions were divided into groups according to the personnel occupancy rate and distribution of personnel was re-regulated in accordance with the country needs (3). In addition to this, the Ministry of Health, by the official letter dated 22 March 2006 and no. 64284, applied to the

Ministry of Finance for the first appointment of deputy nurses and midwives and took permission for appointing 3.000 nurses and midwives in 2006 and 2.473 nurses and midwives in 2007. So, the Ministry of Health took permission for the first appointment of a total 5.473 deputy nurses and midwives. In parallel to this, employment of midwives was preferred in health centers with inadequate personnel and if applications for midwifery were insufficient, then employment of nurses was considered, then. Besides, on 31 May 20707, the Ministry of Health declared that a total of 32.449 (4/B – contracted) permanent staff from various groups would be recruited in certain periods throughout the year. Thus, the Ministry of Health took a major step to meet demand in this respect. Table 6.1 indicates new appointed permanent staff at the MoH since 2004. Personnel Distribution Scale (PDC) criteria were published by the Regulation on Amendment to the Ministry of Health Regulation on Appointment and Transfer which was issued in the Official Gazette dated 24 June 2006.[1]

Table 6-1: New Appointments at the Ministry of Health Since 2004

Title	2004	2005	2006	2007*
Specialist Physician	1556	1950	2828	866
General Practitioner	4185	2263	4267	1083
Assistant	716	2265	1177	8
Nurse	3552	1490	6918	2174
Midwife	4599	1622	3185	8
Health Officer	5468	2311	3036	47
Other personnel	2618	1214	2944	321
TOTAL	22694	13115	24355	4507

Source: MHDPG, 1 June 2007

* 2007 data covers the period between 1 January 2007 - 31 May 2007.

MoH believes that not only establishing modern facilities and equipping them with modern devices but also satisfying personnel is needed for effective, fast and productive health care services. For this reason, the MoH introduced revolving fund implementation so as to promote the income of personnel assigned at rural organizations and thus to promote their motivation and service productivity. Apart from this, the Ministry improved social benefits of the personnel working at the central organization, minimized differences between the central and rural organization personnel and made services productive by motivating personnel (4). Besides, "Department of Performance Management and Quality Criteria

[1] Personnel Distribution Scale-PDS: Number of vacant positions which are identified separately and annually as a result of distribution of the Ministry's existing personnel positions to provinces and service units in accordance with the pre-identified criteria of titles and branches , the salaries of whom are to be met from the general budget.

Development" was established at the Department of Strategy Development in order to institutionalize the studies on performance and quality and to make them continuous.

6.1. CURRENT STATUS OF THE HEALTH PERSONNEL

As also discusses in health labor force policies and plans, there are problems which occur from the lack of a clear planning strategy in Turkey. Government policies try to find solution to this problem in short-run, however, labor force, education and employment plans should be made in long-run for all health labor force which is assigned at all levels in health sector. Efforts should be maintained in order to help health personnel with learning modern techniques and information, broadening their perspective and improving their approaches of basic health care services.

In general, health care services are delivered by more than one sources in Turkey. Yet, some regulations were made to change the status. By the Law on Devolution of Some Agencies and Institutions-Affiliated Health Care Facilities to the Ministry of Health no. 5283 which was issued in the Official Gazette dated 19 June 2005, health care facilities which were owned by other institutions were devolved to the MoH.[2] 55 of 148 devolved hospitals were united with the MoH hospitals for effective use of human resources, buildings, equipment and other facilities, promotion of functional capacity, better delivery of health care services, physicians' further use of technological devices and instruments and on-time measures of treatment. After devolution of the Social Security Organization (SIO) hospitals, the number of examination rooms was increased and thus the number of examined patients was increased, as well. This change could be clearly seen in Figure 6.1 and Figure 6.2 below.

[2] On 19.02.2005, 146 SIO hospitals, 1 Ministry of Health and 1 Ministry of Transportation-affiliated hospital, 11 Oral and Dental Health Care Centers, 217 dispanseries (being district polyclinics) were devolved to the Ministry of Health with their personnel.

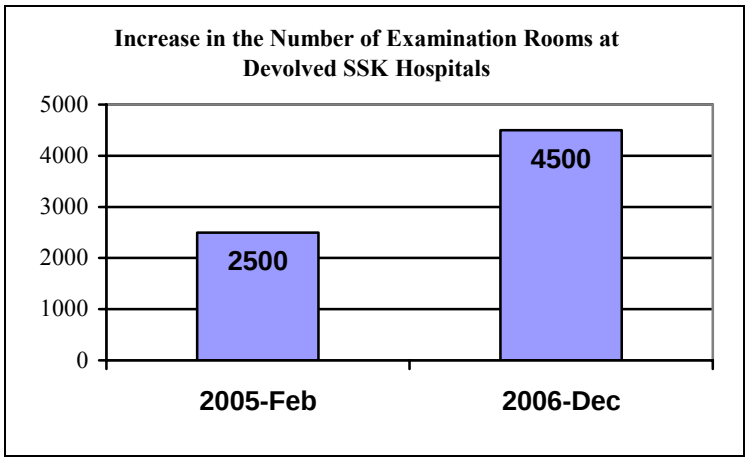

Figure 6-1: Increase in the number of Examination Rooms at Devolved SIO Hospitals

Source: AKDAĞ, R. Budget Presentation for the Fiscal Year 2007

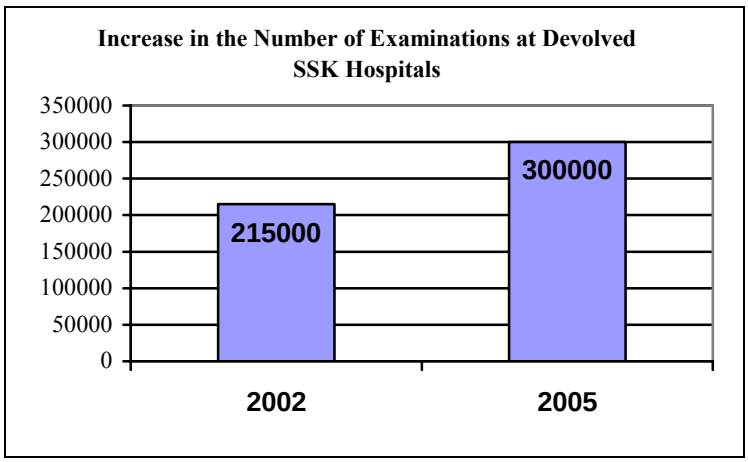

Figure 6-2: Increase in the number of examinations at Devolved SIO Hospitals in 2002-2005 Term, Average Daily Examinations

Source: AKDAĞ, R. Budget Presentation for the Fiscal Year 2007 (17)

Some dispensaries which were devolved from the SIO was converted to health centers and some others were affiliated with the closest state hospital as a district polyclinic. Except for dispensaries, the number of examined patients at the devolved SIO hospitals in 2006 is quite different than the number noted in 2004 that is the number of examinations is 24 millions more than those in 2004. Table 6.2 presents the annual examination numbers at devolved hospitals.

Table 6-2: Total Annual Examination Numbers at SIO Hospitals Before (2004) and After (2006) Devolution

	Total Annual Number of Examinations
2004*	43.561.287
2006**	67.094.434

* Obtained from the MoH In-patient Treatment Facilities Statistical Yearbook for 2004.
** Collected by the SPH with the MoH hospital analyses.

According to the MHDPG Data Processing Department's figures as of 15 March 2007, there are 98.634 physicians, 81.106 nurses, 43.065 midwives and 44.221 health officers in Turkey. Table 6.3 presents data on health care personnel in 1995-2007 in Turkey.

Table 6-3: Turkey Health Personnel, 1995-2007

	Physician	Specialist	General practitioner *	Dentist	Pharmacist	Health Officer	Nurse	Midwife
1995	69349	29846	39503	11717	19090	39342	64243	39551
1996	70947	31126	39821	12406	19861	39075	64526	38945
1997	73609	32511	41148	12737	20557	39658	67265	40230
1998	77344	34189	43155	13421	21441	41461	69146	41059
1999	81988	36854	45134	14226	22065	43032	70270	41271
2000	85117	38064	47053	16002	23266	46528	71612	41590
2001	90757	41907	48850	15866	22922	45560	75879	41158
2002	95190	43660	51530	17108	22322	49324	79059	41513
2003	97763	46563	51200	18073	23632	50432	82246	41273
2004	104226	53344	50882	18363	24615	57723	82616	42649
2005	107347	56645	50702	18834	21409	59313	83926	43438
2006**	97796	50063	47733	4069***	1133***	43721***	80068	42205
2007**	98634	50422	48212	4070***	1117***	44221***	81106	43065

* Assistant physicians are included.
**2006 and 2007 figures are pertaining to the study of Active Working Personnel Number which was conducted by the MHDPG (December for the year 2006 and March for the year 2007) Data on Turkish Armed Forces, Red Crescent, Hygiene Center Presidency and MoH central organization's enrolled personnel and health personnel working in other Ministries and foundations not included.
*** Dentist, Pharmacist and Health Officer numbers data for 2006 and 2007 refer only to the MoH personnel and do not cover personnel working in private sector.

Employment of contracted personnel which is used to solve staffing problem in health in development priority regions, important progress was made in physician's employment in the 5th and 6th region provinces. Figure 6.3 presents the number of contracted personnel as of December 2006.

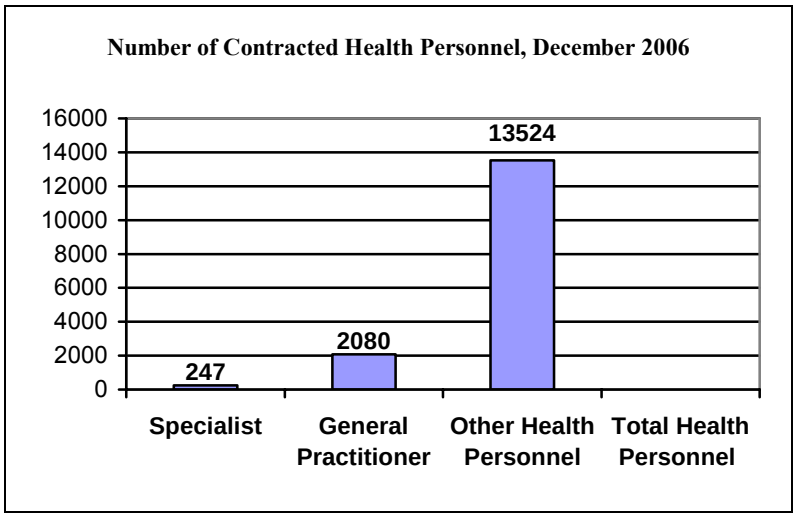

Figure 6-3: Number of Contracted Personnel Working at the MoH, December 2006

Source: AKDAĞ, R. Budget Presentation for the Fiscal Year 2007

Compulsory Public Service, which was introduced to solve the problem of little number of health care personnel in development priority regions, increased the number of specialists and general practitioners working in these regions. As a result of arrangements which were made to remove the imbalanced distribution of health care personnel among regions, good progress was made in 2002-2006 period. Though desired level could not be achieved for nurses it is obvious that the status is promoted if compared with that in 2002. In this respect, best and worst regions could be compared for the year 2002 and 2006. To compare the population per specialist in worst and best regions , the difference which was noted 13.9 in 2002 was decreased to 4.8 in 2006. Table 6.4 presents the difference between worst and best regions with respect to population per personnel, Figure 6.4, 6.5 and 6.6 present the changes between 2002 and 2006 as a result of the efforts that aimed to eliminate the inter-regional imbalance and Figure 6.7 presents the number of physicians working in the fifth and sixth regions.

Table 6-4: Comparison Between the Best and Worst Provinces with respect to Population per Personnel, 2002-2006.

	2002	2006
Specialist Physician	13,9 times	4,8 times
General Practitioner	8,7 times	2,6 times
Nurse-Midwife	7,9 times	4,5 times

Source: AKDAĞ, R. AKDAĞ, R. Budget Presentation for the Fiscal Year 2007

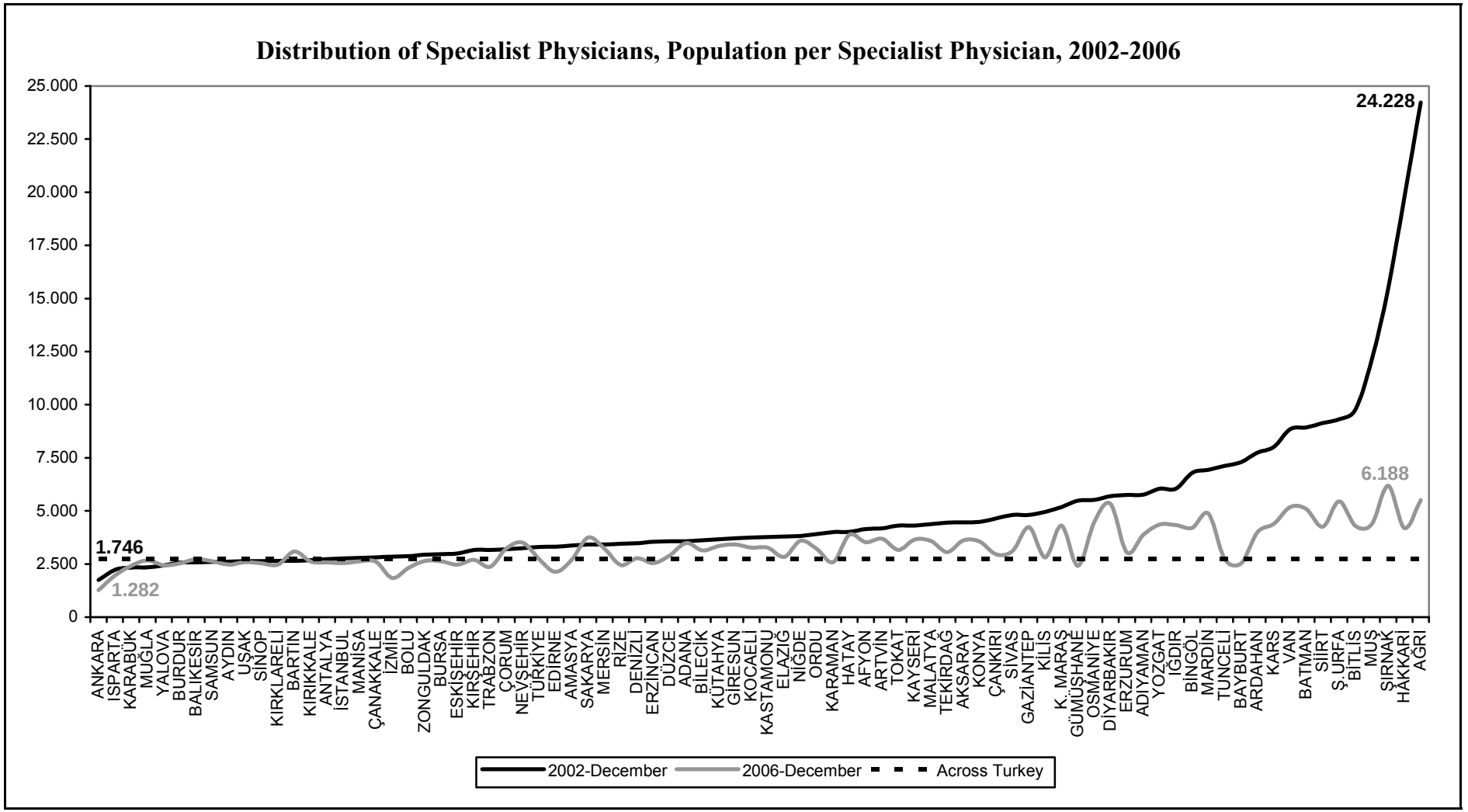

Figure 6-4: Comparison of Provinces with respect to Population per Specialist Physician 2002-2006

Source: AKDAĞ, R. Budget Presentation for the Fiscal Year 2007

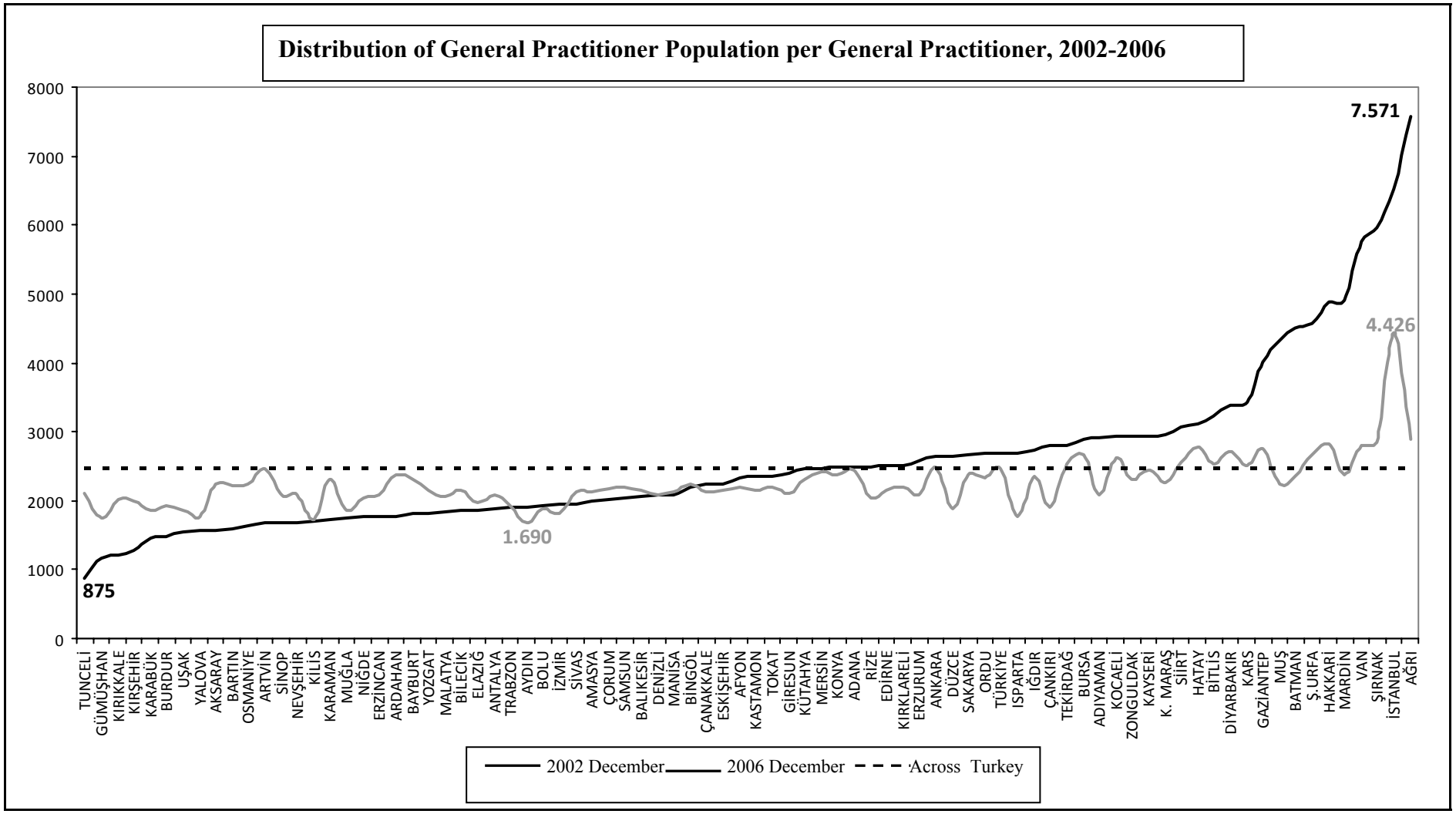

Figure 6.5: Comparison of Provinces with respect to Population per General Practitioner 2002-2006

Source: AKDAĞ, R. Budget Presentation for the Fiscal Year 2007

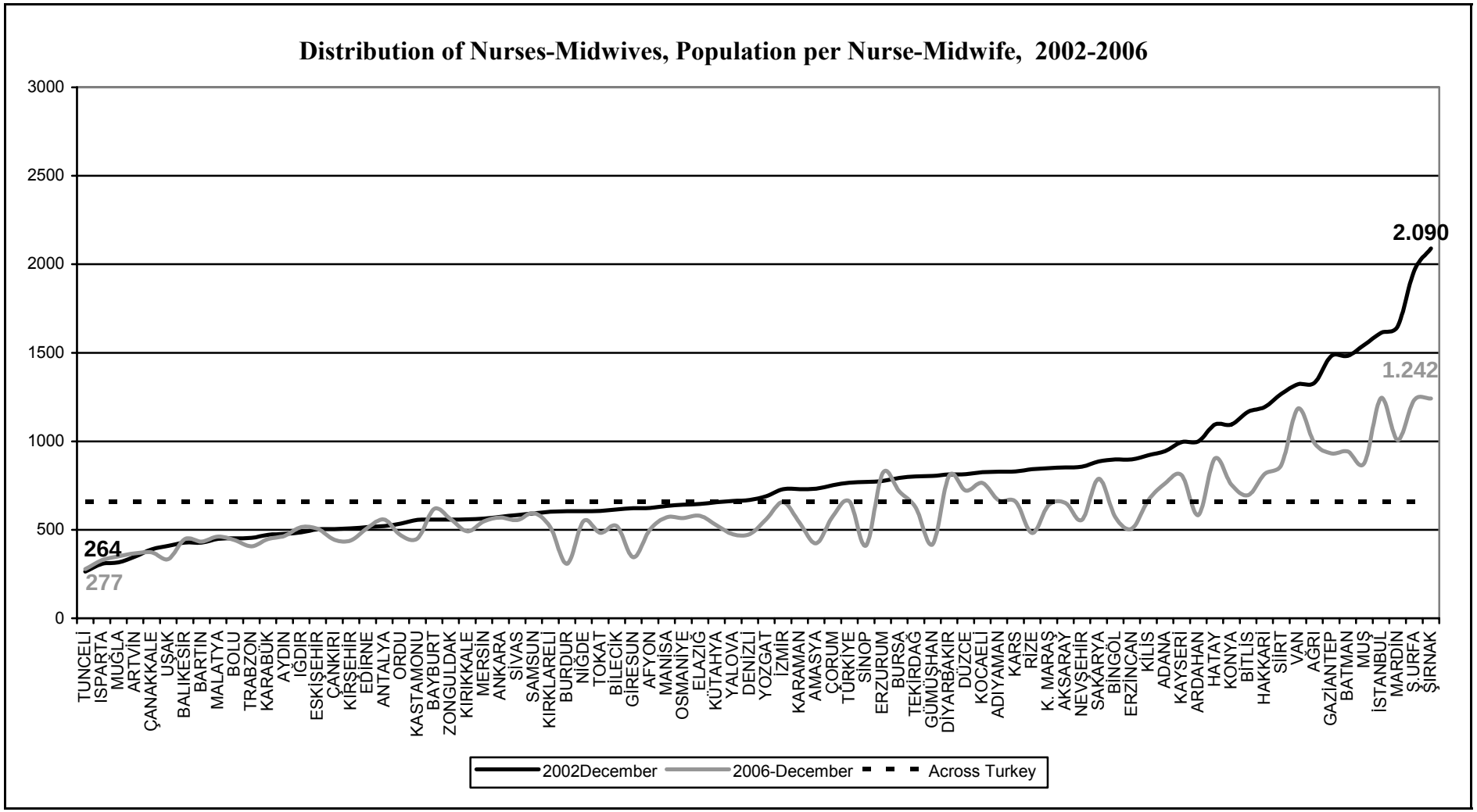

Figure 6.6: Comparison of Provinces with respect to Population per Nurse-Midwife, 2002-2006
Source: AKDAĞ, R. Budget Presentation for the Fiscal Year 2007

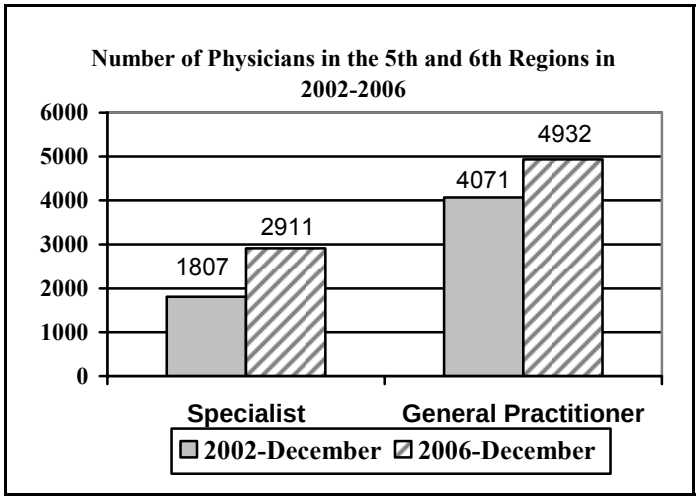

Figure 6-5: Number of physicians working in the 5th and 6th regions between 2002 and 2006

Source: AKDAĞ, R. Budget Presentation for the Fiscal Year 2007

6.2.PRE AND POST-GRADUATE TRAINING OF HEALTH PERSONNEL

6.2.1. Health Education from 1920's to Today

Being aware of the significance of man labor force, which is the most important component of health services delivery, the MoH made so many interventions and applied various strategic methods so as to obtain adequate number of qualified health personnel. In this context, a two-year day health officer's school was opened in Istanbul in 1924 and two similar schools were opened in Sivas. Such schools were diversified both in quality and quantity in the following years. Then, in 1961, these schools were named as "Health College's and started to train assistant health personnel. In 1978-1979 period, the name "Health College" was turned into "Occupational High School of Health". By the Law no. 555 which was issued in the Official Gazette dated 10.04.1965 and no. 11976, Giver Nesibe Health Education Institute was established so as to train intermediate labor force in health and to promote occupational skills of non-physician health personnel. Then, Health Education Institutes were opened in Erzurum, Kayseri, Konya, İstanbul, İzmir, Kırıkkale and Osmaniye. So, the number of health education institutes was increased to eight across Turkey.

Health Education Institutes also came across some problems such as technological developments in health and education, ambiguity of graduates' legal and administrative status in the presence of the Higher Education Council (HEC) and the lack of academic education capacity in these institutes. Therefore, it was decided to open Ankara University-affiliated Faculty of Health Education and Marmara University-affiliated Faculty of Health Education

by the Cabinet's Decision dated 24.08.1994 and no.94/6138 upon the Ministry of Health's request, HEC's approval and the Ministry of Education's proposal which were based on the Annexed Article 30 of the Law no. 2809. As required by the protocol which was signed with the MoH, all building, equipment and logistics need of these facilities were financed by the MoH which aimed to build the capacity of well-trained human resources for health. However, no students have been accepted to these faculties since 2004 (9,18).

According to the Decree Law on the Organization and Tasks of the Ministry of Health no. 181, Ministry of Health General Directorate of Health Education (MoH-GHE) is responsible for preparing plans and programs for opening high schools and faculties for health personnel training and implementing respective procedures. MoH-GHE is also responsible for supervising the procedures regarding the establishment of occupational high schools of health to be opened by private and public agencies than the Turkish Armed Forces (TAF) and the education which is given by the already opened schools. General Directorate, in addition to all these, conduct researches on how to promote health education and evaluate the results obtained.

Within the framework of the PTH, MoH-affiliated occupational highs schools of health, based on the provisions of the Law no. 5450, were devolved to the Ministry of Education in 2006. Besides, student acceptance to Health Education Institutes was stopped by the Approval dated 01.02.2006 and no. 655. As a result of such devolution, almost 7000 personnel were transferred from the MoH to the MoE and 1500 personnel were transferred from the MoE to the MoH (15). In the I. National Health Congress which was organized on 23-27 March 2002 under the first health project, it was discussed to train the European Union (EU)-norms compatible human resources for health. In order to achieve the goals, some activities were conducted under the "Health Education Restructuring Project" in compliance with the decision which was made in the I. National Health Congress. In parallel to the Higher Health Council's decisions[3] and as for the Cabinet's Decision dated 10.10.1996 and no. 96/8655, it was approved to give nursing, midwifery and health officer's education in bachelor degrees and to generalize this system across the country. By the "Law on Devolution of Some Public Agencies-Affiliated Schools to the Ministry of Education" and the "Law on Amendment to Some Laws and Decree Laws no. 5450" which was issued in the Official Gazette dated 03/02/2006 and no. 26069, Occupational High Schools of Health; Emergency

[3] 2 Mart 1992 tarih ve 174/1 Sayılı, 26 Ocak 1995 tarih ve 184/1 Sayılı ve 23 Mayıs 1995 tarih ve 185/1 Sayılı Yüksek Sağlık Şurası kararları

Medical Technician's Schools (high school degree), Anesthesia Technician's Schools (high school degree), Environmental Technician's Schools (high school degree), Dental Technician's Schools (high school degree), Orthopedic Technician's Schools (high school degree), Laboratory Technician's Schools (high school degree), Radiology Technician's Schools (high school degree) and Medical Secretary's Schools were devolved to the Ministry of Education, all of which used to give two-year education. As for the Article 7 of the "Law on Amendment to the Nursing Law no. 5634" which was issued in the Official Gazette dated . 2 May 2007, it was decided to accept students at Occupational High Schools of Health, nursing and health officer's schools for five years and to give the title of "nurse" to students who graduated from these schools.

Within the scope of the PTH, activity field of the MoH-DGHE was expanded and restructured so as to cover health training for people, medical specialty education, continuous post-graduate education and in-service trainings. By the Article 4 of the Law no. 5614 (issued in the Official Gazette dated 04.04.2007 and no.26483) which made amendment to the Article 9 of the Law no. 1219, Medical Specialty Council was established so as to authorize education facilities, identify rotations in medical specialty branches, appoint medical specialty exam jury members, identify faculties and training hospitals to assess assistants who study abroad, to make comments on medical specialty and specialized human resources for health, and to make reviews and conduct researches so as to ensure specialists' tracking the changes. Medical Specialty Council is a permanent council of the Ministry of Health. But when identifying these new fields and responsibilities, administrative and technical capacity which was built for the Occupational High Schools of Health were protected as it was. Thus, the new structure did not manage to catch up with the changes and improvements. (8,12,13,18).

In today's world, flow of information is very fact in almost all areas, which arise the need for well-qualified human resources who would follow the changes and be adopt new technologies in health. So, Refik Saydam Hygiene Center Presidency-affiliated School of Public Health (SPH) was re-activated by the Study Directive dated 10 March 2003 and no. 23 which was based on the Law no. 3959. SPH, in addition to it's variety of tasks, is responsible for preparing training programs to build the capacity of well-trained and qualified human resources and giving in-service trainings to improve the efficacy of health services delivery.

6.2.2. Doctors

Though there are 54 medical schools in Turkey 52 of them do give active education in health. Education lasts 6 years at faculties of medicine and is regulated as a part of the national core educational standards. Medical students become interns in their sixth year. Physicians, following their graduates from medical schools, could get specialized in a medical branch by taking the Medical Specialty Examination (MSE). Some medical schools have one year English preparation class and some others give medical education in English. Education is given in three main sections that are basic and clinical medical sciences, disease-status-symptom list and skills-attitudes-behaviors. .medical education in Turkey is based on the mixed model and increasing number of medical schools prefer the problem-based learning method every other day.

General practitioners who hold bachelor's degree might get specialized by the MSE. Apart from medical specialty, general practitioners could also get some other certificates (such as Dialysis Course Certificate and Emergency Care Certificate). Physicians who are awarded with these certificates could work in respective units in public and private hospitals. They could also become clinic chef, deputy chef and chief assistant. Personnel are appointed to such positions at the MoH-affiliated research and training hospitals in accordance with the principles mentioned in the Main Law on Health Care Services.

The number of physicians in Turkey is still inadequate if compared with that in the European countries, which supports the idea to increase the number of new graduates. Yet, the case should be considered from both quantitative and qualitative perspective. Figure 6.8 presents the number of physicians per 1000 population in the Organization for Economic Co-operation and Development (OECD) member states.

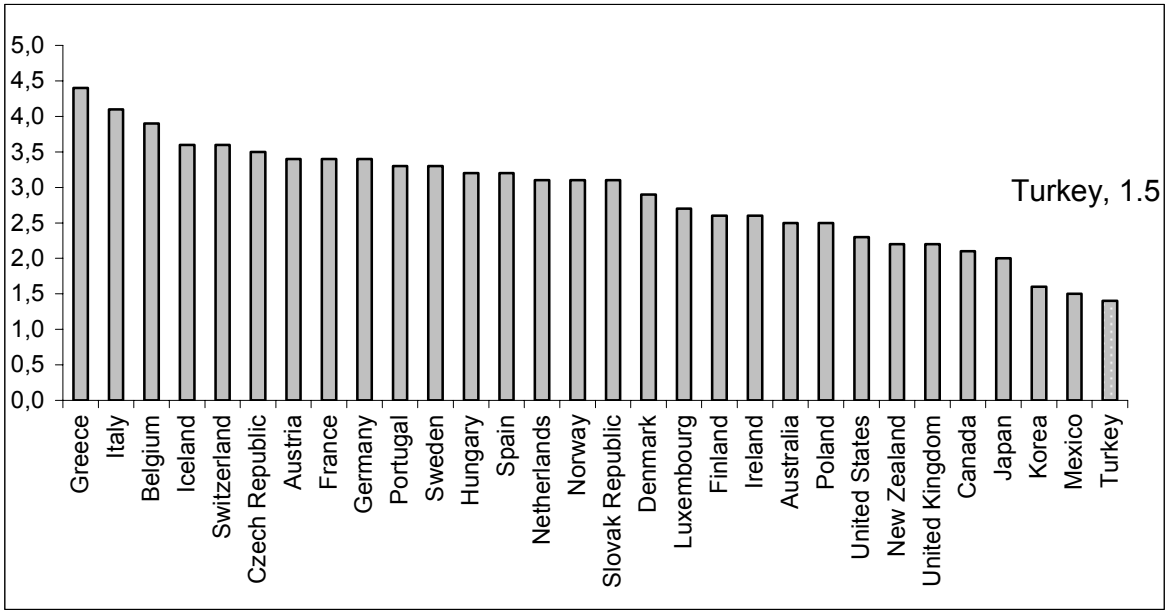

Figure 6-6: Number of Physicians per 1000 population in the OECD countries

Source: OECD in Figures - 2005 edition - ISBN 9264013059

Specialty Commission's Report on Health Care Services of the 8th Five Year Development Plan talks about the problems in medical education and makes recommendations to these problems. Recommendations could be listed as in the following:

- Reviewing pre-graduate medical education given to physicians and making changes both in theoretical and practical training,
- Further use of technologic developments and innovations in the education system,
- Putting emphasis on country-specific health problems in addition to the universal medical education,
- Providing lecturers with formation training and giving material and immaterial subsidy and support to lecturers,
- Evaluating medical schools with respect to competence, examining the number and distribution of students in this respect and identifying the need for physicians within the country from an objective point of view.

The report also lays out recommendations for medical specialty education, continuous medical education, standardization in medical specialty education, decreasing the rate of specialization, assessing the competence of trainers and enacting the Draft Law on Medical Specialty Regulation (2). Being the biggest problem of medicine, specialization has always caused severe discussions in our country. In the existing system, new assistants are accepted

to vacant assistant's positions (10). However, the MoH and HEC should collaborate to identify the lack of specialists and to train the necessary man power.

The number of medical schools which was 4 in 1964 in Turkey increased up to 52 in 2006 and the number of medical school graduates were increased from 426 to 4494. Figure 6.9 presents the number of medical schools and graduates in 1964-2006 in Turkey.

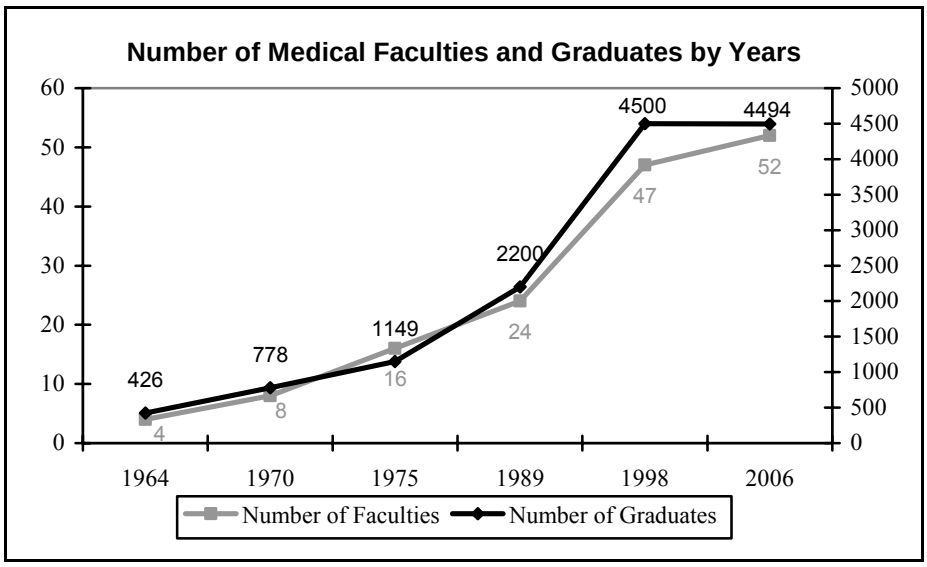

Figure 6-7: Number of medical faculties and graduates in 1964-2006 in Turkey

Source**:** MoH-DGHE, 2006

Comparing the number of students at medical schools in some European countries, the number of students per medical school is lower in Turkey and number of students per lecturer is also lower than that in Europe. Table 6.5 and 6.10 present data on medical schools, lecturers and students in Turkey and some European countries.

Table 6-5: Medical Schools, Lecturers and Students in Turkey and in some European Countries

COUNTRY	POPULATION	MEDICAL SCHOOLS	LECTURERS	STUDENTS	STUDENTS / LECTURERS	STUDENTS / MEDICAL SCHOOLS
GERMANY	82.633.200	36	3.550	79.866	22,50	2218,5
SPAIN	41.895.600	28	2.500	36.049	14,42	1287,5
ITALY	57.987.100	39	12.583	148.157	11,77	3798,9
FRANCE	60.011.200	44	5.847	62.921	10,76	1430
SLOVAKIA	5.381.200	3	893	6.561	7,35	2187
SLOVENIA	1.954.500	1	285	1.717	6,02	1717
FINLAND	5.231.900	5	698	3.583	5,13	716,6
DENMARK	5.397.600	3	1.570	6.598	4,20	2199,3
TURKEY	72.000.000	52	9.020	32.985	3,66	634,3

Source: MoH-DGHE, 2006

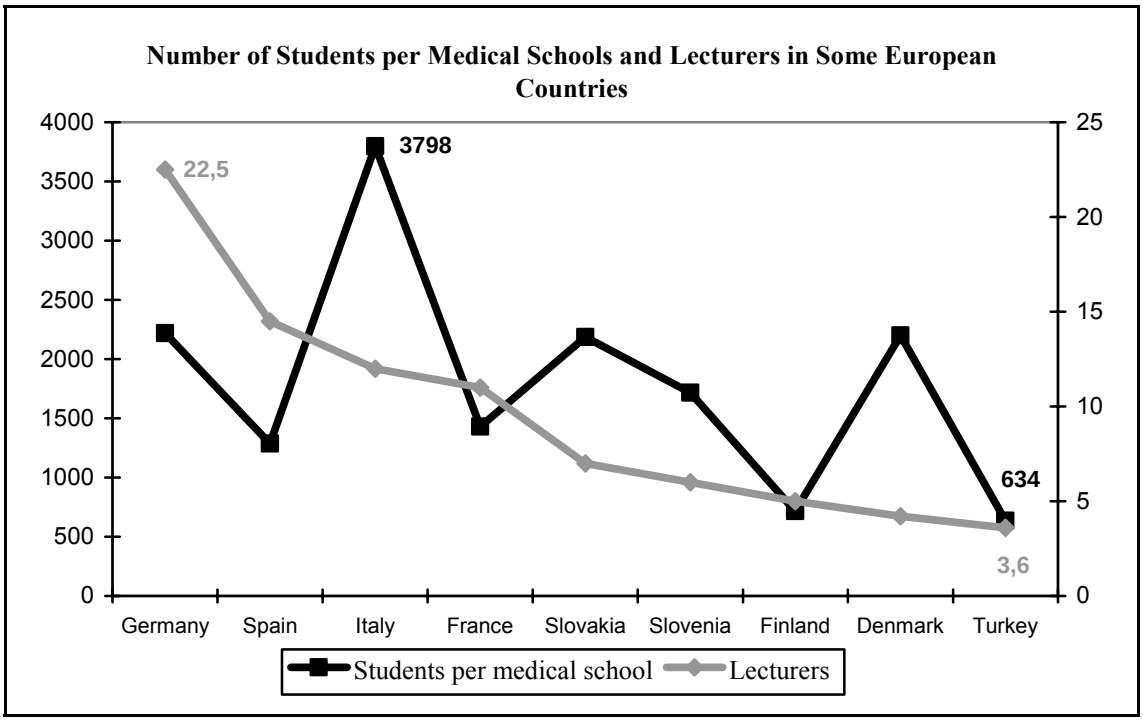

Figure 6-8: Number of students per medical schools and lecturers in some European countries*

* Data obtained from the MoH-DGHE.

6.2.3. Nurses

Health care services require inter-sectoral and inter-disciplinary cooperation and community's participation. Effective and qualified health labor is the most important source in planning and delivering health care services. Nursing, which is a scientific discipline, plays important role in promoting health level of individuals, families and society, and in planning organizing and evaluating health care services. Nurses are among health professionals who undertake active tasks in preventive, curative and promoting health care levels.

In our country, nursing education has been given systematically since 1958. Nursing education is given at universities (in bachelor's degree) but not in high school level because it was cancelled so as to harmonize Turkey with international standards in nursing. In this context, the Law on Amendment to the Law on Nursing no. 5634, which was prepared in parallel with the international conventions and EU harmonization policies that were agreed by Turkey so as to make the existing Law on Nursing dated 28.2.1954 and no. 6283 compatible with the international standards, was issued in the Official Gazette dated 02.05.2007 and then came into force.

Nursing education takes 4 years and graduates are awarded with bachelor's degree in nursing. Nursing education takes a total of 4600 hours. Minimum 1/3 of this training should be theoretical and minimum ½ should be practical. Doctorate degrees in nursing were first given in 1972 in Turkey. Post-graduate training for nurses and other allied health personnel is given in master's programs at universities. After basic education, graduates could get specialized in various fields such as internal medicine, surgery, obstetrics, psychiatry, pediatrics, public health, management in nursing and professional rules and principles. In parallel with the Law no. 5634 which was issued in the Official Gazette dated 02.05.2007 new arrangements were made to bachelor and master programs in nursing and other equivalent disciplines. According to these:

One should be a graduate of nursing faculties or schools (offering bachelor's degree) in order to hold "nurse" title (Article 1). Those who are accepted to the respective branches in Occupational High Schools of Health for five years are exceptions to this provision (Article 7). Nurses who have bachelor's degree will have master's degree and then become specialist nurse. Nurses will be awarded with licence and certificates in certain fields and branches according to the some rules and principles. The Ministry of Health will issue a regulation on preparing, implementing, coordinating, certifying, licensing and crediting of such certificate programs (Article 4 – Article 8). After the enactment of the respective law, health officer's education program which was equivalent to nursing program was united with the nursing program.

Department of Nursing Care Services under the Ministry of Health General Directorate of Curative Services (MoH-DGCS) carry out activities specific to nursing in Turkey. Efforts are made to restructure nursing profession and re-describe tasks, authorities and liabilities of nurses in the light of the PTH's goals, principles and strategies, and the WHO Munich Declaration. In order to improve the quality, reliability and productivity of nursing care services and to increase the performance, the MoH organizes in-service trainings and some periodic courses in chemotherapy nursing, dialysis nursing, intensive care nursing and basic stoma care nursing and etc.

6.2.4. Midwives

Midwives are important health professionals who take care of maternal and child health before, during and after birth. Midwifery education which was given in Occupational

High Schools of Health previously was devolved to universities by the Cabinet's Decision in 1995. So, midwifery education is given at universities, now. There are 28 midwifery departments at universities which offer bachelor's degree in midwifery. This bachelor program takes 4600 hours in 4 years. 50 % of courses are theoretical and the remaining 50 % are practical. Besides, midwives who hold bachelor's degrees could also have master's degree in various branches. Midwives are usually assigned in preventive, curative and rehabilitative units at public and private facilities which are involved in maternal-child care and family planning services.

MoH-DGCS-affiliated Department of Nursing Care Services carry out activities specific to nursing in Turkey. Considering national health problems for good health of individuals and society, efforts are made to harmonize midwifery service standards with those of the EU. Figure 6.11 presents the number of new students who were registered to the department of nursing and midwifery from 2000-2001 to 2005-2006 term.

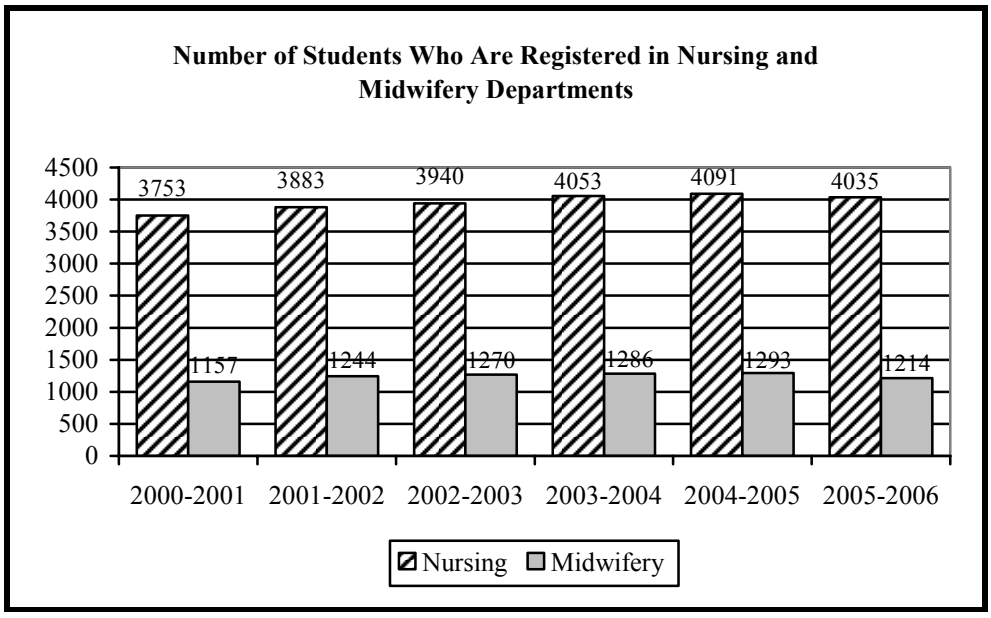

Figure 6-9: Number of New Registered Nursing and Midwifery Students

Source**:** MoH-DGHE

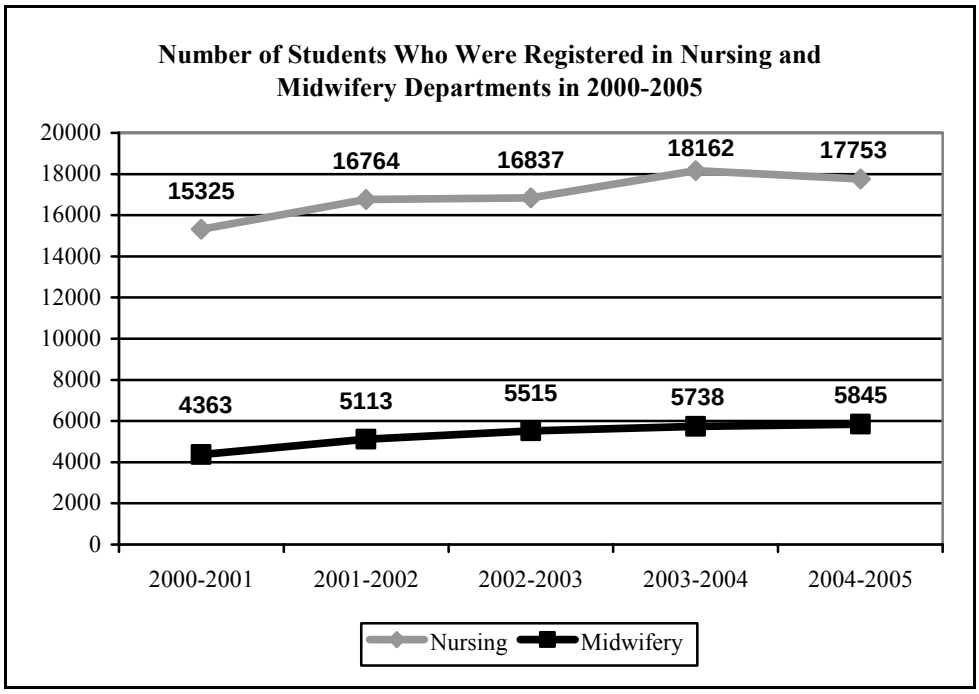

Figure 6-10: Number of students Who Were Registered in Nursing and Midwifery Departments in 2000-2005

Source: MoH-DGHE

6.2.5. Dentists

19 dental faculties exist in Turkey. Dental health education takes 5 years, first three years of which are preclinical and last two years are clinical. 63 % of dentists are employed in private health care facilities while 20 % at the MoH and 8 % at universities. 9 % of dentists in Turkey either do not work or are employed in a different way. In the last few years, both the number and quality of dental faculties have increased in Turkey which is reflected upon the increasing number of dentists stepping into the field. Dentistry is one of the most competitive fields in Turkish health industry.

In 1990 - 2000 term, an outstanding increase was noted in the number of dental school graduates. Yet, when assessing that increase it should also be kept in mind that the country's population is also increasing and the population per dentist does not decrease for this reason. The population per dentist is 3566 in Turkey which seems to be higher when compared to the other European countries. The meaningful difference, in this respect, might be due to the fact that people in Turkey are not accustomed to make regular visits to dentist. Figure 6.13 presents the comparison of dental school graduate numbers in 1990-2000 with other countries' data, Figure 6.14 presents the population and interventions per dentist, Figure 6.15 presents distribution of dentists by employing institutions and Table 6.6 presents the human

resources projection which was made by the TDA in 2004. This projection reflects the views of the TDA.

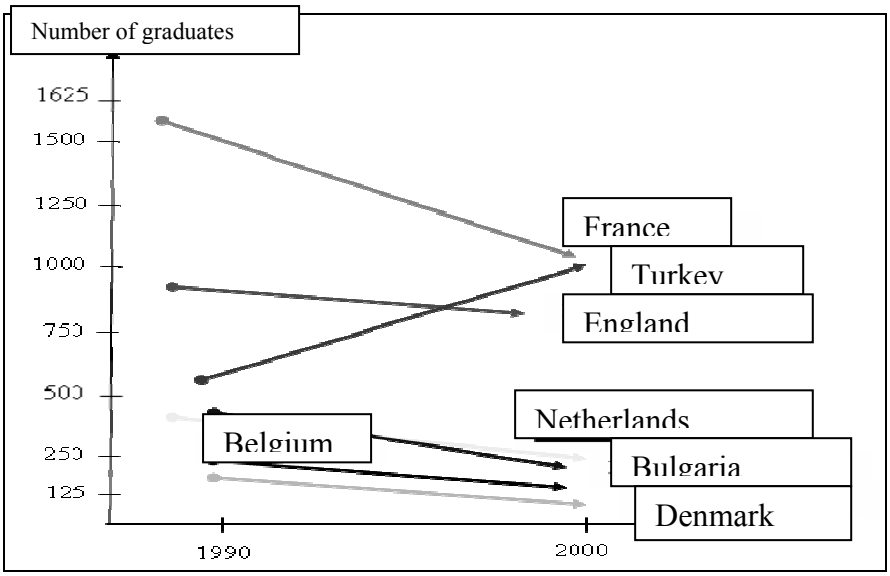

Figure 6-11: Evaluation of Dental School Graduates By Years

Source: TDA

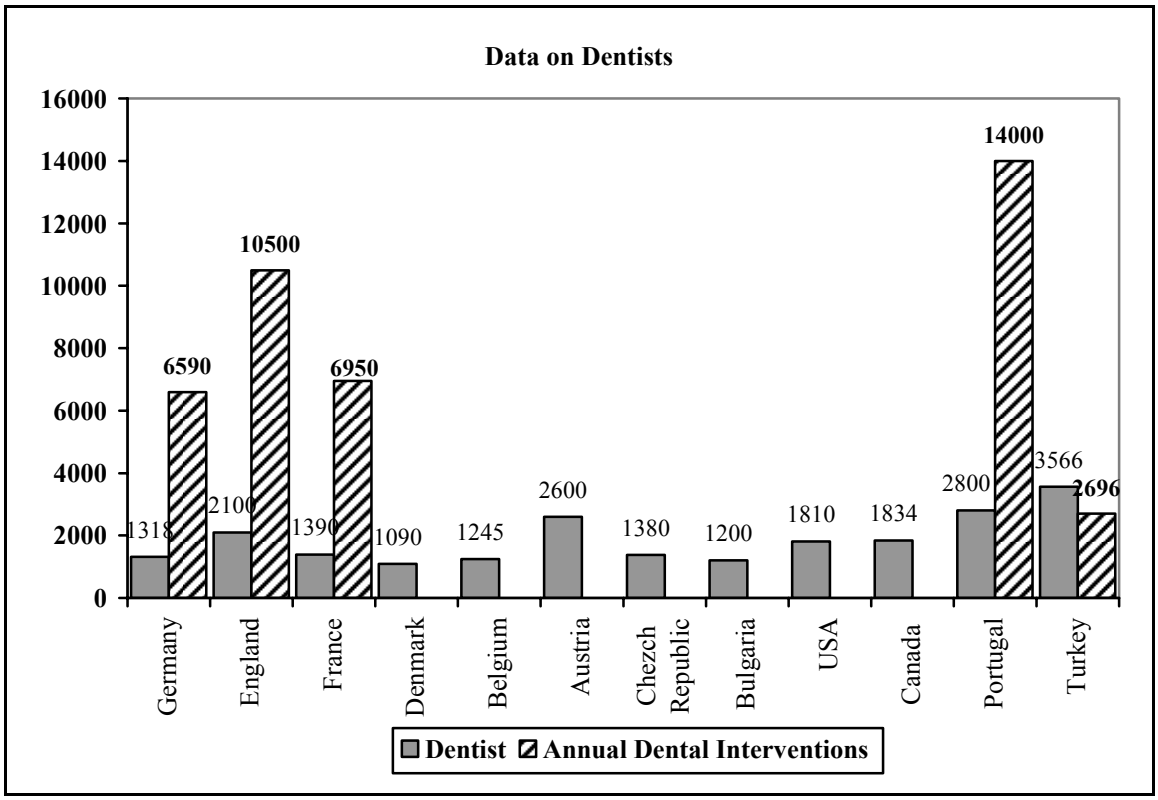

Figure 6-12: Population per Dentist and Number of Dental Interventions, 2006

Source: TDA, 2006

Table 6-6: Turkish Dental Association's Human Resources Projection, 2004

YEAR	POPULATION	ANNUAL VISITS TO DENTIST	INCREASE IN INTERVENTIONS (%)	TOTAL ANNUAL DENTAL INTERVENTIONS	NUMBER OF DENTISTS NEEDED	NUMBER OF DENTISTS WITH NEW GRADUATES
2003	70.000.000	0,7		3240	15.123	18.900
2005	72.000.000	0,8	8	3510	16.410	20.800
2010	77.000.000	1	15	4050	19.012	26.500
2010	77.000.000	1,5	20	4860	23.765	26.500

Source: TDA, Manpower projection, 2004

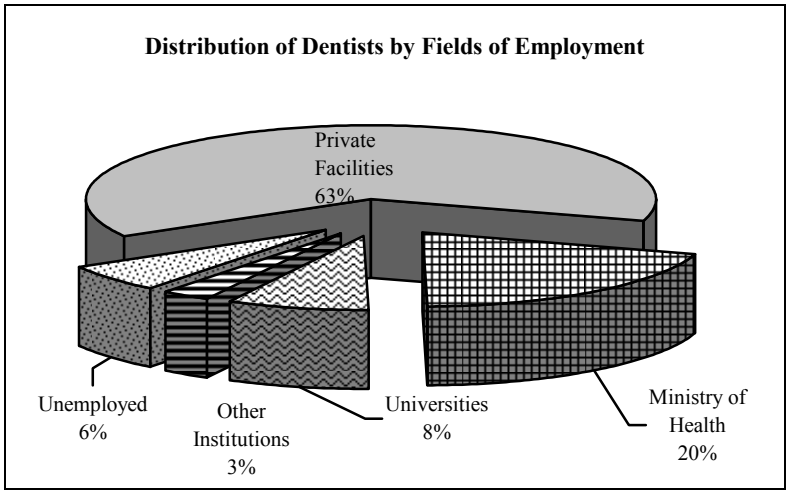

Figure 6-13: Distribution of dentists by fields of employment

Source: TDA, 2006

6.2.6. Pharmacists

Pharmacists are health care professionals who give patients medicines which are prescribed by physicians and dentists, and also instruct them how to keep and use medicines. Being different from other health professions, pharmacy is a health professional branch members of which could produce both services and goods (medicines).

13 pharmacy schools exist in Turkey. Pharmacy education, which took 4 years until 2005 and was increased up to 5 years in 2005-2006 term, consists of both theoretical and practical aspects. Students at the faculty of pharmacy are awarded with the title of "pharmacy" after their graduation from school. Graduates could also continue their academic education in master and doctorate programs.

Pharmacy school graduates could work at universities, MoH-affiliated facilities, hospitals, pharmacies, pharmaceutical stores, pharmaceutical industry, quality-control

laboratories in cosmetics industry, research and development units, sale and marketing departments in private sector.

As of later 2005, the number of pharmacists per 1000 population was found out to be 0,3 in Turkey, which seems a bit lower when compared to some European countries. Table 6.7 presents the number of pharmacists per 1000 population in Turkey and some European countries.

Table 6-7: Number of Pharmacists per 1000 Population in Turkey and Some European Countries

	Number of Pharmacies				
	2000	**2001**	**2002**	**2003**	**2004**
Austria	0,6	0,6	0,6	0,6	0,6
Germany	0,6	0,6	0,6	0,6	0,6
France	1,0	1,0	1,0	1,1	1,1
Ireland	0,8	0,8	0,8	0,9	1,0
Luxemburg	0,7	0,8	0,8	0,8	0,8
Norway	0,5	0,5	0,6	0,6	0,6
Poland	0,6	0,6	0,6	0,7	-
Slovakia	0,4	0,5	0,5	0,5	0,5
Turkey	0,3	0,3	0,3	0,3	0,3

Source :ECD Health Data,2006

6.2.7. Health Officers

The title of "health officers" contain a wide range of technical branches varying from anesthesia technicians (high school degree) to environmental health technicians, dental care technicians, first aid and emergency technicians, laboratory technicians, audiometric technicians, X-ray technicians, population health technicians, medical secretaries and physical therapy technicians all of which are high school graduates. Environmental health technicians and population health technicians will be discussed in this chapter and other professional groups will be handled later. As of March 2005, distribution of health officers who are enrolled at the MoH is presented by various professional groups in Table 6.8.

Table 6-8: Distribution of MoH-enrolled Health Officer Personnel by Various Professional Groups as of 15 March 2007

Professional Groups	**SAYI**
Anesthesia Technician(high school degree)	3939
Environmental Health Technician (high school degree)	3129
Dental Care Technician (high school degree)	776
First Aid and Emergency Technician (high school degree)	1418
Laboratory Technician (high school degree)	10724
Audiometric Technician (high school degree)	210
X-ray Technician (high school degree)	7403
Population Health Technician (high school degree)	14343
Medical Secretary	2153
Orthopedic Technician (high school degree)	113
Physical Therapy (high school degree)	13
TOTAL	44221

Source: MoH-DPG 15.03.2007 Study on the Number of Actively Working Personnel

6.2.7.1 Population Health Technicians

Health officers who constitute major part of health labor force take part in many fields such as preventive health care services, population health services, secondary and tertiary care services, health care services at workplace and on board and etc.

Health officers are given pre-graduate education at three levels: at high schools (Occupational High Schools of Health), in associate degree (two years at college) and in bachelor's degree (four years at college). Bachelor's education is given at 16 universities. Those who graduated from this are awarded with the title of "Health Officer". Education which is given to health officers consist of clinical practice and theoretical courses mainly on anatomy, physiology, biochemistry, statistics, microbiology, microbiology, parasitology, psychology, inter-personal relations, internal diseases and care, surgical diseases and care, communicable diseases and care, and population health and care. The Law no. 5634 which was issued in the Official Gazette dated 02.05.2007 introduced new arrangements for bachelor and master programs in nursing and other equivalent disciplines. According to this amendment, health officer's education program, which was equivalent to nursing program, was united with the nursing program.

Population Health Officers could have master and doctorate degree after obtaining bachelor's degree and take part in academic life being lecturers, associate professors and professors.

6.2.7.2 Environmental Health Technicians

Environmental health technicians who are major components of preventive health care services take and implement necessary measures in order to fight with factors which give harm to human being's health. They inspect food, water, air and buildings to find out what measures should be taken.

Environmental health technicians are given pre-graduate education at three levels: at high schools (Occupational High Schools of Health) "Environmental Health" and "Environmental Health Technical Science" departments. Education takes 4 years. Courses mostly focus on general culture and professional skills. Graduates are capable of taking sample from waters, rehabitating and analyzing the reasons for well and spring water pollution and taking sample from food and etc.

Graduates, upon their request, could be placed at departments of environment, environmental pollution and control, environmental protection, hydrotherapy and health care facilities administration at occupational high schools with no need to re-take an examination. Besides, those who graduate from these departments at the Occupational High Schools of Health could take the advantage of additional success points at the University Examination which is given by the Student Selection and Placement Center (SSPC) on condition that they prefer to study at Health Officer's Department and Health Administration Department both of which offer bachelor's degrees.

By the Law no. 5179 which was issued in the Official Gazette dated 5 June 2004, the MoH transferred some tasks pertaining to environmental health technicians to the Ministry of Agriculture and Rural Affairs (MoARA) and municipalities. In this scope, 500 personnel of environmental health technicians with "Food Inspector's Identity" were devolved to the MoARA.

6.2.8. Other Health Personnel

Other health personnel who give service in health are educated at different levels, too, which are 4-year occupational high schools of health, 2- year associate degrees and 4-year bachelor degrees at universities. Besides, graduates could continue their education with

master or doctorate programs at universities. Health personnel who receive four-year high school education or hold two-year associate degree are work as technicians. Other health personnel who graduate from 4-year bachelor's program work as technologist. Technicians, being a part of treatment process, are supervised by physicians to find out if health care services are given as planned. Technologists, on the other hand, learn how to assess a patient, diagnose problems, and plan treatment schedule. Apart from this, technologists should also assess possible side effects and appropriateness of various treatment options.

Specialty Commission's Report on Efficiency in Health Care Services which was included in the 8th Five Year Development Plan deals with the current status and problems of technicians with associate degrees. The report also claimed that some academic programs were put into effect to meet the need for intermediate labor force in health such as ambulance and emergency technician's, medical documentation and secretariat's, medical laboratory technician's, anesthesia, radiology, radiotherapy, and hemodialysis technician's departments and etc. but graduates of these departments had all problems specific to them. The report also pointed out to the fact that graduates of these departments could not find work at hospitals although they were highly needed just because their job description as not clarified and there were not vacant positions allocated for them.

Turkey has shortcomings in legislation on non-physician health personnel, which is a major problem in the country. The existing laws and regulations need to be re-assessed because they do not contain articles regarding a variety of health occupations. To give example, there are not laws governing job description, personnel rights and status of some health occupations such as pharmacist's technicians, laboratory technicians, anesthesia technicians, X-ray technicians, physical therapy technicians, pathologic anatomy technicians, clinical psychiatry technicians, psychologists and etc. According to the national health legislation, the MoH is liable with coordination in educating/training and employing health personnel. Paragraph b of the Article 3 of the Main Law on Health Care Services no. 3359 states that the cooperation with the MoH-HEC is necessary to this end. The Law on the Ministry of Health and Social Welfare's Organization and Personnel no. 3017 also mentions the same liabilities and express that the MoH "trains and helps to train" health personnel right after identifying the need for health occupations within the country. Unfortunately, it could not be alleged that the HEC and the MoH is in good coordination in this context. Some universities, on the other hand, offer academic programs without consulting the Ministry of Health and learning the actual needs of the country and graduate dieticians, audiologists,

social workers, pedagogues and emergency care technicians, the career of whom seems to be full of ambiguity after graduation from school. The lack of coordination and consultation between institutions lead to the increase in the number of graduates who are not compatible with the country's needs. Thus, some branches are over-staffed in Turkey whereas some others suffer from the lack of well-trained personnel (10).

Following graphics and tables present the number of high school and associate graduates in Turkish health sector figure 6.16 presents the number of technicians in 1999-2005 period. Figure 6.17 presents the number of graduates with associate degrees and Table 6.9 briefs data on the number of allied health personnel working at universities and private sector.

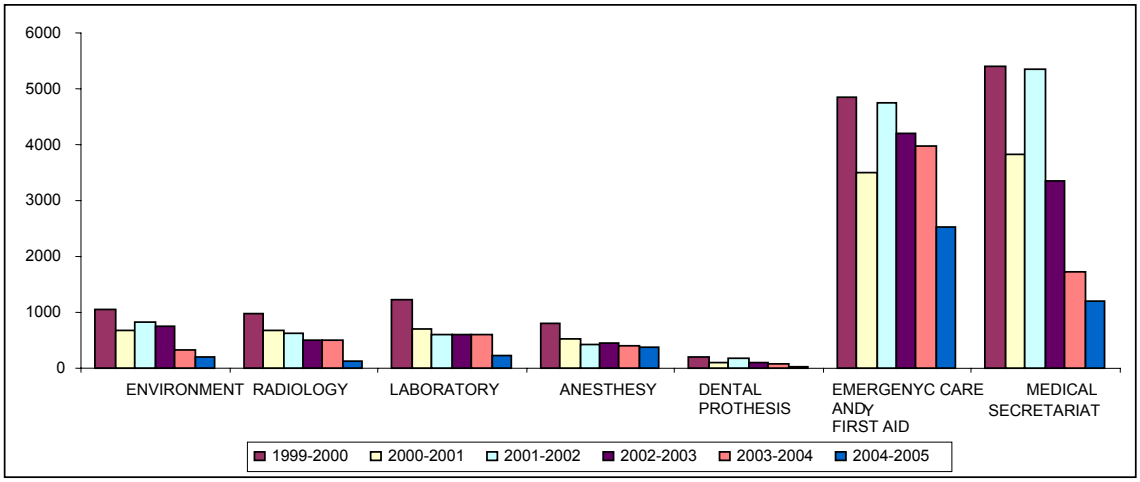

Figure 6-14: Number of Technicians who Graduated from Occupational High Schools of Health, 1999-2005

Source: MoH-DGHE

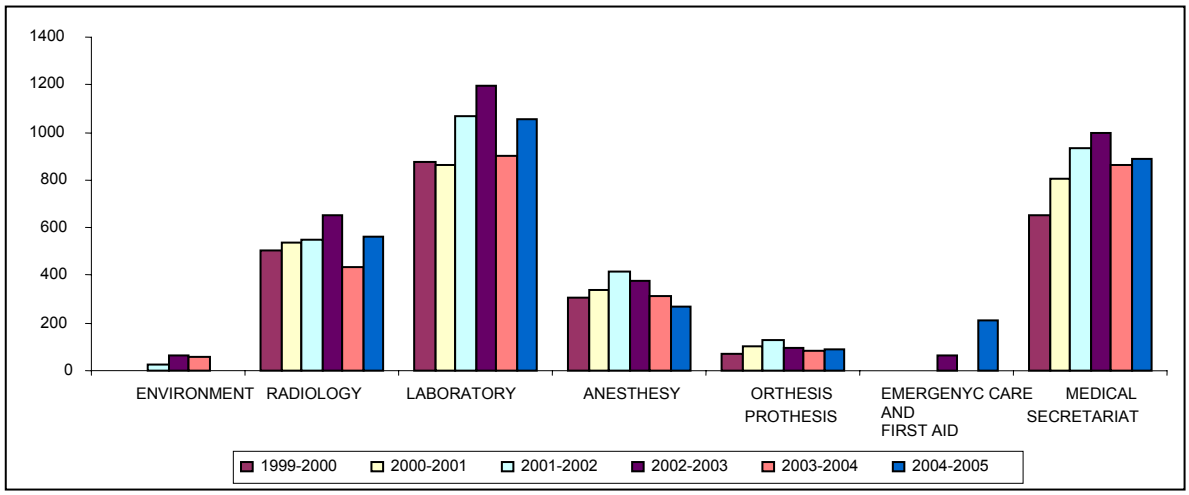

Figure 6-15: Number of Graduates with Associate Degrees, 1999-2005

Source: MoH-DGHE

Table 6-9: Number of Allied Health Personnel at the Ministry of Health, Universities and in Private Sector, 2006

	Ministry of Health	University	Private Sector	TOTAL
Operation Technician (associate Degree	0	13	168	181
Anesthesia Technician (high school	3919	122	563	4604
Biologist	617	286	268	1171
Environmental Health Technician	3154	46	25	3225
Pedagogue	50	7	1	58
Dental Prosthesis Technician (high	1003	4	387	1394
Dental Technician (high school	637	0	86	723
Dietician	486	162	187	835
Physical Therapy Technician (high	16	1	1	18
Physicotherapist	16	3	9	28
Physiotherapist	631	221	211	1063
Assistant Nurse	11	7	8	26
Emergency and First Aid Technician (associate	525	14	84	623
Emergency and First Aid Technician	1390	16	1592	2998
Heart-Lung Pump Work.Technician	0	0	1	1
Laboratory Technician (associate	140	53	316	509
Laboratory Technician	10730	544	1506	12780
Audiologist	27	13	2	42
Audiometric Technician (associate	51	25	5	81
Audiometric Technician	180	5	21	206
Orthopedic Technician	111	14	63	188
Pathologic Anatomy Technician	4	7	1	12
Perfusionic Pump Technician (high	0	4	8	12
Prosthesis Technician	14	2	8	24
Psychologist	477	84	212	773

	Ministry of Health	University	Private Sector	TOTAL
X-ray Technician	7438	424	1167	9029
Health Physicist	9	6	0	15
Health Wartime Officer	22	0	0	22
Health Technician	311	562	200	1073
Health Technician	354	1170	91	1615
Social Workers	287	45	60	392
Medical Secretary	2169	156	303	2628
Medical Technologist	1166	5	24	1195
Population Health Technician	14474	147	1475	16096
Veterinary	7	9	28	44
Total Health Care Services	**50426**	**4177**	**9081**	**63684**

Source: MHDPG

6.3.CERTIFICATION TRAINING OF HEALTH PROFESSIONALS

In order to offer people qualified health care services, institutions should work in collaboration in accordance with the country's needs and personnel should continue their professional improvement in pre and post-graduate term. Thus, Department of Health Professions' Standards of the MoH General Directorate of Health Education conducts studies on promotion and recognition of professional skills and competence of various health professions. Yet, a compulsory training and certification system is not available in Turkey so as to support post-graduate professional improvement of health personnel in Turkey.

Turkish Medical Association (TMA) and Specialty Associations develop labor force plans and policies, co-work with respective institutions and universities to maintain continuous medical education and professional development, and organize trainings, congresses and certification programs. TMA credits the Continuous Medical Training (CMT) activities and notify physicians the scores which they get in these activities. These credits are not reflected on personnel rights, however. It is almost voluntarily and no awarding system does exist. Yet, there are ongoing discussions on these trainings and credits with respect to legal and administrative aspects.

MoH commenced Certification Training on Family Medicine, Certification Training on Emergency Medicine and assistant health personnel-oriented Basic Life Support Trainings with pre-identified curriculums and in-service training practices. MoH gives blood transfusion and training and certification to non-physician health personnel in blood centers and blood stations. Besides, the Ministry of Health gives 3-week training to physicians and 4-week training to nurses and midwives on Family Planning and Intrauterine Devices Certification

Program. Apart from these, the Ministry also gives in-service trainings and certification programs to nurses, midwives and health officers in order to promote the quality, reliability and productivity in nursing care services (such as Intensive Care Unit Nursing Courses, Dialysis Nursing Courses, Emergency Care Nursing Courses and etc.).

Within the scope of health personnel training and certification, SPH set up Distant Learning for Health System (HM-USES). By means of this system which gives training for health managers for now and will give in-service trainings later it is targeted to help health managers to manage their institutions in a better and more productive way by making use of scientific managerial techniques. At the end of these courses given by HM-USES, it is planned to award trainees with certificates. For now, approximately 2000 trainees receive training in this system.

Trainings which are given on HM-USES target to improve basic managerial skills of managers and consist of 11 courses such as financing, team play and leadership. Trainings are different in content depending on whether health managers work at hospitals or provincial directorates. Both programs consist of the following courses:

Following are the courses envisaged for Provincial Health Directors:

1. Term Courses; Health Policies and Planning, Contemporary Human Resources Management, Basic Business Administration Rules for Health Administration, Procurements in Health Care Facilities and Implementation Procedures for Legislation on Procurement.
2. Term Courses; Modern Management Strategy and Principles, Financial Structure and Planning in Health Care Facilities, Management Information Systems in Health Care Facilities, Financial Accounting in Health Care Facilities.
3. Term Courses; Material and Chain of Supply Management for Health Care Services, Producing Values in Health Care Facilities and Income-Expenditure and Profit Analysis Methods, Health Law, Financial Analysis of Investments in Health Care Services.

Following are the courses envisaged for Hospital Manager's training:

1. Term Courses; Basic Business Administration Rules for Health Administration, Contemporary Human Resources Management, Financial Management Techniques in

Health Care Facilities, Procurements in Health Care Facilities and Implementation Procedures for Legislation on Procurement.

2. Term Courses; Contemporary Management Rules and Theories, Marketing Strategy at Hospital Enterprises, Management Information Systems in Health Care Facilities, Financial Accounting in Health Care Facilities.
3. Term Courses; Total Quality Management an Hospitals, Material and Chain of Supply Management for Health Care Services, Producing Values in Health Care Facilities and Income-Expenditure and Profit Analysis Methods, Health Law.

Content of courses are prepared by academicians and transferred to electronic environment by a team assigned at the SPH. When these courses are completed trainees will be awarded with certificates which might have positive effect on their career and the implementation will be the first example of a certification system of this kind.

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CHAPTER 7 HEALTH REFORMS PROCESS IN TURKEY

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In this chapter, we will take a short glance at the history and progress of health reforms in Turkey and discuss the main framework of changes which have been made since the establishment of the Grand National Assembly of Turkey (GNAT). In the last section, the health projects and finally the Program for Transformation in Health (PTH) will be pointed out, as well as the progress which has been made so far.

7.1.HEALTH CARE SERVICES IN PRE-OTTOMAN TURKS

In the pre-Islamic Turks, there were two groups of people who treated patients. First group use to treat patients with medicines and second group used to benefit from religious-magic methods of Shamanism. Physicians who used to treat patients with medicines were called “otacı” or “emçi” or “atasagun” while healers who used to treat patients with religious-magic methods were called “kam” or “baksı” (1).

As explained in Divan-ü Lügat-it Turk, a kam used to stand near a physician and tried to heal a patient in spiritual ways with magic while the physician healed the patient with medicines (herbs).

In the Anatolian Seljuk Empire, medicine overlapped some characteristics of the Islamic medicine. Seljuk physicians, in accordance with the classical understanding of medicine, adopted the four humor theory, which assumed that human being was made of soul and body that had four different fluids. These four fluids were blood, phlegm, yellow gall and black gall which referred to heart, brain, liver and spleen. Keeping these fluids in balance and harmony referred to good health while imbalance and disharmony referred to diseases (1,2).

In the Seljuks, patients were treated in “Darussifa”s which was the hospitals at that time. In these institutions, not only patients were treated but also medical education was given to students based on apprenticeship. Students who completed the education were awarded with license (certificate, diploma) by their instructors and started to work as physicians (1).

Gevher Nesibe Sultan Hospital and Medical Madrasah (Çifte Madrasah was built in 1205-1206 by Gıyaseddin Keyhüsrev I on behalf of his sister Gevher Nesibe Sultan, daughter of Kılıçarslan II, the Seljuk Emperor) which were the first health institutions founded by Turks were built in 1206 in Kayseri province. Hospitals were opened in also Konya, Erzurum,

Erzincan, Sivas, Akşehir, Kastamonu, Divriği, Aksaray, Mardin, Çankırı and Amasya provinces in the 13th century (3). In some sources, it is also stated that Artuqids founded hospitals in 1108-1122 in Mardin and in 1185 in Silvan. (4).

Although health care facilities in the Seljuks were opened and run by their affiliated foundations, health care personnel working there were appointed by the Seljuk Sultan. At that time, there were a number of health care facilities in Anatolia and the empire, in parallel with its policies, opened a great many health care facilities especially on trade paths. Besides, health care services were given in caravansaries, too.

In the Seljuks, the authority of "head physicians" did not exist contrary to the Ottomans. Though some sources assert that Melik el-Hukema's, who were like the Ottoman head physicians, existed in the Seljuks, there is no historical evidence on the activities which were conducted outside the palace by Melik el-Hukemas (1,3,4).

7.2.HEALTH CARE SERVICES IN THE OTTOMAN PERIOD

7.2.1. Health Care Facilities

The Seljuk understanding of medicine also existed in the Ottoman period with its Islamic characteristics. Particularly Darussifas (hospitals) continued to give health care services in the Ottoman period. After the 19th century, the word "hospital" replaced the word "Darussifa" and some other words which were used in the same meaning. "Gureba" and "Hamidiye" hospitals, which were founded after the 19th century, correspond to the contemporary hospitals today (1).

Hospitals in the Ottoman period were managed by head physicians and hospital ministers. Head physicians were responsible for medical services and hospital ministers were responsible for administrative services. In the Ottoman period, hospitals were mainly founded in association with foundations and thus were managed according to the rules and principles of the foundations which they were bounded to. Apart from these, foreigner's hospitals were managed in accordance with the laws and regulations of foreigners. As could be better understand in the upcoming parts, hospitals were under the management and control of head physicians in the Ottoman period (5).

In the Ottoman period, very few hospitals were founded in provinces except for those that host the empire throne. Yıldırım Darussifa, which was built in 1390-1394 in Bursa, was

the first Ottoman hospital. Grand Vizier (Sadrazam) Candarlı İbrahim Pasha was treated at this hospital where mental diseases were treated, as well. A head physician, two physicians, two pharmacists, two dieticians, a cook and a baker were appointed at the hospital when it was first established. Edirne Leprosarium (1451), Edirne Darussifası (1485), Manisa Lunatic Asylum (1539), Sultanahmed Darussifası (1617) and Gureba-i Muslimin (1838) were the most significant and respected health care facilities in the Ottoman period (3,6).

New hospitals were opened in the post-Tanzimat period, as well (T.N: administrative reform commence in 1839 by the Tanzimat Edict). Bezm-i Alem Gureba-i Muslimin hospital for women was the first new hospital which was opened after the Tanzimat Edict (1843). Following that hospital, gureba hospitals were opened in Izmir (1851), in Bursa (1879) and in Edirne (1888). Hamidiye Etfal Hospital, which was the ancestor of today's Sisli Etfal (Children) Hospital, was opened in 1899 and Konya Gureba Hospital, which was the ancestor of today's Konya Numune Hospital, was opened in 1915 (3,7,8).

It is known that first example of contemporary pharmacies which was opened in the Ottoman period was Iki Kapili Pharmacy which was opened in Bahcekapi district in 1757 in Istanbul. In the 1880's there were at least 3-4 pharmacies in Erzurum, Van and Trabzon provinces but most of their managers were uncertified people whom we will discuss in the following parts (1).

In the last years of the Empire, some social associations were also built up in addition to the health care facilities. The most significant one of these associations was Hilal-i Ahmer Association which was the ancestor of the modern Red Crescent Association. Hilal-i Ahmer was founded on 11 June 1868 and first named as the "Association of Aid to Injured and Ill Ottoman Soldiers". The Association was given different names later which were Ottoman Hilal-i Ahmer Association in 1877, Turkish Hilal-i Ahmer Association in 1923, Turkish Red Crescent Foundation in 1935 and finally Turkish Red Crescent Association in 1947. The name "Red Crescent" was given to the Association by Atatürk. The Ottoman Association of Fight Against Tuberculosis was another association which was founded at that period. The Association, which was opened on 8 June 1918, was closed in 1920 due to the occupation of Istanbul and re-opened in 1927 after the Republic was declared. After the GNAT was founded, the Himaye-i Etfal (Children Protection) Association, which was founded by Atatürk, was added to these associations in 1921. The Association was first named as the Children Protection Society and then was re-named as the General Directorate of Society for Social Services and Children Protection in 1983 (5,9,10).

7.2.2. Medical Education

In the Ottoman period, medical education was based on master-apprentice relationship as in the past. Education in medical madrasahs also including the medical education in Suleymaniye Madrasah was not specific to the field of medicine but was rather general. Graduate physicians were awarded with diplomas not in the name of the madrasah but in the name of their instructors.

Systemic medical education in the Ottomans was started during the reign of Mahmoud II in the 19th century when Mekteb-i Tıbbiye-i Adliye-i Sahane – a military school of medicine- was opened on 14 March 1827. Later, Tıphane-i amire was opened in 1827 and Cerrahhane (surgery school) was opened in 1831. Then, these two institutions were united and named as Mekteb-i Tıbbiye-i Adliye-i Sahane in 1831. In the beginning, education was given in French and it was replaced the Ottoman language in 1866. March 14, the opening day of the School is celebrated as the Medicine Day in our country. The first Ottoman civilian medical school, Mektebi Tıbbiye-i Mülkiye (School of Medicine), was opened in 1867 (1,3).

7.2.3. Physicians and Chief Physicians

The Ottoman administration attached utmost importance to medicine and physicians. Darussifa physicians were appointed by the palace and most physicians who were assigned at the palace were selected among those who graduated from Darussifa or Suleymaniye Madrasah. Seretibba-i Sultani (chief physician) was the highest medical authority in government administration. Some sources allege that chief physicians were first appointed during the reign of Murad II, while others prove that they were introduced by Mehmet the Conqueror. First chief physician was Kutbettin and the last chief physician was Abdülhak Molla. Since the 16th century, chief physicians governed health care issues for approximately 380 years and 46 chief physicians performed task at that period.

Chief physicians were responsible for both the health of the palace members and citizens. They worked in affiliation with Baslala (T.N: assistant of the Sultan) as for the Sultan's and his dependents' health and in affiliation with the Grand Vizier as for the entire population's health. They were proposed by the Grand Vizier and appointed by the Sultan. Chief physicians also joined the army with the Sultan and dealt with providing, keeping and protecting medicines and medical supplies of the army during war. In addition to physicians at the palace, various health care facilities, hospitals and social aid societies across the empire were affiliated with chief physicians. They were also liable with fighting against epidemics,

appointing health personnel and opening new hospitals where necessary. Cerrahbasis, who were Chief Surgeons (called Director of Surgeons in 1834), and Kehhals who were Ophthalmologists were responsible to the Chief Physician, too. However, pharmacy was under physicians' responsibility at that time and thus Chief Pharmacists did not exist in the Ottomans since assistants at pharmacies were supervised by physicians (1,3,5).

Another interesting point about the tasks of chief physicians is that active working physicians were given a scientific exam by a council which was headed by the Chief Physician. Chief Physician inhibited those who failed in the exam from performing job and allowed successful candidates to open up their own offices. The oldest historical evidence which proves that today's accreditation system was more or less implemented in the Ottoman period goes back to the 1700s.

Chief physician's authority was annulled in 1849 and replaced by Mekteb-i Tıbbiye Nezareti (Ministry of Medical School). In 1870, a regulation was issued and İdare-i Mülkiye-i Tıbbiye (Medical School Administration) was founded in affiliation with the Ministry of Medical School. Then, in 1871, Health Inspection Offices and Country Medical Offices were founded so as to regulate health care services given to civilians. After that, a law dated 1914 devolved the responsibility of health care services to the General Directorate of Health Affairs which was an affiliated body of the Internal Ministry. Dr. Besim Ömer Pasha was the first Director General of Health Affairs.

After the system of country medical offices was put into practice, those who graduated from the Medical School were appointed to public service for 5 years. Physicians worked in towns and villages for 2 years and in provinces for 3 years. Physicians who worked in deprivation areas (like Yemen, Baghdad, Hicaz and etc.) were awarded with additional payment up to half of their salaries. Country medical offices were the first steps which were taken for delivery of health care services by the government. By-Law on General Administration of Civil Medical Services issued in 1871, envisaged structuring details of which are listed below: (1,3,5)

- Consulting the Ministry of Medical School, Sehremini in Istanbul and Governors in provinces shall assign a country physician in certain cities and towns, if necessary.
- Salaries of physicians shall be paid by the local administrations.
- Municipalities shall open a pharmacy in certain towns and put a door plate on its door so as to imply that the pharmacy is owned and governed by the municipality.

- Physicians shall examine all patients – regardless if they are rich or poor- at certain days and hours with no charge. Patients shall be provided with free-of-charge vaccinations.
- Patients, who are not able to visit the examination place, shall be examined at their homes. Those, who can afford medical services, shall be charged prior to the examination. No charge shall be asked from the poor and compulsory expenses shall be met by the municipalitan fund.
- It is a due a reason for dismissal from job not to examine and treat patients with no important and valid rationales and to ask money from the poor.
- In case epidemics, physicians shall take necessary measures. They shall take measures upon the order and approval of governors as for the cases which fall behind their field of responsibility. Necessary expenditures shall be met by local administrations.
- Physicians shall be responsible for all health-specific affairs also including the inspection of hospitals, pharmacies and other health care facilities which are located in their regions.
- Country physicians shall submit a study report to the Ministry of Medical School once a month.
- Country physicians are expected to know their region in latest 9 months following their appointment.
- Country physicians shall perform their tasks in legal affairs in accordance with respective laws and regulations.
- Country physicians are responsible for notifying local administrations the orders and directives which they are given by the Ministry of Medical School.

7.2.4. Scientific and Technological Developments

Smallpox vaccination is one of the most important scientific and technological developments in the early 18th century in the Ottoman period. Although it is accepted that smallpox vaccination was first invented by Jenner in 1798, the oldest historical evidence in this issue points out that smallpox vaccination was used in 1710's in Istanbul.

In a letter dated 1 April 1717, Lady Mary Montague – the wife of the British Ambassador to the Ottoman Empire who lived in Edirne – wrote to her friend in great surprise that a method which was similar to vaccination (varillation method) was used against smallpox in Istanbul and described the use of the vaccine in details, as well. This letter is the

oldest document in the world which proves the vaccination. After Lady Mary Montague died, the letters which she wrote when she lived in Istanbul and Edirne were published in a book in 1763. These letters are still published with the name of "Turkish Embassy Letters". They were also translated into Turkish and available with the name of "Sark Mektupları" (Letters from the East) (11).

About 150 years after the letters by Lady Mary Montague, Pasteur invented rabies vaccination in France but was not supported by the scientific environment adequately. Then, he was invited to Istanbul to continue his studies by Abdülhamid II, however rejected this invitation due to his old age. Upon Pasteur's rejection of this invitation, Abdülhamid II immediately sent Zoeros Pasha, Hüseyin Hüsnü Bey and Hüseyin Remzi Bey from the Military Medical School to France in 1886 so that they would be educated by Pasteur. By the way, Sultan Abdulhamid II granted 800 Liras (approximately 10.000 Franks) to Pasteur's studies so that he founded a vaccination center for people and he also awarded Pasteur with the First Degree Mecidi Medal, the most important official government award of the Ottoman Empire. Historical evidence of both the Medal and the Grant are available in the archives. The Medal awarded to Pasteur is exhibited in the Pasteur Institute, at present (12).

Headed by Zoeros Pasha, the Rabies Treatment Institute (Daûl-Kelp Operating Room) was founded in January 1997 in Istanbul after the medical team, which was trained by Pasteur in France, came back to the country. Pasteur Institute, however, was founded later, on 14 November 1888.

In addition to Pasteur, both Robert Koch was awarded with the First Degree Mecidi Medal in 1889 for his studies on tuberculosis and Emil Von Behring was awarded with the First Degree Mecidi Medal in 1892 for his studies on diphtheria serum by the Sultan Abdulhamid II. Emil Von Behring was given his medal when he visited Istanbul in 1907 and he was host by the Sultan for three weeks.

First smallpox vaccination center of the Ottoman Era (Telkihhane) was founded in 1892 and Colonel Hüseyin Remzi Bey procured the first smallpox vaccination in the same year. Following the smallpox vaccination center, Bacteriology Center was founded in 1893 and Chemistry Center was found in 1894. At the Bacteriology Center, veterinary Mustafa Adil Bey produced diphtheria serum in 1896, beef plague serum in 1897 and scarlet fever serum in 1903. At the Bacteriology Center, cholera and dysentery vaccines were produced in

1913 and a training branch was founded in the same year. Mustafa Hilmi Bey, bacteriology department's chef at Gülhane Military Hospital, produced vaccine against typhoid fever in 1911 and plague in 1920. First vaccine against typhus fever in the world was given by Dr. Tevfik Sağlam, as well. In 1917, the Hygiene Center in Sivas started to produce smallpox vaccination and distributed it to other provinces than Istanbul for the first time in the Ottoman history (12).

7.3.HEALTH CARE SERVICES SINCE THE FOUNDATION OF GNAT (1920-1990)

Once the first GNAT Government was established, studies were commenced to organize the Ministry of Health (MoH) in contemporary sense. By the Law dated 2 May 1920 and No. 3, the Ministry of Health and Social Welfare (MoH) was founded and assigned with conducting all kinds of health care services across the country. Dr. Adnan Adıvar, the first Minister of Health, started work in a small room located at the Governor's Office in Ankara. Dr. Refik Saydam was the first Minister of Health of the Republic of Turkey. First work program, which was prepared by the Ministry of Health in 1925, listed the problems of priority as in the following:

- To broaden health organization of the state,
- To train physicians, health officers and midwives,
- To establish Numune hospitals, labor and child care centers,
- To fight against severe diseases such as malaria, tuberculosis, trachoma, syphilis and rabies,
- To make laws in health and health care,
- To bring health and social aid organizations to villages,
- To establish the Central Hygiene Center Institute and the School of Public Health.

In this framework, health care services were attached utmost importance in Dr. Refik Saydam's period. Limited sources were allocated to fight with diseases which were common, caused disability and mortality and disease control associations were founded to fight against major health problems (malaria, trachoma, and syphilis and lepra control associations). Public health care services were organized in Health Directorates in provinces and Government's

Health Offices in towns. Curative services were left to the local administrations and Numune Hospitals were opened in Ankara, Diyarbakır, Erzurum and Sivas in 1924, and Istanbul Haydarpasa Numune Hospital was founded in 1936). In addition to Numune Hospitals, Examination and Treatment Houses were opened in central towns at the same period (150 of them were opened in 1924 and 20 of them in 1936). Then, theses centers were transformed into Health Centers and Health Posts. In 1946, Numune Hospital was opened in Trabzon and in 1970 in Adana. Konya Numune Hospital was re-structured by re-organizing and modernizing Konya Gureba Hospital which was founded in 1915 (3,5).

In the first years of the Republic of Turkey, decision-makers tried to remove defects in health by issuing the Law No. 1219 on Medicine and Performance of Medical Professions in 1928, the Law No. 1593 on Public Hygiene in 1930, and the Law No. 3017 on the Organization and Personnel of the Ministry of Health and Social Welfare in 1936.

At the same time, fight against communicable diseases was accelerated and the Law on Public Hygiene identified the ways for fighting communicable diseases. The Law ordered that all vaccines and serums used for such diseases to be produced by the government and imported vaccines and serums to be compatible with the qualifications and standards set by the Ministry of Health. Considering the severity of small pox, the Law also ordered that all newborn infants to be vaccinated in four months following the birth and all people to be re-vaccinated in every five years until the age of 30. Besides, surveillance system was reviewed and the way of the notification of the diseases determined, in terms of whom, how and where to notify.

Being a part of the fight with communicable diseases, the first Tuberculosis Control Dispensary was opened by Istanbul Private Provincial Administration in 1923 in Istanbul upon the request of the Ministry of Health. In 1924, Heybeliada Tuberculosis Sanatorium with 50-beds capacity was opened in Istanbul and the capacity at Haydarpasa and İzmir Communicable Diseases Hospitals and other hospitals in other provinces were strengthened so as to treat the notified tuberculosis patients and isolate them from public.

In that period, also important steps were taken for fighting rabies and rabies hospitals were founded in Erzurum and Sivas in 1925, in Diyarbakır in 1926, in Konya in 1927 and in İzmir in 1930. 'Similarly, trachoma was a major health problem in those years in Turkey. Adıyaman province was even called as the “city of the blind” due to a great number of

trachoma cases. Thus, a trachoma hospital was founded in Adıyaman in 1925. Other trachoma hospitals were opened in 1925 in Malatya, in Adana, Gaziantep, Kilis and Besni in 1930.

As one of the significant developments in protection of public health in the country, the Hygiene Center Presidency was founded on 27 May 1928 to conduct basic laboratory studies with respect to production, control and diagnosis. Then, in 1936, the School of Public Health was opened. The Institute, which acted under the name of Hygiene Center Presidency in the following years, was more than being a respected reference laboratory. It also undertook the production of almost all kinds of vaccines and serums together with the affiliated School of Public Health which conducted scientific researches, trainings, congresses and other scientific studies.

In the post- Dr. Refik Saydam period, this health organization was maintained and the "Extraordinary Law on Malaria Control" was issued in 1945 so as to prevent malaria which caused large-scope epidemics. As reported by the MoH in 1943-1947 in Ankara, Bursa, Eskişehir, İstanbul and İzmir provinces, tuberculosis-caused deaths always occupied the first three ranks. The proportion of those who died of tuberculosis was noted 13.5 %. So, Tuberculosis Control Associations were founded in provinces in 1949 and Atatürk Sanatorium was founded in Ankara in 1953.

In 1952, Maternal and Child Health Organization was founded and Maternal and Child Health Centers, branches and stations were opened. Fighting rabies continued in this period and a rabies hospital was opened in Elazığ in 1953. Curative services which were conducted by local administrationg were undertaken by the MoH in the 1950s and municipalitan hospitals were transformed into state hospitals (3,5).

Once the planned development period was started in Turkey in 1960, the law on Socialization of Health Care Services no. 224 was issued on 12 January 1961. So, a new era started in delivery of health care services, which introduced the following principles:

- Equity in service,
- Continuous service,
- Integrated service,
- Graduated service,
- Prioritized service,
- Participatory service,
- Team service,

- Supervised service,
- Appropriate service,
- Population-based service

Upon the implementation of the Law on Socialization of Health Care Services, government's medical offices were replaced by health centers. According to this model:

- Health centers would give primary health care services to 5.000-10.000 population. A physician, a nurse, a health officer, 2-4 village midwives, a medical secretary, a servant and a driver would be appointed in health centers.

- With a team spirit, health centers would provide the population residing in its region with primary health care and preventive health care services. Health center personnel would reside in their responsible region and services would be continuous and mobile, if necessary.

- Health centers would be supported by State Hospitals as for curative services and by health directorates-affiliated public health centers as for preventive services.

The system of health centers was first implemented in Muş in 1963. Then it was put into effect in 45 provinces in 1979 and in 53 years in 1982. Finally, the system was generalized to the entire country in 1983.

In the post-1983 period, significant changes were made in health policies. Radical reforms were planned in parallel with the world developments based on the assertion that there were problems in delivery of health care services in Turkey. These studies could be divided into two groups. First group consisted of efforts which aimed to make necessary changes to the current system so as to build a better health care system and facilitate transition while second group consisted of efforts which aimed to design and build the new system.

Under the first group of studies, financial structure of the health sector was analyzed in collaboration with the World Bank experts in 1988 and the State Planning Organization (SPO) had Price Waterhouse and Ancon Counseling Company make the Master Plan Study on Health Sector in 1990. Subsequent to these studies, the MoH and WB signed the loan agreements for the First Health Project, Second Health Project and Primary Care Services Project.

7.4.POST- 1990 HEALTH PROJECTS

7.4.1. First Health Project

First Health Project, which was the first WB-financed project in Turkey, was signed by the Republic of Turkey and World Bank on 16 August 1990 (Loan Agreement no. 3057-TU) and came into effect after it was issued in the Official Gazette dated 17 October 1990 and no. 20658. Yet, the project activities were only started in late 1991 for some reasons and completed in late 1998. The project covered eight project provinces which were Diyarbakır, Mardin, Muğla, Sivas, Tokat, Yozgat, Ankara and Pendik, Eyüp, Ümraniye and Bakırköy Districts of İstanbul. 51 % of the project, total budget of which was 147.47 million USD, was funded by the World Bank while 49 % was funded by the National Government. Phases of the First Health Project are presented in Table 7.1 (13,14,15).

Tablo 7-1: Phases of the First Health Project

1- Restructuring and Strengthening Provincial Health Care Services and Especially Primary Health Care Services (Planned Cost: 125,89 million USD ,%85).
• Health programs and in-service trainings, • Improving primary health care services, • Constructing new buildings, ✓ 5 hospitals (Sivas Suşehri, Muğla Fethiye, Ankara Polatlı, Ankara Haymana and Muğla Milas State Hospitals), ✓ 98 health posts, ✓ 15 village-type health centers, ✓ 16 province-type health centers, ✓ 4 training health centers • Repairing the present facilities, • Procurement (Medical equipment, devices and etc.)
2- Promoting the Institutional Capacity (Planned Cost: 21,58 million USD,%15).
• Building man labor force capacity, ✓ Man labor force planning, ✓ Primary education, ✓ Education abroad, • Establishing health information systems, ✓ Basic Statistical Module, ✓ CSMS (Core Resource Management System), ✓ Training for personnel to use health information systems, • Supporting the central organization of the Ministry of Health.

Source: MoH- Health Project General Coordination Unit (HPGCU), Health Project Information Note, 9 October 1997

As of 31 December 1998, total expenditures for the project reached up to 172 million USD and financial realization of the project was noted 100 %. 68.5 million USD of the expenditures was met by the DB loan and 103.5 million USD by the National Budget. With 9 million USD which was spent in compliance with the agreements signed to procure medical devices and equipment for 5 new state hospitals the WB loan increased up to 75 million USD and the loan payments were completed. Figure 7.1 presents the expenditures by years (13).

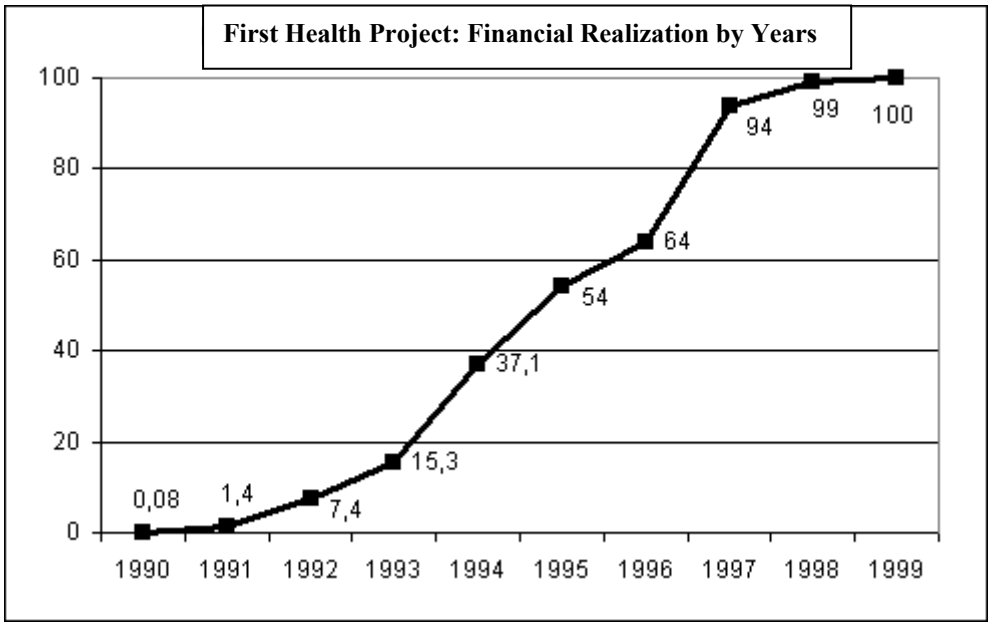

Figure 7-1: First Health Project, Financial Realization by Years

Source: Turkey First Health Project Closing Statement

Constructions

100 % of the constructions of 133 primary health care centers were completed in of 9 October 1997. Of these 5 new hospitals, Suşehri (Sivas) and Milas (Muğla) State Hospitals were opened in 1998, Polatlı State Hospital (Ankara) was opened in 1999, Haymana State Hospital (Ankara) was opened in 2000 and Fethiye State Hospital (Muğla) was opened in 2003. Table 7.2 presents the brief information on the construction of hospitals (13).

Table 7-2: Hospitals Built under the First Health Project

	Number of Beds	Procurement Cost	Beginning Date of Construction	Date of Opening to Service*
Polatlı S.H	150	4.192.167 USD	1994	1999
Milas S.H	100	3.811.286 USD	1994	1998
Suşehri S.H	50	7.681.818 USD	1997	1998
Fethiye S.H	200	8.058.826 USD	1995	2003
Haymana S.H	50	3.479.191 USD	1995	2000

Source: Turkey First Health Project Closing Statement
*Information on the constructions which were completed after the issue of this report was obtained from the respective MoH department.

Procurement and Supply

A total of 33 million USD was spent for procurement and supply. Table 7.3 presents the procurement proceedings in this context by years.

Table 7-3: First Health Project Procurement and Supply Proceedings

YEAR	Procured Goods or Services
1993-1994	Procurement of medical supplies for 2139 primary care health facilities
1993	Procurement of 183 vehicles (123 off-road vehicles)
1994	Procurement of medical devices for 51 hospitals
1996	Procurement of medical devices, furniture and furnishing for 5 new hospitals
1995	Procurement of software and hardware in 79 provinces

Source: MoH-HPGCU, Health Projects Information Note, 9 October 1997

Education and Scholarships

Under the Project, 26 personnel were granted scholarship for study abroad and 108 personnel were sent abroad for education in 1992-1996. In that period, 310 personnel at the MoH and Ankara Provincial Health Directorate were given English language education.

During the project, in-service trainings continued, as well. 13.384 personnel benefited from these trainings. Table 7.4 presents the number of people who were trained with in-service trainings under this project.

Table 7-4: In-service Trainings under the First Health Project

	Trainings for Central Organization	Provincial Trainings	TOTAL
Pre-1995	0	2738	2738
1995	338	1147	1485
1996	407	1417	1824
1997	835	3226	4061
1998	665	2611	3276
TOTAL	2245	11139	11384*

Source: MoH-HPGCU, Health Projects Information Note, 9 October 1997
* 3556 physicians, 3591 midwives, 1436 nurses and 2556 other personnel

Man Labor Force Planning

1. Some surveys were made so as to be used for man labor force planning under the project.

   - Survey on understanding of work and professional attitudes of health personnel,
   - Survey on life quality in central districts,
   - Survey on projection models,
   - Survey on work load-based need for personnel.

2. Acting in compliance with the need to train also trainers in health education and management, trainings were given to teachers and directors at occupational high schools of health.

   - Effective use of educational materials and communication techniques: 536 teachers,
   - Educational methodology: 310 teachers
   - Family planning methods and counseling: 97 teachers
   - Family planning methods for men and counseling: 1000 teachers
   - School management and standardization: 328 directors of occupational high schools of health.

3. Copyrights of some educational cassettes which were designed by the Open Learning Faculty were purchased and these cassettes were distributed to schools (15).

Health Information Systems

During the project, functional and strategic plans were developed for health information systems. Turkey Health Statistics Module (THSM) and Core Resource Management System (CSMS) projects were commenced in parallel with these plans.

Two versions of THSM which were used in the MoH Central Organization and Provincial Health Directorates were made usable at the end of the project. For CSMS, consultancy agreement was signed in May 1995. Then, logical model was designed in December 1995 and final report was prepared in February 1996. However, completion of the project was delayed for some reasons and completed in 2003.

Universal Health Insurance

Throughout the First Health Project, infrastructure studies were conducted for transition to the universal health insurance. A great many studies were carried out on the issue and reports were prepared. In 1992, the Green Card was put into implementation by the Law No. 3816 which was the first step taken for the transition to the universal health insurance.

Results of the First Health Project

First Health Project is the first project which the MoH implemented with the WB loan. First Health Project is also very important since it was a step taken to build the infrastructure which was needed for the reforms planned. Therefore, construction work and procurement of goods constituted approximately 75 % of the project budget. Besides, major steps were taken to build the infrastructure of the health information system and universal health insurance.

"Master Plan Study on Health Sector" which was conducted under this project was used as a reference in many studies and plans later. Though having a limited capacity, studies were also carried out under this project in order to build the capacity of human resources. For the first time, in-service trainings were given in provinces which introduced computers to health personnel as a part of the health information system development efforts. Besides, the MoH Central Organization personnel had the opportunity to study abroad in short or long term.

Project design, high share of country participation, a great many problems occurring from legislations or man labor force and slow progress of the project caused discussions for years. Little experience in implementing such a large-scaled project, unreadiness for

cooperation with international organizations, inadequate practices of both parties and excessive time and budget which overreached the plans led to discussions, as well. Nonetheless, it is considered that implementation of this project made invaluable contribution to the project design culture, work discipline, experience in national and international scale at the MoH and thus turned out to be beneficial for the following projects and studies.

7.4.2. Second Health Project

By the Loan Agreement no. 3802-TU, which was signed between the Republic of Turkey and World Bank on 28 September 1994, the Second Health Project came into force after it was issued in the Official Gazette dated 22 December 1994 and no. 22149. The agreement was amended two times, first in 1999 due to the earthquake and second in 2001. In its original form, the project, which was started on 31 January 1995, was completed on 31 December 2001. The amended version, however, ended on 31 December 2004 and the World Bank issued the Project Closing Statement on 27 October 2005 (14,16).

23 provinces were included in the Second Health Project, which were Adıyaman, Ağrı, Ardahan, Artvin, Batman, Bayburt, Bingöl, Bitlis, Elazığ, Erzincan, Erzurum, Gümüşhane, Hakkâri, Iğdır, Kars, Malatya, Kahramanmaraş, Muş, Siirt, Tunceli, Şanlıurfa, Şırnak and Van. Besides, the Project gave support to the provinces of Bolu, Düzce, Kocaeli, Sakarya and Yalova which were destroyed by the earthquake in 1999. Estimated budget of the project was 200 million USD. 75 % of the project was funded by the WB loaned while 25 % by the National Budget. Components and estimated costs of the Second Health Project are identified below:

1. Primary Care Services: (155.6 million USD)
    a. Education/Training on Primary Care Services (16.2 millions)
    b. Fields of Intervention in Primary Care Services (2.9 million USD)
    c. Development of Infrastructure (136.5 million USD)
2. Development of Health Policies and Management (44.4 million USD)
    a. Training on Management of Health Care Services (10.7 million USD)
    b. Re-structuring Hospital Management (4.5 million USD)

c. Computer-Based Management Support Systems (12.4 million USD)
d. Preparatory Studies on Project Management and Reforms (16.8 million USD)

Subsequent to the additional agreements signed for the Second Health Project, some changes were made in the project components and estimated budget. Table 7.5 presents the project components, estimated budget and realized expenditures together with the changes afore-mentioned (14,16).

Table 7-5: Components of the Second Health Project, Estimated Budget and Expenditures Made

COMPONENT	ESTIMATED BUDGET	EXPENDITURES MADE
1-Primary Health Care Services:	80,6 million USD	80,58 million USD
a- Education/Training on Primary Care Services	15,9 millions	12,7 millions
b-Fields of Intervention in Primary Care Services	8,2 million USD	8,2 million USD
c- Development of Infrastructure	56,5 million USD	56,5 million USD
2- Development of Health Policies and Management	43 million USD	43 million USD
a- Health Care Services and Hospital Management	7,8 million USD	7,8 million USD
b-Computer-Based Management and Support Systems	14,4 million USD	14,4 million USD
c-Researches	4 million USD	4 million USD
d-Project Management	16.8 million USD	16.8 million USD

Source: MoH-HPGCU, Information Note (14), World Bank Second Health Project Closing Statement

7.4.2.1 Education/Training on Primary Care Services (Component 1-a)

Under this component, approximately 27.000 health personnel were trained and capacity was built for the School of Public Health Directorate (SPH) which was re-activated by the end of the project so as to design and coordinate such training programs in the future. Trainings in this framework could be assessed in two groups which are harmonization trainings and promotion trainings.

Within the framework of harmonization trainings, participants were given trainings on provincial characteristics with respect to health care services, regulations regarding health care services and personnel, functions and administration of health centers, main principles and techniques of health services planning, introduction to epidemiology in regional health management, public participation in health care services and health programs. 12.749 personnel attended trainings which lasted ten work days. Trainings were given to all personnel who were first appointed to the project provinces, who were transferred from other provinces and who worked at other facilities or care levels even if located in the same region.

Promotion trainings were given in order to improve the efficiency of health care personnel in delivery of services and to equip them with knowledge and capacity required for the needs and characteristics of the said province. 14.349 personnel attended these trainings. Promotion trainings were designed in compliance with the needs, health indicators and demand within provinces and thus their contents were flexible.

7.4.2.2 Fields of Intervention in Primary Care Services (Component 1-b)

Under this component of the Second Health Project, comprehensive studies were carried out such as rational drug use and development of diagnosis and treatment guidelines for primary care.

Rational Drug Use:

Studies on rational drug use aimed to alleviate the economic and social burden and to prevent psychological, biological and physiological harm caused by irrational drug use. In this context, 73 academicians and 87 provincial officers were trained initially. Then, 87 provincial officers trained 1.048 trainees in various provinces. Pharmacoeconomics was also included in these trainings and a 12-day session was held in 2002 in Antalya. Prescription assessment studies, which were another part of the studies on rational drug use, were conducted in Bolu and Bayburt provinces by making use of the patients' registries and keeping records of the prescriptions which were received by pharmacies in a day. The said studies have been conducted under the SPH shelter since the SPH was re-activated.

Treatment and Diagnosis Guidelines:

"Treatment and Diagnosis Guidelines for Primary Health Care" were developed so as to provide scientific evidence which was needed for primary health care services and to make diagnosis and prescribed or non-prescribed treatment protocols which were needed for very common health problems. Guidelines were published in 12.500 files in 2002 and in 50.000 books in 2003. They were released to primary health care facilities and physicians. More than 100 academicians, physicians and health care facilities contributed to development of the said guidelines and some of the medical faculties in Turkey included them in their pre-graduation education programs, as well. The said study is now being conducted by the SPH.

Other Activities:

Under the Second Health Project, maternal-child health, immunization, malaria, tuberculosis and cancer studies were supported, too. Contributions were made to family planning including but not limited to procurement of equipment and supplies, development

and publishing of materials and public education. Besides, measles vaccination campaigns, which were not included in the original agenda but later added upon need, turned out to be one of the most successful outputs of the project.

7.4.2.3 Development of Infrastructure (Component 1-c)

This component refers to timely procurement of various materials, equipment, furniture and devices, and construction of buildings at lower costs. Under the Second Health Project, it was planned to build training health centers in 23 provinces and 17 of them were built before the project closing statement was issued. Materials, equipment, furniture and devices (also including vaccines and cold chain supplies), which were purchased in 24 separate items, were dispensed to 753 health care facilities and 23 training health centers.

7.4.2.4 Health Care Services and Hospital Management Sub-Component (Component 2-a)

Under this component, a total of 520 trainees were trained with management of health care services. 148 trainees, who consisted of provincial health directors in project provinces, deputies and central organization personnel, and 372 trainees, who consisted of chief physicians, chief nurses and hospital managers in project provinces, participated in this training.

7.4.2.5 Computer-Based Management and Support System Sub-Component (Component 2-b)

With reference to this component, power supplies, cables and other computer network-supporting equipment were purchased for the MoH Central Organization and Provincial Health Directorates. Apart from this, 5.230 personnel were trained with computer's knowledge, Office automation, system processing, network administration and maintenance, human resources management system, material source management system and medicines and pharmaceuticals information system. Information systems which were first put into practice in this context (such as the CSMS) – as would be discussed later- constituted the basis for some other systems which are still in use.

7.4.2.6 Researches Sub-Component (Component 2-c)

Within the framework of researches, various studies were conducted and successful results were obtained in national burden of disease and cost-effectiveness, national health accounts and capacity building.

National Burden of Disease and Cost-Effectiveness Study:

"Global Burden of Disease Standard 2000" was used for this study. The country's burden of disease (DALY) was analyzed so as to lay out geographical differences and comprehensive data was obtained on the causes of mortality and disability by age, gender, region and rural-urban areas. 11.481 households were covered and data from 29 health care facilities were assessed so as to calculate the cost of interventions. Besides, the causes of mortality within the last one year were figured out according to the ICD 10 code in 60.000 households. Coordinated by the SPH, the said study was conducted by a national and international consortium which was formed by Başkent University. The study contributed to evidence-based discussion of major health problems, development of programs and plans specific for regions, access to data which can not be collected by the Standard data forms but which are important to policy-making and also asked by the international organizations and comparison with other countries.

National Health Accounts Study:

With this study, National Health Accounts data base was formed for 1999-2000 in compliance with the Organization for Economic Co-operation and Development (OECD) standards. Questionnaires and surveys were designed and implemented so as to obtain data on health accounts at 152 health care facilities. Coordinated by the SPH, the said study was conducted by a consortium which was formed by Hacettepe University School of Health Administration and Harvard School of Public Health. The study particularly made contribution to identifying total health expenditures and out-of-pocket expenditures for health, clarifying their associations within the health system and obtaining some basic data and calculations which are needed for transition to universal health insurance in order to find out the exact number of people with no health insurance.

7.4.2.7 Project Management Sub-Component (Component 2-d)

This sub-component constituted a basis for receiving national and international consultancy services which were necessary for the management, coordination and implementation of the project activities under the Second Health Project. Other activities which were conducted in this context were receiving technical consultancy to help with renewing the existing organizational structure of the MoH, training and study fellowships abroad and carrying out other relevant studies that were preparation for PTH.

7.4.2.8 Outputs of the Second Health Project

It is obvious that the goals of the Second Health Project had a large scope and thus were difficult to complete as scheduled at the beginning. This project covered infrastructure studies and in-service trainings, programs and researches to foster the reform process. In this context, human resources capacity building trainings were given in both central and rural organization of the MoH and other studies such as the rational drug use and diagnosis and treatment guidelines for primary health care were carried out on the basis of evidence. Besides, the National Burden of Disease and Cost-Effectiveness Study constituted the scientific basis for upcoming activities which aimed to promote health care services. In spite of many challenges, CSMS was realized in the process, as well. In the light of the lessons taken from the First Health Project, hospital building was halted and replaces by building health centers in project provinces. Since the said project provinces were also development-priority areas, health centers located in these provinces were provided with particularly technical support with respect to medical devices and material procurement. Public health laboratories in these provinces were fully equipped with devices and materials. Valuable contributions were made to the promotion of primary care services. Health management trainings were organized for the same purpose, too.

Yet, it was often emphasized that the Second Health Project would not be able to focus on a great many health problems simultaneously and it would not be realistic to claim that all these studies could be completed only in five years. Slow implementation of the project, delays in the project's completion, CSMS's adoption, unsatisfactory practices, waste of time due to frequently changing cabinets and governments and problems of the administrative and technical personnel received many negative comments, though. In the meantime, the MoH-HPGCU, which was founded to conduct these activities, was perceived as an alternative Ministry and its studies were not respected as necessary. Apart from this, a foreign funded project was opposed and opposes raised doubts about officers/administrators who managed these projects.

7.4.3. Primary Care Services Project & Marmara Emergency Earthquake Reconstruction Project

The Loan Agreement no. 4201-TU of the Primary Care Services Project, which was signed between the Republic of Turkey and World Bank in September 1997, came into effect after it was issued in the Official Gazette dated 7 December 1997 and no. 23203. The Project covers Bilecik and Eskişehir provinces. The project's goals were to lay solid basis for further

use of primary care services, promotion of quality and generalization of tested health reforms across the country. Total budget of the Project was 18.63 million USD. 78 % of the Project was financed by the World Bank loan while remaining 22 % was financed by the National Budget. Phases of the Primary Care Services Project are briefed in the following (15):

1- Promotion of Primary Care Services: (17.189 million USD)
    a. Promotion of Family Medicine and Referral System
    b. Trainings
    c. Development of Infrastructure
    d. Primary Health Care Services Information System
2- Monitoring and Evaluation: (461.200 USD)
3- Development of Institutional Capacity (320.500 USD)

After the Marmara earthquake (1999), the project was amended and all sources were allocated for the Marmara Emergency Earthquake Reconstruction Project (MEER) and Bolu, Düzce, Kocaeli, Sakarya and Yalova provinces added to the project provinces like Bilecik and Eskişehir. Loan Agreement no. 4517-TU of the MEER Project was signed between the Republic of Turkey and World Bank on 23.11.1999. Upon signature, the project was issued in the Official Gazette dated 05.12.1999 and no. 23897 and came into effect (16,17).

Basic goals of the MEER Project are to promote life conditions and development in the earthquake destroyed cities, to minimize possible risks by taking necessary measures and to establish an institutional framework for risk management. Following are the components of the MEER Project (17).

A. Disaster Response System and Risk Mitigation
    A.1. Emergency Management System (110.17 million USD)
    A.2. Disaster Insurance Scheme (273 million USD)
    A.3. Land Use Planning and Enforcement of Construction Codes (11.78 million USD)
    A.4. Cadastre Renovation and Land Management (24.21 million USD)
B. Trauma Program for Adults (6.89 million USD)
C. Construction of Permanent Housing (293.32 million USD)
D. Project Management (12.69 million USD)
E. Business Rehabilitation (109.72 million USD)

F. Construction of Permanent Housing in Bolu, Sakarya, Yalova, İstanbul, Bursa and Eskişehir (177 million USD)
G. Repair of Existing Housing Stocks and Healthcare Facilities (632.12 million USD)
H. Rebuilding and Repair of Roads, Water Supply System, Waste Water Systems and Power Distribution Networks (139.73 million USD)

7.4.4. Primary Care Services Project & Outputs of the Marmara Emergency Earthquake Reconstruction Project

Main objective of the Primary Health Care Services Project is to test family medicine as a pilot study in Eskişehir and Bilecik, and then to generalize it by making use the experience and outputs obtained from this pilot study. However, active implementation of this project depended on the adoption of family medicine law in the GNAT and draft law could not be enacted for some reasons which occurred in the process. At the same time, Marmara Earthquake attacked Marmara Region and its neighboring regions. Therefore, the budget which was allocated for the Primary Health Care Services Project was later transferred to the MEER Project. This event turned out to be an important lesson then which proved that the conditions to start such projects should not be associated with external conditions which the implementing agencies did not have any control over. The fact that Ministries which were responsible for the task belonged to different political parties in the coalition government also made inter-sectoral cooperation rather difficult.

The MEER Project was designed as a result of the Marmara Earthquake which gave severe results from both humanitarian and economic perspective. Project activities regarding the health aspect were carried out by the MoH. Some of the budget was transferred from the Second Health Project and Primary Health Care Services Project while a new project source was created for the remaining part. In this context, the MoH made great efforts to bring aid to victims in those regions by meeting the needs of health personnel assigned there, giving in-service trainings and implementing mental health programs, conducting field surveys and setting up disaster intervention teams, providing such teams with necessary equipment, establishing emergency policlinics in the places affected by the eartquake, constructing or repairing hospitals and health care centers, supplying medical devices and materials and procuring mobile health care vehicles. Marmara Earthquake proved to be a major experience with respect to organization and coordination capacity. The most important outputs of the

earthquake experience should be to be prepared for such disasters all the time and to take necessary measures just in the beginning so as not to experience similar damage again.

7.4.5. Avian Influenza Control and Human Pandemic Preparedness and Reponses Project

Avian Influenza Control and Human Pandemic Preparedness and Response Project, which was designed by the MoARA and MoH, were adopted by the Loan Agreement no. TU-4822 which was signed between the Republic of Turkey and World Bank on 17 May 2006. The agreement was then issued in the Official Gazette dated 8 August 2006 and came into effect. Total budget of the project is 27.30 million €.

The objective of the Project is to minimize the threat of posed to humans by highly pandemic avian influenza infection and other zoo noses in domestic poultry and prepare for, control, and respond to an influenza pandemic and other infectious disease emergencies in humans. Components of the Project are briefed in the following: (18,19)

I. Animal Health

I.A: National Policy Framework and National Strategy Development: Development, adoption and announcement of a country-specific strategy and information system in order to control and eradicate avian influenza in the high-risk regions.

I.B: Strengthening Disease Surveillance and Diagnosis Capacity: Strengthening animal disease surveillance and diagnostic capacity, designing and completing of training for veterinary personnel.

I.C: Epidemic Control Plan: Field investments in domestic poultry crematoriums and certification of preparedness for rapid intervention in high-risk regions.

This components aims to publicize the strategies developed, epidemiologic studies conducted, surveillance studies and progress made in disease and control prevention and to enhance diagnostic capacity of reference and regional diagnostic laboratories, as well as the follow-up of reported avian influenza cases, support for the activities regarding action plans, control and eradication of avian influenza to support restructuring in domestic poultry sector.

II. Human Health

II.A: Promotion of Program Planning and Coordination: Development and implementation of advanced command and control mechanisms for quarantine in emergency and disease control.

II.B: Empowerment of National Public Health Follow-up Systems: Improvement, testing and implementation of disease surveillance and control in human beings at risk.

II.C. Health System's Capacity of Struggle: Development and implementation of "Social Isolation Measures" such as quarantine ban of gathering and travel, and supporting an appropriate strategy for communication. Building and strengthening critical medical care networks in order to respond to increasing demand of services and to prevent spread of infection among high-risk groups and health care personnel.

By means of integrated medical care services such as surveillance, diagnosis and intervention, this component aims to alleviate the harm caused by avian influenza. The Project would also contribute to the implementation of the Avian Influenza Action Plan in coordination with the MoARA as well as the studies which aim to promote the MoH's capacity.

III. Raising Public Awareness and Coordination Support

III.A: Raising Public Awareness:

Coordinated communication process which includes the MoARA, MoH and the Ministry of the Interior and which responds to information-communication needs of prioritized groups in pre-epidemic and pandemic stages;

Adoption of safe health implementations and reporting procedures of the reported groups at risk and their contribution to disease control activities;

Training and informing people of the effects and social control measures which might be needed in case of avian influenza pandemic.

III.B: Coordination Support: Coordination and management of project implementation, follow-up and evaluation activities which are conducted in professional terms

This component will give support to raise the government's, private sector's and non-governmental organizations' interest in the subject; inform people of the risks and potential effect of disease; and to publicize emergency interventions and measures of the MoH, National Zootonic Disease Committee and MoARA.

Second component of the project is implemented by the MoH and has 10,91 million € budget. Budget of the MoARA-implemented first component and MoARA and MoH – implemented third component is funded by the MoARA. In the framework of this project, the MoH takes a series of measures against avian influenza, makes preparations for a possible epidemic and identifies the measures to be taken in case of a pandemic.

The MoH has already made a National Influenza Action Plan. Project activities such as personnel training, provincial and local meetings and workshops, procurement of protective clothes and other supplies for personnel and development of communication systems for crisis management centers are still being conducted. (19).

The project will also support some other activities such as active observation of influenza-like diseases at places where avian influenza cases were reported, gathering samples to identify diagnostic tests and virus sub-types, verification of positive and some negative results in reference laboratories, investigation at places where confirmed human cases are existing and taking necessary measures at these places. In this context, existing national reference laboratories should be improved and regional public health laboratories should be empowered. For this purpose, Refik Saydam Hygiene Center Presidency and General Directorate of Primary Health Care continue their studies to establish a reference laboratory and to strengthen the existing one as well as other activities that include setting up teams, provision of equipment and giving trainings.

7.5.THE PROGRAM FOR TRANSFORMATION IN HEALTH AND ACHIEVED GOALS

Promotion of health care services occupies the most basic and prioritized ranks not only in the agenda of developing but also developed countries. Whole world seeks for new approaches towards delivery of health care services and it is difficult to assert that a certain country has managed to solve all health problems in general. Considering health reforming studies, one could see that most of these reforms have a long history and have occurred as a result of patience and stability (20, 21).

PTH, which the MoH commenced on 1 July 2003 and publicized in a booklet in December 2003, made assessment of previous reforms and projects, designed the future health system and planned to make necessary changes to facilitate transition to the new system. In this sense, PTH aims to organize health care services in an effective, productive and equal way and ensure financing. Loan Agreement no. 4737-TU of the Health Transition Project was signed on 11 June 2004.

Policies to be implemented under the PTH aims to promote health level of public (efficacy). The most significant objective in health care services is to take preventive measures to protect people from getting ill rather than to treat illnesses. Decreasing the number of maternal and child deaths and increasing life expectancy at birth are the most concrete examples of this objective. It is planned to decrease costs by exploiting sources properly and to produce more services the same quantity of sources (efficiency). Distribution of human resources, management of materials, rational drug use, health administration and preventive medicine should be evaluated on this basis. It is considered that people should be able to access health care services in accordance with their needs and to contribute to these services as much as they can afford (equity) (20).

7.5.1. Basic Principles of the Program for Transformation in Health:

- **Human-orientedness:** This principle implies to take individuals, their needs, demands and expectations as the basis for planning the system and delivering services. Relying on the fact that health is produced in a family environment, individual is handled within the scope of the “family health” concept.

- **Sustainability:** This principle refers to the fact that the system to be designed should be compatible with domestic conditions and sources in our country and should be continuous by feeding itself.
- **Continuous quality improvement:** This principle emphasizes that achieved goals and provided services should not be perceived as adequate and feedback mechanisms should be established so as to help with seeking the better and learning from mistakes.
- **Participation:** This principle underlines the fact that views and recommendations should be taken from all stakeholders when developing and implementing the system and a good platform should be built for constructive criticism. Besides, this principle aims at covering all components of health sector in the system and uniting all sources under a single roof.
- **Conciliation:** This principle refers to search for common points by respecting mutual benefits among different parts of the sector. Unity and harmony are targeted in methods, standards and supervision mechanisms instead of conflict of interests.
- **Volunteerism:** This principle aims at helping all units within the system to adopt goals-specific attitudes and behaviors regardless of supplying or demanding individuals or agencies. Service producers and receivers should not compulsorily but voluntarily take part in the system through encouraging measures.
- **Separation of Powers:** This principle implies that health care financing, planning, supervising and service producing powers should be separate. So, conflict of interests would not appear and service delivery would be more productive and qualified.
- **Decentralization:** This principle put emphasis on the fact that institutions should get rid of awkward structures which are created by the centralized administration. Centralized administration should be replaced by on-site management in parallel with evolving conditions and contemporary understanding. Administratively and financially autonomous enterprises would have quick decision-making mechanisms and thus utilize sources more effectively.
- **Competitiveness in Services:** This principle implies that health care services should not be monopoly and various service providers should compete with each

other in certain standards. Thus, continuous quality improvement and cost decline would be encouraged (20).

7.5.2. Components of the Program for Transformation in Health:

Components of PTH could be discussed in eight topics:

1. Ministry of Health as the planner and supervisor,
2. Universal Health Insurance which gathers all people under a single roof,
3. Widespread, easily accessible and friendly health system,
    1. Strengthened primary health care services,
    2. Effective and graduated chain of referral,
    3. Administratively and financially autonomous health enterprises,
4. Knowledge and skills-equipped and highly-motivated health human resources,
5. System-supporting educational and scientific bodies,
6. Quality and accreditation for qualified and effective health care services,
7. Institutional structuring in rational drug use and material management,
    1. National Pharmaceuticals Agency,
    2. Medical Devices Agency,
8. Access to effective information in decision-making: Health Information System.

PTH is comprised of components and sub-components which are designed to cover the sector with all of its aspects. Capable of offering proper solutions, each component is associated with the other. Every other component is defined under a different topic in the Health Transition Project.

7.5.3. The Program for Transformation in Health Support Project

Loan Agreement No. 4737-TU of the Health Transition Project was signed on 11 June 2004. Project components are presented in Table 7.6 (21).

Table 7-6: Components of Health Transformation Program Support Project

A) Re-arrangement of the Ministry of Health's Administrative Structure; Strenghtening the Roles of Leadership, Planning and Supervision
A.1. Re-arrangement of administrative and functional structure of the MoH A.2. Re-arrangement of institutional structure in rational management and use of drugs and medical supplies (Establishing the National Pharmaceutical and Medical Devices Agency) A.3.Quality assurance and accreditation for qualified and effective health care services A.4. Research and development studies in health sector
B) Universal Health Insurance
C) Re-structuring Delivery of Health Care Services
C.1. Strengthening health care services and family medicine

C.2. Development of a management model specific for public in-patient treatment facilities C.3. Effective and gradual chain of referral
D) Highly Motivated Health Labor Force Equipped with Knowledge and Skills
D.1. Promotion and authorization of health personnel D.2. Strengthening the School of Public Health
E) Establishing the National Health Information System

Source: MoH-Project Management and Support Unit (MoH-PMSU), Health Transformation Project Concept Note

COMPONENT A – Rearranging the MoH's Administrative Structure; Strengthening the Role of Leadership, Planning and Supervision

A.1. Sub-Component – Rearrangement of the MoH's Administrative and Functional Structure

With the new structuring, the MoH will give a steering role. Thus, the ministry will not directly take care of service provision but will take care of planning, coordination and supervision. It is a must that the MoH adopt a role of planning, supervision and regulation rather than coping with delivery and financing of health care services. For this reason, central and rural organization of the ministry should be re-organized, local administrative units should be given further authority and power and the MoH's central organization should take the initiative as for cases which require nation-wide planning and support (22).

In PTH's vision, the MoH is a public agency which develops policies, sets standards and makes inspection. With this understanding, the MoH will play a steering role so as to have health-allocated sources (of both public and private sector) used in an effective, productive and equal way. In the light of this understanding, the MoH-affiliated bodies will be restructured in accordance with the principles of on-site management and the ministry will become a strategic organization which makes planning. So, the MoH will plan the health sector in a centralized way as defined in the Constitution.

The Law No. 5283 on Devolution of Some Public Agencies-affiliated Health Care Facilities to the Ministry of Health, which was adopted on 06.01.2005 and issued in the Official Gazette dated 19.01.2005 and no. 25705, could be seen as an important step in this respect. Devolution of the Social Insurance Organization (SIO) hospitals to the MoH especially fostered the Ministry's supervising and planning role over the health system. It will also be helpful to transform hospitals into enterprises in the future.

Although devolution of Provincial Health Directorates, hospitals and primary care facilities to local administrations was included in Draft Law on Public Administration, some articles of this Law were rejected by the President. Thus, future developments seem to be ambiguous for now.

A.2. Sub-Component – Rearrangement of the Institutional Structure in Rational Management and Use of Drugs and Medical Supplies– Foundation of National Pharmaceutical and Medical Devices Agency

Institutional formation is needed in Turkey so as to catch up with the international norms in the standardization, licensing and rational management of medicines, equipment, supplies and medical devices. Responsible agencies should be organized autonomously and beyond political interests and sanctions. The agencies which will be the experts in the field of pharmaceuticals and medical devices could be gathered under a single roof or separately.

In Turkey, expenditures on drugs and pharmaceuticals are much more than what is needed in fact. The share of medicines expenditures in public health expenditures was found to be 38.5 % in 2005 (23). "National Pharmaceuticals Agency" should be founded in order to identify basic policies in medicines and steer respective activities such as production, advertisement, market surveillance, and research and development. Such an agency will also help to make the process more effective, transparent and fast.

Contemporary delivery of health care services mostly depends on the use of medical devices and instruments. Effective and safe use of medical devices and instruments, on the other hand, require regulating and monitoring complicated relations among all relevant parties. Medical devices and instruments should comply with the security, quality and performance standards so as to protect public health, respect patient's interests and provide people with quality services as they deserve. Thus, it is a must to establish the "Medical Devices Agency" in Turkey.

There are ongoing studies to establish the afore-mentioned National Pharmaceutical and Medical Devices Agencies. MoH General Directorate of Pharmaceuticals and Pharmacy prepared a draft law which envisaged establishing both agencies under the name of Turkish Pharmaceutical and Medical Devices Agency and submitted draft law to the Prime Ministry on 16.02.2007 in order for draft law to be discussed and voted in the GNAT.

According to draft law, Turkish Pharmaceutical and Medical Devices Agency is the single authority which is responsible for licensing, permitting, notifying, pricing, distributing,

market supplying, market surveillance and inspecting medicines for human and animal use, advanced curative medicines, medical devices, cosmetics and special products for medical purposes. The agency is considered as an affiliated body of the MoH with administrative and financial autonomy. The planned agency shares common features with similar agencies in developed countries and also is capable of meeting the needs of our country (24).

A.3. Sub-Component – Quality Assurance and Accreditation for Qualified and Effective Health Care Services

It is needed to establish the "Accreditation and Quality Assurance Institution" which will set nation-wide standards in health sector, monitor and evaluate implementations, and make regulations on licensing, certification and accreditation. This institution should have an autonomous structure and internationally accredited in the next stage. So, it will promote the quality of health care services, ensure their sustainability and strengthen people's trust in the quality of health care services.

MoH carried out some activities as for establishing the National Health Accreditation System:

1-Final report on the issue, which was prepared by a specialist with international experience, was discussed at the counseling meeting on "Quality Assurance and Accreditation in Health Care Services". All representatives of the health sector attended this meeting. At the end of the meeting, all parties came into agreement on the establishment of the Health Accreditation System in Turkey.

2- A group which consisted of the MoH representatives attended the training conference on "International Practices in Quality Development and Accreditation" held by the Joint Commission International (JCI).

3-In cooperation with the MoH and the Association of Health Care Facilities, a meeting on "Accreditation in Health Sector" was held in Istanbul which hosts the stakeholders of health sector and JCI authorities. At the meeting, the MoH and JCI signed a protocol on structuring the National Health Accreditation System, setting standards, developing quality monitoring and measurement systems.

4- In cooperation with the MoH and Bursa Association of Health Care Facilities, a meeting was held in Bursa which health accreditation system was discussed.

Collaboration with the JCI authorities is underway in to train adequate number of auditors in this field.

A.4. Sub-Component – Research and Development Studies in Health Sector

An effective science and technology policy should be identified and a real research and development (R&D) system should be set up in Turkey. Studies should be conducted in order for the MoH to play an active role in R&D activities in health sector and the Hygiene Center's Laboratory should be accredited internationally.

R&D studies in health should be organized by a single center. Thus, prioritized subjects would be handled on time and unnecessary repetition would be avoided in study fields.

In this context, R&D commission was established at the Ministry of Health, the MoH worked in collaboration with the Scientific and Technological Research Council of Turkey (STRCT) regarding health-specific studies. The applications were first assessed by the Ministry and taken into consideration later.

COMPONENT B – Universal Health Insurance

In parallel with the PTH's equity objective and as a primary requirement of the social state understanding, an insurance model should be developed which people would contribute to the system depending on their income and make use of services as much as they need. It is also included in the Article 56 of Turkish Constitution. Apart from the Universal Health Insurance, private health insurance should be encouraged, too. Undertaking a complementary role, private health insurance should be integrated with the system. Retirement and health insurance in the existing system should be separated and all proceedings regarding health insurance should be united.

The Law on Social Security and Universal Health Insurance dated 31.05.2006 and no. 5510 was adopted in the GNAT and issued in the Official Gazette dated 16.06.2006 and no. 26200. Thanks to this law, the Presidency of Social Security Organization will cover all people under a single health insurance scheme. The law which was supposed to come into effect on 01.01.2007 was postponed to 01.01.2008 for some amendments since some articles of the said law were annulled by the Constitutional Court of Turkey.

C COMPONENT – Restructuring Delivery of Health Care Services – A Widespread, Easily Accessible and Friendly Health System

Varying from very few numbers of houses in rural residential areas to geographically disadvantaged places and to famous and crowded metropolis, Turkey has a heterogeneous nature with problems that need to be solved with peculiar methods. This characteristic should always be kept in mind when trying to deliver health care services in contemporary norms and international standards.

Competitiveness should be encouraged and private entrepreneurship (also including but not limited to associations and foundations) should be facilitated in delivery of health care services with an understanding that integrates all service-providing dynamics with the system. Public opportunities should be promoted, quality should be improved and private sector should be encouraged for competitiveness in order to lessen the gap between rural and urban areas.

C.1. COMPONENT – Strengthening Primary Health Care Services and Family Medicine

It is the main reason for primary care services-strengthening efforts to promote the health status of individuals within a society in general and patients and health employees in particular. Therefore, a well-designed and performance-oriented approach is needed for primary care services. To this end, decision-makers handled the case from various perspectives including the assertion that preventive and primary care diagnostic and curative services had to be given by physicians whom would be selected by patients themselves. So, physicians and family members would have a more friendly relation and physicians would play an active role in health education, prevention of diseases and health promotion. Individuals' health records would be kept by the primary care physicians which would later facilitate the control, follow-up and risk analysis of diseases.

Major steps were taken through the Law No. 5258 on Pilot Implementation of Family Medicine, which was adopted on 24.11.2004 and issued in the Official Gazette dated 9 December 2004 and no. 25665. Following the enactment of this law, family medicine was put into practice in Düzce on 15 September 2005 which was preferred as a pilot province. Ten more provinces (Adıyaman, İzmir, Elazığ, Isparta, Samsun, Edirne, Bolu, Eskişehir, Gümüşhane and Denizli) were covered in pilot provinces by the Ministerial Approval dated 16 February 2006 and no. 1538 (family medicine was put into implementation in all of these

pilot provinces). In addition to these 11 provinces, 13 more provinces were covered in pilot implementation by the Ministerial Approvals dated February and March 2007. It is considered that family medicine system will have been commenced in these provinces by late 2007. Table 7.7 presents the provinces in which family medicine is implemented and beginning dates of the implementation in these provinces. Table 7.8, in addition to the previous table, presents the pilot provinces which were accepted by the Ministerial Approval dated February and March 2007.

Table 7-7: Family Medicine System-Implemented Provinces as of June 2007

PROVINCE	DATE OF BEGINNING
Düzce	15 September 2005
Eskişehir	17 July 2006
Bolu	16 October2006
Edirne	1 December 2006
Denizli	25 December 2006
Adıyaman	25 December 2006
Gümüşhane	29 December 2006
Elazığ	4 January 2007
Isparta	18 January 2007
Samsun	1 March 2007
İzmir	14 May 2007

Table 7-8: Other Pilot Provinces Identified by the Ministerial Approval inn February 2007

Pilot Provinces Identified by the Ministerial Approval* in February 2007	
Adana	Karaman
Amasya	Manisa
Bartın	Çorum
Bayburt	Osmaniye
Burdur	Yalova
Erzurum	Sinop
Karabük	

* Ministerial Approval dated 05.02.2007 and no. 01269, and dated 16.03.2007 and no. 03031

C.2. COMPONENT – Developing An Autonomous Management Model for Public In-Patient Treatment Facilities

All hospitals, public or private, should give service to all people by contracting with the insurance institution and complying with the chain of referral. When giving such service, quality and price of hospital care should be supervised and all public hospitals should be made autonomous under the MoH's supervision. Decentralization of hospitals and promotion of

their service quality is a must for their competitiveness with the private sector. Considering non-homogeneous demographical distribution and deprivation areas, health care institutions which are not productive in economic terms should be supported to ensure the sustainability and high quality of services.

Public hospitals could be provided with administrative and financial autonomy at two stages. At the first stage, all public hospitals - except for the Ministry of Defense and University-affiliated facilities – should be devolved to the MoH and at the second stage, all facilities should be granted the right of self-management and thus they should be held responsible for their decisions, service quality and productivity.

By the Law No. 5283 on Devolution of Some Public Agencies-affiliated Health Care Facilities to the Ministry of Health, first phase of this process seems to be completed and second phase continues on the efforts which aim to restructure hospitals as health enterprises.

C.3. COMPONENT - Effective and Graduated Chain of Referral

It is obvious that health problems of most patients could be solved in primary care and hospital polyclinics are overloaded with such patients. An effective and graded chain of referral would both improve the quality of services by alleviating the excessive burden at hospitals and avoid waste of health care expenditures.

Preliminary condition of an effective chain of referral is that patients have the right to receive primary care from a physician whom he/she prefers and thus trusts. It depends on the status of service which the primary care physician provides for his/her patient and empowering the primary care services, as well. Patient satisfaction-oriented family medicine also lays the foundation for an effective and graded chain of referral.

The assertion that the chain of referral is not unilateral is one of the most significant effects of family medicine system on chain of referral. Most of the patients who are referred to secondary or tertiary care for diagnosis and/or treatment have to be referred back to inferior- level facilities for the continuation, follow-up and control of treatment. For the doctors who are responsible to record the patients that they have referred, the feedback they receive from the secondary care consultation will strengthen the medical record system. Thus, it will be possible to follow up the individuals by their family physician without giving up quality and to provide health care service with minimum cost.

D COMPONENT – Knowledge and Skills-Equipped and Highly-Motivated Health Labor Force

D.1. COMPONENT - Promoting and Authorizing Health Personnel

This component of the PTH aims at defining jobs, tasks and responsibilities of those who work in health sector and educating students at medical schools in family medicine with a pre-graduate curriculum in cooperation with universities.

Dentists in primary care should be utilized maximum, nursing education should be given in bachelor's degree and family medicine nurses should be trained, as well. Balanced distribution of health care personnel should be encouraged by nationwide policies and compulsory service should be removed later.

Under this component, efforts are made to develop health labor force inventory, and conduct co-work with the World Health Organization (WHO) in coordination with the SPH. All of these efforts target to obtain concrete and accurate information on the qualifications and country-wide distribution of health sector personnel. In this framework, "Workshop on Development of Health Human Resources in Turkey" was held on 24-28 April 2007 in Ankara. Approximately 100 participants from all stakeholders in health sectors attended the workshop. At the workshop, participants examined the "Evaluation Report on Health Human Resources in Turkey", which was prepared by the SPH, WHO and Harvard School of Public Health, discussed the problems in Turkey related to human resources in health sector, and came out with proposals to solve these problems.

The efforts undertaken to establish the Licensing and Revalidation System refer to another dimension of health personnel's promotion. Considering the fact that holding a university degree is not adequate to give qualified health care services as desired and all professionals in all sectors have to promote themselves through professional improvement and training/education in today's world, the system envisages that the personnel has to be eligible for the work which he/she is responsible for and also has to certify his/her eligibility regularly at certain intervals.

D.2. COMPONENT - Strengthening the School of Public Health

Multi-disciplinary man labor force with better technical capacity is needed to achieve the health transformation and maintain the success. The system rather needs professionals who have a good command of health policy, health administration, health systems, health

planning and public health. In this context, Turkey needs a formation which would make sector analysis, plan field surveys, guide government in health policies, collaborate with national and international organizations and give post-graduate trainings which are needed by the sector.

Thus, it was targeted to re-activate the School of Public Health, which was present in the early Republican period but then lost its efficiency, so as to meet the contemporary needs today and to pave the way for subsequent studies. Now, it is considered that the SPH should be re-structured in an autonomous way.

SPH, which conducted activities from early years of the Republic to 1982, was re-opened in May 2003. SPH, the personnel of which come from different fields of education and expertise, supports the health system through its trainings, researches, counseling services and publications. SPH conducts activities on many fields also including but not limited to rational drug use, pharmacotherapy, pharmacoeconomics, health economics and financing, national health expenditures, public health, Flagship health policy seminars (for middle and high-ranking health managers) and web-based distant learning programs in health.

Health managers-focused trainings were transferred to online distant learning system so that more trainees were trained in less time and at lower cost. School of Public Health - Distance Health Education System (SPH-DHES) was developed for this purpose and gave pilot trainings to the Ministry of Health and School of Public Health personnel. First pilot study was started on 1 November 2006 and 354 users registered into the system. After the SPH-DHES pilot trainings, “Basic Management Skills Training”, in which provincial health directors, deputy directors and hospital chief physicians participated, was started on 5 February 2007. The said training is now being given to 2000 trainees. SPH-DHES is capable of training 5000 trainees. Also efforts are being made in order to credit these trainings, affiliate them with personnel rights, use as a criteria for promotion and to upgrade the performance score of trainees.

National Health Accounts Study was conducted in order to obtain data on health expenditures in Turkey which were accurate, valid and eligible for international comparison, and regular monthly reports were issued on public health expenditures. Besides, workshops and trainings were organized within the framework of pharmacoeconomics and rational drug use. Approximately 3.700 participants joined these trainings and workshops which studied

health management, Flagship Program, health economics and financing, and human resources in 2003-2006 periods.

E COMPONENT - Establishing the National Health Information System

Integrated health information system is a need for harmony among all components of the PTH. Health Information System needs to be established so as to ensure coordination in health care services, develop health inventory, protect individuals' medical records, transfer information between the referral steps, and collect data in primary health care practices.

Health Information System should be capable of collecting and processing data in identifying health policies, diagnosing problems and priorities, taking necessary measures, planning sources and investments and conducting scientific researches and studies.

The MoH started a series of studies in order to establish the Health Information System. Following are the studies which were completed or being conducted by the Ministry of Health:

- Turkey Health Information System (THIS) / e-Health
- Core Resource Management System (CRMS),
- Primary Health Statistics Module (PHSM),
- Patient Follow-up System (PFS),
- Green Card Information System (GCIS),
- Ministry of Health Tender Information System (MHTIS),
- Medical Devices and Equipment Record System (MDERS),
- Family Medicine Information System (FMIS),
- Ministry of Health Communication Center System (MHCCS),
- Geographical Information System (GIS),
- Uniform Accounting System (UAS).

Turkey Health Information System (THIS) / e-Health

Efforts which are made to develop health information systems also lay the foundation for e-Health studies. In this context, efforts were made to set standards and outputs were put

into practice. In health information systems and statistical applications, diseases need to be defined by Standard terms. ICD-10 code (International Statistical Classification of Diseases and Related Health Problems, 10th Revision) is one of the most common systems which is used to this end. As of 1 January 2005, 3 and /or 4 level codes of the ICD-10 code were put into implementation at hospitals with suitable infrastructure. Besides, ICD-10 was adopted by all the MoH-affiliated institutions on 01.07.2005.

Core Resource Management System (CRMS)

CRMS Project, which was started on 1 September 1997, aims use information technologies in man labor force, materials, medicines-pharmacy and financial resources management at the MoH's central organization and in 81 Provincial Health Directorates so that a contemporary, further effective and productive institutional structure is built.

CRMS application software consists of four information system (primary modules) that are the Human Resources Management System (HRMS), Material Resources Management System (MRMS), Financial Resources Management System (FRMS) and Pharmaceuticals and Pharmacy Information System (PPIS). Each of these information systems has a great many sub information systems (sub-modules).

CRMS has been used at the MoH's central organization and in 81 Provincial Health Directorates since July 2003. Problems and/or requests which are reported by users are handled by the Data Processing Department and the system is upgraded so.

Primary Health Statistics Module (PHSM)

PHSM consists of two modules which are used in Provincial Health Directorates and Ministry of Health (PHSM/PHD – Provincial Health Directorate and PHSM/MoH-Ministry of Health Module). Both of them have been used since 1998.

PHSM/PHD facilitates to enter statistical data which was reported by the field (health centers, hospitals, dispensaries and etc.), test accuracy and stability, calculate provincial total and issue reports on provincial health indicators. PHSM/MoH module's goal is to test the integrity and consistency of data entered by the Provincial Health Directorates, to ensure consolidation on country basis, measure the country's total and to issue reports on the country's health indicators.

The fact that PHSM software, which was designed in client/server application, and CRMS software, had to be successfully integrated with the system aroused the need to re-design the PHSM software on web basis. In this context, studies are in progress to transfer PHSM to the web.

Patient Follow-up System (PFS)

PFS software was developed so as to keep records of health care services given to the MoH central organization's personnel and their dependents and to provide them with patient-oriented, qualified and rapid services. Following a three-month testing period, the system was put into practice on 02.01.2004.

The system which was first put into practice in Department Medical Office facilitated to keep records of personal health care services. In the light of this project, a model was created to identify the content of health records at national level.

It was targeted that the PFS system would be an experimental study to serve as a source for primary care services based on primary care level. With respect to performance-based revolving fund payments, performance assessment of personnel is included in objectives, as well.

Uniform Accounting System (UAS)

UAS software was designed to be based on the MoH systems and easily accessed online by the users. The aim is to standardize a uniform accounting program in the Ministry-affiliated health care facilities' revolving fund accounting offices.

Green Card Information System (GCIS)

GCIS is a web-based application which is used online in 81 provinces and 932 district centers. Registration and update is made by the green card bureaus in district centers across Turkey. The system serves to more than 1.700 users on 7/24 basis.

Ministry of Health Communication Center (MHCC-184)

MHCC-184 handles and evaluates all kinds of problems, complaints, suggestions and requests of people. MHCC was established so as to respond reported problems on time, to find solutions and promote the MoH's service quality by accelerating the bureaucratic processes. A call center (line no. 184) was built at the Ministry which all people could access easily. All Provincial Health Directorates, 650 state hospitals and 500 district health groups were included in this system.

Geographical Information System (GIS)

The system was developed to present the Ministry-affiliated hospitals, health centers, health posts and etc. on map; make geographical and non-geographical inquiry and analyses on the basis of regions, provinces, districts and units; and to use maps and geographical information easily in re-planning.

Ministry of Health Procurement Information System (MoHPIS)

MoHPIS is a web-based implementation which was developed by the Information Processing Department of the MoH. Information and data on material and service procurement of Provincial Health Directorates, hospitals and Regional Hygiene Center Directorates are entered in the system synchronically. So, results of procurements could be monitored by the central organization and affiliated bodies, outstanding differences at tender prices could be eliminated and realistic prices could be obtained more quickly when identifying the estimate cost.

Medical Devices and Equipment Registry System (MDERS)

MDERS is a data base which contains information on medical devices, supplies, laboratory devices and kits. It was designed so as to include product brands and models specific for Turkey by making use of the "Universal Medical Device Terminology". Studies are underway to update MDERS registry and access.

Family Medicine Information System (FMIS)

FMIS, which was first implemented in some health centers, is now being implemented in pilot provinces. Through this system, family physicians send examination, referral,

diagnosis, vaccination, baby and pregnancy monitoring data to the Electronic Patient Registry (EPS) data base at the MoH central organization. Health data which is transferred to the EPS via FMIS lets in-depth analysis of primary health care services and helps to design health policies.

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