



Healthcare Industry in Turkey



REPUBLIC OF TURKEY PRIME MINISTRY
INVESTMENT SUPPORT AND
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Glossary of Terms

Acronym	Definition
AIDS	Acquired Immunodeficiency Syndrome
AFAD	Prime Ministry, Disaster and Emergency Management Presidency
BağKur	Former Social Security Organization for Artisans and the Self-Employed (Became Part of SGK)
BMI	Business Monitor International
BRIC	Brazil, Russia, India, China
CAGR	Compound Annual Growth Rate
CBRT	The Central Bank of the Republic of Turkey
CE	Conformité Européenne
CEO	Chief Executive Officer
CIS	Commonwealth of Independent States
CT	Computed Tomography
EAGM	Eastern and African Growth Markets
EBMT	European Society for Blood and Marrow Transplantation
ECO	Echocardiography
EIU	Economist Intelligence Unit
EU	European Union
EUR	Euro
FDI	Foreign Direct Investment
GCP	Good Clinical Practices
GDP	Gross Domestic Product

Acronym	Definition
GE	General Electric
GEPF	Government Employees Pension Fund
GITES	Input Supply Strategy
GMP	Good Manufacturing Practice
HTP	Health Transformation Program
İEİS	Pharmaceutical Manufacturers Association of Turkey
JCI	Joint Commission International
JCR	Japan Credit Rating Agency
KOSGEB	Small and Medium Enterprises Development Organization
M&A	Mergers and Acquisitions
MENA	Middle East and North Africa
MNC	Multinational Company
MoH	The Ministry of Health of Turkey
MRI	Magnetic Resonance Imaging
N/A	Not Available
N/D	Not Disclosed
OECD	Organization for Economic Co-operation and Development
OHSAD	Private Hospitals and Health Institutions Association
OIZ	Organized Industrial Zone
ÖSYM	Student Selection and Placement Center



Glossary of Terms

Acronym	Definition
PPP	Public-Private Partnership
PTTS	Pharmaceutical Track and Trace System
R&D	Research & Development
RRR	Risk/Reward Rating
SADER	The Healthcare Products Manufacturers & Representatives Association
SEİS	Health Industry Employers' Association of Turkey
SGK	Social Security Institution
SME	Small and Medium Enterprises
SPO	State Planning Organization
SSK	Former Social Insurance Organization (Transferred to SGK)
SUT	Health Budget Law
TC	Republic of Turkey
TDZ	Technology Development Zone
TEYDEB	Department of Technological Innovation and Support System Programs
TİTUBB	The Turkish National Information Bank of Pharmaceuticals and Medical Devices
TL	Turkish Lira
TSB	Insurance Association of Turkey
TSE	Turkish Standards Institute
TTB	Turkish Medical Association

Acronym	Definition
TÜBİTAK	Scientific and Technological Research Council of Turkey
TÜMDEF	Medical Device Manufacturers and Suppliers Association
TÜRKÖK	Stem Cell Coordination Center
TurkStat	Turkish Statistical Institute
TUSIDER	Health Establishments Association
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United States of America
USD	United States Dollar
VAT	Value Added Tax
WHO	World Health Organization



Table of Contents

Executive Summary	6
I. General Overview of the Healthcare Sector	7-20
A. A Brief Overview of the Global Healthcare Sector	8-9
B. Overview of the Turkish Healthcare Sector	10
C. Economic Indicators and FDI in Turkey	11-13
D. Mergers and Acquisitions	14
E. Special Focus: Organ and Tissue Transplantation	15-20
II. A Detailed Look at the Healthcare Industry in Turkey	21
A. The Turkish Healthcare Market and System	22-30
B. Healthcare Infrastructure	31-36
C. Healthcare Insurance	37-42
D. Healthcare Services	43-53
E. Medical Device Sector	54-65
III. Investment Environment and Opportunities in Turkey	66
A. Investment Environment	67-83
B. Investment Opportunities	84-96



Executive Summary

- Across the globe, the healthcare sector is expanding as increasing economic prosperity, a changing disease profile, a growing global population along with a large demographic of senior citizens are resulting in a higher demand for healthcare services. 2012 saw conservative growth in numbers, with total healthcare spending rising by an estimated 1.9%. Yet, growth in healthcare spending is projected to pick up and reach an annual average of 5.3% between 2013-2017.
- The very same drivers for growth globally are shaping the development of the healthcare sector in Turkey. The Turkish healthcare sector has been expanding and is expected to continue its expansion as changing population ratios, higher incidences of chronic disease, wider health insurance coverage and increasing incomes create upsurges in healthcare spending.
- According to the Economist Intelligence Unit forecasts, the healthcare sector in Turkey is set to boom as healthcare spending per capita will increase at a CAGR of 5.6% between 2013 and 2017, while most developed countries will be experiencing relatively lower growth rates.
- The reforms implemented as a part of the 2003-2013 Health Transformation Program brought about a number of significant improvements to the Turkish healthcare system.
- As a result of the reforms, there were significant additions in terms of capacity in healthcare infrastructure as well as increased access to high quality healthcare services. The number of hospitals grew at a CAGR of 4.7% between 2002-2012, whereas the growth in the number of beds mirrored this with a 4% increase. Similarly, visits to healthcare institutions grew at a CAGR of 24.4% between 2002-2012.
- The expansion in the healthcare sector was led by private healthcare institutions as the number of private hospital beds grew at a CAGR of 23.6%, a figure much higher than the growth rate of hospitals under the auspices of the MoH. Similarly, the number of private hospital visits also grew at a rate of a remarkable 63.5%.
- There is also considerable potential in the medical devices market as Turkey strives to decrease its dependency on imports. The Turkish medical device sector is expected to expand at a CAGR of 8.5% over the 2013-2018 period.
- With considerable potential for growth, the Turkish healthcare sector provides a vast number of investment opportunities. The MoH will be spending an estimated TL 100 billion in lease payments for its Healthcare PPP Program, whereas medical free zones, health tourism and e-health provide similarly attractive investment opportunities for potential investors.



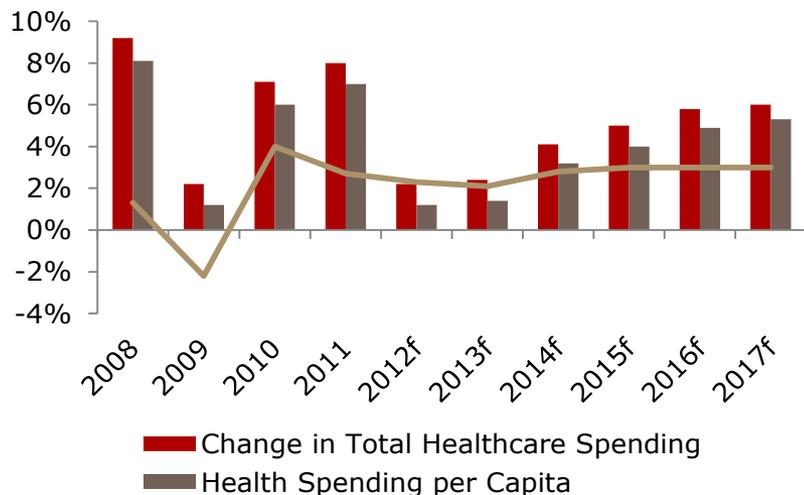
I. General Overview of the Healthcare Sector

- A. A Brief Overview of the Global Healthcare Sector
- B. Overview of the Turkish Healthcare Sector
- C. Economic Indicators and FDI in Turkey
- D. Mergers and Acquisitions
- E. Special Focus: Organ and Tissue Transplantation



The healthcare sector is expanding all over the world...

Figure 1: Healthcare Spending and GDP Growth (60 Major Economies)

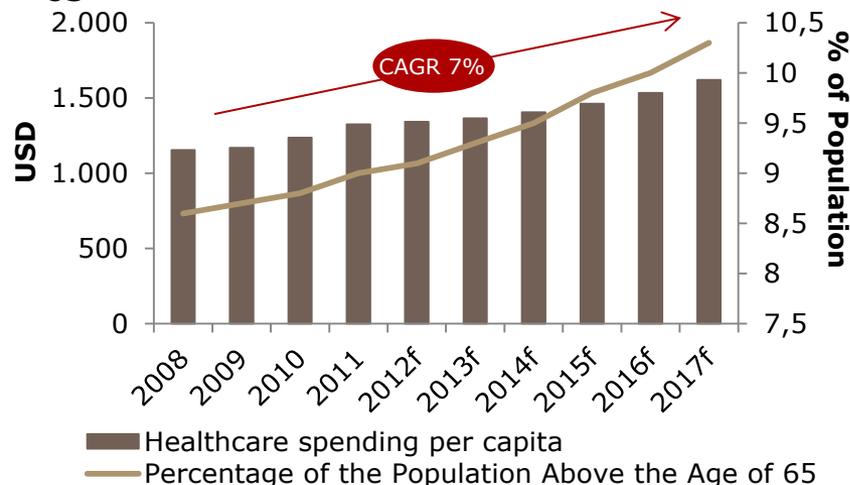


f: forecast
Source: Economic Intelligence Unit

- Healthcare sector growth closely correlates with global GDP growth, population growth, an ageing population and government spending. 2012 saw conservative growth in the numbers, with total healthcare spending rising by an estimated 1.9%. Yet, growth in healthcare spending is projected to pick up and reach an annual average of 5.3% between 2013-2017.

- The percentage of the world population above the age of 65 is projected to reach 10.3% in 2017. In line with this increase, healthcare spending per capita is also growing from USD 1,154 per capita in 2008 and is expected to reach USD 1,620 in 2017.
- It should also be noted that because of the growing global population, total healthcare spending will grow at a much faster pace than healthcare spending per capita.

Figure 2: Healthcare Spending per Capita and Percentage of the Population Above the Age of 65

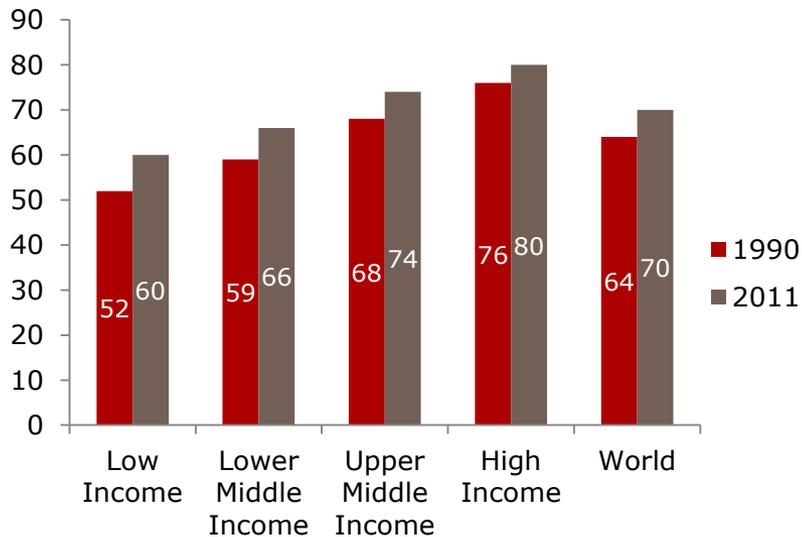


f: forecast
Source: Economic Intelligence Unit



...and growth is expected to continue as increased life expectancy and the higher incidence of chronic disease cause upsurges in healthcare spending

Figure 3: Life Expectancy, 1990-2011



Source: WHO

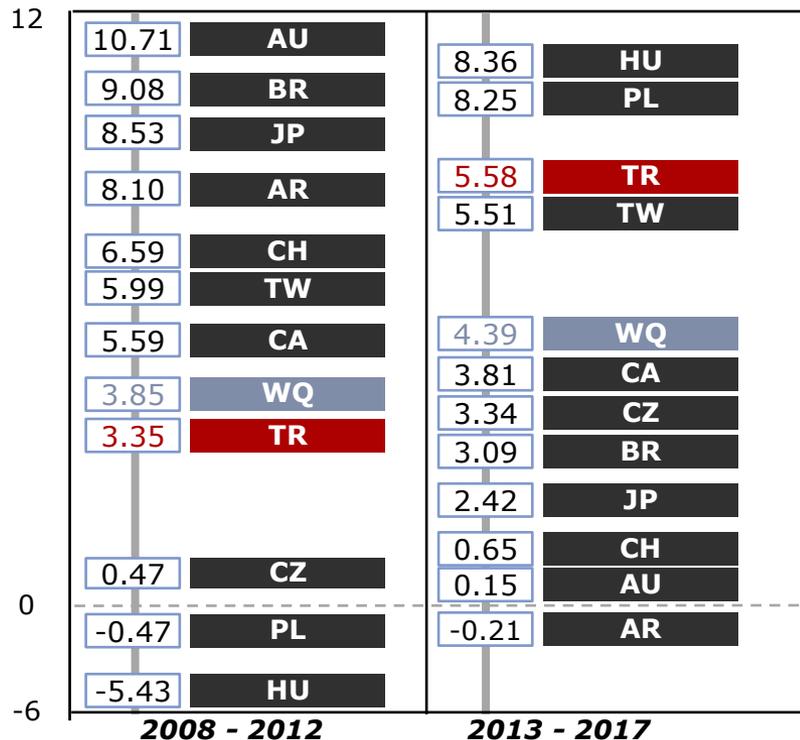
- In the last decade, life expectancy has increased worldwide and across income groups. The increase in life expectancy is closely linked with the changing profile for disease worldwide. As the average life expectancy increases, so does the probability of falling ill to chronic disease, and requiring lifelong medical attention.
- Life expectancy is projected to continue increasing worldwide and reach 74 years by 2017.

- In addition to increasing life expectancy, the increased prevalence of risk factors such as tobacco use, being overweight or obese and an unhealthy diet has also led to a change in disease trends.
- According to WHO, worldwide obesity has more than doubled since 1980, with the number of overweight adults reaching 1.4 billion in 2008. Among those who are overweight, around 500 million are morbidly obese, corresponding to more than 10% of the world population.
- As risk factors become more prevalent in developing countries, diseases previously thought to be problems of the developed world such as cancer, cardiovascular disease and diabetes are increasingly becoming problems in developing countries.
- In fact, WHO reports that in 2008 80% of deaths from non-communicable diseases and 70% of cancer deaths occurred in low- and middle-income countries.
- As non-communicable, chronic diseases require long-term care, costs associated with treating those suffering from chronic diseases are generally higher than infectious diseases. Therefore, an increased level of chronic diseases can be associated with increased levels of healthcare spending.



The growth of healthcare spending per capita in Turkey is expected to outpace many developed countries between 2013 and 2017.

Figure 4: Healthcare Spending per Capita Growth for 2008-2012 and 2013-2017 in Selected Countries/Regions



- With a CAGR of 3.35% between 2008 and 2012, Turkey stands just below high income countries, and the world average.
- However, according to EIU forecasts, the healthcare sector in Turkey is set to boom by a CAGR of 5.6% between 2013 and 2017, while most developed countries will be experiencing relatively lower growth rates. Turkey is also expected to surpass the forecasted world average with this growth rate.

Investment Tip: Turkey will experience continued economic expansion and rising incomes which, in turn, will create more demand for health services and products. These increases are reflected in healthcare spending projections.

Source: EIU database, Deloitte Analysis

Note: The numbers in the first column refers to 2008-2012 CAGRs and the numbers in the second column are related to expected 2013-2017 CAGRs.

Note: Countries/Regions are as follows: Argentina (AR), Australia (AU), Brazil (BR), Canada (CA), Czech Republic (CZ), Hungary (HU), Japan (JP), Poland (PL), Switzerland (CH), Taiwan (TW), Turkey (TR), Taiwan (TW) and World (WQ)



Turkey's fast-growing economy is expected to attract more investments in the future

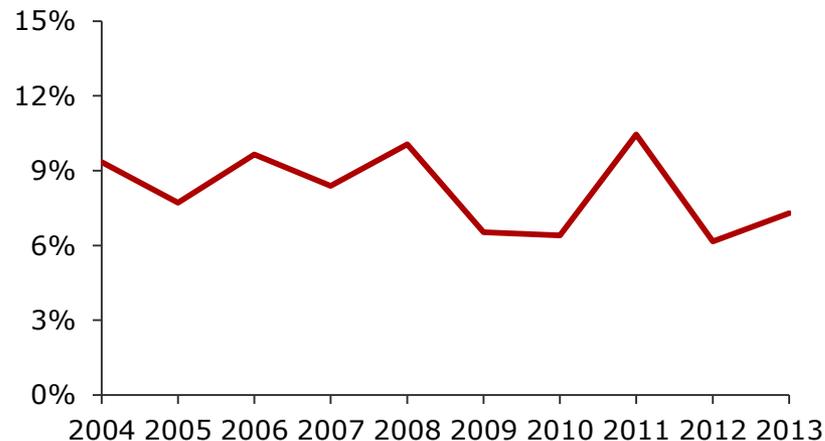
Figure 5: GDP Growth Rate (Constant Prices)



Source: TurkStat, EIU
*:forecasts

- Turkey has undergone a profound economic transformation over the last decade and its economic fundamentals are quite solid. It is the 17th largest economy in the world and the 6th largest economy in Europe with a current GDP of approximately USD 818 billion in 2013.
- Having boomed as fast as 9.3% and 8.8% in real terms in 2010 and 2011, the OECD projects a real GDP growth of around 4% in 2014 and 2015, while EIU projects 5% growth on average until 2017.

Figure 6: Inflation, 2004-2012



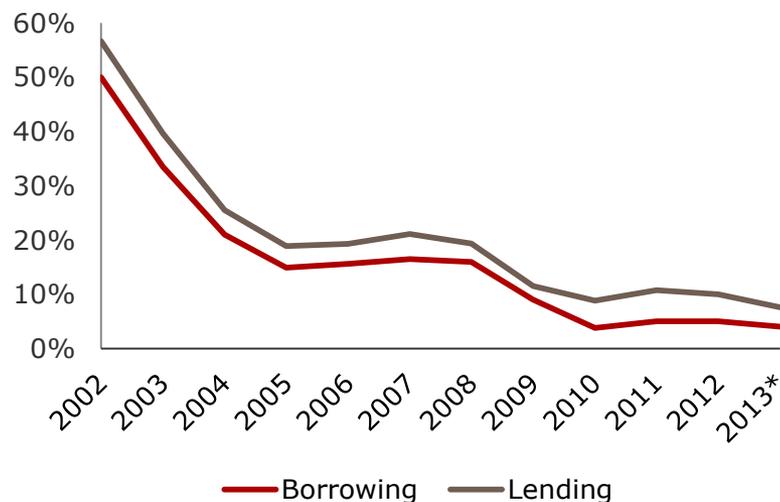
Source: TurkStat

- Monetary policy played a vital role in reining in inflation over recent years. Turkish inflation has stayed under 10% since 2004 and year-end inflation was 7.4% in 2013. The EIU forecasts that inflation will further ease to 4.1% by 2018.



Capitalizing on its economic policies, the investment environment in Turkey has become increasingly more welcoming to foreign investors

Figure 7: The Central Bank of the Republic of Turkey O/N Interest Rates



Source: CBRT
* As of September 2013

- The overnight lending rates have been steadily decreasing over the years and were around 7.5% in September 2013, which is a 500 basis point decrease from 2002.
- Fitch Ratings announced Turkey’s investment grade rating of BBB in November 2012 and Standard & Poor announced a BB+ rating in March 2013. These events signal further upgrades and are expected to boost the inflow of institutional funding.
- Moody’s raised Turkey’s government bond ratings to Baa3 and revised its outlook to stable from positive in May 2013.

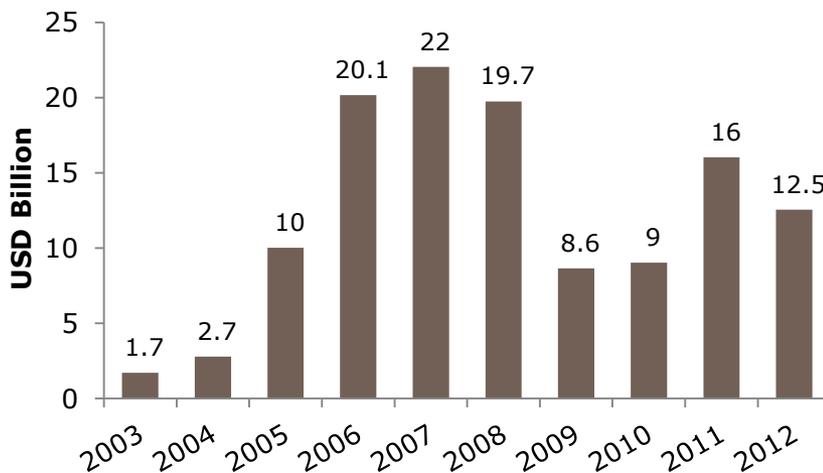
Table 1: Turkey’s Credit Ratings

	Rating (Local Currency)	Outlook (Local Currency)	Rating (Foreign Currency)	Outlook (Foreign Currency)
Standard & Poor’s	BBB	Stable	BB+	Negative
Fitch	BBB	Stable	BBB-	Stable
Moody’s	Baa3	Stable	Ba1	Positive
JCR	BBB-	Stable	BBB-	Stable



Turkey's FDI in health and social work activities increased at a CAGR of 39% from 2008 to 2012

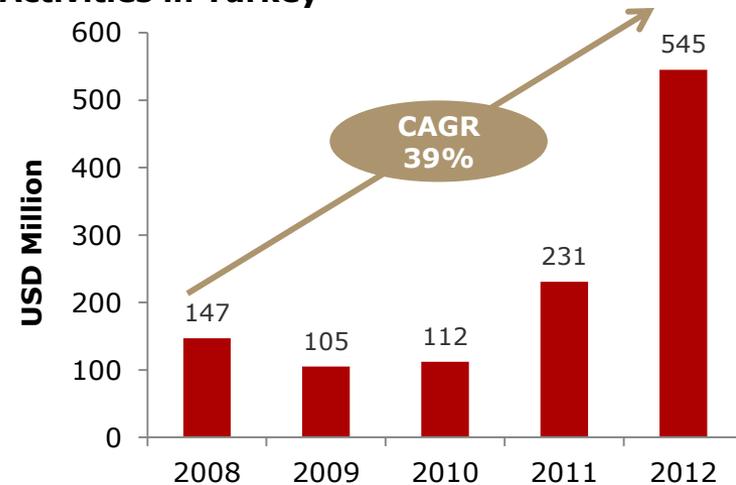
Figure 8: FDI Inflows to Turkey, 2003-2012



Source: World Development Indicators, World Bank DataBank

- Turkey has become an attractive destination for FDI. After weak FDI inflows in 2002, they began increasing incrementally and reached a record level of USD 22 billion in 2007. The decrease in 2009 can be explained by the global crisis which lowered FDI all around the world including Turkey. However, according to the 2011 figures Turkey has recovered satisfactorily from past downturns.

Figure 9: FDI in Health and Social Work Activities in Turkey



Source: CBRT

- The volume of FDI inflows directed to Turkey shows a promising recovery. 2012 FDI inflow rose to **USD 12.5 billion**, compared to USD 8.6 billion for 2009.
- Moreover, Turkey was able to attract an impressive level of FDI for its health and social work sector. FDI inflows to the industry increased at a CAGR of 39% from 2008 to 2012, reaching USD 545 million in 2012.



Mergers & Acquisitions in Healthcare Sector surpassed USD 1.4 billion between 2009 and 2012

Acquirer	Target	Date	Deal Value USD Millions	Stake
Euromedic International	Oylat Diyaliz Merkezi	2009	N/D	100%
The Carlyle Group	Medical Park Hospital Group	2009	N/D	40.0%
Rhea Investments	Dentistanbul	2010	0.2	100%
NBK Capital (Swan Holding)	Dünya Göz Hastanesi	2010	N/D	30.0%
Argus Capital Partners & Qatar First Investment Bank	Memorial Health Group	2010	N/D	40.0%
ADM Capital	Kemer Medical Center	2011	27.0	N/D
ADM Capital; PGGM N.V.; IFC	Universal Hospitals Group	2011	140.0	26.0%
Ethemba Capital; NBGI Private Equity	BirgiMefar Group	2011	N/D	N/D
Global Investment House	Bıçakçılar Tıbbi Cihazlar	2011	N/D	80.0%
Mid Europa Partners	Kent Hospital	2011	N/D	65.0%
Mineks International	Istanbul Cerrahi Hastanesi	2011	60.0	80.0%
NBGI Private Equity	Sante Group	2011	N/D	N/D
Integrated Healthcare Holdings	Acıbadem Sağlık Hizmetleri	2011	1,260.4	75.0%
Amplifon	Maxtone	2012	1.3	51.0%
Integrated Healthcare Holdings	Acıbadem Sağlık Hizmetleri	2012	88	6.5%
Acıbadem Sağlık Hizmetleri	Jinemed	2012	8	65.0%
Bureau Veritas	Kontrollab	2012	N/D	100%
Fresenius	Ren Grup Diyaliz	2012	N/D	100%
Euromedic International	Ultra Görüntüleme Merkezi	2012	N/D	100%

Source: Deloitte Annual Turkish M&A Review 2009, 2010, 2011, 2012

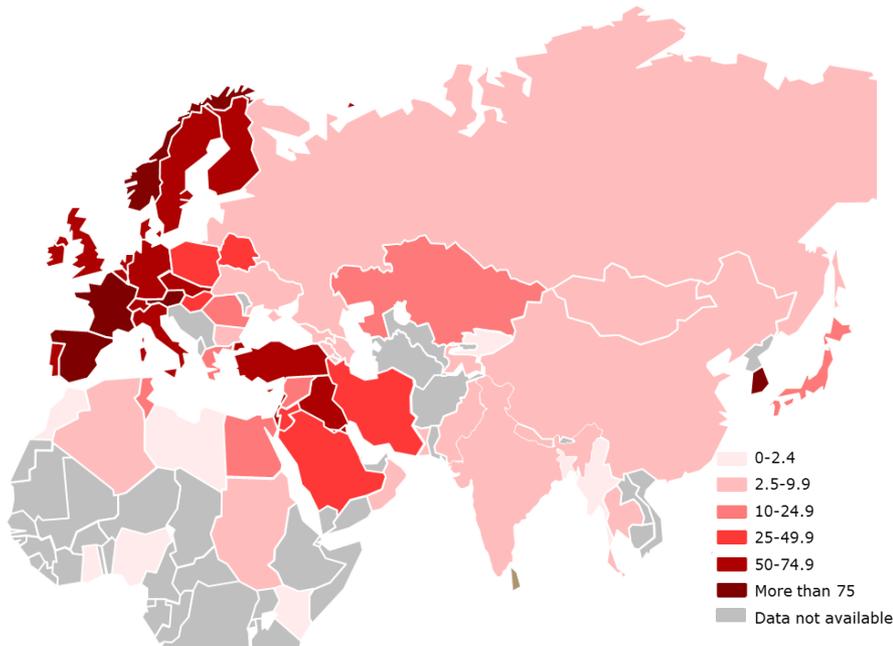


E. Special Focus: Organ and Tissue Transplantation



The number of organ transplants in Turkey grew by a CAGR of 40% between 2002 and 2012

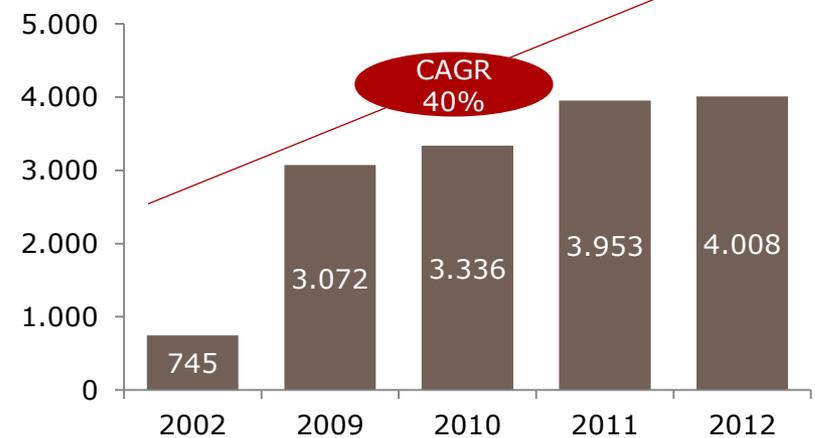
Figure 10: Number of Organs Transplanted per Million Population, 2012



Source: Global Observatory on Donation and Transplantation

- Covering the regions of Europe, Central Asia and North Africa, Turkey has one of the highest densities of organ transplantations. In 2012, **53.7 patients per million** population received organ transplants in Turkey. In comparison, this rate was **53.3 in Germany**, 2.6 in Bulgaria and 20.7 in Greece.

Figure 11: Number of Organ Transplants in Turkey



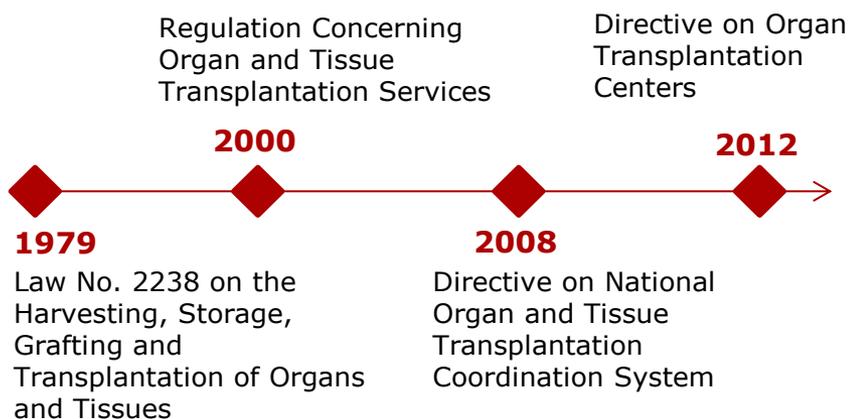
Source: MoH

- The number of organ transplants in Turkey grew by a **CAGR of 40%** between 2002-2012, from 745 to 4,008. This increase reflects the importance given to organ transplantation as a part of government policies.
- In fact, organ transplantation was included as a priority area of improvement in the **Strategy Paper 2011-2023: Health Services that Require Specialized Planning** published by the Ministry of Health. According to this plan, the MoH will pay particular attention to **brain death tracking systems** to increase the number of donors.



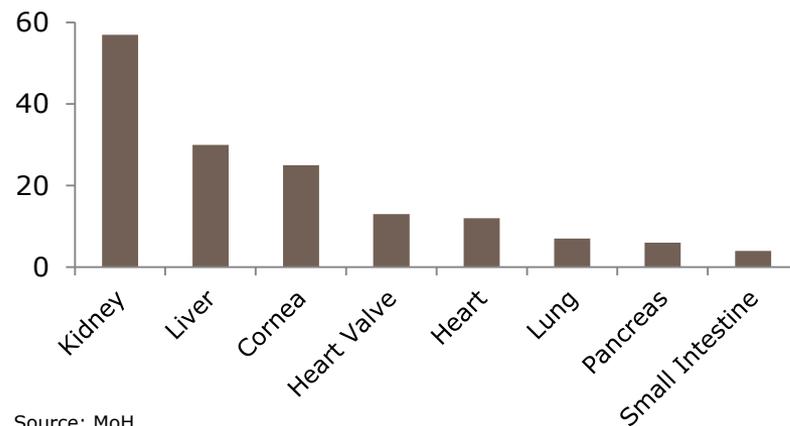
Following the legislative framework, more organ transplantation centers are being established

Figure 12: Legislation Concerning Organ Transplantation



- The first law on organ transplantation in Turkey, Law No. 2238 on the Harvesting, Storage, Grafting and Transplantation of Organs and Tissues, was adopted in 1979, shortly after the first kidney transplantation took place in Turkey in 1974.
- Since then, legislation has been adopted to further clarify the legal framework governing organ transplantations, namely, Law No. 2238 regarding implementation of these measures, and two directives for the National Organ and Tissue Transplantation Coordination System and Organ Transplantation Centers.

Figure 13: Organ Transplantation Centers in Turkey, 2014



Source: MoH

Note: Some centers perform multiple types of organ transplants. These centers were included multiple times in the graph.

- As of January 2014, there were 57 organ transplantation centers that transplant kidneys, whereas the numbers of liver and cornea transplantation centers stand at 30 and 25, respectively.
- Additionally, there are 12 centers that perform heart transplantations and 13 that transplant heart valves. There are also facilities that transplant lungs and pancreases, with 7 and 6 centers providing these services, respectively.



High quality services are also provided for patients requiring stem cell transplants

Relevant Legislation

- Law No. 2238 on the Harvesting, Storage, Grafting and Transplantation of Organs and Tissues
- Regulation Concerning Organ and Tissue Transplantation Services
- Directive on the National Organ and Tissue Transplantation Coordination System
- Regulation on Cord Blood Banking
- Regulation on Tissue Typing Laboratories
- Directive on Embryonic Stem Cell Research

- In addition to organ transplantation services, Turkey has both the resources and tools to harvest and transplant stem cells to treat those suffering with diseases such as leukemia. The stem cells transplanted to such patients are sourced from bone marrow or cord blood.
- In light of this, Turkey has established the legislative framework to regulate bone marrow banking and transplant, as well as cord blood banking. The legislation determines the conditions under which such centers may operate and also allows private operators to provide bone marrow transplantation and cord blood banking services.

Figure 14: Number of Bone Marrow Transplant Centers, 2011

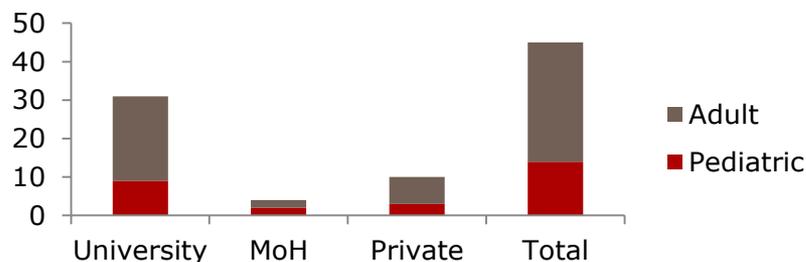
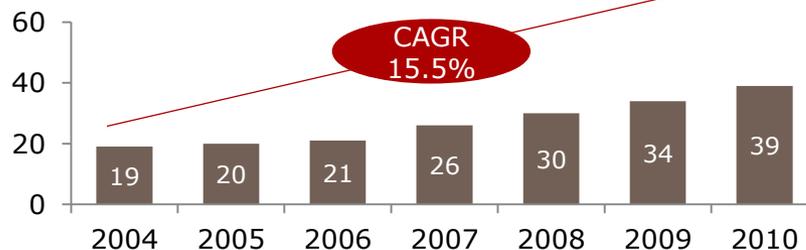


Figure 15: Number of Bone Marrow Transplant Centers



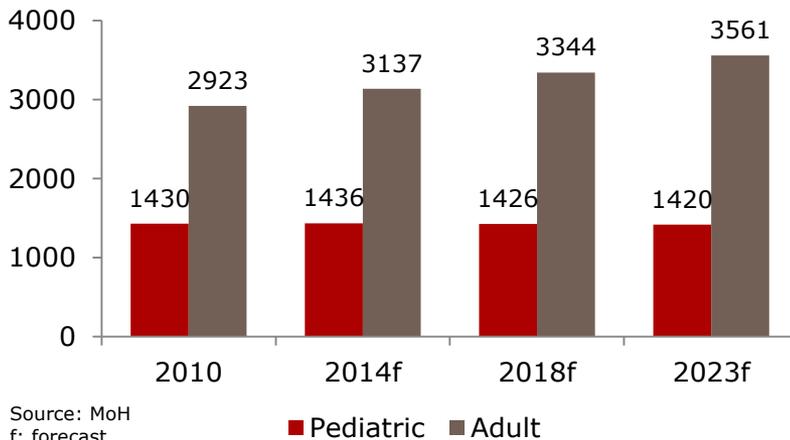
Source: MoH

- As of April 2011, there were a total of 45 bone marrow transplant centers, 10 of these were private. In line with government policies that classify bone marrow transplant services as a service that requires specialized planning. The number of bone marrow transplant centers grew by a CAGR of 15.5% between 2004-2010.



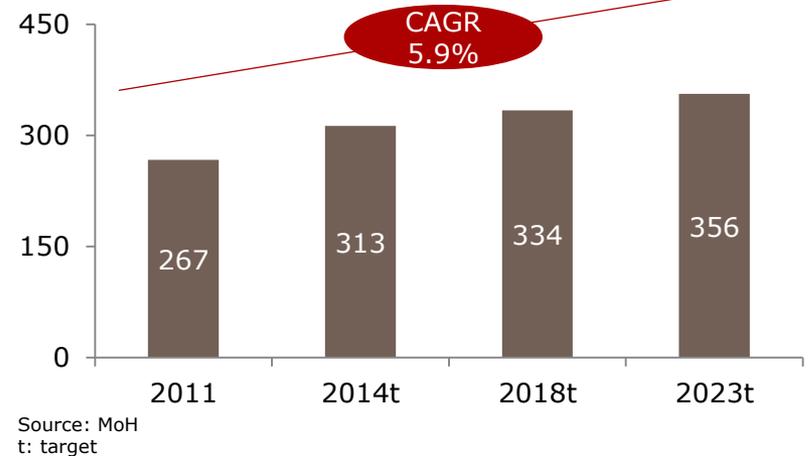
To answer the growing need, additional bone marrow transplant centers are being planned

Figure 16: Number of Patients Requiring Bone Marrow Transplants



- The MoH estimates that between 2010-2023, the number of patients requiring bone marrow transplants will increase by a modest CAGR of 2.8%. Most of the increase is expected to be in the number of adult patients requiring bone marrow transplant, increasing by a CAGR of 4.0% between 2011-2023.
- As the percentage of the population between 0-19 years decreases slightly up to 2023, the number of pediatric patients requiring bone marrow transplants will decrease slightly.

Figure 17: Bone Marrow Transplant Centers Bed Capacity, Adult



- Yet, the MoH plans to increase the number of pediatric bone marrow transplant centers. According to the MoH's plan, the bed capacity of pediatric bone marrow transplantation centers will grow by a CAGR of 12.5% between 2011-2023, amounting to a total of 144 centers in 2023.
- Up until 2023, the adult bone marrow transplant centers will also see growth, increasing by a CAGR of 5.9% between 2011-2023. Whereas in 2011, the bed capacity of adult bone marrow transplantation centers was 267. The MoH plans to increase this capacity to 356 beds by 2023.



The legislative framework allows for the establishment of private cord blood banks in Turkey

- In addition to bone marrow transplants, patients requiring stem cell transplantations may also be treated using cord blood. For this reason, cord blood banking has become an area of interest in recent years.
- There are three types of cord blood banks: allogeneic cord blood banks, which store cord blood donations open for use by any in need, autologous cord blood banks that store cord blood of individuals to be retrieved in the future by those individuals should there be a need, and cord blood banks that provide a combination of both of these services.
- In Turkey, there is one allogeneic cord blood bank registered in international cord blood registries, the Ankara University School of Medicine Unrelated Blood and Marrow Donor Registry. In addition, Ege University Cord Blood Bank also provides allogeneic, as well as autologous, blood banking services. Yet, there are a number of private companies providing autologous cord blood banking.
- Banking of cord blood is regulated by the Regulation on Cord Blood Banking. According to the regulation, like all institutions operating in stem cell services sector, cord blood banks are required to have an infrastructure in line with GMP (good manufacturing practices) certificate requirements.

Figure 18: Selected Private Cord Blood Banks in Turkey



- A number of autologous private cord blood banks operate in Turkey since the regulation on cord blood banking came into effect. Some of these banks are the Turkish subsidiaries of cord blood banks operating globally, whereas others are Turkish companies based in Turkey.

II. A Detailed Look at the Healthcare Industry in Turkey

- A. The Turkish Healthcare Market and System
 - a. The Drivers of Domestic Demand
 - b. The Healthcare System
 - c. Strategic Plans and Targets

B. Healthcare Infrastructure

C. Health Insurance

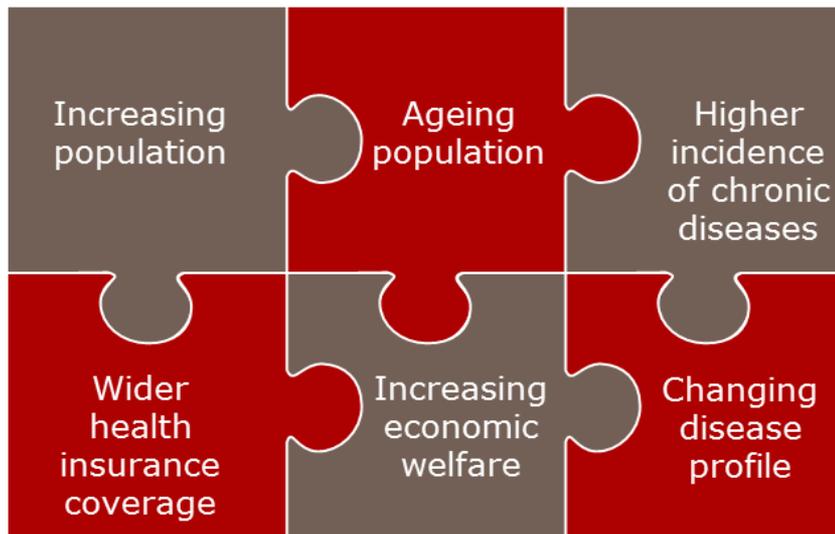
D. Healthcare Services

E. The Medical Device Sector



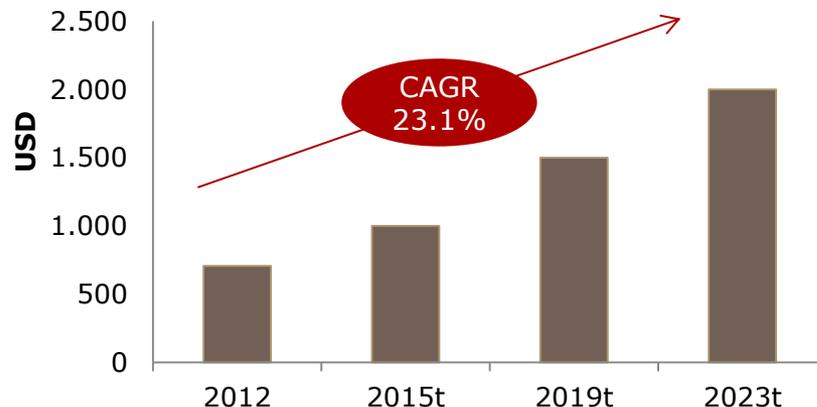
Increasing incomes, changing demographics and widespread access to healthcare services are the engines of growth in the Turkish healthcare system

Figure 19: Drivers of Healthcare Growth



- The Turkish healthcare sector has been expanding and is expected to continue its expansion as changing population dynamics, higher incidences of chronic diseases, wider health insurance coverage and increasing economic welfare create increases in healthcare spending.

Figure 20: Targeted Healthcare Spending per Capita



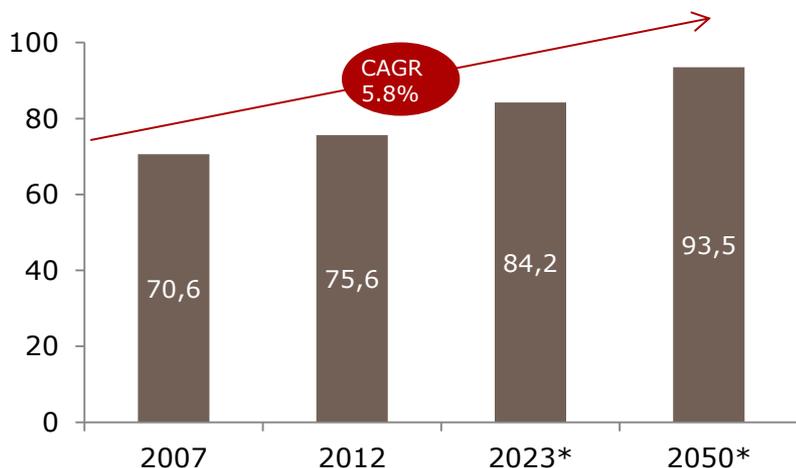
t: target
Source: Ministry of Health

- The Ministry of Health is targeting increased effectiveness, efficiency and equity in health service delivery as well as ensuring financial sustainability for its programs.
- Simultaneous improvements in the health system on both the demand side (increased health insurance coverage, expanded benefits and reduced cost sharing) and the supply side (expansion of infrastructure, health workforce and health services) are intended.
- As a result, healthcare spending per capita has been targeted to almost triple by 2023, reaching **USD 2,000**.



The growing population and ageing demographics contribute to the need to upgrade healthcare infrastructure and increase spending

Figure 21: Population of Turkey, (million people)



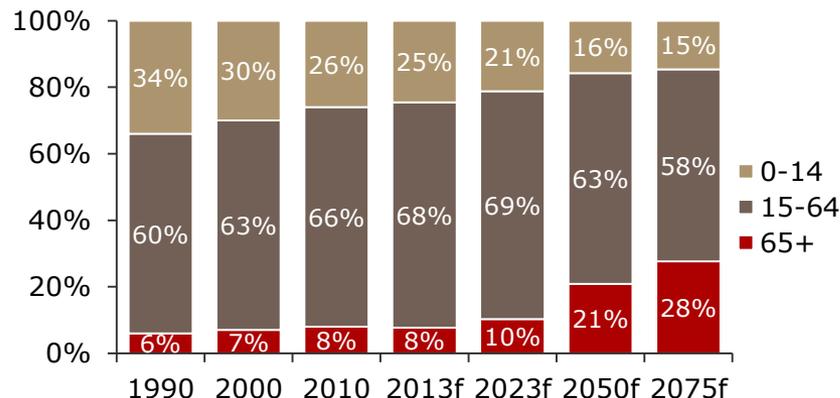
Source: TurkStat, Deloitte Analysis

* Forecast, Note: There may exist differences due to rounding.

- The Turkish population is expected to grow at a CAGR of 4.3% between 2012 and 2050 to an estimated 93.5 million in 2050.
- Even though Turkey will continue to have one of the youngest populations in Europe, its median age will reach 34 in 2023, 42.9 in 2050 and 47.4 in 2075. Therefore, more than half of the population will be over 47 years of age by 2075.
- The percentage of the population over the age of 65 is also on a rise as it will reach 10% of the total population in 2023 and 28% in 2075.

- There is a positive correlation between age and the possibility of suffering from chronic disease requiring lifelong care which would also incur higher medical costs. An ageing population coupled with continued population growth would result in increases in Turkey's healthcare spending.

Figure 22: Population Dynamics in Turkey



Source: TurkStat, Deloitte Analysis

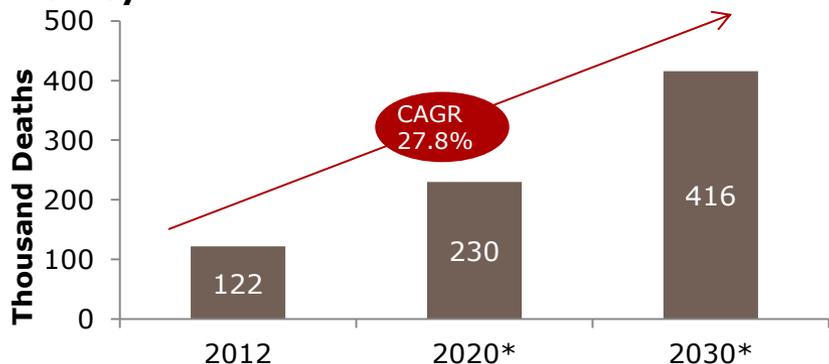
f: forecast, Note: There may exist differences due to rounding.

Investment Tip: An ageing population would result in an increased need for skilled nursing facilities and certain other public buildings, such as schools. These would be designed with a view toward conversion into healthcare facilities in the future.



Changes in disease profiles will put pressure on the healthcare system and would require further investments in infrastructure and the diversification of healthcare services

Figure 23: Deaths from Cardiovascular Disease in Turkey

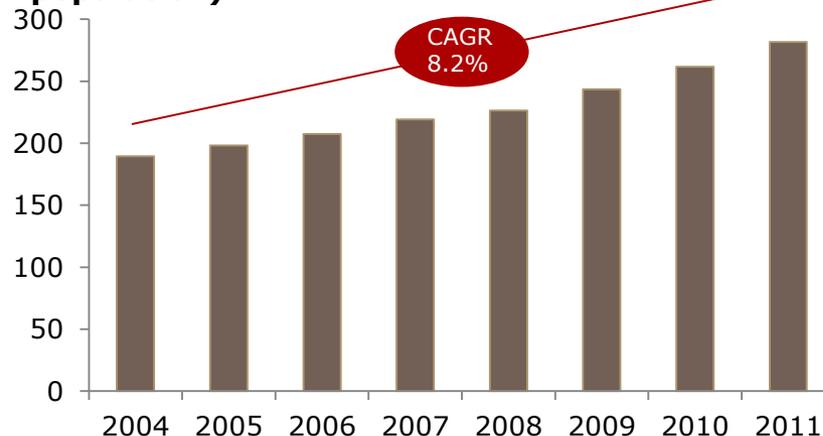


Source: TurkStat, MoH

* Forecast, Note: There may exist differences due to rounding.

- While Turkey's population has characteristics resembling a developing country including the large portion of the population still between 15-64 years of age, its disease profile has started to resemble that of developed countries with huge advances in the fight against infectious diseases.
- Deaths from cardiovascular diseases are expected to increase at a CAGR of 27.8% between 2012-2030 whereas cancer incidence has increased by a CAGR of 8.2% between 2004-2011. Similarly, there are drastic reductions in the incidence of infectious diseases except that of AIDS, which resembles non-communicable diseases in that it requires lifelong medical attention and costly treatment.

Figure 24: Cancer Incidence (per 100,000 population)



Source: MoH

Table 2: Incidence of Infectious Diseases (per 100,000 population)

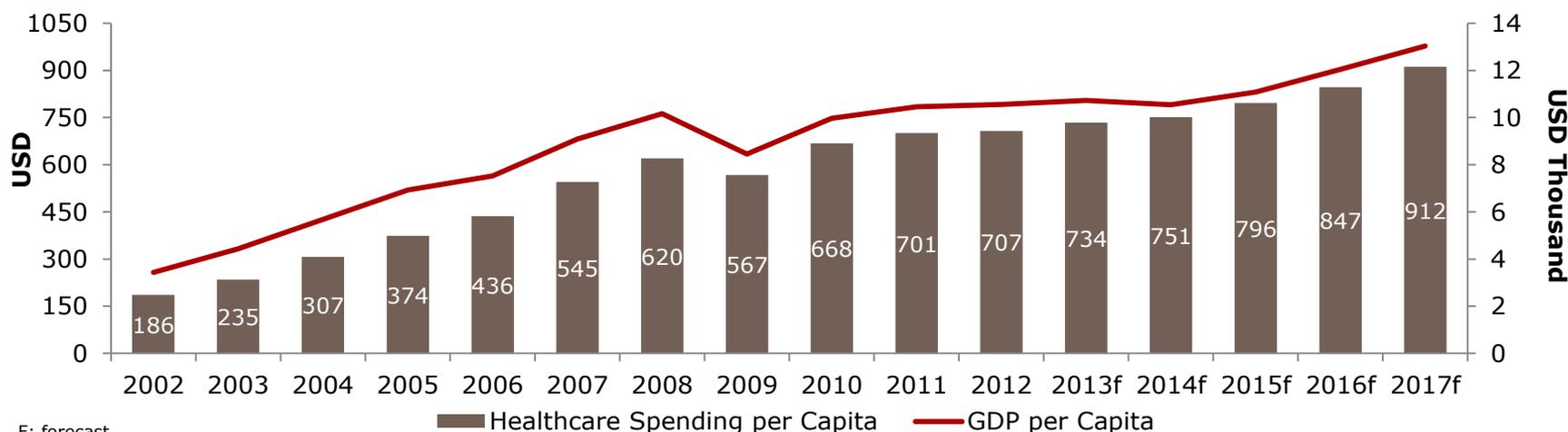
	2002	2012
AIDS	0.07	0.12
Measles	11.1	0.5
Tuberculosis	32	22
Malaria	14.7	0.5

Source: MoH, WHO



As economic welfare increased, Turkey's healthcare spending grew at a CAGR of 30.6% between 2002-2012

Figure 25: Healthcare Spending per Capita and GDP per Capita in Turkey



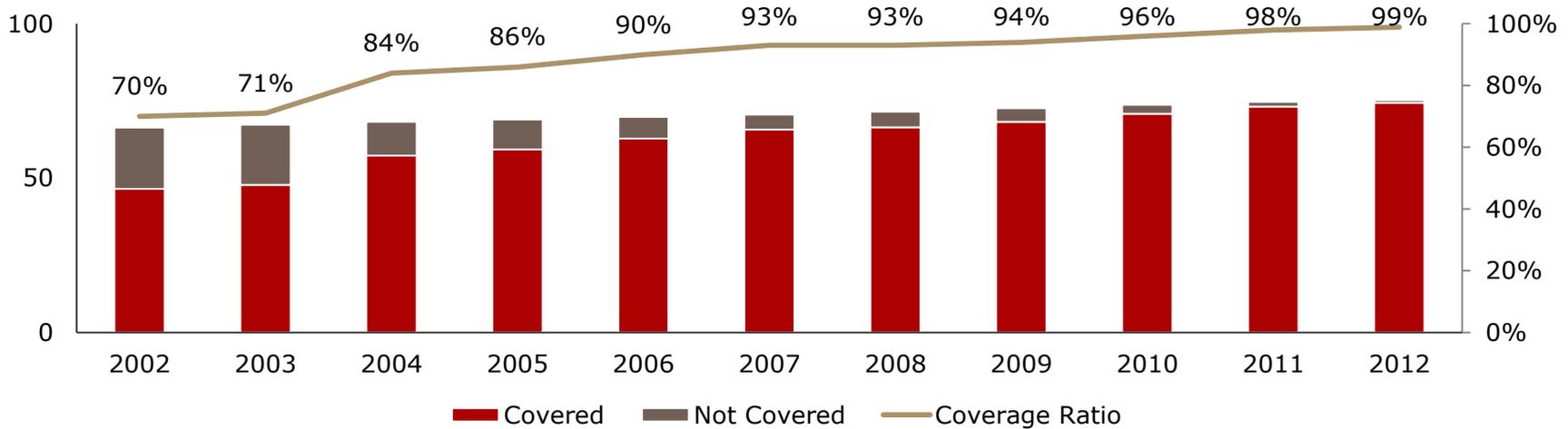
F: forecast
Source: Economic Intelligence Unit

- There is a strong correlation between economic welfare and the level of healthcare spending. As economic welfare increases, so do expectations for readily accessible and higher quality healthcare.
- The Turkish economy rapidly expanded in the last decade with per capita GDP expanding at a CAGR of 25.1% between 2002 and 2012 from USD 3,439 in 2002 to USD 10,550 in 2012. In line with increased economic welfare, healthcare spending per capita grew at a CAGR of 30.6% between 2002-2012 from USD 186 to USD 707.
- The Turkish economy is expected to continue its rapid expansion with GDP per capita reaching USD 13,303 in 2017. GDP per capita is projected to grow at a CAGR of 4.3% between 2012-2017, registering an increase of around USD 2,500.
- Healthcare spending will grow in line with improvements in economic welfare as it increases at a CAGR of 5.2% from USD 707 in 2012 to USD 912 in 2017. There is especially strong growth between 2015-2017, giving an indication that growth in healthcare spending per capita will continue to increase in the long term as well.



Social Security coverage has expanded rapidly in Turkey, covering 99% of the population in 2012

Figure 26: Social Security Coverage



Source: SSI

- The social security system in Turkey underwent major transformation, resulting in a more efficient and fast functioning system. This program was based on centralizing the control of different social security funds in a single institution.
- Within the scope of the program, three insurance funds, namely SSK, Emekli Sandığı (GEPF) and BağKur, were merged under a sole body called the Social Security Institution (SGK).
- The social security system now covers approximately 99% of the total population with 75.2 million people covered, which is an increase of 29% from 2002.
- As the number of persons benefiting from the SSI increases, so does the rate of utilization of healthcare facilities and services, leading to increased levels of healthcare spending.



The Turkish healthcare system is a highly regulated market with increasing private sector involvement



Central Government

- Policy is formed at this level with the participation of the Parliament, Ministry of Development and the MoH.
- The central government provides funding to the national healthcare system through budgetary allocations made to public hospitals and contributions to the Universal Health Insurance Fund.

Ministry of Health

- In addition to its role in policy formulation, the MoH is the main institution responsible for the healthcare system. It oversees and monitors the state of the healthcare system. The MoH hospitals fall directly under its mandate. The MoH ensures availability and delivery of pharmaceuticals, special products and medical devices as well as conducts economic evaluations to set their prices.

The Social Security Institution

- Patients make monetary contributions to the SSI through compulsory premium payments. The SSI, in turn, reimburses public hospitals (MoH and University Hospitals) and makes some contribution to services provided by private healthcare institutions as well.

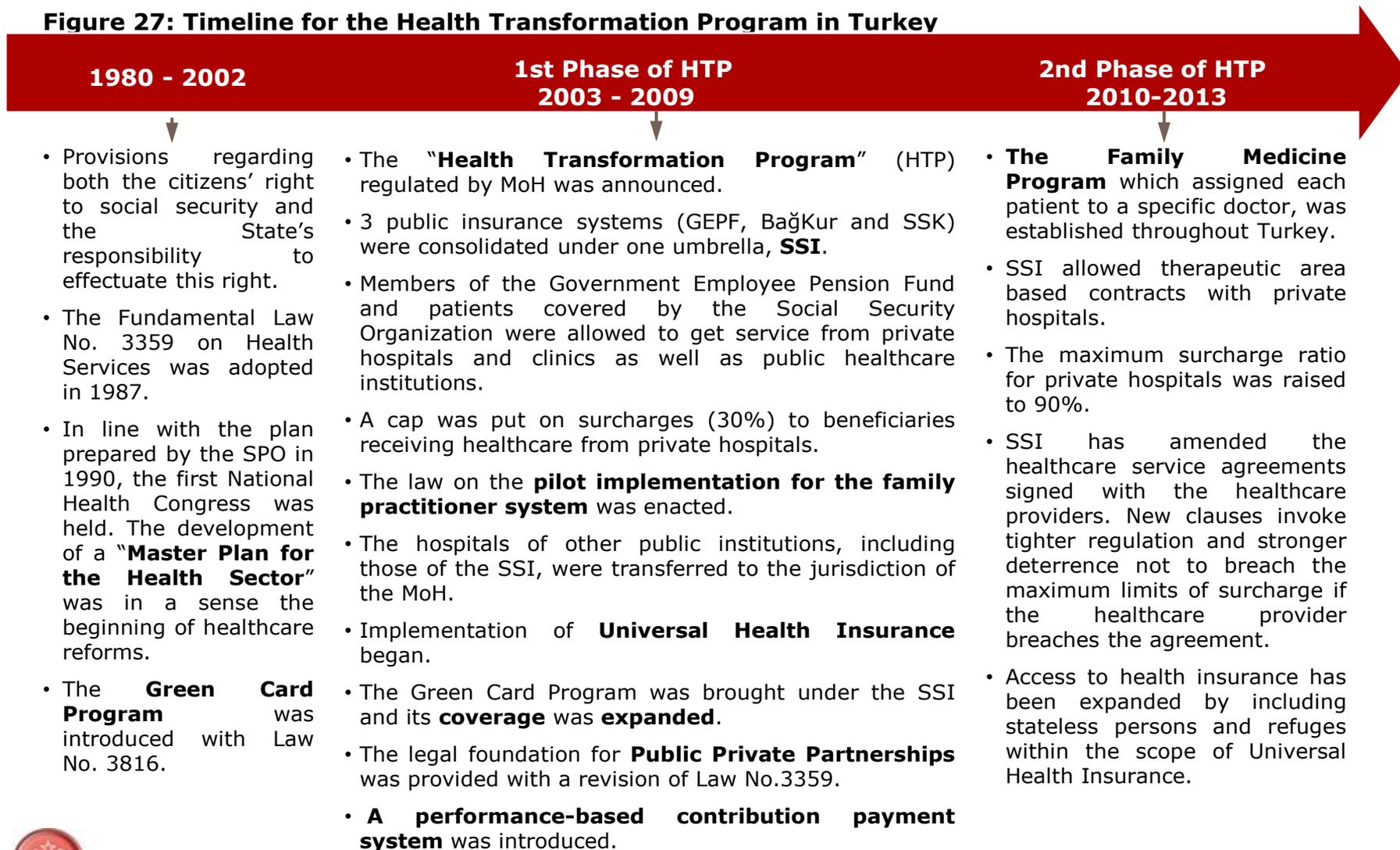
Private Healthcare Services

- The MoH provides contributions towards the costs of private healthcare. Private healthcare institutions may bill up to 90% (as an additional surcharge) which will then be provided by private insurance or out of pocket payments.



Since 2003, the Turkish healthcare system has undergone a major transformation

Figure 27: Timeline for the Health Transformation Program in Turkey



Strategic plans and targets will provide the impetus for further improvements to the healthcare system as well as fueling health spending

2023 Vision for Healthcare

- The government aims to make Turkey one of the world's top ten economies by 2023 while increasing the share of R&D expenditures to 3% of the GDP and total exports to USD 500 billion.
- The Turkish government's plans for healthcare services targets the development of the family medicine system, health tourism and telemedicine solutions.

To increase the number of family practitioners throughout Turkey

To reduce infant mortality rates to below 0.05% by 2023

To reduce the incidence of non-communicable diseases

To become a health tourism hub

To increase R&D activities for stem cell therapy, gene therapy and distance diagnostics

To increase use of telemedicine technologies and home care services

Figure 28: Strategic Goals of the MoH



The Ministry of Science, Industry and Technology has also set targets for the sector

- In order to create a life sciences sector that is internationally competitive and export oriented, the Ministry of Science, Industry and Technology has identified 6 main strategic goals in its Strategy Paper and Action Plan.

1

Improve regulations to meet the demands of public health as well as improve investments

- Regulations are being prepared to improve the health sector in Turkey.
- Strategies to increase export share in existing markets will be set and new export markets will be identified for medical devices.

2

Investment in qualified human resources

- Attract Turkish scientists who are working abroad back to Turkey and ease the hiring process of qualified foreign employees to companies, while integrating the qualified workforce into R&D projects.

3

Improve cooperation among the public sector, the private sector and universities

- Establishment of the Health and Social Work Sector Technical Committee, which will develop policies and regulations to improve the industry.

4

Educate doctors, pharmacists and consumers about pharmaceutical use and medical devices

- Educate the public on the efficient and effective use of medical devices.
- Include pharmaceutical waste management information on the prospectus of pharmaceuticals.
- Develop medical device usage monitoring systems.

5

Effective planning of R&D operations to produce high value added products

- Improve R&D infrastructure by analyzing best practices.
- Establishment of medical device and life sciences clusters.
- Publish Turkish pharmaceutical inventory.

6

Develop a sustainable financing model to support the industry

- Improve incentive system in order to increase R&D, new investments and exports of the sector.
- Support SMEs that operates on new and innovative medical devices.



II. A Detailed Look at the Healthcare Industry in Turkey

A. Turkish Healthcare Market and System

B. Healthcare Infrastructure

C. Health Insurance

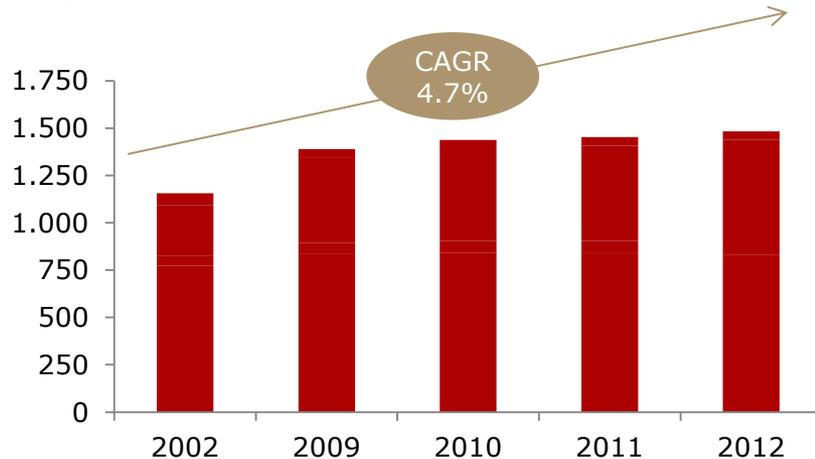
D. Healthcare Services

E. Medical Device Sector



Turkish healthcare infrastructure is expanding with the number of hospitals increasing by a CAGR of 4.7% between 2002-2012

Figure 29: Number of Hospitals in Turkey

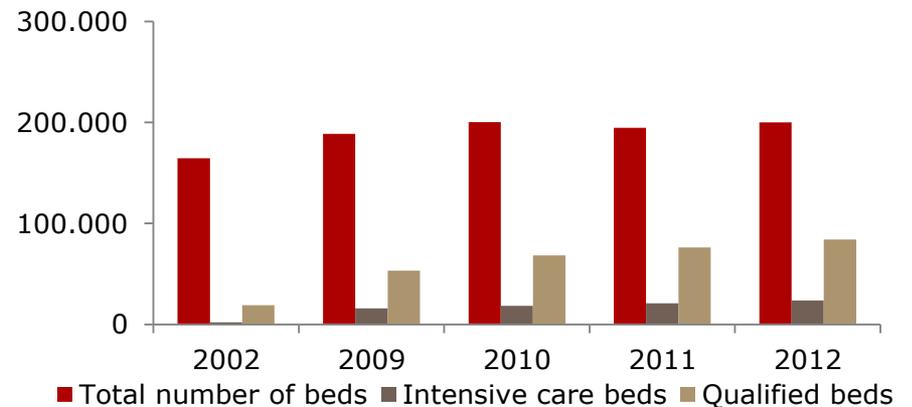


Source: MoH, Health Statistics Yearbook 2012

- As demand for grew for more and better equipped hospitals, the Turkish healthcare sector saw increased investments in the hospital sector. Between 2002-2012, the total number of hospitals grew at a CAGR of 4.7%.

Investment Tip: Investments in the healthcare sector are expected to continue as the government strives to increase the number of hospital beds per 10,000 population to 32 in 2023 from the current number of 26.5. It has also taken on an ambitious healthcare PPP program.

Figure 30: Number of hospital beds in Turkey



- The total number of hospital beds grew by a CAGR of 4% between 2002-2012. As of 2012, there were 1,483 hospitals with a total bed capacity of 200,070.
- The largest capacity additions were to intensive care and qualified beds. The number of qualified beds increased at a CAGR of 34.7%, whereas the number of intensive care beds increased by the remarkable CAGR of 60.5%, demonstrating that investments in infrastructure were not only focused on increasing quantity, but were chiefly aimed at increasing the quality of the healthcare infrastructure. This comes as no surprise because with increased economic welfare, the demand for higher quality healthcare services also increases.



Growth in Turkey's healthcare sector was led by the private sector between 2002-2012 as the number of private hospital beds grew at a CAGR of 23.6%

Figure 31: Number of Private Hospitals in Turkey

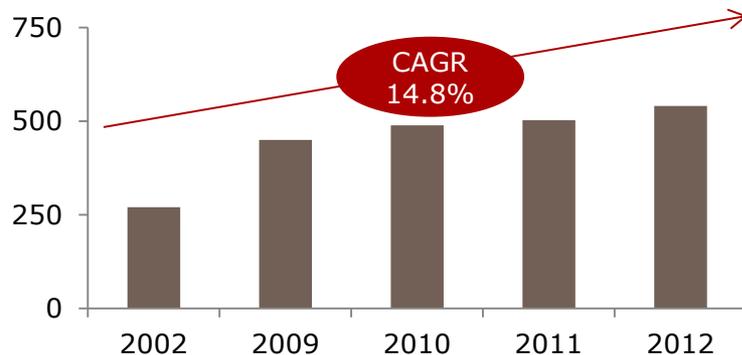
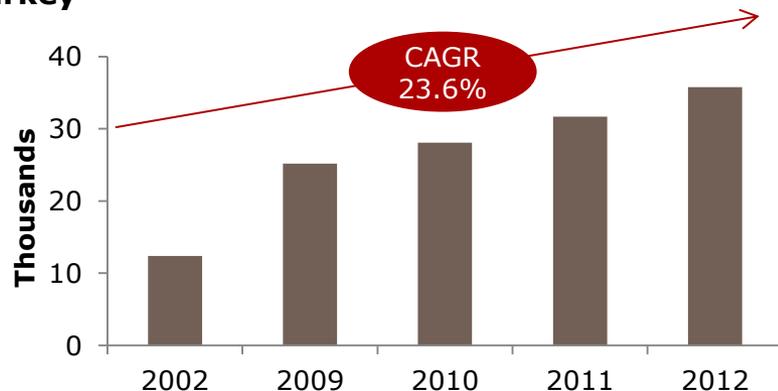


Figure 32: Number of Private Hospital Beds in Turkey



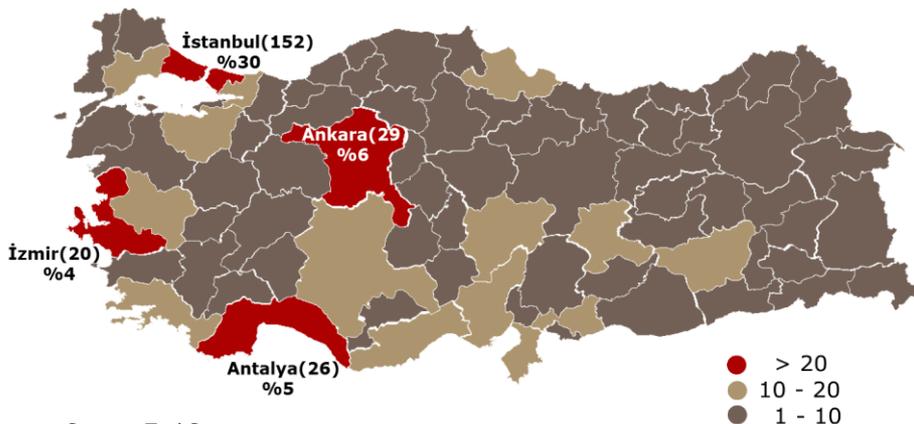
Source: MoH, Health Statistics Yearbook 2012

- Even though the MoH hospitals have the majority share and also the highest number of beds, in the period between 2002-2012, private hospitals led the expansion in healthcare infrastructure. The number of private hospitals grew at a CAGR of 14.8%, as opposed to MoH hospitals which increased their number at a CAGR of only 1.5%.
- There was an even more remarkable increase in the number of private hospital beds, with the number of hospital beds in private hospitals growing at a CAGR of 23.6% between 2002-2012, whereas growth in MoH hospitals had more moderate growth at a CAGR of 6.2%.
- It is apparent that the expansion in infrastructure was led by the private sector in the last decade. This is not surprising as the government has actively supported a more proactive role for the private sector by including private healthcare institutions in the national social security plan and also initiating an ambitious healthcare PPP program to expand healthcare infrastructure in collaboration with the private sector.
- Government policies point to a continuing and increasing role for the private sector in the future expansion of Turkish healthcare infrastructure.



Private hospitals in Turkey are concentrated in the western region, with the highest concentration in Istanbul

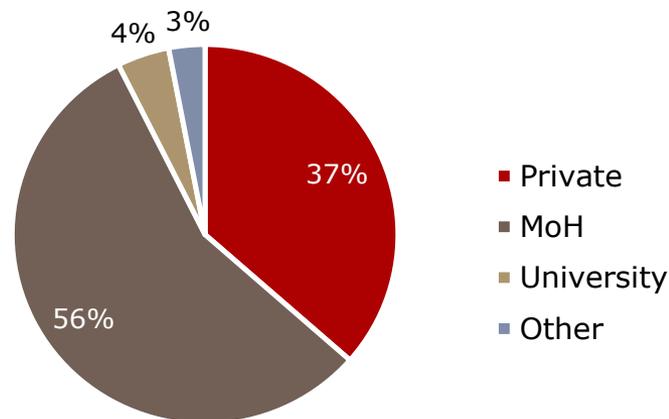
Figure 33: Regional Distribution of Private Hospitals in Turkey, 2012



Source: TurkStat

- The majority of private hospitals are located in western Turkey, with Istanbul (30%), Ankara (6%), Antalya (5%) and Izmir (4%) leading the way. The concentration of private hospitals is proportional to population density; Istanbul, Turkey's largest city, has the highest number of private hospitals at 152.
- Other cities with high populations also have a high number of private hospitals. Ankara, the second largest city in Turkey after Istanbul, has 29 private hospitals, whereas Antalya and Izmir house 26 and 20 private hospitals respectively.

Figure 34: Percentage of Private Hospitals in Turkey, 2012



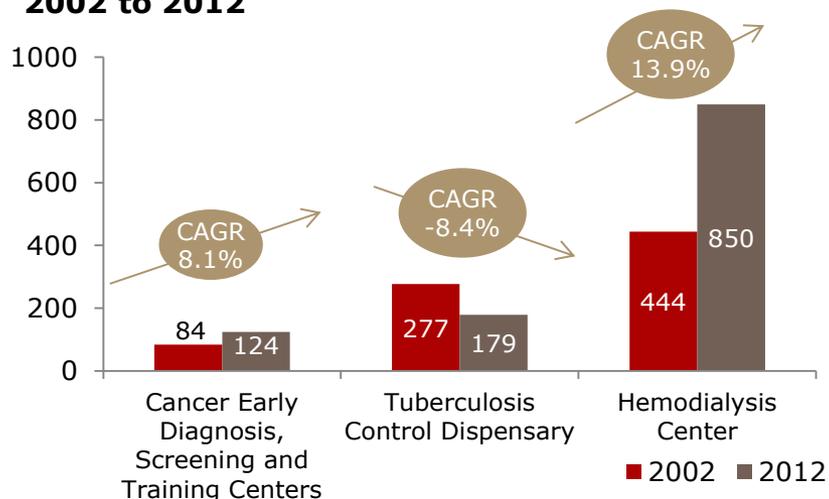
Source: MoH

- Yet, the market penetration for private healthcare institutions is significant all over Turkey. There is at least 1 private hospital in every province, with 17 provinces having more than 10 private hospitals.
- In addition, as of 2012, 37% of all hospitals in Turkey are private, as opposed to 56% operating under the MoH mandate. This, yet again, demonstrates the fairly high market penetration of private healthcare institutions in Turkey.



As the disease profile changes and demand for higher quality healthcare infrastructure increases, the number of specialized health centers also increases

Figure 35: Number of Specialized Centers, 2002 to 2012



Source: MoH

- The change in the number of specialized health centers aptly reflects the change in disease profile and the demand for higher quality health infrastructure. As the number of specialized centers dealing with chronic diseases such as cancer and diabetes increase, those targeting infectious diseases, such as Tuberculosis Control Dispensaries, saw a decline in numbers.
- Turkey's healthcare infrastructure has also expanded to include 17 different types of specialized hospitals with a total bed capacity of 23,129.

Hospital Type	Number	Bed Capacity
General Hospital	1,341	176,943
Obstetric and Children's Hospital	43	7,452
Ophthalmology Hospital	26	604
Chest Diseases Hospital	15	4,111
Physical Therapy and Rehabilitation Center	11	2,009
Psychiatric Hospital	8	4,393
Dental Hospital	6	96
Cardiovascular Diseases Centers	5	836
Children's Diseases Hospital	3	1,729
Bone Diseases Hospital	2	585
Occupational Diseases Hospital	2	156
Oncology Hospital	1	910
Surgical Hospital	1	70
Venereal Diseases Hospital	1	31
Leprosy Hospital	1	50
Orthopedics and Traumatology Hospital	1	29
Hospital for Children with Leukemia	1	14
Spastic Children's Hospital and Rehab Center	1	54



Medical free zones will contribute higher quality healthcare infrastructure tailored to foreign patients

- The Ministry of Health is planning to open medical "**free zones**", which will include hospitals, rehabilitation centers, thermal tourism facilities, nursing houses, health techno-cities and R&D centers. These medical "free zones" will be built in big cities where transportation will be relatively easy.
- **60% of the labor force** will be provided by foreign doctors and medical personnel, since **85% of the patients** are expected to be foreigners.
- Tax and investment incentives will be provided to investors in health tourism.
- The main idea behind health-related free zones is to implement the principles to an area where all the activities are related to health. Medical free zones would not be limited to hospitals and health facilities.
- Even though there are not any medical free zones currently operating, there are Ministry projects that are expected to begin construction in Antalya, Bursa and Izmir by the end of 2013.



Source: Ministry of Health

- | | |
|--------------------------|-------------------------------|
| 1: Convention Center | 7: Mosque , Synagogue ,Church |
| 2: Social Facilities | 8: Sports Facilities |
| 3: Hospitals | 9: Rehabilitation Facilities |
| 4: Spa and Beauty Center | 10: Recreation Area |
| 5: Recreation Area | 11: Hotel |
| 6: Education Center | 12: Technology Center |



II. A Detailed Look at the Healthcare Industry in Turkey

A. The Turkish Healthcare Market and System

B. Healthcare Infrastructure

C. Health Insurance

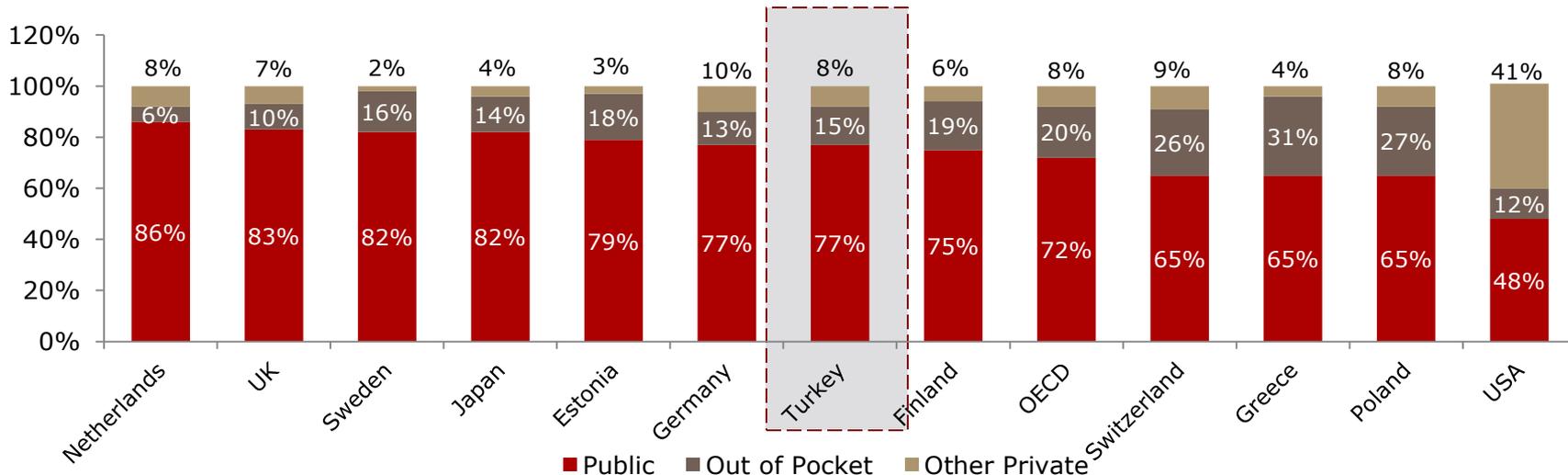
D. Healthcare Services

E. Medical Device Sector



The publicly financed Social Security System plays a critical role in the provision of healthcare services and the realization of strategic plans and targets

Figure 36: Health Expenditure by Financing Type in Selected OECD Countries, 2011



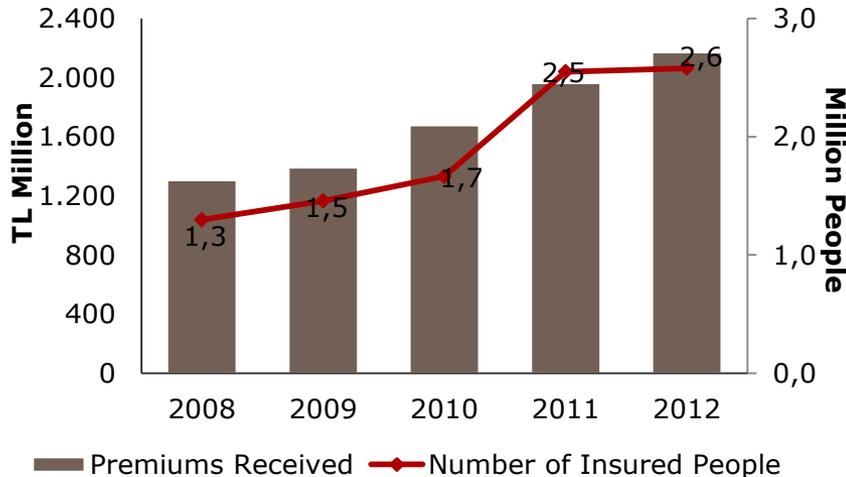
Source: MoH, OECD
Note: Data for Turkey is from 2012.

- The publicly financed social security system plays a critical role in the provision of healthcare services in Turkey. As apparent from OECD comparisons, Turkey has a high share of public healthcare spending at 77%. This is higher than the OECD average of 72%.
- Out of pocket spending is also relatively low in Turkey at only 15%, compared to the OECD average of 20%. Whereas, other private financing is on level with the OECD at 8%.
- As a welfare state, Turkey has strived to make healthcare services more accessible to all of its citizens under equal and fair conditions. In line with this, social security coverage reached 99% in 2012.
- The state also pays health premiums for the low-income portion of the population, which not only leads to an expanding healthcare sector, since the number of visits to healthcare facilities increase, but also allows for the utilization of healthcare services in a more equitable and fair manner.



Turkey's health insurance premiums grew with incredible momentum reaching a CAGR 13% from 2008 to 2012

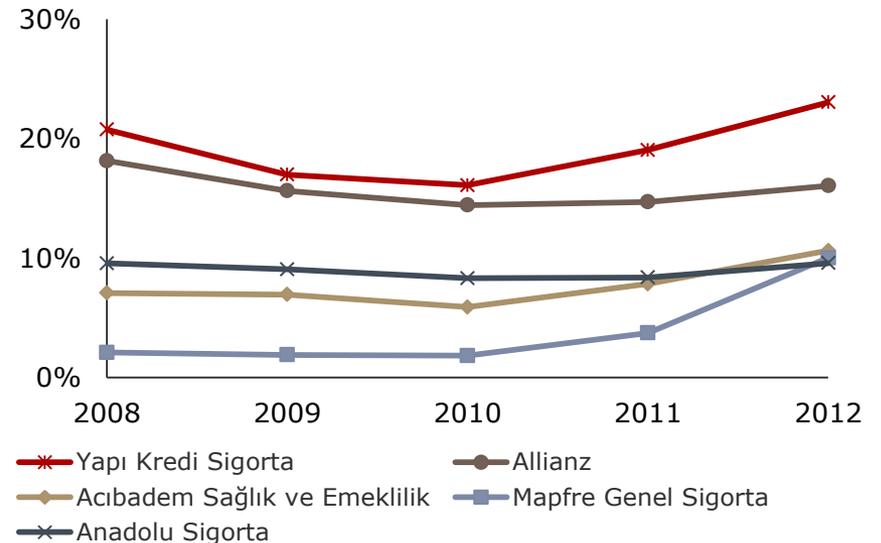
Figure 37: Private Health Insurance Premiums and Number of People Covered



Source: TSB

- Health insurance is classified as non-life insurance in Turkey. The non-life insurance sector's asset size grew at a CAGR of 10% from 2008 to 2012 reaching TL 19 billion, whereas non-life insurance premiums grew at a CAGR of 17% from 2009 to 2012 fueled mainly by health insurance.
- Premiums received increased by a CAGR 13.5% from 2008 to 2012 to more than TL 2,160 million, while the number of insured people increased a CAGR 18.7% during the same period surpassing 2.5 million in 2012.

Figure 38: Market Share of Health Insurance Companies



Source: TSB

Note: Yapı Kredi Sigorta's and Yapı Kredi Emeklilik's majority shares were bought by Allianz in March 2013.

- The top 5 health insurance companies constitute almost 70% of the total market. YapıKredi Sigorta was the market leader in health insurance constituting a share of 23% in 2012 with more than TL 499 million premiums collected. YapıKredi Sigorta is followed by Allianz constituting a 16% market share and finally, Acibadem and Anadolu Sigorta with an almost 10% market share each.



Selected Players in Insurance Sector

Name	Logo	What They Do
Acıbadem Sigorta		Driven by its solid experience in the healthcare service sector, Acıbadem Group introduced its insurance branch in 2004. Acıbadem provides health, life and personal accident insurance services.
Allianz Sigorta		Allianz covers Turkey with its non-life insurance subsidiary Allianz Sigorta, its life and pension subsidiary Allianz Hayat ve Emeklilik and also with Allianz Global Assistance and Euler Hermes. Its primary business lines are health and auto.
Axa Sigorta		The Axa Group of companies offer services in life, health and other forms of insurance as well as investment management. As part of Axa Group, Axa Sigorta provides insurance services in Turkey with 9 regional offices and 2 regional representatives.
ERGO Sigorta		The ERGO Insurance Group is represented in over 30 countries worldwide, concentrating in the regions of Europe and Asia. Ergo has been active in Turkey since 1981 with 13 regional offices.
Groupama Sigorta		Groupama Group is an insurance, banking and financial services group and first entered the Turkish market by acquiring a 30% share of Güneş Sigorta in 1991. In addition to its headquarter in Istanbul, Groupama Sigorta has regional offices in 8 cities in Turkey.
Mapfre Genel Sigorta		Mapfre Group acquired an 80% share of T. Genel Sigorta from Çukurova Holding and began operating in Turkey in 2007. Other than health and life insurance, Mapfre Genel Sigorta provides almost all forms of insurance in Turkey.
Zurich Sigorta		Zurich Insurance offers a wide range of general insurance and life insurance products and services in more than 170 countries. It entered the Turkish market by acquiring TEB Sigorta.



Success Stories

ERGO

ERGO

- ERGO Sigorta was founded in 2006 via acquisition of the majority of shares of İsviçre Hayat A.Ş. by the ERGO Group. In 2008, ERGO acquired the remaining 25% of the shares and became the sole owner.
- ERGO International announced that ERGO Turkey was one of the three biggest companies within the ERGO Group. It is expected that ERGO Turkey will contribute to the growth of the Group the most, compared to the other member firms.
- ERGO Insurance operates in non-life, life and pension services with a focus on non-life.

"With İsviçre, we found ourselves in a very good position to take advantage of the excellent business opportunities in the Turkish market in the coming years." *Klaus Allerdissen, Board Member*

"Turkey has growth prospects with its huge young population. We believed that Turkey will eventually integrate into Europe's political network." *Klaus Flemming, Board Member*

"Turkey is one of the fastest growing non-life markets globally." *Investor Briefing on ERGO International, 2013*

ALLIANZ

Allianz

- Allianz entered the Turkish market in 1988 by partnering with Şark Sigorta. The company covered life and health insurance operations under Sark Sigorta until 2003. Its name was first changed to Koç Allianz Sigorta, and then to Allianz Sigorta in 2008 when Allianz acquired over 80% of the total shares.
- In July 2013, Allianz acquired YapıKredi Sigorta consistent with its approach to obtain growth through strategic relationships in high-growth insurance markets.

"The rising welfare level, the high share of young people and Turkey's increasing population overall bring new insurance needs. These opportunities excite us." *Michael Diekmann, Chairman and CEO*

"Turkey is an extremely important market for us because of its high economic potential, low insurance penetration and proximity to the center of Europe." *Enrico Cucchiani, Board Member*

"The transaction with YapıKredi is a unique opportunity to move into a market leading position in one of Europe's key growth markets." *Oliver Bäte, Board Member*



Success Stories

ACIBADEM SİGORTA

ACIBADEMSİGORTA

- Acıbadem Sigorta started its operations in 2004 with the name Acıbadem Health and Life Insurance Co. It focused on health, life and personal accident products.
- In 2007, Abraaj Group acquired 50% of its shares. Reuters stated that Acıbadem became one of the fastest growing and most profitable health insurance companies in Turkey, achieving more than 30% annual premium growth over 2010-2012.
- In 2013, Abraaj divested its 50% shares to Khazanah Nasional Berhad, the Government of Malaysia's strategic investment fund. The acquisition completed with Khazanah acquiring a 90% stake in Acıbadem Sigorta.

"We are pleased with the successful completion of the acquisition as it forms an important piece of the build-out of Khazanah's insurance platform that is focused on markets with strong growth potential."

*Tan Sri Dato' Azman bin Hj. Mohtar, Kazanah's
Managing Director*

GROUPAMA SİGORTA



- It was founded in 1959 under the leadership of Ziraat Bank as Başak Insurance. In 2006, 56.67% of Ziraat Bank shares were purchased by Groupama.
- After merging with Güven Sigorta in 2008, the company was renamed Groupama Insurance.
- The company has an extensive agency network with its base of operation in Istanbul and 9 regional offices in 8 cities.
- The healthcare insurance products of Groupama include First Aid Insurance, Welcome Baby Health Insurance, Only Inpatient Insurance, Inpatient and Outpatient Insurance, Travel Health Insurance and Rebates & Tax Advantages.

"Turkey with its growth potential, has strategic importance for Groupama as it is a role model country within the Group. The exciting dynamics of the market in Turkey is encouraging us to realize some of our investment plans for the Turkish insurance market."

Jean Francois Lemoux, General Manager of Groupama



II. A Detailed Look at the Healthcare Industry in Turkey

A. The Turkish Healthcare Market and System

B. Healthcare Infrastructure

C. Health Insurance

D. Healthcare Services

E. Medical Device Sector



With recent reforms, healthcare services have become more accessible

- With increased access to healthcare services as the result of almost universal social security coverage and improvements under the Health Transformation Program, visits to primary, secondary and tertiary care facilities increased with a CAGR of 24.4% between 2002-2012.
- While visits to primary care facilities grew by a CAGR of 25.7%, visits to secondary and tertiary care facilities grew by a CAGR of 23.6% between 2002-2012.
- The number of visits per patient is also on a rise, demonstrating that the increased number of visits to physicians and healthcare facilities is not merely due to population increases, but rather to improvements to the accessibility of healthcare in the last decade.
- There was a remarkable increase in the rate of utilization of primary care as patients visit primary care facilities three times more than they did in 2012.
- In summary, in the last decade, healthcare services in Turkey not only became more accessible, but also more efficient as the increased utilization of primary care facilities allows for a portion of the burden on secondary and tertiary care services to be lifted.

Figure 39: Number of Visits to Healthcare Providers (million visits)

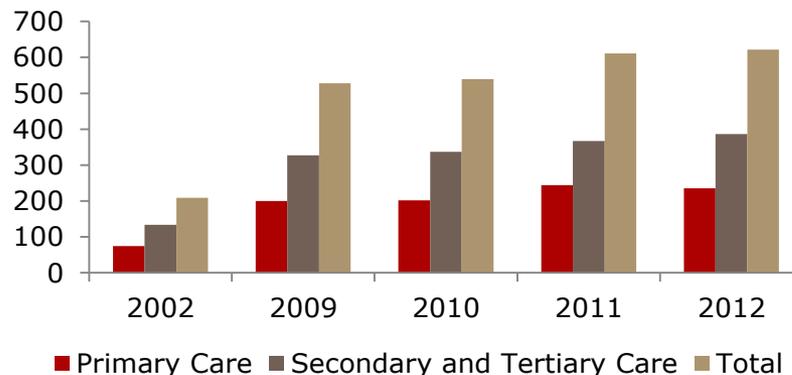
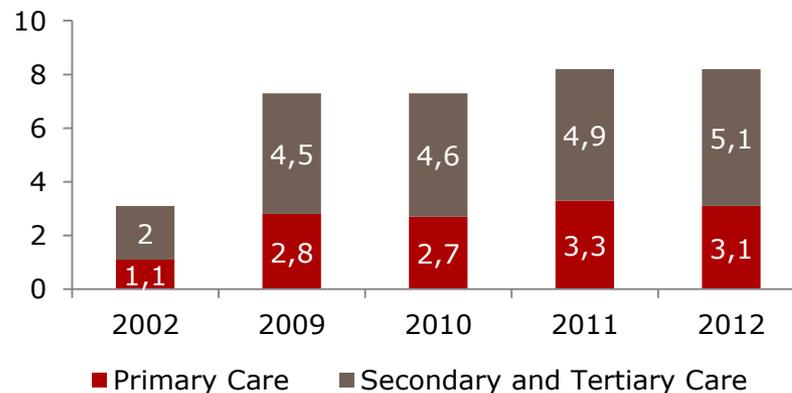


Figure 40: Number of Visits to Healthcare Providers per Patient

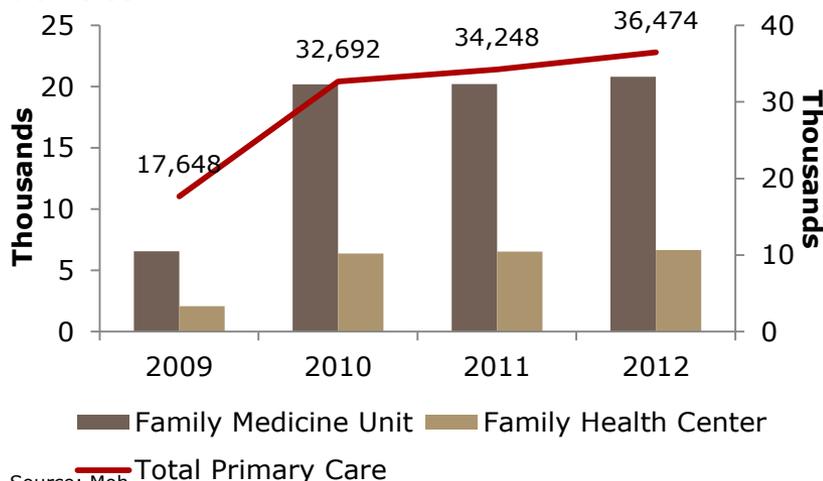


Source: MoH, Health Statistics Yearbook 2012



Family medicine was integrated into the Turkish healthcare system, easing the burden on secondary and tertiary care

Figure 41: Number of Visits to Primary Care Facilities

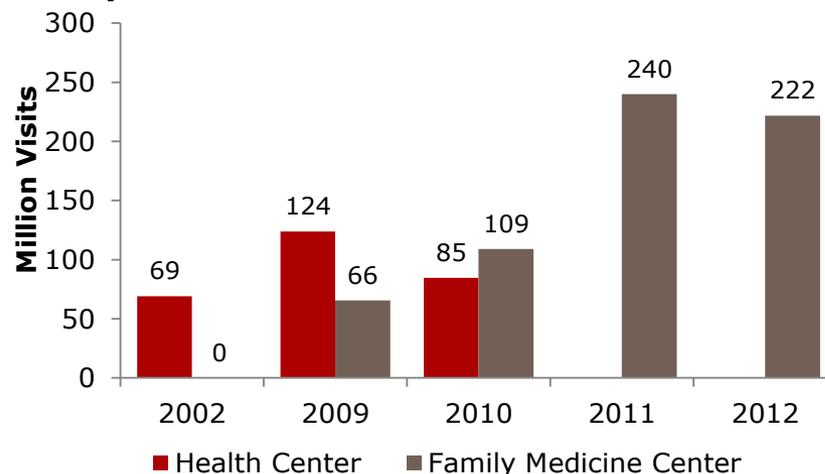


Source: Moh

- With the implementation of the **Health Transformation Program**, there were significant improvements in the provision of primary care. In 2002, there were no Family Medicine Units or Family Health Centers. A portion of their services were provided by **Health Centers** which were **gradually phased out**; their number decreasing from 5,055 in 2002 to 3,842 in 2009, and completely phased out in 2010. These were **replaced by Family Medicine Units and Family Health Centers** whose numbers increased from 6,546 and 2,086 in 2009 to 20,811 and 6,660 in 2012, respectively.

- The transition to the family medicine system not only increased the number of primary care centers patients can refer to, but also relieved some of the burden on secondary and tertiary care facilities.
- The total number of persons using health centers was 69.1 million in 2002. In contrast, there were 221.7 million visits to family medicine centers in 2012; triple the amount of visits made to health centers in 2002. This drastic increase cannot be explained by population growth alone, and can be attributed **to healthcare services becoming more accessible.**

Figure 42: Number of Visits To Health Centers and Family Medicine Centers



Source: Moh

Note: There may exist differences due to rounding.



Private healthcare service utilization is increasing as private hospital visits rise at a CAGR of 63.5%

Figure 43: Number of Hospital Visits

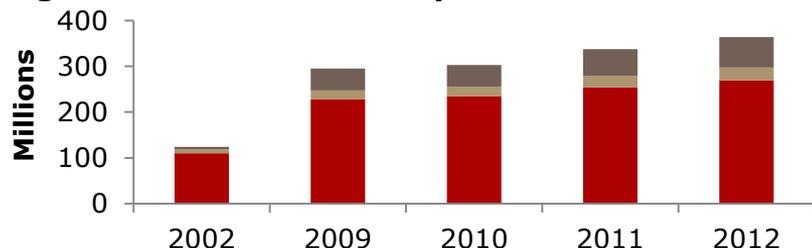


Figure 44: Number of Patients Hospitalized

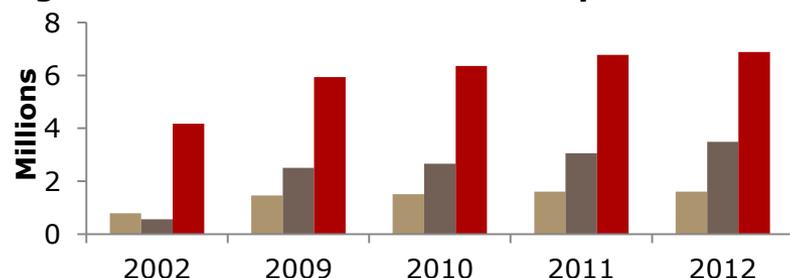
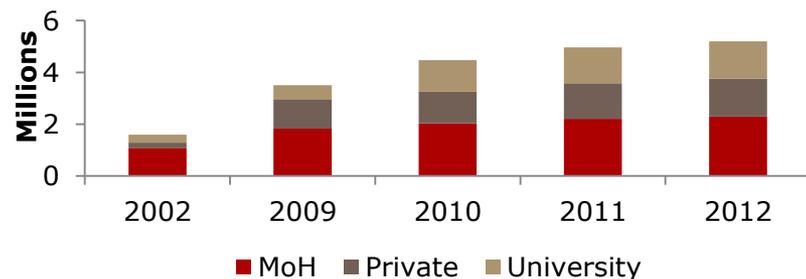


Figure 45: Number of Surgeries Performed



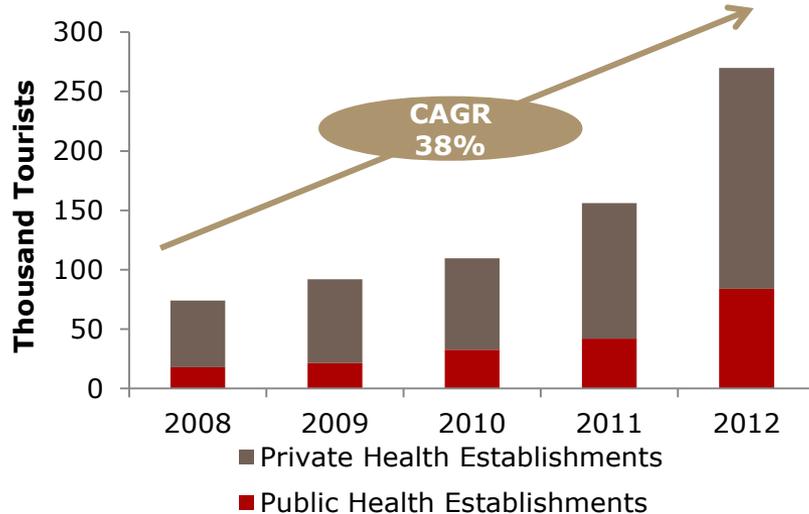
- The increasing reliance on private healthcare providers to meet growing demand for healthcare services is apparent from comparisons with MoH and university hospitals. The rate of utilization of private hospitals increased drastically between 2002-2012, as the number of hospital visits, number of hospitalized patients and number of surgeries performed all reached much higher levels, with rates of growth surpassing the rates of growth in MoH and university hospitals.
- Between 2002-2012, the number of hospital visits to private hospitals increased at a CAGR of 63.5%, compared to an increase at a CAGR of 18.9% in MoH hospital visits. In 2002, there were 5.7 million visits to private hospitals. This number increased to 66.6 million visits in 2012.
- In the same period, the number of patients hospitalized in private healthcare institutions also increased at a CAGR of 45.9%, a figure that is much higher than the rate of increase in MoH hospitals, which was a CAGR of 16.5%. In 2002, 556,494 patients were hospitalized as opposed to 3.5 million in 2012.
- The number of surgeries performed also increased at a CAGR of 44.3% as opposed to a 10.6% increase in surgeries performed in MoH hospitals. 2002 saw 218,837 surgeries performed, whereas in 2012 this number increased to 1.4 million.

Source: MoH,



Health-related tourism is an emerging global trend, one that has already taken off in Turkey

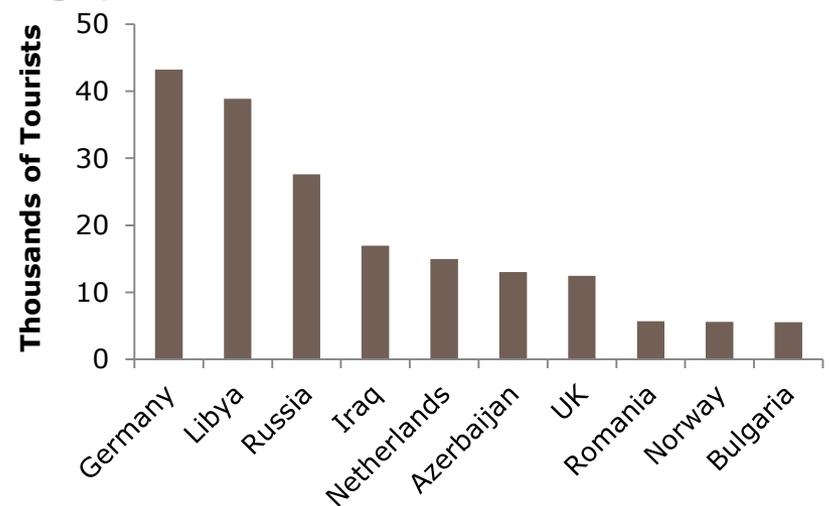
Figure 46: Distribution of Patients Receiving Health Care in Turkey by Year, 2008-2012



Source: Ministry of Health

- Health tourism refers to traveling to another country to seek specialized or economical medical care as well as well being services and recuperative care. This includes, in addition to services provided in hospitals and clinics, services such as those provided for the elderly and thermal tourism.
- An emerging trend globally, health tourism has also been on a rise in Turkey. The number of foreign patients coming to Turkey to receive medical treatment increased at a CAGR of 38% between 2008-2012.

Figure 47: Health Tourists in Turkey by Country of Origin, 2012



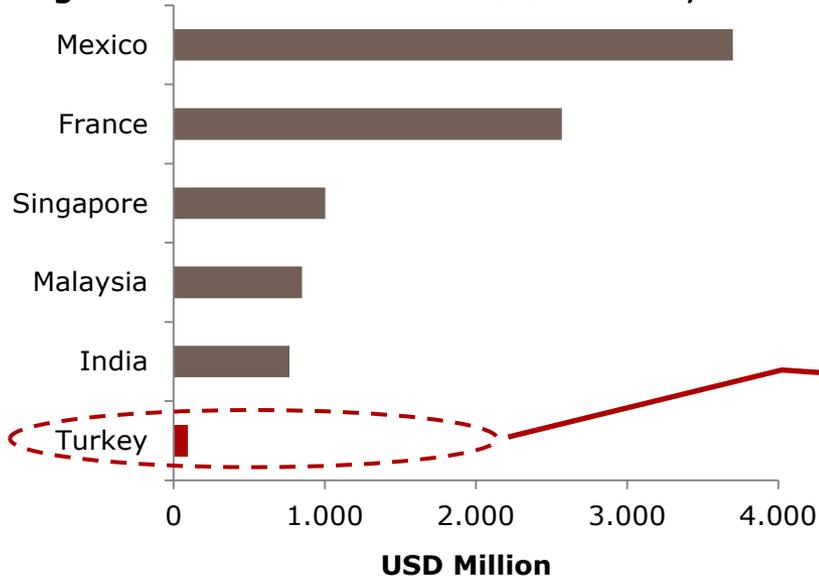
Source: Ministry of Health

- The majority of health tourists came from Germany, Libya, Russia, Iraq and the Netherlands in 2012, benefiting from high quality, yet affordable, healthcare services in Turkey.
- Istanbul had the highest number of health tourists within Turkey with more than 25,000 foreign patients, followed by Kocaeli and Ankara with 11,000 and 8,000 foreign patients, respectively.
- In 2012, popular treatment options were eye operations with a **frequency of 25%**, followed by **oncology with 13%** and **orthopedics with 12%**.



Turkey currently has a low share of global health tourism, but because of its resources and infrastructure, has great potential

Figure 48: Health and Wellness Tourism, 2012

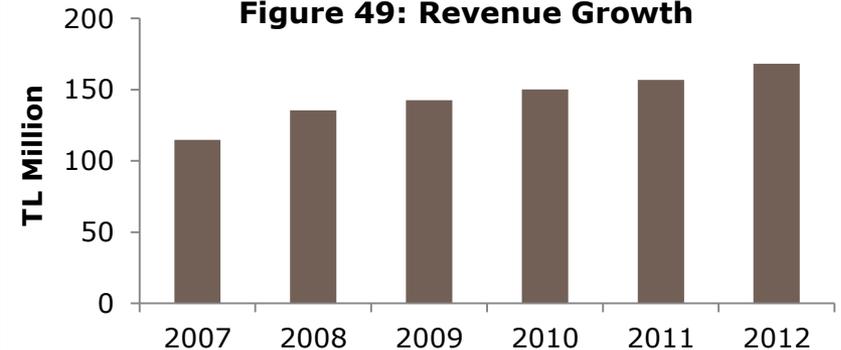


Source: Euromonitor

- The ageing population in the developed world and the burden on its respective healthcare infrastructure has proven to be a challenge in maintaining a sustainable healthcare system. In this respect, Turkey has created an opportunity in this area by incorporating this need with highly skilled doctors and medical personnel, its healthcare infrastructure and technology and providing it all at relatively low cost. Thus, Turkey is becoming a very attractive health tourism destination.

- The figure shows the health and wellness tourism revenue data for each country. It includes sales of spa packages, products and services available to international and domestic tourists. More specifically, categories include spas (hotel/resort, destination, other), medical tourism and other health and wellness facilities.
- Turkey has generated **USD 94 million** in income in 2012. This means a **6.5%** increase from 2007 to 2012.
- The revenues have grown steadily from 2007 to 2012, reaching **TL 168 million** in 2012. This indicates a **47% increase** from 2007 to 2012.

Figure 49: Revenue Growth



- As investment in the health tourism industry grows, Turkey will definitely reach its full potential as a major destination.



Selected Players

Name	Logo	What They Do
Acibadem Healthcare Group		<ul style="list-style-type: none"> • Founded in 1991, it has an international affiliation with Harvard Medical International • 16 General Hospitals, 7 Medical Centers, Centralized Clinical Genetics, Pathology, Food and Hygiene Laboratories
American Hospital		<ul style="list-style-type: none"> • Founded in 1920, it has international affiliations with M.D. Anderson Cancer Center, New York Presbyterian, The Methodist and Texas Children's Hospitals • 1 Hospital, 2 Polyclinics
Anadolu Medical Center		<ul style="list-style-type: none"> • Founded in 2005, it has an international affiliation with Johns Hopkins Medical Center • 1 Hospital, 2 Outpatient Clinics
Group Florence Nightingale		<ul style="list-style-type: none"> • Founded in 1989, it has international affiliations with The Memorial Hospital, Houston and the Cancer Center Institute, New York • 4 hospitals, 1 Outpatient Clinic
International Hospital		<ul style="list-style-type: none"> • Founded in 1989, it has an international affiliation with Harvard Medical International • 1 hospital, 1 Medical Center
Medical Park Hospitals Group		<ul style="list-style-type: none"> • Founded in 1995 • 15 Hospitals, 2 Hospital Complexes, 2 Medical Centers
Medicana Health Group		<ul style="list-style-type: none"> • Founded in 1992 • 6 Hospitals, 2 Dental Clinics
Memorial Healthcare Groups		<ul style="list-style-type: none"> • Founded in 2000 • 6 Hospitals, 2 Dental Clinics
Universal Hospitals Group		<ul style="list-style-type: none"> • Founded in 1992, it has an international affiliation with Massachusetts General Hospital • 12 Hospitals



Success Stories

ACIBADEM

- Established in 1991, Acibadem is among the leading private healthcare services providers in Turkey.
- Its credentials include accreditation from the Joint Commission International (**JCI**) and an affiliation with Harvard Medical International.
- The company provides comprehensive diagnostic and treatment services with a team of **2,200** physicians, **3,500** nurses and **6,500** support staff in its **16 full-service general hospitals** and **11 outpatient clinics**.
- Providing complex treatments that require advanced technology and experience, Acibadem runs 5 cancer, 10 heart care, 9 infertility, 5 transplant, 3 spine and joint, 1 sports medicine, 6 nuclear and 3 robotic surgery centers.
- Acibadem also has a stem cell and umbilical cord bank where research studies are conducted in collaboration with Acibadem University on cell treatment and regenerative medicine.
- As of January 2012, Acibadem is a part of a larger global network known as International Healthcare Holdings (IHH). It operates a wide network of hospitals and clinics in Malaysia, Singapore, India, China and Brunei.

- In 2008, **Abraaj Group**, a MENA and South Asian private equity firm partnered with Acibadem Healthcare Services .

"Given high population growth rates, lower infant mortality rates and increased life expectancies, the need for the expansion of high quality healthcare services has never been greater. Going forward, without private investment, the healthcare industry in the region will not be able to keep pace with this increasing demand." *Vice Chairman and Chief Executive Officer of Abraaj Capital, Arif Naqvi*

- In 2011, Malaysian investment fund, **Khazanah Nasional** and its healthcare unit International Healthcare Holdings acquired a combined **75%** share in Acibadem, while facilitating the exit of the Abraaj Group with its %50 stake in the business.

"Our investment in Acibadem validates our thesis of investing in high growth regions and high impact sectors. We remain committed to our existing investments in Turkey and to capitalizing on the promising opportunities that lie ahead." *Khazanah's Managing Director, Tan Sri Dato' bin Hj. Azman Mokhtar*

- Khazanah also opened an office located in Istanbul, which will facilitate investments into Turkey and the region.



Success Stories



- Dünyagöz is **one of the largest specialized ophthalmology hospital groups** in the world with 20,000 examinations and 5,000 laser and eye operations performed per month.
- **Since 1996**, Dünyagöz Hospital Group has been providing service for all eye-related or eye-contour-related health problems.
- The company operates in both Turkey and Europe in **18 eye-care centers**.
- Having obtained **JCI** accreditation, Dünyagöz Hospital Group services almost **30,000** foreign patients from **107 countries** all around the world.
- In March 2013, Dünyagöz announced its prospective investment in an ophthalmic hospital and cornea bank in Greece.

- In 2010, NBK Capital of the National Bank of Kuwait acquired a 30% equity stake in Dünyagöz Group.

"This is our 4th and biggest investment in Turkey. We believed that Dünyagöz will obtain a more powerful position in the MENA region. Our active ownership approach, reinforced by our local presence in Turkey and close partnership with the current management team, will accelerate the growth trajectory of the company." *Senior Managing Director of Alternative Investments at NBK Capital, Amjad Ahmad*

- In 2013, Eray Kapıcıoğlu, Chairman of Dünyagöz Hospital Group announced that NBK Capital has completed exit of Dünyagöz.

"The Group has made Turkey's first and biggest investment in the ophthalmology field in Frankfurt, Germany. We will be a publicly traded corporation in the first quarter of 2014 and open hospitals, whose projects will be in 6 cities including Kayseri, Konya, Izmir, Erzincan, Mersin, Gaziantep." *Chairman of Dünyagöz Hospital Group, Eray Kapıcıoğlu*



Major Stakeholders

Name	Logo	What They Do	Website
The Ministry of Health of Turkey (MoH)		Turkey's MoH, founded in 1920, is the largest healthcare provider and the main body responsible for the provision of healthcare services. The mission of the MoH is to continuously improve the health of the population through the prevention of disease and the provision high quality healthcare services.	www.saglik.gov.tr
The Ministry of Culture and Tourism		The Ministry of Culture and Tourism evaluates, improves and markets all opportunities relating to tourism. More specifically, it regulates healthcare tourism services as well as granting the permission required for these services.	www.kultur.gov.tr
Social Security Institute (SGK)		The Social Insurance Institute, the General Directorate of Bağkur and General Directorate of Emekli Sandığı (GEPF) was brought under a single roof and renamed the Social Security Institute. It is the main body responsible for the coordination and financing of Universal Health Insurance.	www.sgk.gov.tr
Private Hospitals and Health Institutions Association (OHSAD)		The Private Hospitals Association, the Health Institutions Association, the Tourism Regions Health Institutions Association and the Southeast Anatolia Private Health Institutions Association have come together to establish the Private Hospitals and Health Institutions Association. Through this merger, 80% of hospitals within the private sector and 850 other health institutions have a joint platform for cooperation.	www.ohsad.org.tr



Major Stakeholders

Name	Logo	What They Do	Website
Accredited Hospitals Association		The Accredited Hospitals Association protects the rights and interests of internationally accredited hospitals and healthcare professionals working in these institutions.	www.ahd.org
Turkish Medical Association (TTB)		The Turkish Medical Association (TTB) is the voice of physicians in Turkey by constitutional right. 80% (83,000 members approximately) of the country's physicians are members of TTB. The Turkish Medical Association encourages professional responsibility and investigates complaints by patients.	www.ttb.org.tr
Health Industry Employers' Association of Turkey (SEİS)		Health Industry Employers' Association is the industry association of companies operating in the medical devices sector. It aims to represent companies active in sector in policy making processes.	www.seis.org.tr
Health Establishments Association (TUSİDER)		Health Establishments Association protects the rights and interests of private healthcare providers, physicians and citizens as one of the largest non-governmental organizations in this area since 1999.	www.tusider.org.tr



II. A Detailed Look at the Healthcare Industry in Turkey

- A. Turkish Healthcare Market and System
- B. Health Insurance
- C. Healthcare Infrastructure
- D. Healthcare Services

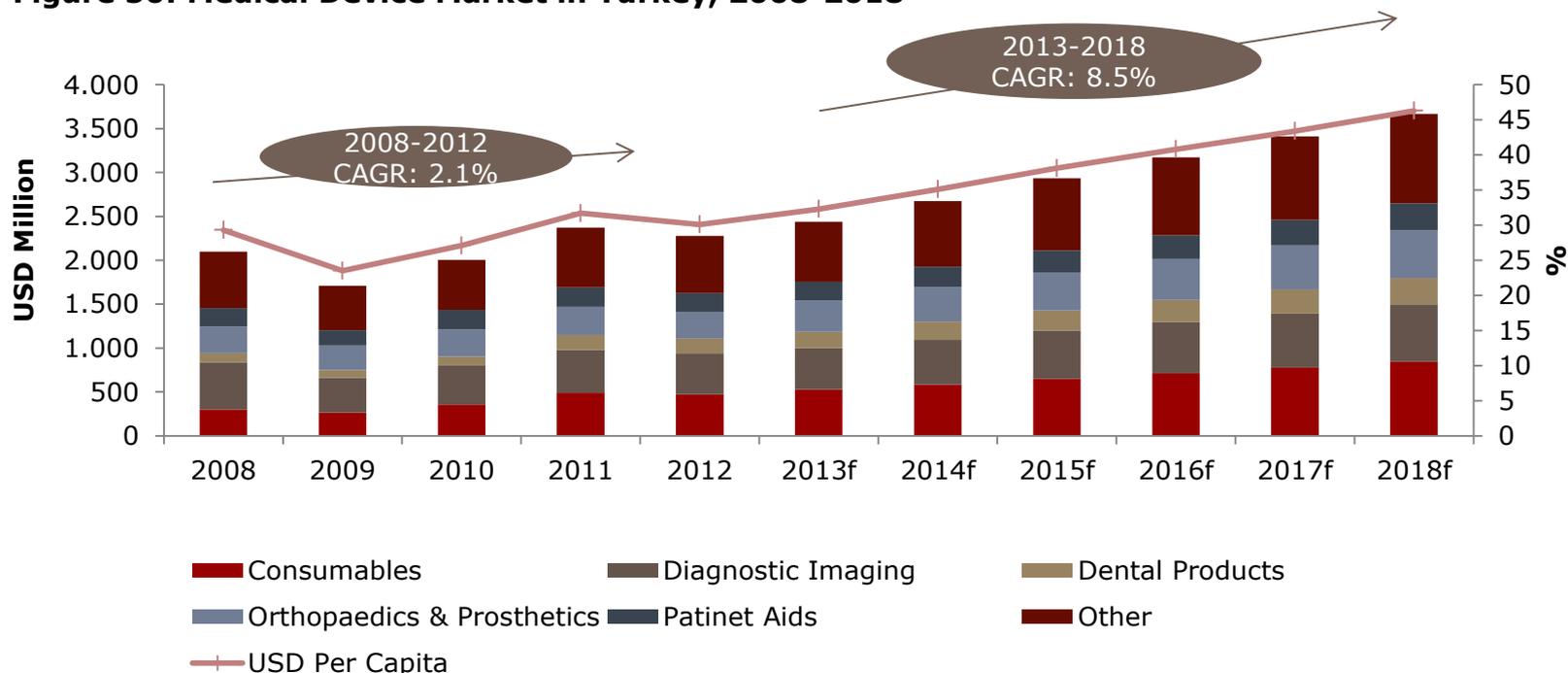
- E. Medical Devices Sector
 - a. Market Outlook
 - b. Regulatory Framework
 - c. Major Players
 - d. Success Stories



The Turkish medical device sector is expected to expand at a CAGR of 8.5% over 2013-2018

- Turkey medical device market has been growing gradually and is ranked as the largest in the region of the Middle East and Africa. According to BMI Espicom, the Turkish medical device market reached over USD 2.2 billion in 2012. Moreover, it is forecasted to grow at a CAGR of 8.5% through 2018, buoyed by strong imports. The expansion of healthcare facilities and rising health expenditure will be the main drivers of projected fast-paced growth.

Figure 50: Medical Device Market in Turkey, 2008-2018



Other items include: Wheelchairs, ophthalmic instruments, anesthesia equipment, dialysis equipment, blood pressure monitors, endoscopy monitors and hospital furniture.

Source: BMI Espicom



The need for high tech medical devices is increasing

- As of 2012, there were 18,666 medical imaging devices in healthcare facilities in Turkey. The number of medical imaging devices in Turkey is provided in the table below. Considering the increasing population, healthcare spending, continuous efforts to modernize healthcare infrastructure and advances in service quality, growth is expected to accelerate between 2013-2018.

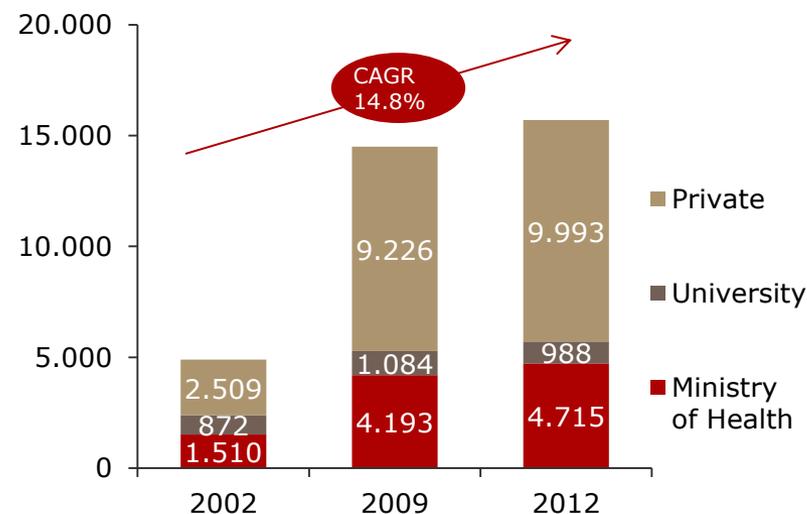
Table 3: Number of Medical Imaging Devices in Healthcare Facilities, 2012

	MoH	University	Private	Total
MRI	310	89	522	921
CT	448	122	572	1,142
Ultrasound	2,348	384	1,508	4,240
Doppler Ultrasonography	1,218	302	943	2,463
ECO	587	188	592	1,367
Mammography	353	77	506	936
X-ray	3,554	2,165	1,878	7,597

Source: Health Statistics Yearbook 2012, MoH

- Parallel to changing disease profiles, the number of hemodialysis devices being used increased at a CAGR of 14.8%. The role of private hospitals in this growth is remarkable. The largest increase is seen in the private sector while the number of hemodialysis devices has almost quadrupled in 10 years.

Figure 51: Number of Hemodialysis Devices In Use

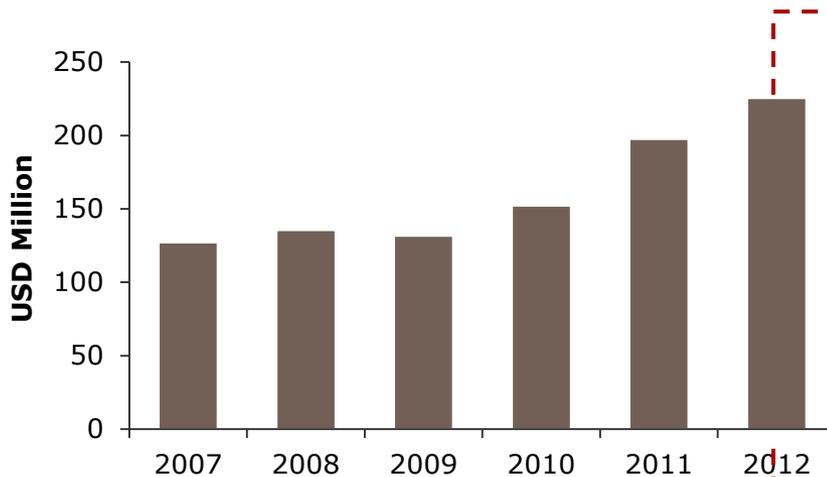


Source: Health Statistics Yearbook 2012, MoH



Medical device exports increased at a CAGR of 12% from 2007 to 2012

Figure 52: Medical Device Exports

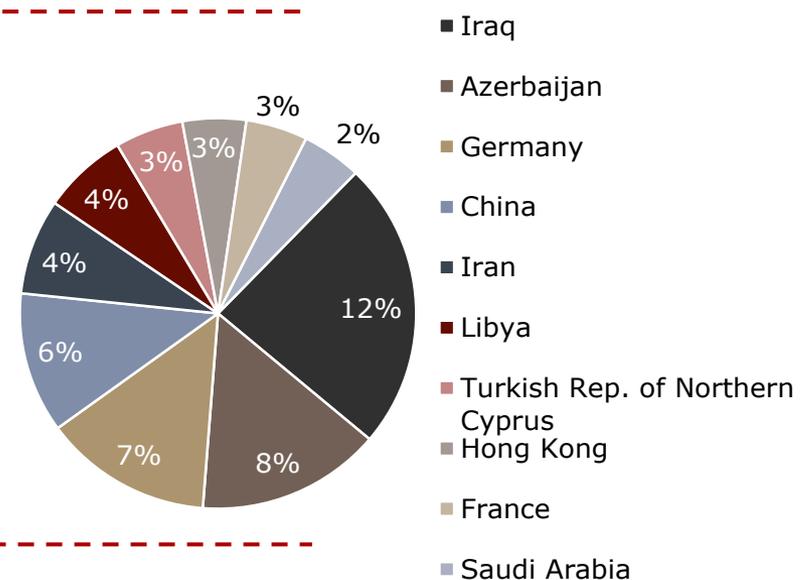


Source: TurkStat, Deloitte Analysis

Note: HS Codes 3005, 3006, 3407, 401511, 7017, 841920, 8713, 9012, 9018, 9019, 9020, and 9402 were used.

- The production of medical devices is limited in Turkey and the increasing demand is chiefly met by imports. Total medical device imports increased slightly with CAGR 4% between 2007 and 2012 exceeding USD 1.3 billion in 2012.
- Yet, the Turkish medical device sector has increasing export potential. Medical device exports increased with a CAGR of 12% between 2007-2012 surpassing USD 225 million in 2012. In 2012, the largest export markets for Turkey's medical device sector were Iraq, followed by Azerbaijan, Germany and China.

Figure 53: Top 10 Countries for Export, 2012



- Local production is expected to increase in line with the healthcare system's modernization, integration of EU standards and the expansion of healthcare service providers. Development of local production is also being supported by the government's targets to spur medical device exports.

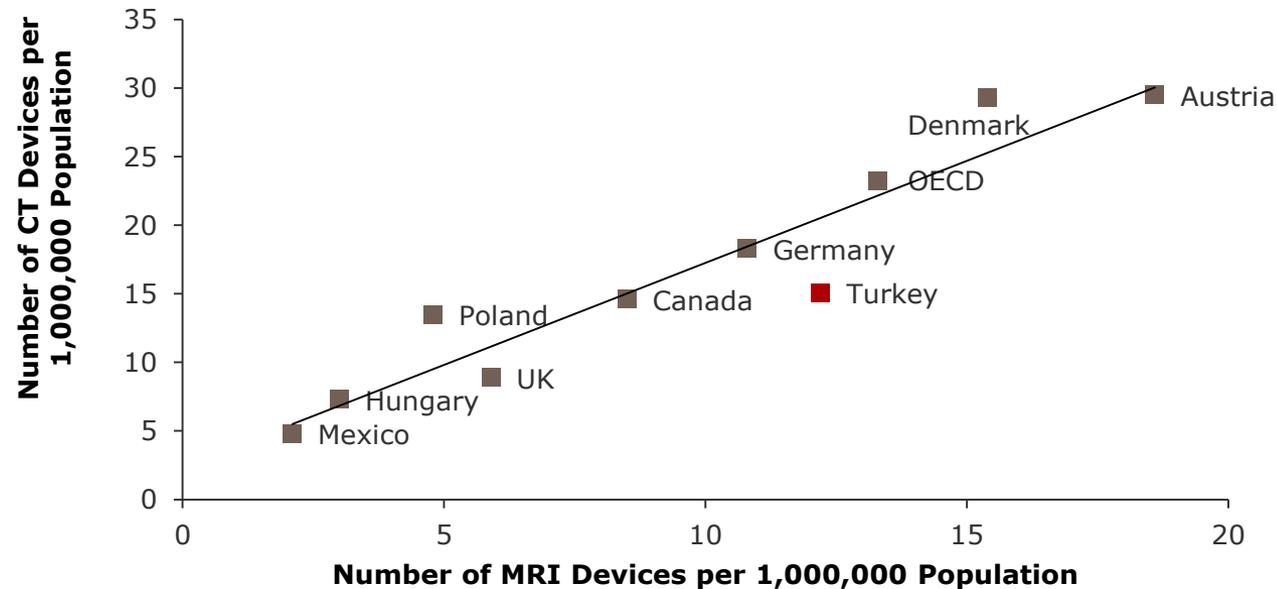
Investment Tip: The new PPP legislation adopted in 2013 requires at least 20% of the medical equipment used in healthcare facilities to built by PPPs that produce this equipment locally.



The global benchmarks for medical device density reflects Turkey's high potential.

- As Turkey's medical device sector grows, so does the need for high technology medical devices in parallel with the planned expansion in healthcare infrastructure. The number of MRI and CT devices per 1 million population is 12.2 and 15.1, respectively. Although Turkey is above many of the upper income countries, it still lags behind the OECD average. Considering the projected growth potential, it is expected that Turkey will follow global trends and increase the number its MRI and CT devices to satisfy increasing need.

Figure 54: Number of MRI and CT Devices per 1 Million Population in Selected Countries



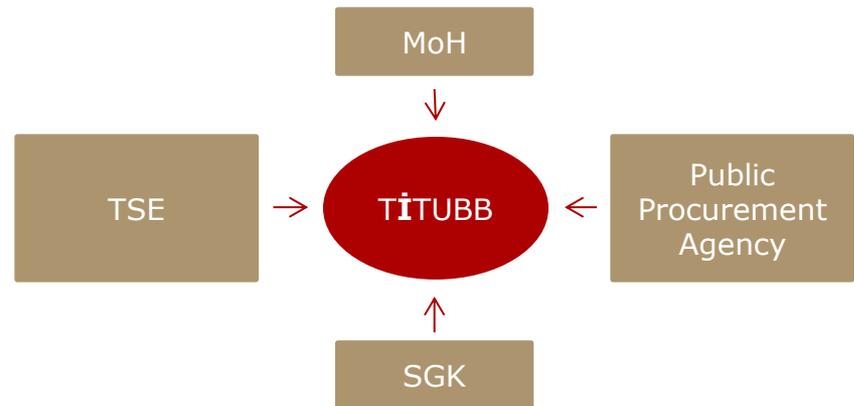
Source: MoH, Health Statistics Yearbook 2012



The national legislation regarding the regulation of medical devices will be aligned with that of the EU

- As a member of the EU Customs Union, Turkey has adopted the Medical Devices Directive, the Active Implantable Medical Devices Directive and the In Vitro Diagnostics Directives of the EU. Therefore, all products that are deemed to fall under the EU directives would need to conform to the directives in order to be manufactured or marketed in Turkey.
- Thus, Turkey recognizes European CE marking for medical devices. CE marking for all medical devices requires technical documentation, risk analysis, proof of compliance with the essential requirements of the directives, and a product related declaration of conformity issued by the manufacturer.
- The Turkish Standards Institute assesses and inspects CE conformity both for locally produced products and imported products.
- The Drug and Device Institute which is a part of the Ministry of Health in Turkey is responsible for certifying that a device manufacturer has taken steps to ensure compliance with the regulations.
- All medical devices need to be registered in the national database (TİTUBB) maintained by the Drug and Device Institute.

- Public procurement laws regulate the majority of services that offer diagnosis and cures as well as the purchase of drugs and medical supplies. The Public Procurement Authority oversee these activities to insure they follow the regulations.
- The SGK reimburses the expenses for medical devices purchased by the holders of SGK insurance according to SUT regulation.



Investment Tip: The alignment of the Turkish Medical Device Legislation with that of the EU facilitates the marketing of products manufactured in Turkey to EU countries.



Growth in the medical device sector is supported by the strategic targets of the MoH.

- The MoH sets targets and objectives to improve capacity, quality and distribution of health services as well as ensuring that both infrastructure and technology is sustainable and up to date. It also ensures accessibility, safety, efficacy and the effective use of medical devices. These areas are of the utmost importance to the Ministry.
- Since the production of medical devices is limited in Turkey, a large share of medical devices are imported. Therefore, the MoH aims to increase the export/import coverage ratio gradually from 12.7% in 2011 to 17% in 2017 and to 22% in 2023.
- The Input Supply Strategy (**GITES**) was formed to address Turkey's dependence on imported intermediate goods. Featured heavily in the 10th National Development Plan, GITES aims to increase the use of locally produced intermediate goods in manufacturing, and in doing so, manufacture products with increased added value. The machinery sector is one of the sectors that is specifically addressed in the strategy paper and as such, producers in the medical device sector can expect to benefit from incentives and opportunities provided under GITES.

Table 4: Selected Objectives of the MoH for the Medical Device Sector

Accessibility, Safety, Efficacy & Rational Use of Medical Devices

- To improve, monitor and evaluate quality standards for biological products and medical devices
- To develop, monitor and evaluate evidence-based implementation standards for medical devices used for treatment purposes
- To organize awareness-raising events
- To increase the number of inspections for GCP and GMPs
- To improve the process for evaluating applications and licensing
- To ensure the effective use of medical devices

Contribution to the Economy

- To establish Free Health Zones
- To develop programs to increase the export of medical products and services
- To establish a product tracking and tracing system for medical devices and cosmetic products and integrate it into the Pharmaceutical Track and Trace System (PTTS)
- To reduce the size of the informal sector



Major Players



- Leading global medical device producers have chosen Turkey for their **regional headquarters, R&D center(s)** and/or for their **production facilities**.
- Abbott and Siemens have production and R&D centers in Turkey, whereas Bayer and Alvimedica have corporate offices. GE has moved its headquarters for the EAGM region to Istanbul. Siemens opened a new production plant worth USD 76 Million to the Gebze Industrial Zone. Baxter has formed a partnership with Eczacıbaşı.

- Globally renowned companies are among the major players of medical device industry of Turkey as supplier.
- Some of these companies include Johnson & Johnson, Boston Scientific, CareFusion, Becton Dickinson & Company, Covidien, 3M, Philips and Olympus.

Investment Tip: Construction of new, city hospital complexes provide significant opportunities for medical device companies that are being commissioned to equip the facilities.



Major Stakeholders

Name	Logo	What They Do	Website
The Ministry of Health of Turkey (MoH)		Turkey's MoH, founded in 1920, is the largest healthcare provider and the entity responsible for the provision of healthcare services. It determines the requirements for the design, manufacturing, supply, classification and supervision of medical devices.	www.saglik.gov.tr
The Turkish Drug And Medical Device Institute		The Turkish Drug and Medical Device Institute provides permission for and oversees clinical trials concerning medical devices. It is also responsible for certifying that a device manufacturer has taken steps to ensure compliance with the regulations.	www.iegm.gov.tr
Turkish Standards Institute (TSE)		The TSE makes conformity assessments for CE marks demonstrating conformity of products to European standards.	www.tse.org.tr
Social Security Institute (SGK)		The Social Security Organization is responsible for financing the MoH and university hospitals for the procurement of medical devices.	www.sgk.gov.tr
The Health Industry Employers' Association of Turkey (SEİS)		The Health Industry Employers' Association is the association of companies operating in the medical devices sector. It represents companies active in the sector in the government's policy making processes.	www.seis.org.tr
The Healthcare Products Manufacturers and Representatives Association (SADER)		The Healthcare Products Manufacturers and Representatives Association was founded in 1993 by 14 companies active in the medical equipment sector. It strives to set high level standards for commercial relations and promotes professionalism in the sector.	www.sader.org.tr
Federation of Medical Device Manufacturers and Suppliers Association (TUMDEF)		TUMDEF was established in 2004 and works to increase cooperation, industry standards and the adoption of new technology within the Turkish medical devices sector.	www.tumdef.org.tr



Success Stories



- Biçakçılar is a leading manufacturer and distributor of medical equipment and disposable products. It has been serving the healthcare industry for **54 years**.
- The company is active in Turkey and **80 other countries**. It has its manufacturing plant and **headquarters in Istanbul**, with sales branches in Ankara, Izmir, Samsun, Antalya and Adana. It has over **600 employees**.
- Biçakçılar designs, produces and distributes **300** different kinds of medical equipment and over **2,500** sterile, disposable medical products.
- **80%** of the company was acquired by **Global Capital Management Ltd.**, asset management unit of Global Investment House of Kuwait in 2011.

"This partnership is a crucial step towards improving Biçakçılar's corporate structure and realizing our plans for global competitiveness. Global Capital Management's support, and the trust they have in us, will provide us with the means to expand further in the global arena and replicate our success in the Turkish market and international markets."
General Manager of Biçakçılar, Ferhat Biçakçı

"Investing in Biçakçılar is in line with our strategy to increase our funds' investments in Turkey, which is one of the largest markets in the Middle East and North Africa, and as such, one of the key destinations for private equity investments within the region. Our team's active investor role, diligent approach, Turkish investment experience and distinguished track record will all play major roles in making Bicakcilar one of the success stories in the Global Buyout Fund portfolio."
Partner at Global Capital Management, Ihsan Sancay



"With Biçakçılar's frontier market position, strong and trusted brand, multi-product and multi-channel strategy, and extensive distribution network across Turkey and worldwide, Biçakçılar's is ideally positioned to benefit from the rapidly growing healthcare market. Our strong belief in the investment potential and growth prospects of the Turkish market in general and the healthcare sector in particular has been successfully considered by the fund's investment in Biçakçılar, which has been a major player in the Turkish healthcare market for 50 years."
Managing Partner at Global Capital Management, Rajiv Nakani



Success Stories



- GE Healthcare, the healthcare services branch of General Electric, is one of the top medical device manufacturers worldwide.
- GE Healthcare, active in Turkey almost for **25 years**, is the business partner of a number of healthcare organizations such as the Florence Nightingale Hospital Group.
- GE Healthcare specializes in medical imaging and IT medical diagnostics , patient monitoring systems, performance improvements, drug discovery and biopharmaceutical manufacturing.
- It provides a wide range of technologies and services that can help caregivers improve the consistency, quality, and efficiency of patient care. It also develops clinical and financial IT solutions to streamline health costs and improve the quality of care.
- In 2008 GE decided to combine all managing operations in Eastern and African growth markets into a single "International Diagnostic Imaging Operation " and started conducting its activities from Istanbul.

"My team's goal is to reinforce GE Healthcare's continued commitment to providing world-class healthcare solutions to this region and proactively identify new areas where we can make a difference. Our aim is to build customized in-country solutions to accelerate response time in addressing local customers' needs. Turkey represents a robust platform for economic expansion on a regional basis. We are impressed with the talented and skilled employee base in Turkey."

Former CEO of GE Healthcare International - EAGM Region, Richard di Benedetto

- GE chose **Istanbul** as its **international base of operations**. GE split a major part of its operations from its London headquarter to Istanbul for the EAGM region. It manages its operations in **84 countries** from Turkey.

"Supporting emerging markets is central to GE Healthcare's global growth, and we are committed to significantly advance GE's localization efforts via infrastructure build-up and leveraging our strength in service capabilities across this dynamic region."

Former CEO of GE Healthcare International- EAGM Region, Karim Karti



Success Stories

Baxter

- Baxter International Inc. has expertise in medical devices, pharmaceuticals and biotechnology and creates products that advance patient care worldwide. Baxter has over 80 years of experience in the healthcare sector and employs more than 50,800 people worldwide.
- The company started its operations in Turkey in 1961. As a result of a **50-50 partnership** agreement signed in 1994 between Eczacıbaşı and Baxter, the corporation was named **Eczacıbaşı-Baxter Hospital Supply Inc.**, adding marketing and sales to its activities in addition to manufacturing.
- The company's products and services are used extensively in the nephrology, hematology, oncology, surgery, anesthesia and intensive care departments in hospitals as well as blood banks and private hemodialysis centers.
- Its customer group ranges from health institutions to peritoneal dialysis patients.
- Having obtained EU-GMP certification for its peritoneal solution plant, Eczacıbaşı-Baxter exports these solutions to the UK, France, Germany, Belgium, Hungary, Romania, Poland, Croatia, Bulgaria and Albania.
- The company also provides an innovative home delivery service for peritoneal dialysis patients whose numbers rapidly expanded in Turkey in recent years.

Baxter, a partner of Eczacıbaşı, decided to make additional investment in Turkey for a manufacturing and R&D center in medicine. The company has made a USD 170-180 million investment in the first stage and plans to produce new drugs in Turkey.

*Science, Industry And Technology
Minister - Nihat Ergün*



III. Investment Environment and Opportunities in Turkey

A. Investment Environment

- a. Costs and Availability of the Factors of Production
- b. Competitiveness and Global Benchmarks
- c. Incentives
- d. Research and Development

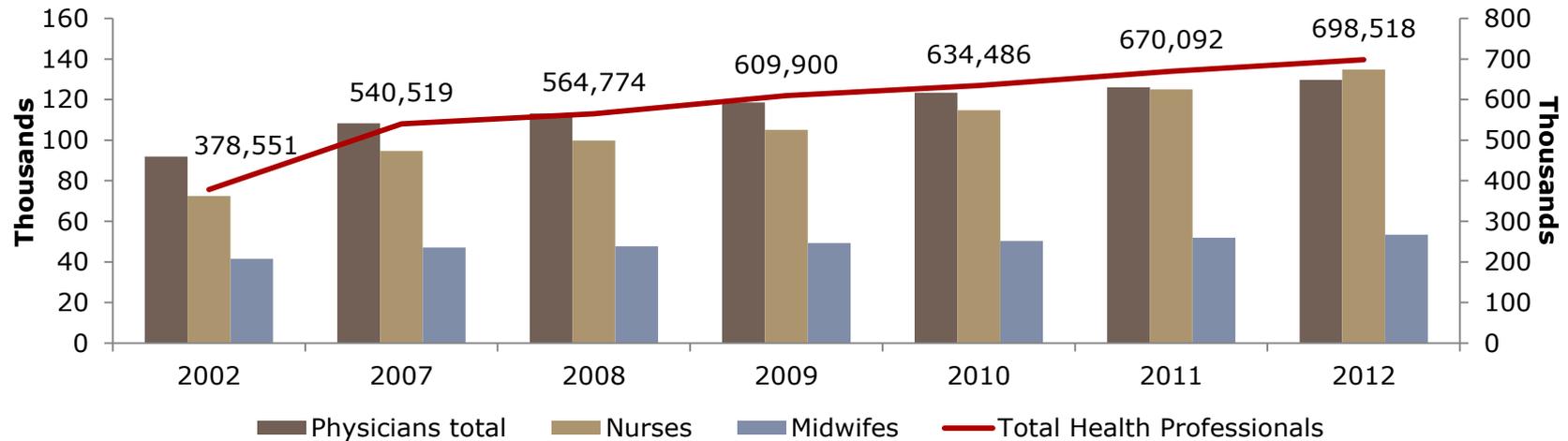
B. Investment Opportunities

- a. Free Health Zones
- b. Health Tourism
- c. Public – Private Partnerships
- d. e-Health and Telemedicine



The workforce in health-related fields is expanding to support further growth

Figure 55: Number of Health Professionals in Turkey



Source: MoH, TurkStat

- The total number of health personnel grew by a CAGR of 13% between 2002-2012. One of the largest increases was in the number of nurses, which grew by a CAGR of 13.6%. The number of physicians saw a more modest, but still significant rate, as it grew by a CAGR of 7.1%. In 2012, for the first time in a decade, the number of nurses surpassed that of physicians; a positive development for the Turkish healthcare system.
- The number of midwives also increased albeit at a lower rate, at a CAGR of 5.6%.
- Currently, the total number of health professionals is 698,518. 129,772 of these are physicians, whereas 134,906 are nurses. The number of midwives reached 53,466 in 2012, while the number of other health personnel also had remarkable increases, reaching 122,663 in 2012 and expanding by a CAGR of 19.6% between 2002-2012.
- The number of dentists and pharmacists also increased reaching 21,404 and 26,571 in 2012, with CAGRs of 5.5% and 3.6% respectively.



The number of health professionals is set to increase in line with strategic targets...

Figure 56: Total Number of Physicians per 100,000 population

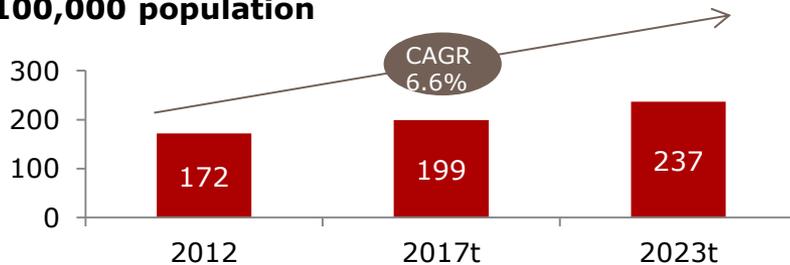


Figure 57: Total Number Of Nurses And Midwives per 100,000 Population

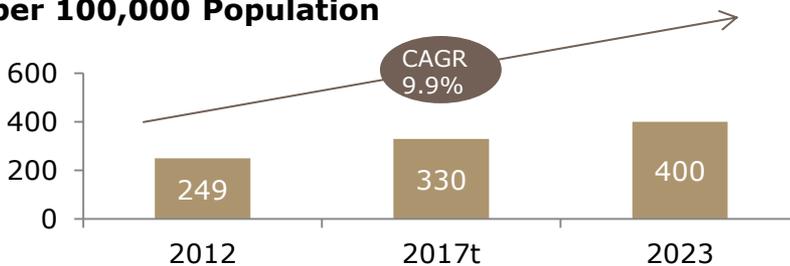
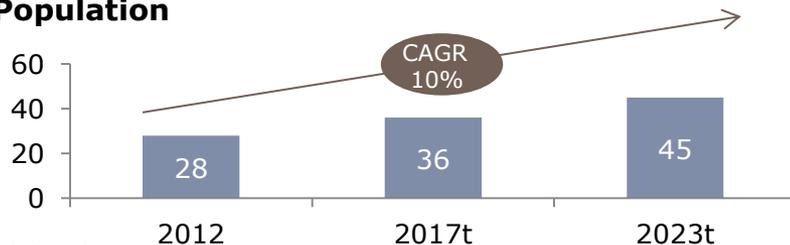


Figure 58: Total Number Of Dentists per 100,000 Population



t: target
Source: MoH, Strategic Plan, 2013-2017

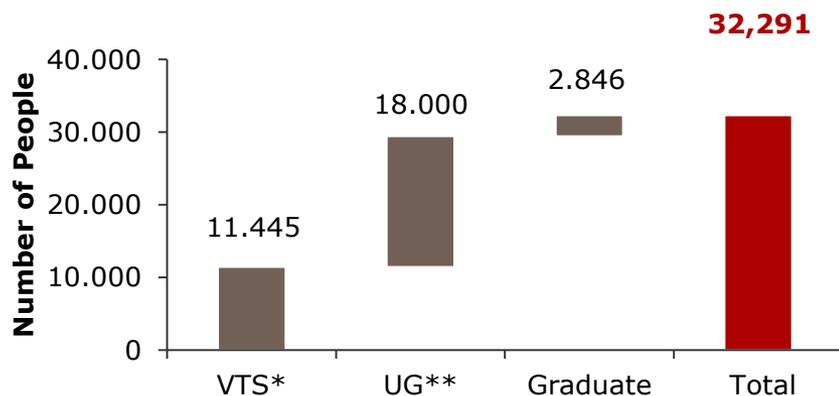
- Within the context of the MoH 2013-2017 Strategic Plan and 2023 targets, there are plans to increase:
 - The number of physicians per 100,000 population to 199 in 2017 and 237 in 2023.
 - The number of nurses and midwives per 100,000 population to 330 in 2017 and 400 to 2023.
 - The number of dentists per 100,000 population to 36 in 2017 and 45 in 2023.
- If the health workforce expands according to the targets outlined above, the total number of physicians will increase by a CAGR of 6.6% between 2012-2023. This growth rate is almost the same as the rate registered between 2002-2012.
- The number of nurses and midwives, on the other hand, will grow by a CAGR of 9.9%. The growth rate for dentists will be almost identical at a CAGR of 10%, a growth rate that is twice that of the rate between 2002-2012.

Investment Tip: If the targets of the MoH are to be met, the number of dentists will grow at a much faster rate between 2012-2023 than they had previously. This will provide the necessary workforce for any infrastructure projects focusing on dentistry.



...coupled with the necessary know-how of qualified graduates.

Figure 59: 2011-2012 Graduates in Healthcare Sector by Level of Education



Source: ÖSYM

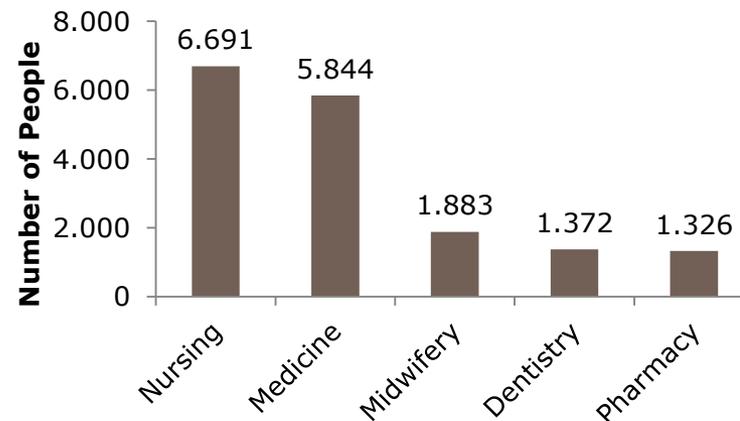
* Vocational Training Schools

** Undergraduate

- There were a total of more than 32,000 students receiving graduate degrees in the 2011-2012 academic year from fields that were specifically related to the healthcare sector.
- It is important to note that Turkey offers numerous educational openings for a degree in health sciences. 18,000 pursued an undergraduate degree, and 2,846 continued their education further into graduate and doctoral programs.

- Departments related to healthcare are generally classified within the health sciences which include the branches of medical science, dentistry, pharmacy, nursery, midwifery and the like.
- Among the main branches of health science, medicine and nursing offer the most skilled labor to the healthcare sector.

Figure 60: 2011-2012 Graduates in Healthcare Sector According to Field of Study

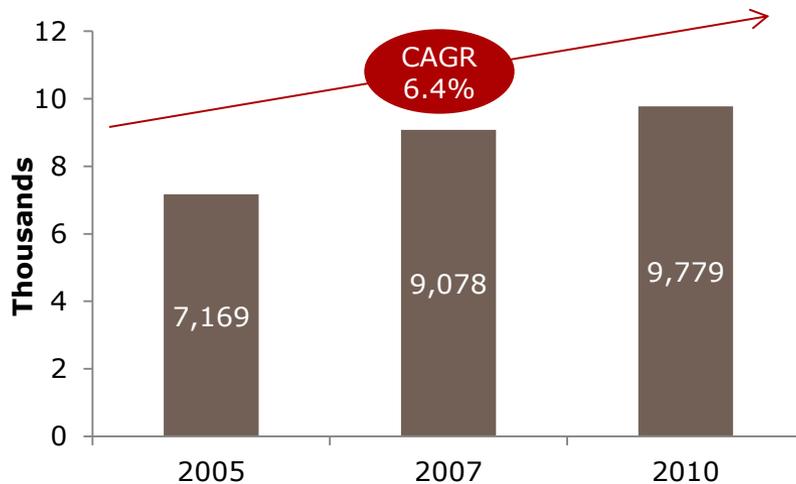


Source: ÖSYM



The number of researchers in medical and health science is increasing, especially in the private sector

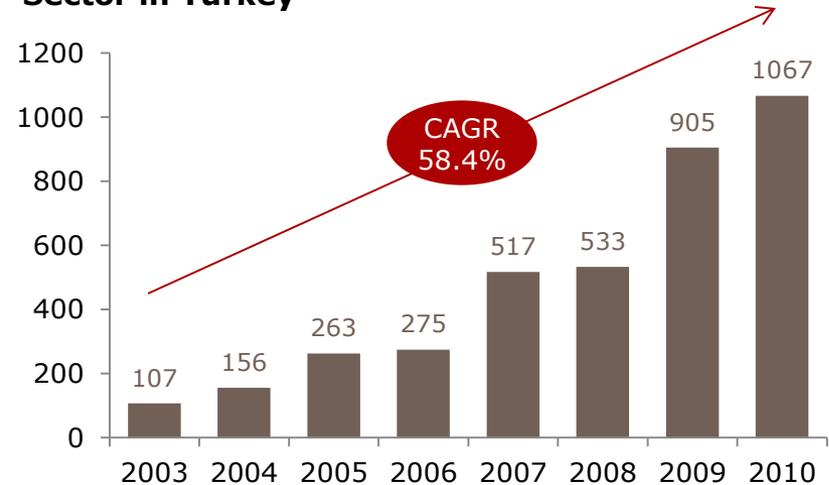
Figure 61: Number of Researchers Working In Medical And Health Science in Turkey



Source: UNESCO

- The number of researchers working in medical and health science in Turkey grew by a CAGR of 6.4% between 2005-2010, from 7,169 in 2005 to 9,779 in 2010.
- The increasing involvement of the private sector in the Turkish healthcare sector is also apparent from the growth in the number of researchers working in medical and health science. In the private sector, the number of researchers grew by a CAGR of 58.4% between 2003-2010 and reached 1,067 in 2010.

Figure 62: Number Of Researchers In Medical And Health Science Employed by the Private Sector in Turkey



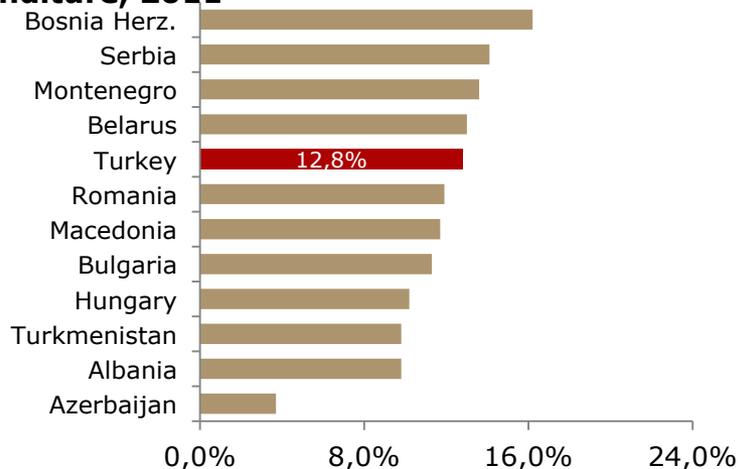
Source: UNESCO

- This is a much faster rate than the increase in the total number of medical and health science researchers, which includes researchers in the public and private sectors and researchers employed by non-profit entities.
- In fact, even though researchers employed by the private sector are proportionally less than those employed by the public sector, the private sector accounted for 37% of the increase in the total number of researchers in medical and health science.



Healthcare spending in Turkey, an indicator of competitiveness, is already above average in comparison to countries in the same income group

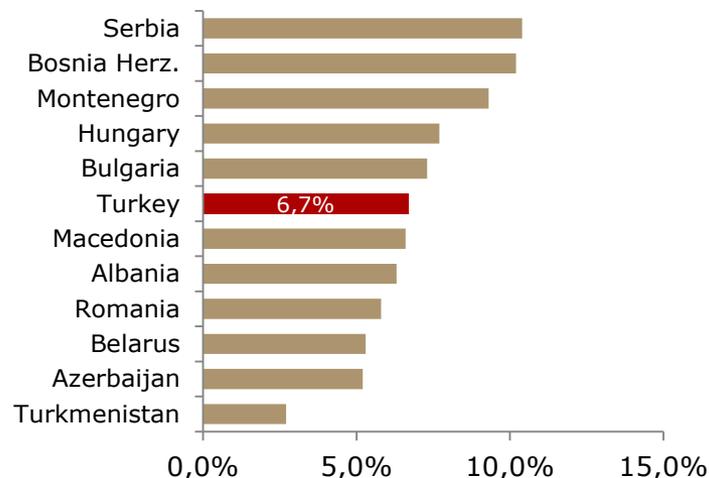
Figure 63: General Government Expenditure on Health as a Percentage of Total Government Expenditure, 2011



Source: WHO

- According to the World Bank, Turkey is an 'upper middle income' country in the European and Central Asian region. Among its peer countries Turkey's health spending as a percentage of GDP and general government expenditure on health as a percentage of total government expenditure is already above average.
- 12.8% of Turkey's total government expenditure is allocated to the healthcare sector, which puts Turkey in fifth place among countries in the same income group and geographical region.

Figure 64: Total Expenditure on Health as a Percentage of GDP, 2011



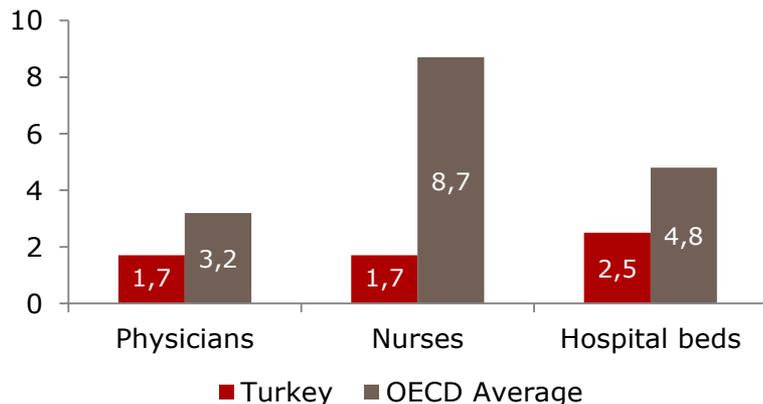
Source: WHO

- Total health expenditure as a percentage of GDP is also above average in comparison with countries in the same income group at a total of 6.7%. This percentage is not only higher than more than half of the countries in the same income group, but is also higher than some countries considered to be high income by the World Bank.
- In Russia and Latvia, for instance, both considered to be among high income countries, total expenditure as a percentage of GDP in 2011 was 6.2%, whereas Lithuania, another high income country, had a percentage of 6.6%.



The Turkish healthcare sector still has room for growth as it catches up with high income countries

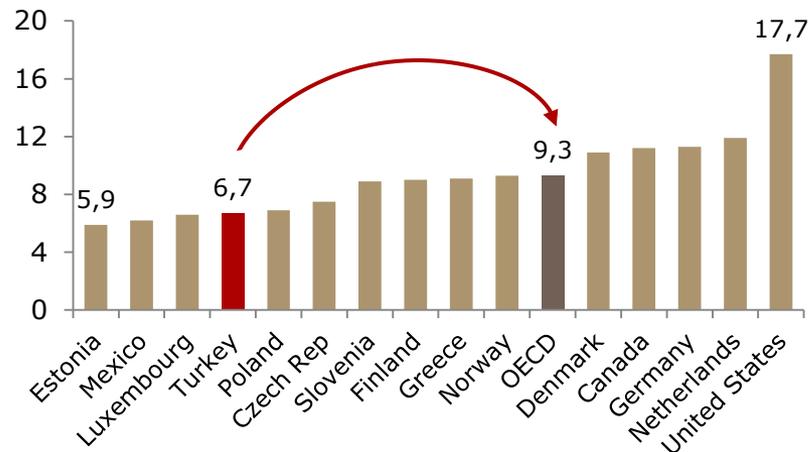
Figure 65: Density of Healthcare Resources, per 1000 Population, 2011 or Latest Available



Source: OECD

- Even though the Turkish healthcare sector is performing rather well among countries in its income group, it still has the potential for growth as Turkey catches up with high income countries. It is still trailing behind the OECD average in terms of total healthcare spending as a percentage of GDP, and density of doctors, nurses and hospital beds.
- As previously explained, increasing population, ageing demographics, growing economic welfare and a change in disease profile all form increases in Turkish healthcare spending.

Figure 66: Total Healthcare Spending as a Percentage of GDP in Selected OECD Countries, 2011 or Latest Available



Source: OECD, WHO

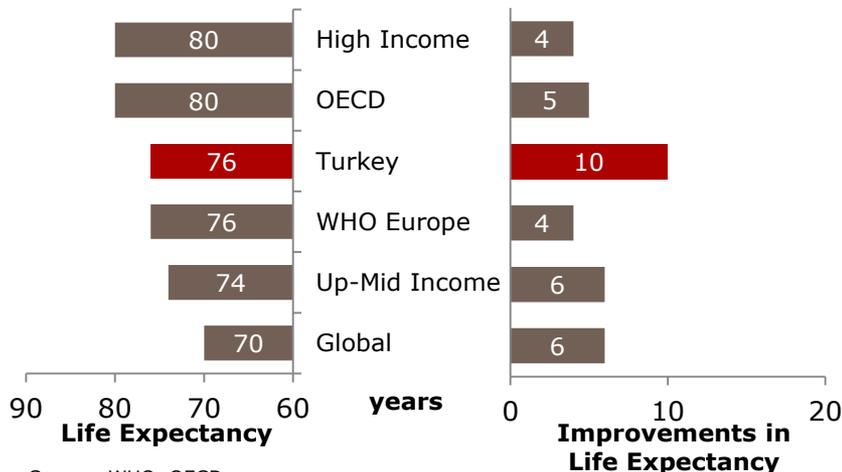
Note: The data for Turkey was taken from WHO as this was the latest available data.

- These very same factors suggest that Turkish healthcare spending will follow a similar path to high income countries such as the members of OECD which have ageing populations, a significantly higher proportion of chronic diseases and prosperous economies.
- Figures show that the Turkish health system has a significant growth potential that can be utilized as the pressure on the healthcare system to provide more accessible and higher quality healthcare services mount.



Yet improvements in the Turkish healthcare system were achieved much faster than in high income countries

Figure 67: Life Expectancy at Birth, 2011 and Improvement in Life Expectancy Between 1990-2011

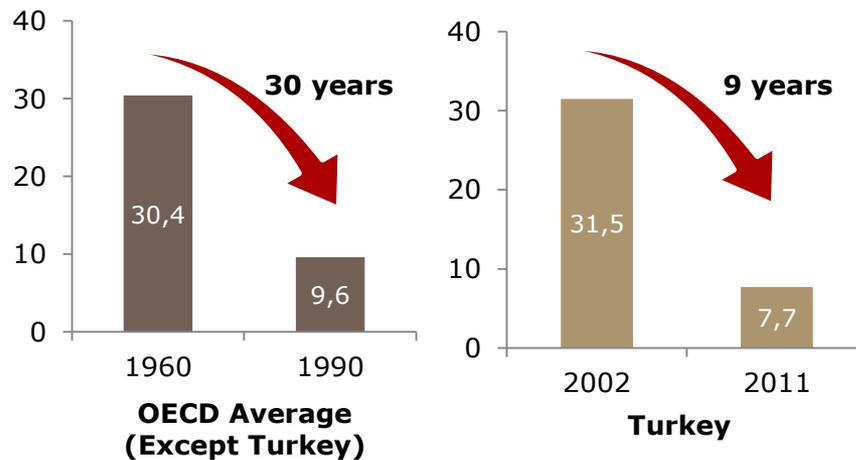


Source: WHO, OECD

- The Turkish healthcare system is already performing better than a number of countries in its income group when it comes to health indicators, and certainly improving at a much faster rate than both upper middle income and high income countries.
- This is apparent from one of the most important indicators of a well-functioning healthcare system according to OECD, life expectancy. In Turkey, life expectancy at birth increased by 10 years between 1990-2010, whereas this growth was only 6 years globally and in upper middle income countries, 5 years in the OECD, and 4 years in high income countries.

- In 9 years, Turkey reduced its infant mortality rate by more than the reduction achieved by OECD in 30 years. Turkey reduced its infant mortality rate by 23.8 in 9 years, it took the OECD 30 years to achieve a reduction of 20.8.
- These drastic improvements are yet another important indicator of a well-functioning healthcare system and shows that even though the Turkish system lags behind high income countries, it is quickly catching up. Improvements to the healthcare system in upcoming years will also require a high number of investments.

Figure 68: Infant Mortality per 1,000 Live Births



Source: OECD



Turkey has globally competitive prices for surgical procedures

- Furthermore, in terms of access, Turkey is in a geographically favorable position. This, coupled with the availability of cheap (budget airlines) and convenient (direct flight paths) air travel – make it a promising hub for health tourism.
- The focus on competitive fees and high quality service are significant markers which highlight Turkey’s promise for becoming a medical and wellness tourism hub in the region.

Table 5: Surgery Cost Comparison by Country, 2011

Surgery	USA	Thailand	Singapore	Malaysia	India	Turkey
1 Coronary Artery Bypass	55,000-130,000	11,000	13,000-18,500	11,500-12,500	9,000-11,000	11,375-15,000
2 Cardiac Valve Surgery	130,000-160,000	10,000	12,000-13,000	14,500-15,500	9,000-10,000	16,950
3 Angioplasty	42,000-57,000	13,000	11,500-13,000	7,500-8,500	10,000-12,000	5,000-6,000
4 Hip Joint Replacement	24,000-43,000	12,000	12,000-16,000	9,500-10,500	8,000-10,000	10,750
5 Lipoplasty	14.000-16.000	N/A	4.500-5.500	2.000-3.000	2.000-3.500	2,000-3,000
6 Rhinoplasty	6,500-7,500	N/A	3,500-4,500	2,000-2,500	1,500-2,500	3,000-4,000
7 Lasik (Eye)	2,000-2,500	N/A	1,500-2,000	N/A	N/A	1,613*

Source: Ministry of Health,

Note: All prices are given in USD.

* Converted to USD using the average USD/TL rate in 2011.



The quality of Turkish healthcare services is also internationally recognized

Figure 69: Number of Organizations with JCI Accreditation by Country, 2013

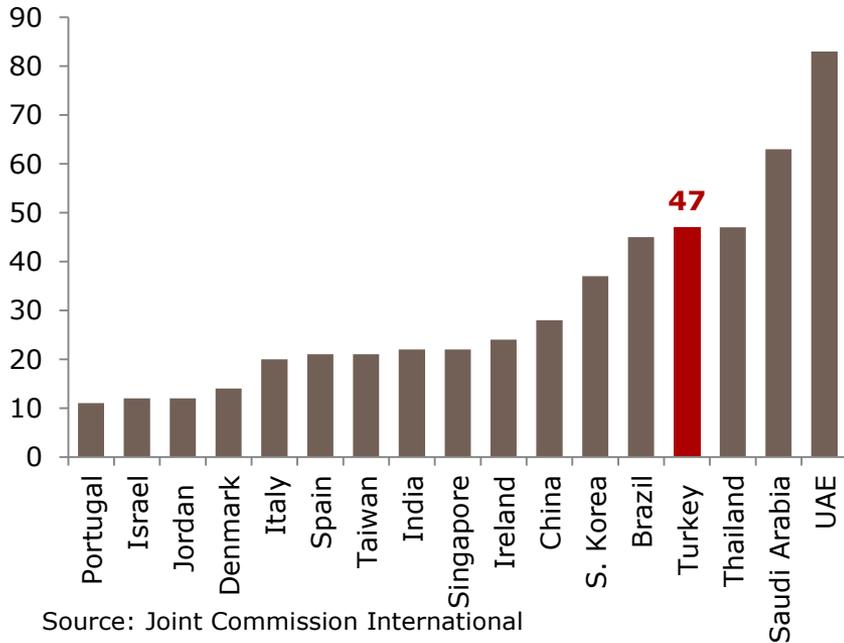
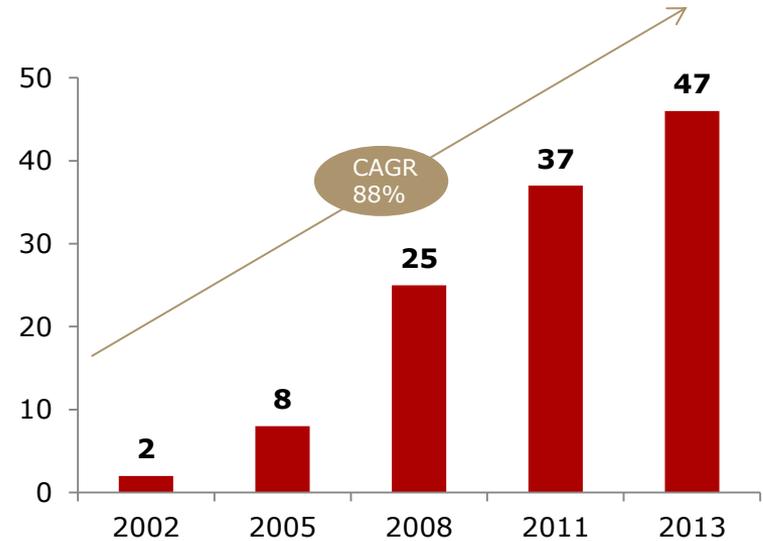


Figure 70: Number of Organizations with JCI Accreditation in Turkey by Year



Source: Joint Commission International

- Turkey has one of the highest number of JCI accredited organizations in the world. JCI not only provides accreditation for hospitals, but also for ambulatory care, clinical care, clinical laboratories, home care, long term care, medical transport and primary care services.

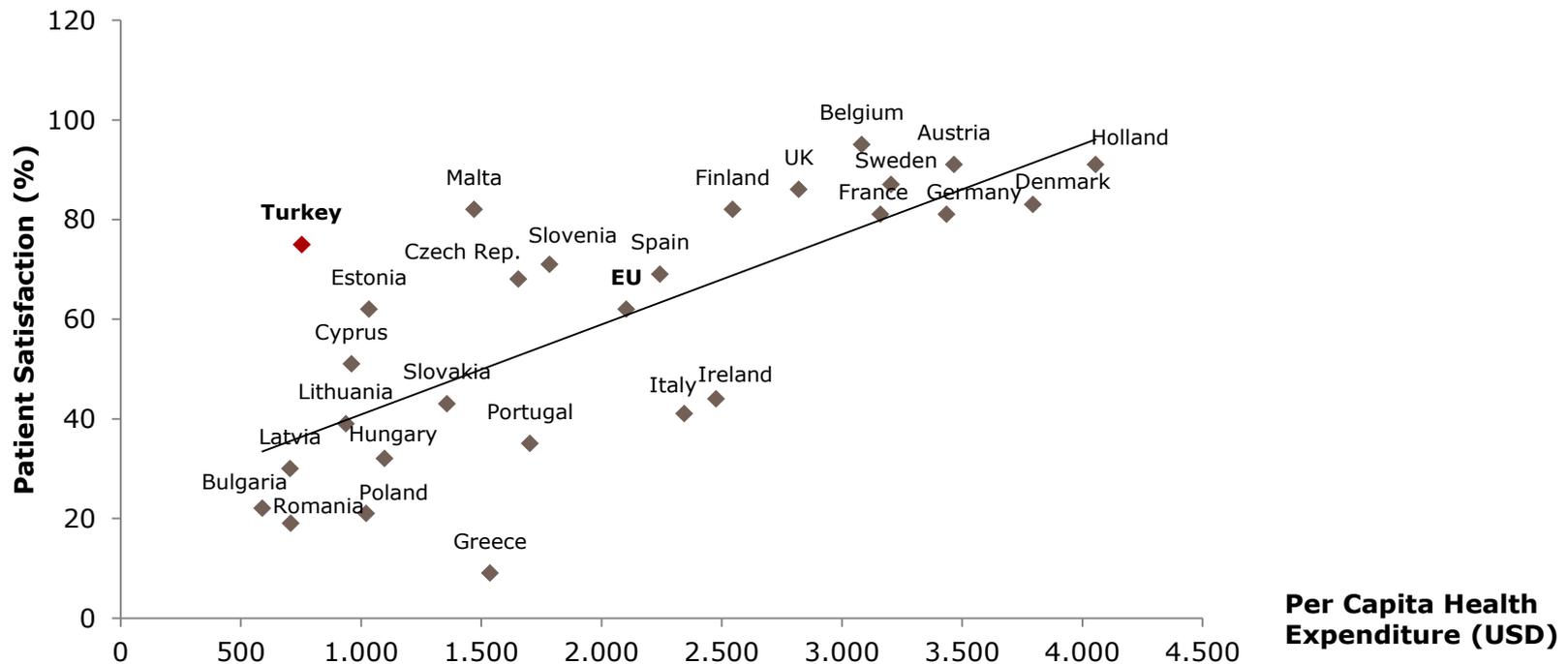
- The number of organizations in Turkey that received JCI accreditation has increased over the years. Between 2002-2013, the number of JCI accredited organizations in Turkey increased by a remarkable CAGR of 88% and in 2013, the number of these organizations reached 47.



The increased quality of healthcare is reflected in patient satisfaction indexes which show Turkey competing easily with the upper income countries

- When considering the relation between per capita health expenditures and satisfaction, Turkey is three times more effective than other countries of the same income level. Also, patient satisfaction is higher in Turkey than the EU average, even though the per capita health expenditure in the EU is triple the expenditure in Turkey.

Figure 71: Patient Satisfaction and per Capita Health Expenditures



Source: MoH, Health Statistics Yearbook 2012

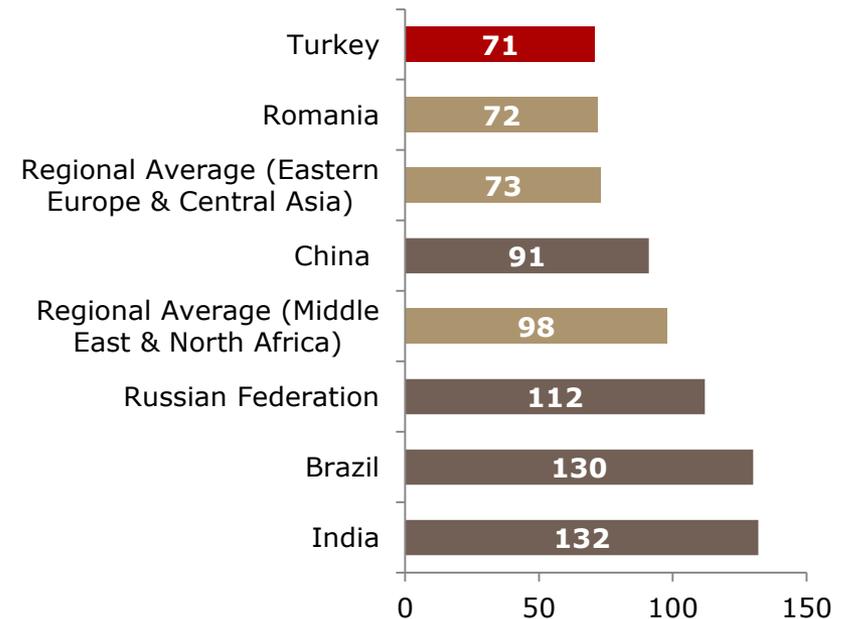


Overall, Turkey is ranked 71st in the World Bank's *Doing Business 2013 Report*

- The Foreign Direct Investment Law in Turkey – which complies with international standards – was enacted in 2003. The objective of this law is to regulate the principles that encourage foreign direct investments including protecting the rights of foreign investors; defining investment and investor in line with international standards; establishing a notification-based system for foreign direct investments rather than screening and approval; and increasing foreign direct investments through established policies.
- With this law, unless stipulated by international agreements and other special laws, the following points are applied:
 1. Foreign investors are free to make direct investments in Turkey.
 2. Foreign investors shall be subject to equal treatment with domestic investors.
- As a result, the number of expats in Turkey has increased significantly. According to the Ministry of Labor and Social Security, the number of work permits given to foreigners increased by 86% in 2012 reaching 32,272. Since 2003, a total of 125,697 permits were provided to foreigners.
- It is also crucial to note that the availability of the free transfer of funds in Turkey adds positively to its investment friendly environment.

- According to *Doing Business 2013 Report* by the World Bank, Turkey is ranked 71st among 185 countries on the ease of doing business.
- Turkey has a higher ranking compared to BRIC countries. Eastern & Central Asia and Middle East & North Africa are ranked 73rd and 98th respectively, both below the rank of Turkey.

Figure 72: Ease of Doing Business Analysis Ranking, 2013

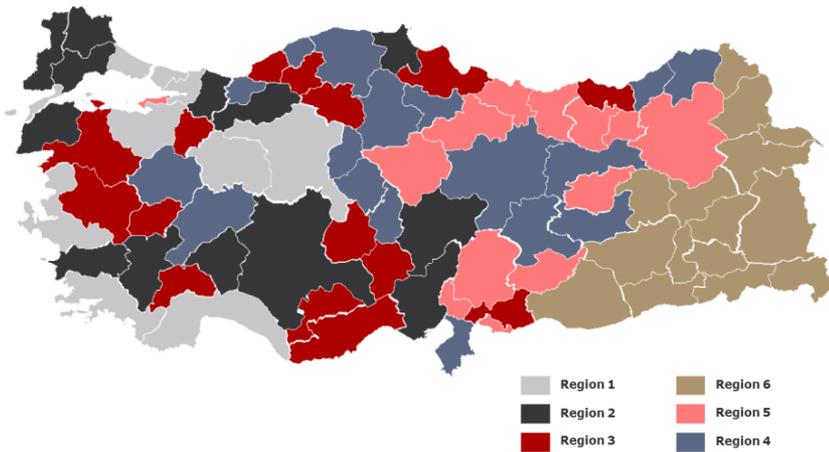


Source: Doing Business 2013, The World Bank



Several incentive plans are available to investors through the Turkish Investment Incentive Program

Figure 73: Incentive Regions



- The investment incentive program of 2012 comprises 4 different plans: general, regional, large scale and strategic. Moreover, specific priority investment subjects are supported by measures of Region 5 even they are made in Regions 1, 2, 3 and 4 .
- All investment types, except the ones that are specifically excluded from the investment incentives program, will be supported by the General Investment Incentive Program. Under this scope, the minimum fixed investment amount is TL 1 million in Region 1 and 2 and TL 500,000 in Regions 3, 4, 5 and 6.

Support Measures	General Inv.	Regional Inv.	Large Scale Inv.	Strategic Inv.
Vat Exemption	✓	✓	✓	✓
Customs Duty Exemption	✓	✓	✓	✓
Tax Deduction	✗	✓	✓	✓
Land Allocation	✗	✓	✓	✓
Interest Support	✗	✓	✗	✓
Vat Refund	✗	✗	✗	✓
Employer's Social Security Premium Support	✗	✓	✓	✓

Only For Region 6

Income Tax Withholding Support	✓	✓	✓	✓
Employees' Social Security Premium Support	✗	✓	✓	✓

REGIONAL INVESTMENTS INCENTIVE PLAN MEASURES

Region	OIZ	1	2	3	4	5	6
Tax Reduction (%)	Out of OIZ	15	20	25	30	40	50
	Within OIZ	20	25	30	40	50	55
Employer's Social Security Premium Support Period (years)	Out of OIZ	2	3	5	6	7	10
	Within OIZ	3	5	6	7	10	12



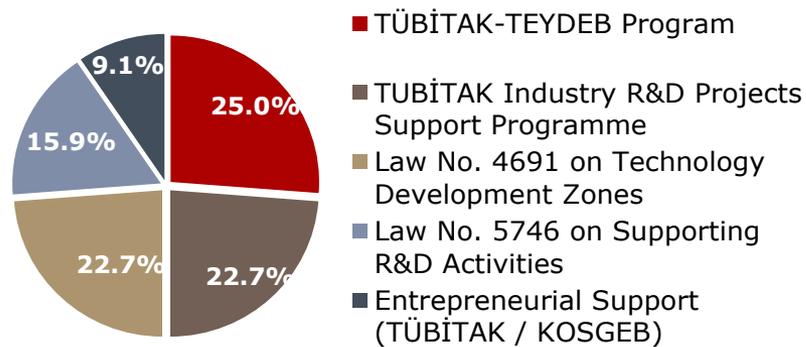
Medical, high precision and optical equipment are incentivized through various incentive plans

- **Large Scale Investment Incentive Plan** supports certain industries depending on their minimum investment amounts. Medical, high precision and optical equipment investments exceeding **TL 50 Million** are supported under the large scale investment plan.
- **Strategic investment incentives** are given to support production of intermediate and final products with high import dependence with a view to reduce current account deficit. The criteria for this support would be: for production of intermediate and final goods with high import dependence of which more than **50% of these goods** are supplied by imports, to have a minimum investment amount of **TL 50 million**, to create a minimum **40% value added**, to have an import amount of at least **USD 50 million** for goods to be produced in the previous one year period (not applicable to goods with no domestic production). Healthcare investments meeting these conditions will be issued a 'strategic investment' certificate.
- Investments that are not classified as strategic and large scale would be subject to **regional investment incentives**. Medical devices, precision and optical instruments production investments as well as hospital and nursing home investments are among the eligible investment categories for this plan.

- In addition to the Strategic Investment Incentive Program, healthcare sector investments and initiatives are supported through several other regulations and incentive programs.



Figure 74: Share of Total Incentives Granted



Moreover, there are specific incentives to boost health-related tourism

	Activity	Support
Communique No. 2012/4	Support for Obtaining Reports for Entry into the Health Tourism Market	Healthcare Institutions and Health Tourism Companies: 60% of the cost (up to USD 100,000 per year) Industry Associations: 70% of the cost (up to USD 300,000 per year)
	Support for Opening a Representation Office Abroad (Up to 4 years)	Healthcare Institutions and Health Tourism Companies: 60% of the rental costs (up to USD 200,000 per year) Industry Associations: 70% of the rental costs (up to USD 300,000 per year)
	Certification Support	50% of the costs (up to USD 50,000)
	Industry Fairs, Congresses, Conferences or Independent Promotion Activities in the Field of Health Tourism Organized Abroad	Healthcare Institutions and Health Tourism Companies: 50% of their costs reimbursed (up to USD 300,000 per year) Industry Associations: 70% of the cost (up to USD 500,000 per year)
	Participation in International Health Tourism Fairs and Conferences	70% of the costs per activity (up to USD 15,000 per activity and 10 activities per year)
	Promotion and Advertising on Approved Search Engines	50% of the costs (up to USD 100,000 per year)
	Organization, Promotion and Consultancy Costs, as well as Transport and Accommodation Costs for a Trade Delegation	60% of the costs (up to USD 150,000 per year, each industry organization may make use of the incentive for up to 5 trade missions and 5 procurement committees per year)
	Procurement of Consulting Services	50% of the cost (up to USD 200,000 per year)
Law No.6322	According to Article 9 of Law No. 6322, healthcare service providers in Turkey that provide services to those domiciled abroad may take advantage of a 50% tax reduction . In addition to healthcare services, those providing medical documentation and data retention services to those domiciled abroad may also make use of the tax exemption.	



R&D activity is increasing in line with government targets to increase the share of healthcare R&D spending

- R&D activity in the healthcare sector is set to increase in line with strategic plans and targets. According to MoH targets, the share of healthcare R&D spending in public sphere will increase to 9% in 2017 and 15% in 2023 from 3% in 2011.
- The already remarkable share of healthcare R&D spending in universities is also set to increase from 33% in 2011 to 35% in 2017. In 2023, an even further increase is targeted for 40% of total university R&D spending.
- The MoH policies also include commercial R&D spending. According to MoH targets, the share of healthcare R&D spending will increase to 10% in 2017 and 15% in 2023.
- In addition to the targets of the MoH, R&D in healthcare is also encouraged by the policies of the Ministry of Science and Technology. The Ministry not only supports R&D by improving R&D infrastructure and by analyzing best practices but also by establishing medical device and life sciences clusters. Similarly, GITES is expected to boost R&D activities that develop high quality and cost-effective intermediate products.

Figure 75: Government Targets for Health-Related R&D Spending in Public R&D Spending

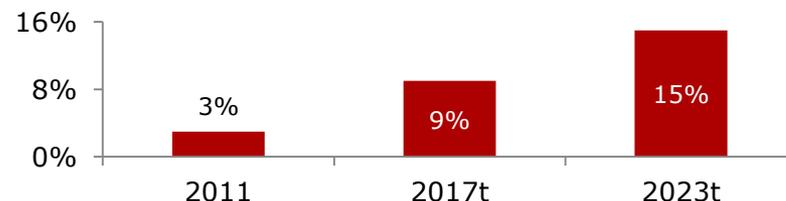


Figure 76: Government Targets for Health-Related R&D Spending in University R&D Spending

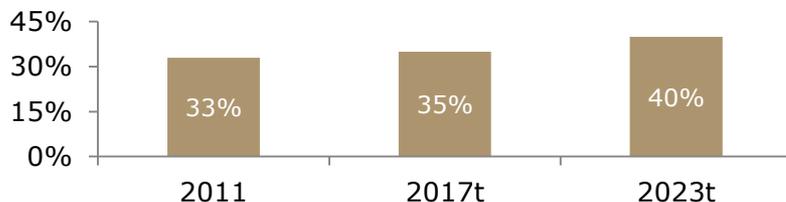
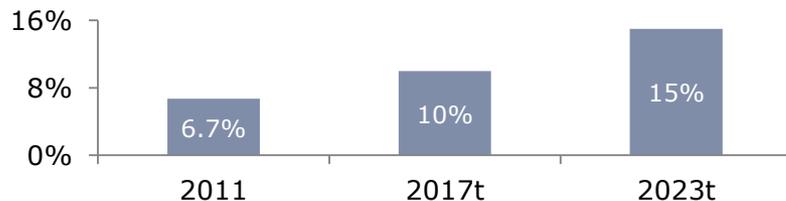


Figure 77: Government Targets for Health-Related R&D Spending in Commercial R&D Spending

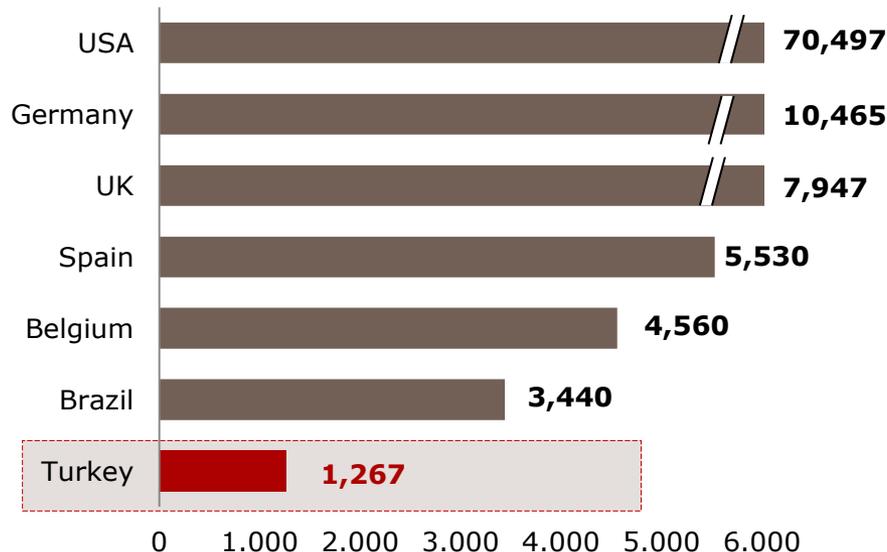


t: target
Source: MoH



Turkey is ranked 35th in the world in terms of the number of clinical research conducted

Figure 78: Total Number of Clinical Research Conducted in the World in 2013



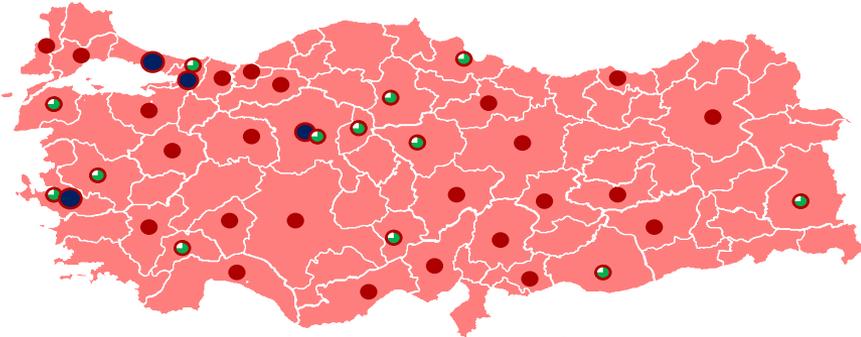
Source: clinicaltrials.gov, Ministry of Science, Industry and Technology

Investment Tip: One of the goals of the government is to increase R&D spending in the sector, and thus, to increase the total number of clinical research conducted.

- The Turkish Drug and Medical Device Institute is the regulatory authority governing drug discovery and R&D. It also monitors clinical research and R&D activities in Turkey. The institute prepared legislation related to clinical research in August 2011, which is also compatible to European Union directives.
- Companies that want to conduct research in the following areas must have permission from the Ministry of Health:
 - Pharmaceuticals, medical products, herbal medical products that will be tested on human subjects
 - Pharmaceutical studies
 - Bioavailability and bioequivalence studies
 - Medical device studies and medical device clinical research
 - Stem cell transplantation research
 - Organ and tissue transplantation
 - New surgical methods research
- Turkey is ranked 35th in the world for the number of clinical research conducted in the world and 19th in Europe. Turkey conducted over 1,200 clinical trials in 2013 and has a share of 0.6% in total clinical research conducted in the world.



Technology Development Zones also contribute significantly to research and development



● One TDZ ● More than one TDZ ● Under Construction

- TDZs are organized research and business centers where universities, research institutions and industrial foundations work together to increase innovation, technology transfer and productivity so as to produce better quality products with lower costs.
- As of 2013, there are 39 TDZs in operation. Ankara and Istanbul have the highest number of TDZs with 5 each. Kocaeli and İzmir also have several TDZs, 3 and 2 respectively. The rest of the provinces labelled above have one TDZ, while the 13 provinces labelled as under construction all have one currently under construction.
- TDZs are governed by Law No. 4691 on Technology Development Areas. The incentives provided for TDZs fall under 3 categories: companies, entrepreneurs, and university faculty members.

Minister of Science, Industry and Technology Nihat Ergün:
"The 2023 goals for the are 5,500 companies, 65,000 employed, and 10 billion dollars in exports."

- ✓ The Ministry Science, Industry and Technology will meet the fixed costs of companies that cannot afford their respective costs. Companies do not have to pay income tax until 2023. They can obtain free access to state-owned intangibles for 5 years but later have to pay 0.2% of the property tax of the intangible property.
- ✓ Entrepreneurs operating in this region are exempt from income tax until 2023 from income made from R&D operations and software. Taxes on wages of R&D personnel are exempt until 2023.
- ✓ 50% of social security premiums for 5 years of R&D personnel will be funded under Law No. 5746 named R&D Operations Support.

Source: Ministry of Science, Industry and Technology, Association of Turkish Technology Parks



III. Investment Environment and Opportunities in Turkey

A. Investment Environment

- a. Costs and Availability of Factors of Production
- b. Competitiveness and Global Benchmarks
- c. Incentives
- d. Research and Development

B. Investment Opportunities

- a. Free Health Zones
- b. Health Tourism
- c. Public – Private Partnerships
- d. e-Health and Telemedicine



Turkey plans to establish 4 medical free zones by 2017, and 10 by 2023

Figure 79: Relevant Legislation and the Medium-Term Investment Plan for Free Health Zones



Source: Ministry of Health

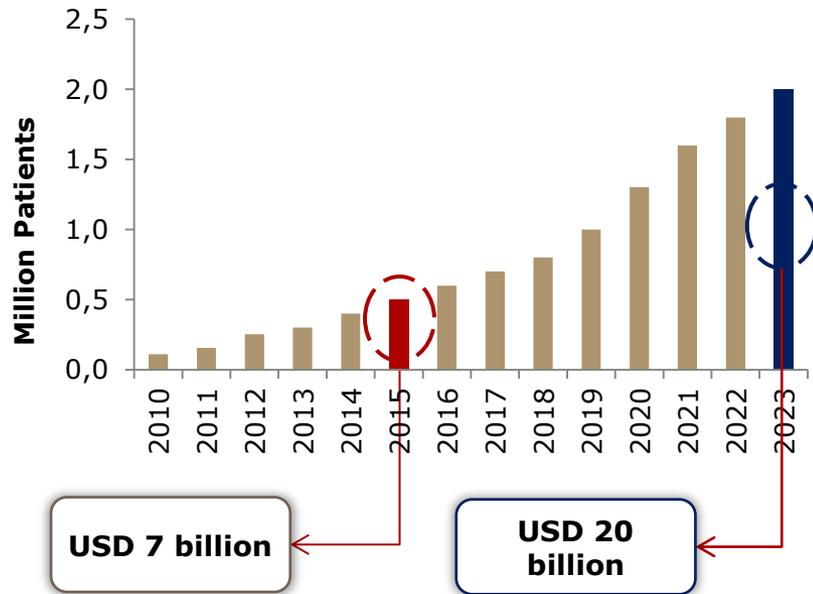
- In the medium term, medical free zones will provide immense opportunities for investors. Even though there are no medical free zones currently in operation, the MoH plans to launch 4 medical free zones by 2017, and increase their number to 10 by 2023. According to Decree Law No.663, the Cabinet may decide on the procedure by which medical free zones are established within the framework of the Law on Free Zones. Yet, during the course of 2013-2014, the MoH plans on the adoption of a regulation on Medical Free Zones and a decree regarding Medical Free Zones.
- Medical free zones will provide investors with numerous advantages such as tax incentives and cost effective infrastructure. Moreover, since 85% of the patients are expected to be domiciled abroad, medical free zones may provide employment for foreign doctors who speak English.

Figure 80: Procedure for Establishing Medical Free Zones, as of January 2013



There are plans to increase health tourism revenue to USD 20 billion by 2023

Figure 81: Patient and Revenue Projections in Health Tourism



Source: Ministry of Health

- The Ministry of Health is projecting **USD 7 billion** in revenue from 500,000 foreign patients in 2015 and **USD 20 billion** in revenue from **2 million** foreign patients in 2023.

- In order to achieve these ambitious goals, the Ministry of Health will focus on marketing efforts and promotion in co-operation with the Ministry of Economy and the Ministry of Culture and Tourism by:

- Increasing the scope of health tourism by determining the standards and preparing detailed legislation for thermal, spa and wellness tourism as well as health tourism for the elderly.
- Improving the management of health tourism by promoting co-operation between the shareholders within different sectors.

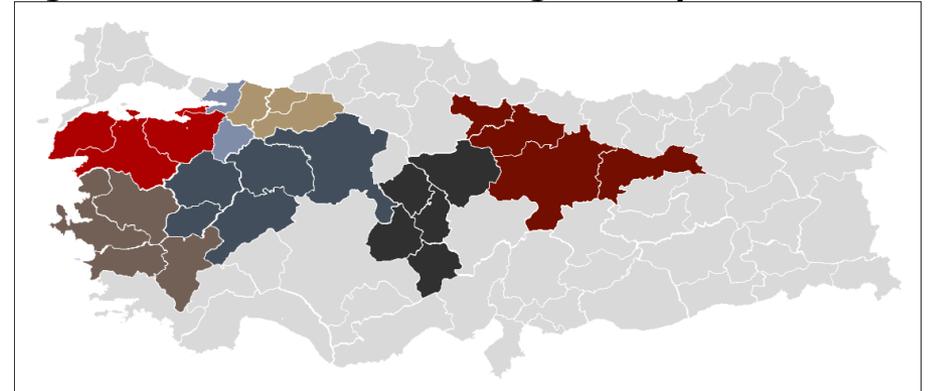
- With a generous health tourism incentive plan and ambitious targets for the number of patients and revenue, health tourism is expected to provide immense opportunities for investors in the short to medium term.
- High quality services, cost efficient healthcare services and surgical operations make Turkey a prime destination for health tourism. Coupled with the government's financial incentives to those providing health tourism services such as financial support for promotion abroad, help in obtaining the relevant international accreditations and the establishment of foreign offices. All these factors combined provide business and financial support and also allow for increased investment opportunities to potential investors.



Thermal tourism and tourism for the elderly and disabled provide significant investment opportunities

- Thermal tourism refers to thermo-mineral baths, mineral water, inhalation treatments, mud baths, as well as the use of thermal waters for entertainment and recreational purposes. The main cities for thermal tourism are Afyonkarahisar, Balıkesir, Bursa, İzmir, Nevşehir and Ankara.
- Currently, there are **81 thermal facilities** in Turkey. **18 of these facilities** have tourism investment licenses and **63 have operating licenses**, with a total bed capacity of 27,666. In the long term, the Ministry of Health targets the increase in the total bed capacity for thermal tourism facilities to be 500,000 beds which will attract **15 million tourists**.
- For this reason, **seven thermal tourism regions** were identified in the context of a project to analyze the geothermal potential, infrastructure facilities and needs, along with the possibility to jointly provide thermal tourism services with alternative tourism services. As a result of this project, the Ministry of Culture and Tourism will determine areas for thermal tourism investment, which will be rented to investors for a maximum period of 49 years. Therefore, opportunities for building and operating thermal tourism facilities will increasingly become available to investors in the mid to long term.

Figure 82: Thermal Tourism Regions Map



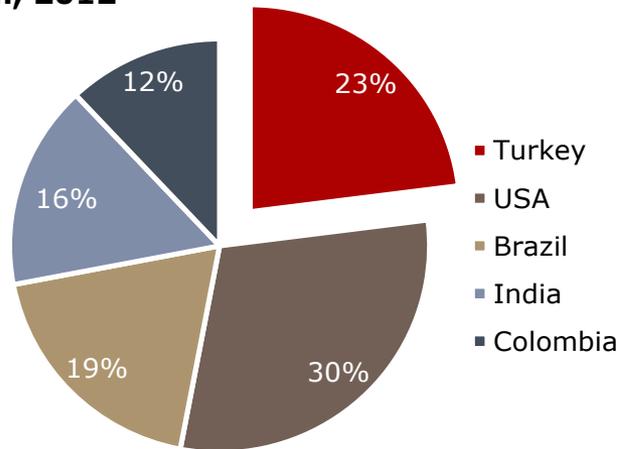
- Yalova, Balıkesir, Bursa, Çanakkale
 - Amasya, Tokat, Sivas, Erzincan
 - İzmir, Manisa, Aydın, Denizli,
 - Kocaeli, Bilecik
 - Kütahya, Uşak, Eskişehir, Ankara, Afyon,
 - Sakarya, Düzce, Bolu
 - Yozgat, Kırşehir, Nevşehir, Aksaray, Niğde
- Source: Ministry of Health

- In addition to thermal tourism, tourism for the elderly and the disabled also provides significant investment opportunities. According to the World Ageing Organization, there are currently **600 million people** who are above the age of 65 and this number is expected to reach 2 billion by 2050.
- Turkey has plans to invest in infrastructure for the disabled to support them on their travels. The Ministry of Health is working to produce initiatives that will increase investments in this particular sector.



According to PPP professionals, Turkey is the second most attractive market globally for PPP projects in the medium to long term

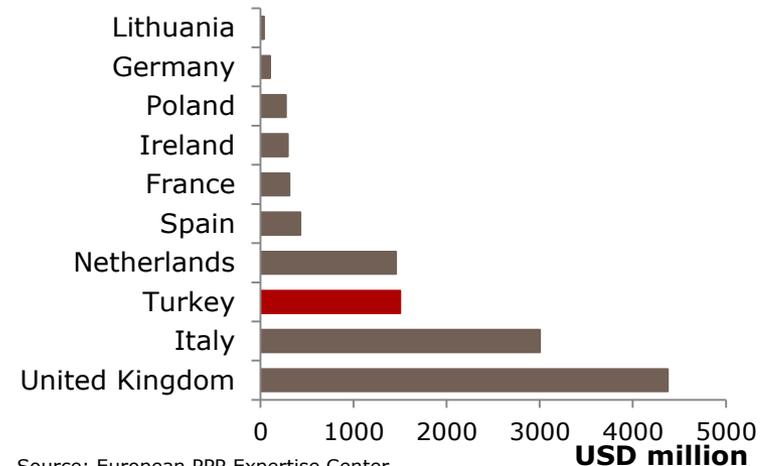
Figure 83: PPP Professionals' Top Pick for the Emerging PPP Market in the Medium To Long Term, 2012



Source: Deloitte Survey

- Turkey's attractiveness as a PPP destination is growing. A global survey conducted by Deloitte in 2012 shows that according to PPP professionals, Turkey is the second most attractive market globally for PPP projects in the medium to long term.
- According to the same survey, already by 2013 Turkey was expected to be among the top 10 markets with the highest levels of PPP activity.

Figure 84: PPP Projects Coming to a Financial Close in the First Half of 2013, by Value



Source: European PPP Expertise Center

- Turkey has lived up to these expectations. According to the Ministry of Development the total value of all PPP contracts in 2013 was **USD 46 billion**, a remarkable increase from the 2012 level of USD 2 billion.
- In line with this, Turkey yet again displayed its potential by becoming the third largest PPP market in Europe in the first half of 2013, surpassing not only countries in the same income group, but also performing better than countries with more developed PPP markets.



The MoH will be spending an estimated USD 47 billion* in lease payments for its Healthcare PPP Program

- Turkey has undertaken an ambitious **Healthcare PPP Program** in which a total of **35 health campuses and city hospitals** will be built using the build-lease-transfer model.
- The health campuses and city hospitals will add between 40,000 - 50,000 beds to Turkey's existing healthcare infrastructure.
- It is estimated that the lease payments for the planned health campuses and city hospitals will be between TL 80,000 and 85,000 per year per bed, amounting to a total of USD 1.5 to 1.9 billion* per year.
- Assuming the MoH will lease the facilities for 25 years, the total amount of **lease payments** for healthcare campuses and city hospitals will reach **USD 38 to 47 billion***.
- There are currently, **20 projects in the pipeline**: 2 in the pre-qualification tender announcement phase, 1 in the pre-qualification phase, 2 in the bid phase, 3 in the final bid phase, 9 in the contracting stage and 3 in the construction phase.
- Yet, more projects will be tendered in the short to medium term as the MoH strives for swift completion of the planned healthcare campuses.

Added Bed Capacity
50,000

Average Lease Period
25 Years

Lease Payments per year
USD 1.5-1.9 billion*

Planned PPP Projects
35

Current PPP Projects
20

Total Lease Payments
TL 38 – 47 billion

Investment Tip: The new PPP legislation adopted in 2013 requires that at least 20% of the medical equipment used in healthcare facilities built through PPPs to be produced locally.

Source: Ministry of Health, Dünya Gazetesi

*Converted using the year-end (2013) USD/TL exchange rate of 2.1304.



Turkey has the political, institutional and legal framework required to realize its ambitious PPP program

Policy Framework

- 2003-2013 Health Transformation Program
- Vision 2023
- MoH 2013-2017 Strategic Plan
- 10th National Development Plan

Legal Framework

Law No.6428

Institutional Framework

- Supreme Planning Board
- MoH, Department of Public-Private Partnership
- Under Secretariat of the Treasury

Healthcare PPP Project, build-lease-transfer

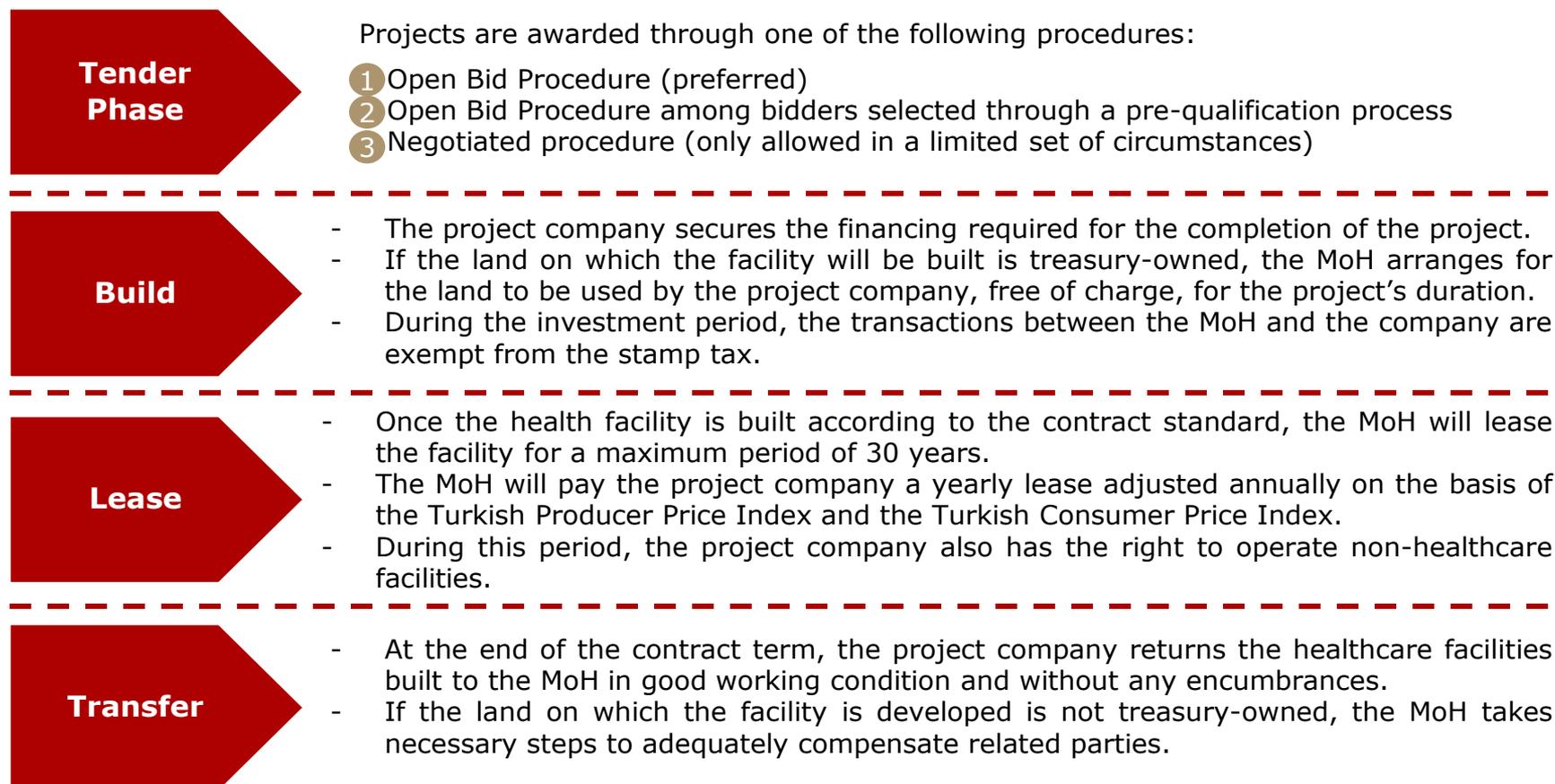
- Law No. 6428 was published in the Official Gazette on 9 March 2013. The new law replaced Supplemental Article 7 of Law No. 3359 and its regulation for implementation. The **new legislation**, to a large extent, **decreases the burden and risk** undertaken by companies involved in PPP projects. It **brings legal certainty** and introduces a mechanism through which lease payments can be adjusted according to changes in the foreign exchange rate.

- **The Supreme Planning Board** is involved in a limited number of decisions with fundamental importance, while **the MoH** assumes the bulk of the work to be done for the initiation and realization of Healthcare PPP Projects. The MoH selects relevant PPP projects, prepares feasibility reports and tender documentation. **The Under Secretariat of the Treasury**, in most cases, procures the land for the PPP project provided that it is determined the land will be treasury-owned land.



Healthcare PPPs in Turkey most frequently use the Build-Lease-Transfer (BLT) Model

Under the BLT model, the project company contracts or renews healthcare facilities, and subsequently leases it to the government for a set amount of time. During the contract period, in addition to getting regular lease payments from the government, the project company also has the right to develop and operate non-healthcare facilities. If the company is renewing the facility, it receives the right to provide non-healthcare services and a service fee in return for its investment. If new facilities are built, the following procedure is followed:



Projects in the Pipeline...

PPP Projects in Healthcare as of December 2013

Pre-qualification tender announcement phase

Istanbul Bakırköy Integrated Health Campus 1,043 beds

Pre-qualification phase

Istanbul Üsküdar Public Hospital 425 beds

Bid phase

Eskişehir City Hospital 1,060 beds

Final Bid phase

Kocaeli Integrated Health Campus 1,180 beds

TPHA + TPMDA Campus N/A

Contract phase

Bursa Integrated Health Campus 1,355 beds

Isparta City Hospital 755 beds

Izmir Bayraklı Integrated Health Campus 2,000 beds

Adana Integrated Health Campus 1,539 beds

Elazığ Integrated Health Campus 1,038 beds

Gaziantep Integrated Health Campus 1,867 beds

Konya Karatay Integrated Health Campus 838 beds

Manisa Education and Research Hospital 558 beds

Mersin Integrated Health Campus 1,253 beds

PTR, Psychiatric and High Security Forensic Psychiatric Hospitals 2,400 beds

Yozgat Education and Research Hospital 475 beds

Istanbul İkitelli Integrated Health Campus 2,682 beds

Construction phase

Ankara Bilkent Integrated Health Campus 3,660 beds

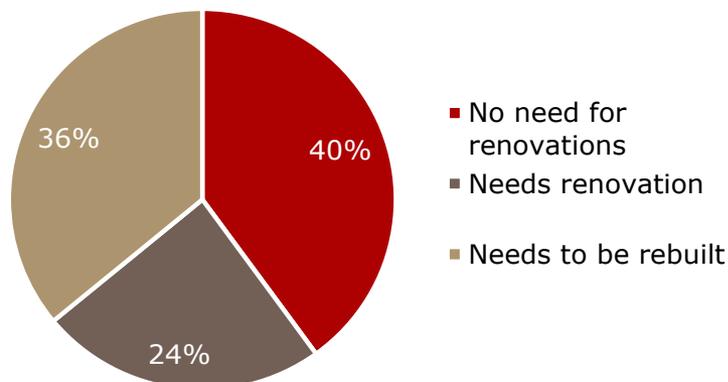
Ankara Etlik Integrated Health Campus 3,566 beds

Kayseri Integrated Health Campus 1,583 beds



New regulations that require the renovation or rebuilding of existing hospitals offer further opportunities for hospital infrastructure providers

Figure 85: Hospital Renovations According to the 2007 Earthquake Regulation



Source: AFAD

- As of June 2012, 60% of hospitals in Turkey needed to be either renovated or rebuilt in order to comply with the latest building regulations that require hospitals to be resistant to earthquakes. 36% will have to be torn down and rebuilt in order to comply with the 2007 Earthquake Regulation, whereas 24% need urgent renovation.
- Since hospitals, together with schools, are classified as critical buildings, their renovation is a priority for the MoH. During this process, 1,002 hospitals will be renovated according to the 2007 Earthquake Regulation, while 1,816 buildings will be rebuilt.

Figure 86: Hospital Renovations According to the 2007 Earthquake Regulation

	Blocs	Surface Area	%
Hospitals already renovated	245	670	5
Hospitals with no need for renovation	15	45	0
Hospitals that were built after the enactment of the Earthquake Regulation	1,215	4,118	35
Hospitals to be renovated	1,002	2,844	24
Hospitals to be rebuilt	1,816	4,230	36

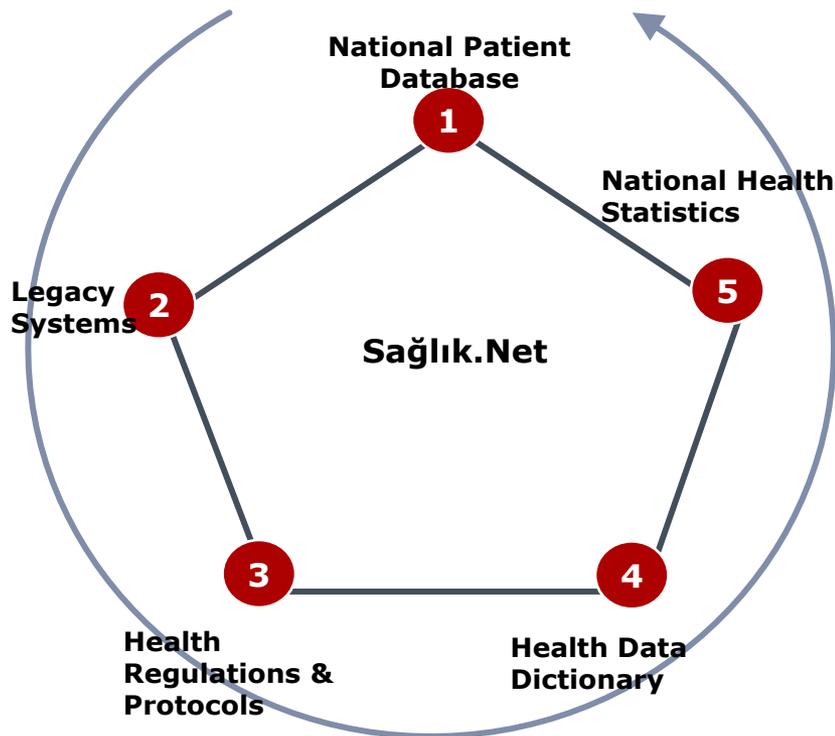
Source: AFAD

- Therefore, the 2,818 hospitals to be renovated or rebuilt in the short to mid term, provide immense opportunities for companies involved in the construction and renovation of hospitals.



Moreover, significant investment opportunities arise as Turkey aims to integrate e-Health systems into practice

Figure 87: National Health Information System



Source: e-sağlık.gov.tr

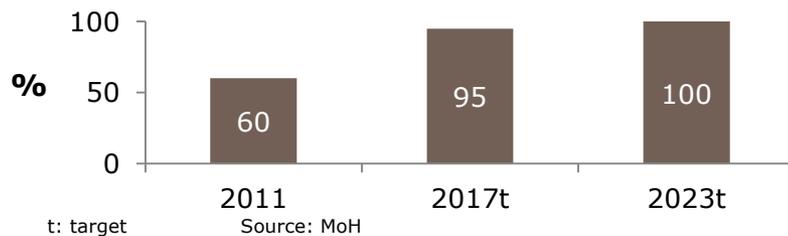
- The Health Transformation Program includes the development of a national health information system to provide nationwide infrastructure for the efficient sharing of electronic health records.
- This system allows patients, hospitals, clinics, medical faculties and laboratories to record information regarding patients' health and track this information as it accumulates.
- Moreover, the system will track the workforce and financial status all of the institutions that provide healthcare services.
- The **main goals** of the project are:
 - Standardizing healthcare information systems
 - Implementing data analysis support and decision making systems
 - Accelerating the information flow among e-health stakeholders
 - Creating personal health profiles for individuals
 - Increasing efficiency and disposing of redundancies
 - Coordinating e-Health processes
 - Supporting scientific research
 - Accelerating the adoption of the e-Health concept nationally



The MoH has set targets to further develop e-Health applications

- The MoH sets medium and long term performance goals that enhance the monitoring and evaluation of the health service industry's delivery system.
- Achieving these targets will also foster evidence-based decision-making, that is of utmost importance both for the effectiveness of the sector, and public health.
- By 2023, all health institutions are expected to adopt electronic information sharing systems, while the indicators available on e-Health systems are aimed to meet international standards.

Figure 88: Percentage of Health Institutions that Share Electronic Information



Investment Tip: Official targets to adopt and develop e-Health systems present significant investment opportunities for IT infrastructure companies.

Figure 89: Indicators Available on Health.Net that Meet International Standards

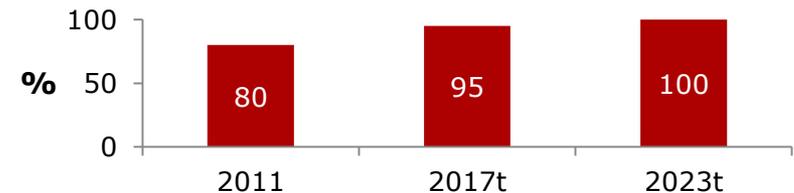


Figure 90: Rate of Appointments Made via Central Hospital Appointment System

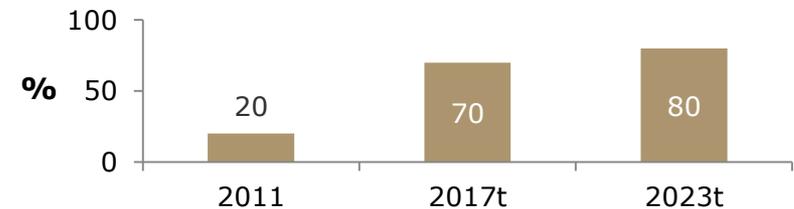
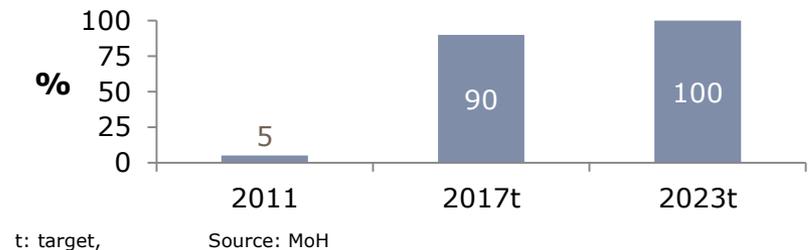


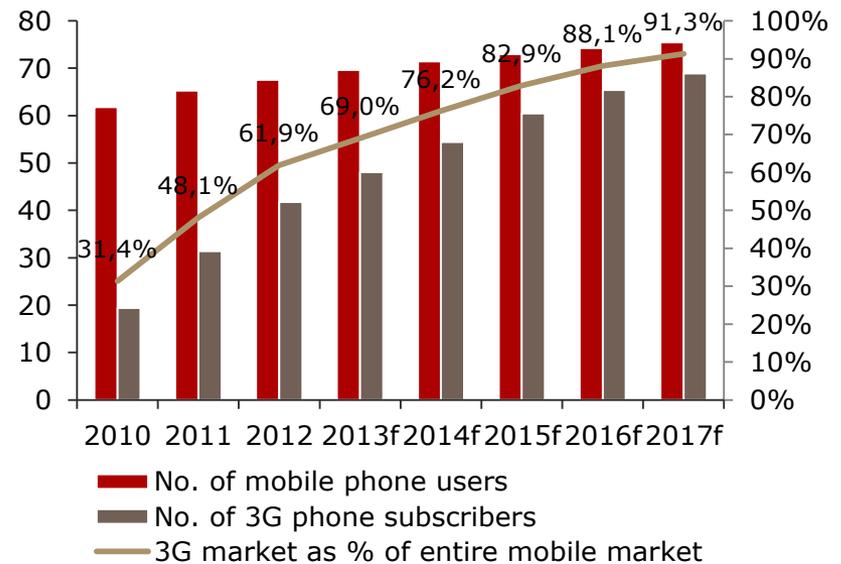
Figure 91: Percentage of Paperless Hospitals



Telemedicine provides cost-effective solutions for modernizing health systems, and has a high potential for growth in Turkey

- Telemedicine is defined as the use of telecommunication and information technologies to provide clinical healthcare at a distance.
- Mobile technology in healthcare provides more accessible, affordable and effective solutions while reducing delays in case of an emergency.
- In Turkey, mobile phone subscriptions and 3G usage are expected to increase, reaching a 3G penetration rate of 91.3% by 2017. Increased usage can be interpreted as a strong basis for future telemedicine utilization.
- Telemonitoring solutions that can be used to monitor patients in their homes such as implantable cardiac defibrillators, personal alarms and alerts are included in telemedicine systems.
- The conditions most suitable for home monitoring include many that become more prevalent with age such as diabetes, cardiovascular disease and cardiac arrhythmias.

Figure 92: Development of Mobile Phone and 3G Subscriptions



Source: BMI (graph data); Nielsen: The Mobile Consumer: A Global Snapshot; Euromonitor International: Technology, Communications and Media: Turkey
f: forecast

Investment Tip: Utilizing telemedicine solutions increases access to high quality healthcare while reducing costs. Considering the fast growing use of mobile phones and increasing 3G subscription rates in Turkey, together with efforts to modernize the health system for changing disease trends, telemedicine applications have great potential for investors.



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