Healthcare Industry in Turkey

January 2014
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# Glossary of Terms

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<thead>
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<th>Acronym</th>
<th>Definition</th>
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<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
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<tr>
<td>AFAD</td>
<td>Prime Ministry, Disaster and Emergency Management Presidency</td>
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<tr>
<td>BağKur</td>
<td>Former Social Security Organization for Artisans and the Self-Employed (Became Part of SGK)</td>
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<td>BMI</td>
<td>Business Monitor International</td>
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<tr>
<td>BRIC</td>
<td>Brazil, Russia, India, China</td>
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<tr>
<td>CAGR</td>
<td>Compound Annual Growth Rate</td>
</tr>
<tr>
<td>CBRT</td>
<td>The Central Bank of the Republic of Turkey</td>
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<tr>
<td>CE</td>
<td>Conformité Européenne</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>CIS</td>
<td>Commonwealth of Independent States</td>
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<tr>
<td>CT</td>
<td>Computed Tomography</td>
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<tr>
<td>EAGM</td>
<td>Eastern and African Growth Markets</td>
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<td>EBMT</td>
<td>European Society for Blood and Marrow Transplantation</td>
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<td>ECO</td>
<td>Echocardiography</td>
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<td>EIU</td>
<td>Economist Intelligence Unit</td>
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<td>EU</td>
<td>European Union</td>
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<td>EUR</td>
<td>Euro</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
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<tr>
<td>GCP</td>
<td>Good Clinical Practices</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<thead>
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<tr>
<td>GE</td>
<td>General Electric</td>
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<td>GEPF</td>
<td>Government Employees Pension Fund</td>
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<td>GITES</td>
<td>Input Supply Strategy</td>
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<tr>
<td>GMP</td>
<td>Good Manufacturing Practice</td>
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<tr>
<td>HTP</td>
<td>Health Transformation Program</td>
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<tr>
<td>İEİS</td>
<td>Pharmaceutical Manufacturers Association of Turkey</td>
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<td>JCI</td>
<td>Joint Commission International</td>
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<td>JCR</td>
<td>Japan Credit Rating Agency</td>
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<td>KOSGEB</td>
<td>Small and Medium Enterprises Development Organization</td>
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<td>M&amp;A</td>
<td>Mergers and Acquisitions</td>
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<tr>
<td>MENA</td>
<td>Middle East and North Africa</td>
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<td>MNC</td>
<td>Multinational Company</td>
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<td>MoH</td>
<td>The Ministry of Health of Turkey</td>
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<tr>
<td>MRI</td>
<td>Magnetic Resonance Imaging</td>
</tr>
<tr>
<td>N/A</td>
<td>Not Available</td>
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<tr>
<td>N/D</td>
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<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
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<td>OHSAD</td>
<td>Private Hospitals and Health Institutions Association</td>
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<tr>
<td>OIZ</td>
<td>Organized Industrial Zone</td>
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<tr>
<td>ÖSYM</td>
<td>Student Selection and Placement Center</td>
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# Glossary of Terms

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<th>Acronym</th>
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<td>PPP</td>
<td>Public-Private Partnership</td>
</tr>
<tr>
<td>PTTS</td>
<td>Pharmaceutical Track and Trace System</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research &amp; Development</td>
</tr>
<tr>
<td>RRR</td>
<td>Risk/Reward Rating</td>
</tr>
<tr>
<td>SADER</td>
<td>The Healthcare Products Manufacturers &amp; Representatives Association</td>
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<tr>
<td>SEİS</td>
<td>Health Industry Employers’ Association of Turkey</td>
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<tr>
<td>SGK</td>
<td>Social Security Institution</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>SPO</td>
<td>State Planning Organization</td>
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<tr>
<td>SSK</td>
<td>Former Social Insurance Organization (Transferred to SGK)</td>
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<tr>
<td>SUT</td>
<td>Health Budget Law</td>
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<tr>
<td>TC</td>
<td>Republic of Turkey</td>
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<tr>
<td>TDZ</td>
<td>Technology Development Zone</td>
</tr>
<tr>
<td>TEYDEB</td>
<td>Department of Technological Innovation and Support System Programs</td>
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<tr>
<td>TİTUBB</td>
<td>The Turkish National Information Bank of Pharmaceuticals and Medical Devices</td>
</tr>
<tr>
<td>TL</td>
<td>Turkish Lira</td>
</tr>
<tr>
<td>TSB</td>
<td>Insurance Association of Turkey</td>
</tr>
<tr>
<td>TSE</td>
<td>Turkish Standards Institute</td>
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<tr>
<td>TTB</td>
<td>Turkish Medical Association</td>
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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tr>
<td>TÜBİTAK</td>
<td>Scientific and Technological Research Council of Turkey</td>
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<td>TÜMDEF</td>
<td>Medical Device Manufacturers and Suppliers Association</td>
</tr>
<tr>
<td>TÜRKÖK</td>
<td>Stem Cell Coordination Center</td>
</tr>
<tr>
<td>TurkStat</td>
<td>Turkish Statistical Institute</td>
</tr>
<tr>
<td>TUSIDER</td>
<td>Health Establishments Association</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollar</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
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<td>WHO</td>
<td>World Health Organization</td>
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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)**

- Change in Total Healthcare Spending
- Health Spending per Capita

- 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**

- 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.
...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

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

- 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.

- 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

- 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

| Source: CBRT * As of September 2013 |

<table>
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<tr>
<th>Rating (Local Currency)</th>
<th>Outlook (Local Currency)</th>
<th>Rating (Foreign Currency)</th>
<th>Outlook (Foreign Currency)</th>
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<td>Standard &amp; Poor’s</td>
<td>BBB</td>
<td>Stable</td>
<td>BB+</td>
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<td>Fitch</td>
<td>BBB</td>
<td>Stable</td>
<td>BBB-</td>
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<td>Moody’s</td>
<td>Baa3</td>
<td>Stable</td>
<td>Ba1</td>
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<td>JCR</td>
<td>BBB-</td>
<td>Stable</td>
<td>BBB-</td>
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Turkey’s FDI in health and social work activities increased at a CAGR of 39% from 2008 to 2012

• 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.

• 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.

Figure 8: FDI Inflows to Turkey, 2003-2012

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

Source: World Development Indicators, World Bank DataBank

Source: CBRT
# Mergers & Acquisitions in Healthcare Sector surpassed USD 1.4 billion between 2009 and 2012

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Target</th>
<th>Date</th>
<th>Deal Value USD Millions</th>
<th>Stake</th>
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<tr>
<td>Euromedic International</td>
<td>Oylat Diyaliz Merkezi</td>
<td>2009</td>
<td>N/D</td>
<td>100%</td>
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<td>The Carlyle Group</td>
<td>Medical Park Hospital Group</td>
<td>2009</td>
<td>N/D</td>
<td>40.0%</td>
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<td>Rhea Investments</td>
<td>Dentistanbul</td>
<td>2010</td>
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<td>NBK Capital (Swan Holding)</td>
<td>Dünya Göz Hastanesi</td>
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<td>Argus Capital Partners &amp; Qatar First Investment Bank</td>
<td>Memorial Health Group</td>
<td>2010</td>
<td>N/D</td>
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<td>ADM Capital</td>
<td>Kemer Medical Center</td>
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<td>27.0</td>
<td>N/D</td>
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<td>ADM Capital; PGGM N.V.; IFC</td>
<td>Universal Hospitals Group</td>
<td>2011</td>
<td>140.0</td>
<td>26.0%</td>
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<td>Ethemba Capital; NBGI Private Equity</td>
<td>BirgiMefar Group</td>
<td>2011</td>
<td>N/D</td>
<td>N/D</td>
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<td>Global Investment House</td>
<td>Bıçakçılars Tibbi Cihazlar</td>
<td>2011</td>
<td>N/D</td>
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<td>Mid Europa Partners</td>
<td>Kent Hospital</td>
<td>2011</td>
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<td>Mineks International</td>
<td>Istanbul Cerrahi Hastanesi</td>
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<td>60.0</td>
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<td>NBGI Private Equity</td>
<td>Sante Group</td>
<td>2011</td>
<td>N/D</td>
<td>N/D</td>
</tr>
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<td>Integrated Healthcare Holdings</td>
<td>Acibadem Sağlık Hizmetleri</td>
<td>2011</td>
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<td>Amplifon</td>
<td>Maxtone</td>
<td>2012</td>
<td>1.3</td>
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<td>6.5%</td>
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<td>Acibadem Sağlık Hizmetleri</td>
<td>Jinemed</td>
<td>2012</td>
<td>8</td>
<td>65.0%</td>
</tr>
<tr>
<td>Bureau Veritas</td>
<td>Kontrollab</td>
<td>2012</td>
<td>N/D</td>
<td>100%</td>
</tr>
<tr>
<td>Fresenius</td>
<td>Ren Grup Diyaliz</td>
<td>2012</td>
<td>N/D</td>
<td>100%</td>
</tr>
<tr>
<td>Euromedic International</td>
<td>Ultra Görüntüleme Merkezi</td>
<td>2012</td>
<td>N/D</td>
<td>100%</td>
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Investment Support and Promotion Agency of Turkey
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**

- 1979: Law No. 2238 on the Harvesting, Storage, Grafting and Transplantation of Organs and Tissues
- 2000: Directive on Organ Transplantation Centers
- 2008: Directive on National Organ and Tissue Transplantation Coordination System
- 2012: Regulation Concerning Organ and Tissue Transplantation Services

- 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**

- 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.

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

- 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**

<table>
<thead>
<tr>
<th>Year</th>
<th>Pediatric</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1430</td>
<td>2923</td>
</tr>
<tr>
<td>2014</td>
<td>1436</td>
<td>3137</td>
</tr>
<tr>
<td>2018</td>
<td>1426</td>
<td>3344</td>
</tr>
<tr>
<td>2023</td>
<td>1420</td>
<td>3561</td>
</tr>
</tbody>
</table>

Source: MoH  
* f: forecast

**Figure 17: Bone Marrow Transplant Centers Bed Capacity, Adult**

<table>
<thead>
<tr>
<th>Year</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>267</td>
</tr>
<tr>
<td>2014t</td>
<td>313</td>
</tr>
<tr>
<td>2018t</td>
<td>334</td>
</tr>
<tr>
<td>2023t</td>
<td>356</td>
</tr>
</tbody>
</table>

Source: MoH  
* t: target

- 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.

- 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.

• 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

- Increasing population
- Ageing population
- Higher incidence of chronic diseases
- Wider health insurance coverage
- Increasing economic welfare
- Changing disease profile

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

- 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)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>70.6</td>
</tr>
<tr>
<td>2012</td>
<td>75.6</td>
</tr>
<tr>
<td>2023*</td>
<td>84.2</td>
</tr>
<tr>
<td>2050*</td>
<td>93.5</td>
</tr>
</tbody>
</table>

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**

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Thousand Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>122</td>
</tr>
<tr>
<td>2020*</td>
<td>230</td>
</tr>
<tr>
<td>2030*</td>
<td>416</td>
</tr>
</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Disease</th>
<th>2002</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
<td>0.07</td>
<td>0.12</td>
</tr>
<tr>
<td>Measles</td>
<td>11.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>32</td>
<td>22</td>
</tr>
<tr>
<td>Malaria</td>
<td>14.7</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: MoH, WHO
As economic welfare increased, Turkey’s healthcare spending grew at a CAGR of 30.6% between 2002-2012

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**

- 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.

Source: SSI
The Turkish healthcare system is a highly regulated market with increasing private sector involvement.

### Policy
- 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.

### Funding
- Central Government, SSI, Private Insurance, Out of Pocket

### Service
- The MoH and University Hospitals, Private Healthcare Institutions

### Patients

<table>
<thead>
<tr>
<th>Central Government</th>
<th>Ministry of Health</th>
<th>The Social Security Institution</th>
<th>Private Healthcare Services</th>
</tr>
</thead>
</table>
| • 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. | • 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. | • 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. | • 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**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provisions regarding both the citizens’ right to social security and the State’s responsibility to effectuate this right.</td>
<td>• The “Health Transformation Program” (HTP) regulated by MoH was announced.</td>
<td>• The Family Medicine Program which assigned each patient to a specific doctor, was established throughout Turkey.</td>
</tr>
<tr>
<td>• The Fundamental Law No. 3359 on Health Services was adopted in 1987.</td>
<td>• 3 public insurance systems (GEPF, BağKur and SSK) were consolidated under one umbrella, SSI.</td>
<td>• SSI allowed therapeutic area based contracts with private hospitals.</td>
</tr>
<tr>
<td>• In line with the plan prepared by the SPO in 1990, the first National Health Congress was held. The development of a “Master Plan for the Health Sector” was in a sense the beginning of healthcare reforms.</td>
<td>• Members of the Government Employee Pension Fund and patients covered by the Social Security Organization were allowed to get service from private hospitals and clinics as well as public healthcare institutions.</td>
<td>• The maximum surcharge ratio for private hospitals was raised to 90%.</td>
</tr>
<tr>
<td>• The Green Card Program was introduced with Law No. 3816.</td>
<td>• A cap was put on surcharges (30%) to beneficiaries receiving healthcare from private hospitals.</td>
<td>• SSI has amended the healthcare service agreements signed with the healthcare providers. New clauses invoke tighter regulation and stronger deterrence not to breach the maximum limits of surcharge if the healthcare provider breaches the agreement.</td>
</tr>
<tr>
<td>• SSI allowed therapeutic area based contracts with private hospitals.</td>
<td>• The law on the pilot implementation for the family practitioner system was enacted.</td>
<td>• Access to health insurance has been expanded by including stateless persons and refugees within the scope of Universal Health Insurance.</td>
</tr>
<tr>
<td>• The maximum surcharge ratio for private hospitals was raised to 90%.</td>
<td>• The hospitals of other public institutions, including those of the SSI, were transferred to the jurisdiction of the MoH.</td>
<td>• The Family Medicine Program which assigned each patient to a specific doctor, was established throughout Turkey.</td>
</tr>
<tr>
<td>• SSI has amended the healthcare service agreements signed with the healthcare providers. New clauses invoke tighter regulation and stronger deterrence not to breach the maximum limits of surcharge if the healthcare provider breaches the agreement.</td>
<td>• Implementation of Universal Health Insurance began.</td>
<td>• Access to health insurance has been expanded by including stateless persons and refugees within the scope of Universal Health Insurance.</td>
</tr>
<tr>
<td>• Access to health insurance has been expanded by including stateless persons and refugees within the scope of Universal Health Insurance.</td>
<td>• The Green Card Program was brought under the SSI and its coverage was expanded.</td>
<td>• The legal foundation for Public Private Partnerships was provided with a revision of Law No.3359.</td>
</tr>
<tr>
<td>• A performance-based contribution payment system was introduced.</td>
<td>• The legal foundation for Public Private Partnerships was provided with a revision of Law No.3359.</td>
<td>• The legal foundation for Public Private Partnerships was provided with a revision of Law No.3359.</td>
</tr>
</tbody>
</table>
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

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### Figure 28: Strategic Goals of the MoH

#### Ultimate Goal: To protect and improve people’s health in an equitable manner.

#### Strategic Goal 1: To protect the individual and the community from health risks and foster healthy lifestyles

#### Strategic Goal 2: To provide easily accessible, efficient, appropriate and effective health services to individuals and the community

#### Strategic Goal 3: To respond to the health needs and expectations of individuals based on a patient-centered and holistic approach

#### Values: Equity, Participation, Evidence Based, Sustainability

---
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

- 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.**

- 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%.

- 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.

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.

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

- 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.

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

Source: MoH
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
2: Social Facilities
3: Hospitals
4: Spa and Beauty Center
5: Recreation Area
6: Education Center
7: Mosque, Synagogue, Church
8: Sports Facilities
9: Rehabilitation Facilities
10: Recreation Area
11: Hotel
12: Technology Center
II. A Detailed Look at the Healthcare Industry in Turkey

A. The Turkish Healthcare Market and System

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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**

- **Publicly financed social security system**: Turkey has a high share of public healthcare spending at 77%. This is higher than the OECD average of 72%.
- **Out of pocket spending**: Turkey has relatively low out of pocket spending 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.
- **State pays health premiums**: 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

- 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.

Source: TSB

Figure 38: Market Share of Health Insurance Companies

- 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, Acıbadem and Anadolu Sigorta with an almost 10% market share each.

Source: TSB

Note: Yapı Kredi Sigorta’s and Yapı Kredi Emeklilik’s majority shares were bought by Allianz in March 2013.
## Selected Players in Insurance Sector

<table>
<thead>
<tr>
<th>Name</th>
<th>Logo</th>
<th>What They Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acıbadem Sigorta</td>
<td><img src="image" alt="Acıbadem Sigorta Logo" /></td>
<td>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.</td>
</tr>
<tr>
<td>Allianz Sigorta</td>
<td><img src="image" alt="Allianz Logo" /></td>
<td>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.</td>
</tr>
<tr>
<td>Axa Sigorta</td>
<td><img src="image" alt="Axa Sigorta Logo" /></td>
<td>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.</td>
</tr>
<tr>
<td>ERGO Sigorta</td>
<td><img src="image" alt="ERGO Logo" /></td>
<td>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.</td>
</tr>
<tr>
<td>Groupama Sigorta</td>
<td><img src="image" alt="Groupama Logo" /></td>
<td>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.</td>
</tr>
<tr>
<td>Mapfre Genel Sigorta</td>
<td><img src="image" alt="Mapfre Sigorta Logo" /></td>
<td>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.</td>
</tr>
<tr>
<td>Zurich Sigorta</td>
<td><img src="image" alt="Zurich Logo" /></td>
<td>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.</td>
</tr>
</tbody>
</table>
## Success Stories

### 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 Isvicre, 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 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 SIGORTA

- Acibadem Sigorta started its operations in 2004 with the name Acibadem 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 Acibadem 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 Acibadem 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.

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.

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.

![Figure 41: Number of Visits to Primary Care Facilities](chart1.png)

![Figure 42: Number of Visits To Health Centers and Family Medicine Centers](chart2.png)

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%

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

- 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.

- 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**

- Mexico
- France
- Singapore
- Malaysia
- India
- Turkey

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.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Logo</th>
<th>What They Do</th>
</tr>
</thead>
</table>
| Acıbadem Healthcare Group                 | ![Acıbadem Logo](image) | • 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                         | ![American Hospital Logo](image) | • 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 Policlinics |
| Anadolu Medical Center                    | ![Anadolu Medical Center Logo](image) | • Founded in 2005, it has an international affiliation with Johns Hopkins Medical Center  
• 1 Hospital, 2 Outpatient Clinics |
| Group Florence Nightingale                | ![Group Florence Nightingale Logo](image) | • 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                   | ![International Hospital Logo](image) | • Founded in 1989, it has an international affiliation with Harvard Medical International  
• 1 hospital, 1 Medical Center |
| Medical Park Hospitals Group              | ![Medical Park Hospitals Group Logo](image) | • Founded in 1995  
• 15 Hospitals, 2 Hospital Complexes, 2 Medical Centers |
| Medicana Health Group                     | ![Medicana Health Group Logo](image) | • Founded in 1992  
• 6 Hospitals, 2 Dental Clinics |
| Memorial Healthcare Groups               | ![Memorial Healthcare Groups Logo](image) | • Founded in 2000  
• 6 Hospitals, 2 Dental Clinics |
| Universal Hospitals Group                | ![Universal Hospitals Group Logo](image) | • Founded in 1992, it has an international affiliation with Massachusetts General Hospital  
• 12 Hospitals |
Success Stories

Established in 1991, Acıbadem 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, Acıbadem runs 5 cancer, 10 heart care, 9 infertility, 5 transplant, 3 spine and joint, 1 sports medicine, 6 nuclear and 3 robotic surgery centers.

Acıbadem also has a stem cell and umbilical cord bank where research studies are conducted in collaboration with Acıbadem University on cell treatment and regenerative medicine.

As of January 2012, Acıbadem 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 Acıbadem 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 Acıbadem, while facilitating the exit of the Abraaj Group with its 50% stake in the business.

“Our investment in Acıbadem 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Logo</th>
<th>What They Do</th>
<th>Website</th>
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<tbody>
<tr>
<td><strong>The Ministry of Health of Turkey (MoH)</strong></td>
<td></td>
<td>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.</td>
<td><a href="http://www.saglik.gov.tr">www.saglik.gov.tr</a></td>
</tr>
<tr>
<td><strong>The Ministry of Culture and Tourism</strong></td>
<td></td>
<td>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.</td>
<td><a href="http://www.kultur.gov.tr">www.kultur.gov.tr</a></td>
</tr>
<tr>
<td><strong>Social Security Institute (SGK)</strong></td>
<td></td>
<td>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.</td>
<td><a href="http://www.sgk.gov.tr">www.sgk.gov.tr</a></td>
</tr>
<tr>
<td><strong>Private Hospitals and Health Institutions Association (OHSAD)</strong></td>
<td></td>
<td>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.</td>
<td><a href="http://www.ohsad.org.tr">www.ohsad.org.tr</a></td>
</tr>
</tbody>
</table>
# Major Stakeholders

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<th>What They Do</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accredited Hospitals Association</td>
<td><img src="logo.png" alt="Logo" /></td>
<td>The Accredited Hospitals Association protects the rights and interests of internationally accredited hospitals and healthcare professionals working in these institutions.</td>
<td><a href="http://www.ahd.org">www.ahd.org</a></td>
</tr>
<tr>
<td>Turkish Medical Association (TTB)</td>
<td><img src="logo.png" alt="Logo" /></td>
<td>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.</td>
<td><a href="http://www.ttb.org.tr">www.ttb.org.tr</a></td>
</tr>
<tr>
<td>Health Industry Employers’ Association of Turkey (SEİS)</td>
<td><img src="logo.png" alt="Logo" /></td>
<td>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.</td>
<td><a href="http://www.seis.org.tr">www.seis.org.tr</a></td>
</tr>
<tr>
<td>Health Establishments Association (TÜSİDER)</td>
<td><img src="logo.png" alt="Logo" /></td>
<td>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.</td>
<td><a href="http://www.tusider.org.tr">www.tusider.org.tr</a></td>
</tr>
</tbody>
</table>
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**

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

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

![Graph showing medical device exports from 2007 to 2012]

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

<table>
<thead>
<tr>
<th>Accessibility, Safety, Efficacy &amp; Rational Use of Medical Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>• To improve, monitor and evaluate quality standards for biological products and medical devices</td>
</tr>
<tr>
<td>• To develop, monitor and evaluate evidence-based implementation standards for medical devices used for treatment purposes</td>
</tr>
<tr>
<td>• To organize awareness-raising events</td>
</tr>
<tr>
<td>• To increase the number of inspections for GCP and GMPs</td>
</tr>
<tr>
<td>• To improve the process for evaluating applications and licensing</td>
</tr>
<tr>
<td>• To ensure the effective use of medical devices</td>
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</tbody>
</table>

#### 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

<table>
<thead>
<tr>
<th>Name</th>
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<th>What They Do</th>
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<tbody>
<tr>
<td>The Ministry of Health of Turkey (MoH)</td>
<td><img src="saglik_bakanligi.png" alt="Logo" /></td>
<td>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.</td>
<td><a href="http://www.saglik.gov.tr">www.saglik.gov.tr</a></td>
</tr>
<tr>
<td>The Turkish Drug And Medical Device Institute</td>
<td><img src="tibbi_ilig.png" alt="Logo" /></td>
<td>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.</td>
<td><a href="http://www.iegm.gov.tr">www.iegm.gov.tr</a></td>
</tr>
<tr>
<td>Turkish Standards Institute (TSE)</td>
<td><img src="tse.png" alt="Logo" /></td>
<td>The TSE makes conformity assessments for CE marks demonstrating conformity of products to European standards.</td>
<td><a href="http://www.tse.org.tr">www.tse.org.tr</a></td>
</tr>
<tr>
<td>Social Security Institute (SGK)</td>
<td><img src="sgk.png" alt="Logo" /></td>
<td>The Social Security Organization is responsible for financing the MoH and university hospitals for the procurement of medical devices.</td>
<td><a href="http://www.sgk.gov.tr">www.sgk.gov.tr</a></td>
</tr>
<tr>
<td>The Health Industry Employers’ Association of Turkey (SEİS)</td>
<td><img src="seis.png" alt="Logo" /></td>
<td>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.</td>
<td><a href="http://www.seis.org.tr">www.seis.org.tr</a></td>
</tr>
<tr>
<td>The Healthcare Products Manufacturers and Representatives Association (SADER)</td>
<td><img src="sader.png" alt="Logo" /></td>
<td>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.</td>
<td><a href="http://www.sader.org.tr">www.sader.org.tr</a></td>
</tr>
<tr>
<td>Federation of Medical Device Manufacturers and Suppliers Association (TÜMDEF)</td>
<td><img src="tumdef.png" alt="Logo" /></td>
<td>TÜMDEF was established in 2004 and works to increase cooperation, industry standards and the adoption of new technology within the Turkish medical devices sector.</td>
<td><a href="http://www.tumdef.org.tr">www.tumdef.org.tr</a></td>
</tr>
</tbody>
</table>
Success Stories

Biçakçiler 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.

Biçakçiler 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 Biçakçiler’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 Biçakçiler, Ferhat Biçakçı

“Investing in Biçakçiler 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 Biçakciler’s frontier market position, strong and trusted brand, multi-product and multi-channel strategy, and extensive distribution network across Turkey and worldwide, Biçakciler’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 Biçakcilar, 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 imagining 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 headquarters 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**

- 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.

Source: MoH, TurkStat
The number of health professionals is set to increase in line with strategic targets...

- 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**

- 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.

**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.

**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**

<table>
<thead>
<tr>
<th>Year</th>
<th>Researchers (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>7,169</td>
</tr>
<tr>
<td>2007</td>
<td>9,078</td>
</tr>
<tr>
<td>2010</td>
<td>9,779</td>
</tr>
</tbody>
</table>

CAGR 6.4%

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Researchers (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>107</td>
</tr>
<tr>
<td>2004</td>
<td>156</td>
</tr>
<tr>
<td>2005</td>
<td>263</td>
</tr>
<tr>
<td>2006</td>
<td>275</td>
</tr>
<tr>
<td>2007</td>
<td>517</td>
</tr>
<tr>
<td>2008</td>
<td>533</td>
</tr>
<tr>
<td>2009</td>
<td>905</td>
</tr>
<tr>
<td>2010</td>
<td>1,067</td>
</tr>
</tbody>
</table>

CAGR 58.4%

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.

- 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.

- 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.

- 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

- 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.

- 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.

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

- 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

- 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.
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**

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

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.

- 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 71\textsuperscript{st} in the World Bank’s \textit{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 \textit{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.

\textbf{Figure 72: Ease of Doing Business Analysis Ranking, 2013}

\begin{itemize}
  \item \textbf{Turkey} 71
  \item \textbf{Romania} 72
  \item \textbf{Regional Average (Eastern Europe \& Central Asia)} 73
  \item \textbf{China} 91
  \item \textbf{Regional Average (Middle East \& North Africa)} 98
  \item \textbf{Russian Federation} 112
  \item \textbf{Brazil} 130
  \item \textbf{India} 132
\end{itemize}

Source: Doing Business 2013, The World Bank
Several incentive plans are available to investors through the Turkish Investment Incentive Program.

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.
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.

<table>
<thead>
<tr>
<th>Incentive Program</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TÜBİTAK-TEYDEB Program</td>
<td>25.0%</td>
</tr>
<tr>
<td>TÜBİTAK Industry R&amp;D Projects Support Programme</td>
<td>15.9%</td>
</tr>
<tr>
<td>Law No. 4691 on Technology Development Zones</td>
<td>22.7%</td>
</tr>
<tr>
<td>Law No. 5746 on Supporting R&amp;D Activities</td>
<td>22.7%</td>
</tr>
<tr>
<td>Entrepreneur Support (TÜBİTAK / KOSGEB)</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

*Figure 74: Share of Total Incentives Granted*
Moreover, there are specific incentives to boost health-related tourism

<table>
<thead>
<tr>
<th>Activity</th>
<th>Support</th>
</tr>
</thead>
</table>
| 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)                                                                                             |

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.
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**

- USA: 70,497
- Germany: 10,465
- UK: 7,947
- Spain: 5,530
- Belgium: 4,560
- Brazil: 3,440
- Turkey: 1,267

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

- 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

**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.

- 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

- 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

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>Law 3218 on Free Zones</td>
</tr>
<tr>
<td>2011</td>
<td>Decree Law No. 633 on the Organization and Mandate of the Ministry of Health and Subordinate Agencies</td>
</tr>
<tr>
<td>2013</td>
<td>No medical free zones in operation</td>
</tr>
<tr>
<td>2017</td>
<td>4 medical free zones will be built by 2017</td>
</tr>
<tr>
<td>2023</td>
<td>10 medical free zones will be built by 2023</td>
</tr>
</tbody>
</table>

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

1. Investor suggests a location and a project.
2. The Ministry of Economy consults with the MoH and evaluates the project.
3. The project is forwarded to the Cabinet.
4. The Cabinet announces investor and the location of the investment.
5. Infrastructure development and planning for the chosen location.
6. Promotion of the project and recruitment of investors.
7. Establishment of health, education and R&D centers, technoparks and social facilities.
There are plans to increase health tourism revenue to USD 20 billion by 2023

Figure 81: Patient and Revenue Projections in Health Tourism

- 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, Izmir, 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.

- 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

- 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

- 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.

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

- 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:

**Tender Phase**
- Projects are awarded through one of the following procedures:
  1. Open Bid Procedure (preferred)
  2. Open Bid Procedure among bidders selected through a pre-qualification process
  3. Negotiated procedure (only allowed in a limited set of circumstances)

**Build**
- The project company secures the financing required for the completion of the project.
- If the land on which the facility will be built is treasury-owned, the MoH arranges for the land to be used by the project company, free of charge, for the project’s duration.
- During the investment period, the transactions between the MoH and the company are exempt from the stamp tax.

**Lease**
- Once the health facility is built according to the contract standard, the MoH will lease the facility for a maximum period of 30 years.
- The MoH will pay the project company a yearly lease adjusted annually on the basis of the Turkish Producer Price Index and the Turkish Consumer Price Index.
- During this period, the project company also has the right to operate non-healthcare facilities.

**Transfer**
- At the end of the contract term, the project company returns the healthcare facilities built to the MoH in good working condition and without any encumbrances.
- If the land on which the facility is developed is not treasury-owned, the MoH takes necessary steps to adequately compensate related parties.
### Projects in the Pipeline...

<table>
<thead>
<tr>
<th>PPP Projects in Healthcare as of December 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-qualification tender announcement phase</strong></td>
</tr>
<tr>
<td>Istanbul Bakırköy Integrated Health Campus</td>
</tr>
<tr>
<td>Istanbul Üsküdar Public Hospital</td>
</tr>
<tr>
<td>Eskişehir City Hospital</td>
</tr>
<tr>
<td>Kocaeli Integrated Health Campus</td>
</tr>
<tr>
<td>TPHA + TPMDA Campus</td>
</tr>
</tbody>
</table>

| **Pre-qualification phase** |
| Bursa Integrated Health Campus | 1,355 beds |
| Isparta City Hospital | 755 beds |
| İzmir 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 |

| **Bid phase** |
| Yozgat Education and Research Hospital | 475 beds |
| Istanbul İkitelli Integrated Health Campus | 2,682 beds |
| Ankara Bilkent Integrated Health Campus | 3,660 beds |
| Ankara Etlik Integrated Health Campus | 3,566 beds |
| Kayseri Integrated Health Campus | 1,583 beds |

| **Final Bid phase** |
| **Contract phase** |

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

- 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.

- 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.

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**

![Chart showing the percentage of health institutions sharing electronic information from 2011 to 2023.]

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

![Chart showing the percentage of indicators available on Health.Net that meet international standards from 2011 to 2023.]

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

![Chart showing the rate of appointments made via the central hospital appointment system from 2011 to 2023.]

**Figure 91: Percentage of Paperless Hospitals**

![Chart showing the percentage of paperless hospitals from 2011 to 2023.]

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

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of mobile phone users</th>
<th>No. of 3G phone subscribers</th>
<th>3G market as % of entire mobile market</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>31.4%</td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>2011</td>
<td>48.1%</td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td>2012</td>
<td>61.9%</td>
<td></td>
<td>20%</td>
</tr>
<tr>
<td>2013</td>
<td>69.0%</td>
<td></td>
<td>30%</td>
</tr>
<tr>
<td>2014</td>
<td>76.2%</td>
<td></td>
<td>40%</td>
</tr>
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<td>2015</td>
<td>88.9%</td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>2016</td>
<td>88.1%</td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td>2017</td>
<td>91.3%</td>
<td></td>
<td>70%</td>
</tr>
</tbody>
</table>

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

**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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