

Health Systems in Transition

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Cyprus

Health system review

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Contents

Preface	v
Acknowledgements	vii
List of abbreviations	ix
List of tables, figures and boxes	xi
Abstract	xiii
Executive summary	xv
1. Introduction	1
1.1 Geography and sociodemography	1
1.2 Economic context	4
1.3 Political context	6
1.4 Health status	7
2. Organization and governance	13
2.1 Overview of the health system	14
2.2 Historical background	14
2.3 Organization	16
2.4 Decentralization and centralization	19
2.5 Planning	20
2.6 Intersectorality	20
2.7 Health information management	21
2.8 Regulation	23
2.9 Patient empowerment	29
3. Financing	35
3.1 Health expenditure	36
3.2 Sources of revenue and financial flows	42
3.3 Overview of the statutory financing system	44
3.4 Out-of-pocket payments	48
3.5 Voluntary health insurance	53

3.6 Other financing	55
3.7 Payment mechanisms	56
4. Physical and human resources	59
4.1 Physical resources	60
4.2 Human resources	65
5. Provision of services	73
5.1 Public health	73
5.2 Patient pathway	79
5.3 Primary/ambulatory care	80
5.4 Inpatient care	85
5.5 Emergency care	86
5.6 Pharmaceutical care	87
5.7 Rehabilitation/intermediate care	89
5.8 Long-term care	91
5.9 Services for informal carers	92
5.10 Palliative care	93
5.11 Mental health care	94
5.12 Dental care	96
5.13 Complementary and alternative medicine	97
5.14 Health services for specific populations	97
6. Principal health care reforms	99
6.1 Analysis of recent reforms	99
6.2 Future developments	102
7. Assessment of the health system	105
7.1 Stated objectives of the health system	106
7.2 Financial protection and equity in financing	107
7.3 User experience and equity of access to health care	108
7.4 Health outcomes, health service outcomes and quality of care	110
7.5 Health system efficiency	112
7.6 Transparency and accountability	114
8. Conclusions	117
9. Appendices	121
9.1 References	121
9.2 Useful web sites	125
9.3 HiT methodology and production process	125

Preface

The Health Systems in Transition (HiT) series consists of country-based reviews that provide a detailed description of a health system and of reform and policy initiatives in progress or under development in a specific country. Each review is produced by country experts in collaboration with the Observatory's staff. In order to facilitate comparisons between countries, reviews are based on a template, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a report.

HiTs seek to provide relevant information to support policy-makers and analysts in the development of health systems in Europe. They are building blocks that can be used:

- to learn in detail about different approaches to the organization, financing and delivery of health services and the role of the main actors in health systems;
- to describe the institutional framework, the process, content and implementation of health care reform programmes;
- to highlight challenges and areas that require more in-depth analysis;
- to provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in different countries; and
- to assist other researchers in more in-depth comparative health policy analysis.

Compiling the reviews poses a number of methodological problems. In many countries, there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services are based on a number of different sources, including

the World Health Organization (WHO) Regional Office for Europe's European Health for All database, data from national statistical offices, Eurostat, the Organisation for Economic Co-operation and Development (OECD) Health Data, data from the International Monetary Fund (IMF), the World Bank's World Development Indicators and any other relevant sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate review.

A standardized review has certain disadvantages because the financing and delivery of health care differ across countries. However, it also offers advantages, because it raises similar issues and questions. HiTs can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situation. They can also be used to inform comparative analysis of health systems. This series is an ongoing initiative and material is updated at regular intervals.

Comments and suggestions for the further development and improvement of the HiT series are most welcome and can be sent to info@obs.euro.who.int.

HiTs and HiT summaries are available on the Observatory's web site (<http://www.healthobservatory.eu>).

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List of abbreviations

Abbreviations	
AHK	Electricity Authority of Cyprus
AKEL	Progressive Party of the Working People
ATHK	Cyprus Telecommunications Authority
CAM	complementary and alternative medicine
CAP	centrally authorised procedure
CDC	Cyprus Dental Council
CMC	Cyprus Medical Council
CPD	continuing professional development
CT	computerized tomography
CYSTAT	Department of Statistics and Research in the Ministry of Finance
DEOK	Democratic Labour Federation of Cyprus
DIKO	Democratic Party
DISY	Democratic Rally of Cyprus
DPHS	Department of Pharmaceutical Services
DRG	diagnosis-related group
DTP	diphtheria, tetanus, pertussis
EDEK	Socialist party
EFTA	European Free Trade Association
EMR	electronic medical record
EOKA	National Organization of Cypriot Fighters
ETYK	Cyprus Union of Bank Employees
EU	European Union
EU27	all 27 EU member states as of 2012
EUnetHTA	European network for Health Technology Assessment
EUROKO	European Party
FFS	fee for service
GDP	gross domestic product
GHIS	General Health Insurance System
GMC	General Medical Council

Abbreviations	
HBV	hepatitis B vaccine
HIO	Health Insurance Organization
HTA	health technology assessment
INN	international non-proprietary name
IT	information technology
MAH	market authorization holder
MoF	Ministry of Finance
MMR	measles, mumps, rubella
MP	Member of Parliament
MRI	magnetic resonance imaging
MRP	mutual recognition procedure
NGH	Nicosia General Hospital
NGO	non-governmental organization
OECD	Organisation for Economic Cooperation and Development
OPV/IPV	oral polio vaccine/inactivated polio vaccine
OTC	over the counter
PDS	Public Dental Services
PEO	Pancyprian Federation of Labour
POM	prescription-only medicine
PPP	purchasing power parity
PRPs	pharmacy retail prices
SEK	Cyprus Workers' Confederation
SFEK	Cyprus Association of Pharmaceutical Companies
THE	total health expenditures
THEMEA	therapeutic unit for addicted persons
VAT	value added tax
VHI	Voluntary Health Insurance
WHO	World Health Organization

List of tables, figures and boxes

Tables		page
Table 1.1	Trends in population/demographic indicators, selected years	4
Table 1.2	Macroeconomic indicators, selected years	5
Table 1.3	Mortality and health indicators, selected years	7
Table 1.4	Notification rate per 100 000 population in selected communicable diseases for Cyprus and EU27	8
Table 1.5	Main causes of death, number of cases, selected years	9
Table 1.6	Maternal, child and adolescent health indicators, selected years	11
Table 2.1	Pharmaceutical expenditure in Cyprus, 2008	28
Table 2.2	General satisfaction in Cyprus public hospitals	31
Table 2.3	Cross-border health care for Cyprus, from and to the EU and European Free Trade Association (EFTA) countries	32
Table 2.4	Number of patients and cost per year for treatment abroad	33
Table 3.1	Trends in health expenditure in Cyprus, selected years	37
Table 3.2	Mean annual consumption expenditure in health per adult equivalent by income decile	49
Table 3.3	User charges for health services provided by the public sector	51
Table 3.4	Estimation of payment ceilings as a percentage of patient income	52
Table 3.5	VHI in Cyprus	54
Table 3.6	Provider-payment mechanisms	56
Table 3.7	Payment methods for health care personnel	58
Table 4.1	Public hospitals in Cyprus	60
Table 4.2	Items of functioning diagnostic imaging technologies (mammography machines, MRI units, CT scanners) per 100 000 population in 2009, selected countries	64
Table 4.3	Health workers in Cyprus and relative percentages (selected years)	67
Table 5.1	Immunization coverage 2000–2009	75
Table 5.2	Quality ratings of outpatient care in 1996 and 2002 on a scale of 1 (very poor) to 10 (excellent)	82
Table 5.3	Patient views on aspects of an outpatient visit	83
Table 5.4	Services offered to long-term care patients by informal carers in Cyprus and EU27 as percentage of respondents	93
Table 5.5	Palliative care facilities in Cyprus, 2011	93

Figures

	page	
Fig. 1.1	Map of Cyprus	2
Fig. 2.1	Organization of the social protection system	15
Fig. 2.2	Organization of the Ministry of Health	17
Fig. 2.3	Frequency of use as preference country (2009)	27
Fig. 3.1	Health expenditure as a share (%) of GDP in the WHO European Region, latest available year	38
Fig. 3.2	Trends in health expenditure as a share (%) of GDP in Cyprus and selected countries, 1995 to latest available year	39
Fig. 3.3	Health expenditure in PPP per capita in the WHO European Region, latest available year	40
Fig. 3.4	Health expenditure from public sources as a percentage of total health expenditure in the WHO European Region, latest available year	41
Fig. 3.5	Financial flows and flow of services in the Cyprus health system	43
Fig. 3.6	Mean OOP payments as share of household income	50
Fig. 4.1	Operating indicators in Cyprus and EU average, 1990 to latest available year	62
Fig. 4.2	Beds in acute care hospitals per 100 000 population in Cyprus and selected countries, 1990 to latest available year	63
Fig. 4.3	Number of physicians per 100 000 population in Cyprus and selected countries, 1990 to latest available year	66
Fig. 4.4	Number of nurses per 100 000 population in Cyprus and selected countries, 1990 to latest available year	67
Fig. 4.5	Number of physicians and nurses per 1 000 000 population in the WHO European Region, latest available year	68
Fig. 4.6	Number of dentists per 100 000 population in Cyprus and selected countries, 1990 to latest available year	69
Fig. 4.7	Number of pharmacists per 100 000 population in Cyprus and selected countries, 1990 to latest available year	70
Fig. 5.1	The patient pathway	80
Fig. 5.2	Outpatient contacts per person per year in the WHO European Region, latest available year	84

Boxes

	page	
Box 6.1	Reforms already taken by the Ministry of Health	101

Abstract

The health system in Cyprus comprises separate public and private systems of similar size. The public system, which is financed by the state budget, is highly centralized and tightly controlled by the Ministry of Health. Entitlement to receive free health services is based on residency and income level. The private system is almost completely separate from the public system and for the most part is unregulated and largely financed out of pocket. In many ways there is an imbalance between the public and private sectors. The public system suffers from long waiting lists for many services, a situation that has been worsened by the recent economic crisis, while the private sector has an overcapacity of expensive medical technology that is underutilized. To try to address these and other inefficiencies, a new national health insurance scheme funded by taxes and social insurance contributions has been designed to offer universal coverage and introduce competition between the public and private sectors through changes in provider payment methods. However, the scheme has not been implemented due to cost concerns. Despite the low share of economic resources dedicated to health care and access issues for some vulnerable population groups, overall Cypriots enjoy good health comparable to other high-income countries.

Executive summary

Introduction

Cyprus, a European Union (EU) and Eurozone country, is an island republic covering an area of 9250 sq km in the eastern Mediterranean Sea with a population of 838 897 in the government-controlled area in 2011 (Statistical Service, 2012). Over the past decade, the country has enjoyed economic growth and increasing prosperity mainly due to growth in service industries, such as banking, shipping and tourism. Real gross domestic product (GDP) has been growing at an average annual rate of almost 4% since 1995, compared to less than 2% growth in the euro area. Unemployment has historically been low at about 3%, but it increased to 9.3% in December 2011 as a result of the global financial crisis (Eurostat, 2012a).

Life expectancy at birth is 77.9 years for males and 82.4 years for females (Statistical Service, 2011). The leading causes of death are diseases of the circulatory system and malignant neoplasms. The most common cancer in women is breast cancer with an age-standardized incidence rate of 73 per 100 000 population; the most frequent cancer in men is prostate cancer. There is a low prevalence of HIV infection and high levels of immunization coverage. Although the population in comparison with other EU countries is relatively young, its ageing population poses significant challenges to its already strained health system.

Organization and governance

The health system consists of two parallel delivery systems: a public one and a separate private one. The public system is highly centralized and almost everything regarding planning, organization, administration and regulation is the responsibility of the Ministry of Health. It is exclusively financed by the state budget, with services provided through a network of hospitals and health

centres directly controlled by the Ministry of Health. Public providers have the status of civil servants and are salaried employees. The private system is financed mostly by out-of-pocket payments and to some degree by voluntary health insurance (VHI). It largely consists of independent providers and facilities are often physician-owned or private companies in which doctors are usually shareholders. Other minor health care delivery sub-systems include the Workers' Union schemes, which mostly provide primary care services, and the schemes offered by semi-state organizations such as the Cyprus Telecommunication Authority (ATHK) and the Electricity Authority of Cyprus (AHK). The first mostly have their own network of providers, while the second use private providers. Other public health programmes are administered by a number of other Ministries and agencies, such as the Ministry of Education and Culture, the Ministry of Agriculture, Natural Resources and Tourism, the Police and several non-governmental organizations (NGOs).

In terms of regulation of providers, personnel, pharmaceuticals and medical devices, Cyprus is almost fully in line with corresponding EU directives, which have been incorporated into national legislation. Despite this legislation, in the private sector there are difficulties controlling and regulating areas such as the development of health facilities, high-cost medical technology, staffing and human resource development and quality of services. Additionally, patient empowerment remains an important issue, and there have been positive steps with the enactment of the Safeguarding and Protection of the Patients' Rights Law in 2004.

Financing

Despite its relatively strong economy, Cyprus devotes a low share of its financial resources to health care. According to National Health Accounts data, total health care expenditures (THE) in Cyprus in 2010 accounted for 6.0% of GDP, with the government funding 41.5% of health care expenditures and 58.5% privately funded. Out-of-pocket payments are the dominant private source of health care expenditures and Cyprus has one of Europe's highest proportions of health care spending by household.

The MoF is responsible for collecting tax revenues, which are allocated at the beginning of the year to the different ministries through annual budgets. The final Ministry of Health budget is approved by the government, after a budget creation process that involves numerous stakeholders. The Ministry of Health

is exclusively responsible for the implementation of the budget and no public provider is able to spend beyond approved amounts. All health professionals in the public sector have civil servant status and their payment is on a salary basis.

The public system does not secure universal coverage. It is estimated that only 83% of the population has right of access to the public health system free of charge, while the rest of the population must pay according to fee schedules set by the Ministry of Health to use public services. The legal basis for entitlement to public services is Cypriot or EU citizenship and proof of having earned below a certain level of income, although for some groups, free-of-charge coverage is granted without proof of income or other criteria. A fairly high share of the population is also entitled to health services funded either by workers' unions or semi-state organizations. VHI provides coverage to more than 20% of the population through group or individual schemes.

The services provided by the public system include primary care, specialists' services, diagnostic tests and paramedical services, emergency services, hospital care, pharmaceutical care, dental care, rehabilitation and home care. Cost-sharing measures in the public system are not significant and therefore do not constitute a barrier to access for most people; there is no evidence for informal payments, which in any case are likely to be considered minimal and negligible.

Physical and human resources

Physical and human resources are split between government hospitals and health care centres, and private hospitals, clinics and polyclinics. The majority of physicians, dentists and pharmacists work in the private sector whereas the majority of nurses are employed in the public sector. Over the last decade the majority of newly qualified physicians has pursued careers in non-primary care specialties. As a result there has been a decrease of 20% in the number of GPs from 1995 to 2000.

Because the annual Ministry of Health budget includes a specific allocation for each public hospital according to required needs, there are no incentives for cost-awareness, quality assurance and efficient use of available resources. The pluralistic health system has resulted in a lack of adequate resource distribution and utilization between the public and private sectors. Indicatively, Cyprus has a very high number of CT and MRI scanners compared with the OECD country average, with most of the scanners being concentrated in the private

sector. Moreover, the health care system is characterized by underutilization of information technology and the lack of a universal electronic medical record system to facilitate data mining, coordination and continuity of care, and quality improvement.

There has been continued increase in the number of graduating nurses as a result of new nursing programmes at four local universities (one public and three private). A relative increase in the supply of physicians and pharmacists is also expected as local universities have recently initiated their first medical and pharmacy programmes; a national workforce capacity plan for health workers is needed to ensure that these new workers are able to find employment. Moreover, Continuing Professional Development (CPD) and revalidation of qualification issues need to be addressed in order to ensure medical competency, quality of care and patient safety.

Provision of services

The public system has a large network of providers throughout the country. This network operates alongside that of the private sector, which offers primarily ambulatory care and to some extent hospital care, although data and documentation regarding the private sector is sparse. The link between secondary care and the social care system is informal, the latter being mostly the responsibility of the Ministry of Labour and Social Security.

The fragmentation of the health system, with little continuity of care and poor communication between doctors and other health care providers within and between the private and public sectors, is a major weakness. It leads to inefficiencies in both sectors, duplications of service and underutilization in the private sector. Within the public sector there are problems related to organization and coverage since there is no referral system. There are also difficulties accessing some services due to long waiting times and access for specific groups, such as immigrants, is problematic. There is limited coverage in certain services including dental care (since orthodontics and fixed prosthetics are not provided by the public sector), long-term care, rehabilitation care and palliative care – the last two are mostly provided by NGOs and the charitable sector. Additionally, there is an issue of affordability, especially for the above-mentioned services, since patients in many cases bear the cost for care. The affordability issue is evident not only from high private expenditure as a percentage of total health expenditure, but also from several Eurobarometer surveys.

Principal health reforms

Accession to the EU has led to many reforms in the health system, particularly in terms of policy, regulation and the provision of services. Major challenges include reducing the rising costs of health care, addressing inequalities in access to health care services, and improving the quality and financing of the health system. Reforms in these areas will help to maintain the progress achieved in controlling communicable diseases, to reduce the incidence of chronic diseases and to maintain the environment in a way that safeguards the quality of life.

Prior to EU accession, the parliament approved a law that called for a new health system based on the principles of solidarity, justice and universality. The General Health Insurance System (GHIS) is designed to provide universal coverage within a comprehensive health system. However, the starting date of the GHIS has been repeatedly postponed due to three main reasons: government concerns over costs, the negative impact of the financial crisis on the fiscal revenues, and the time-consuming tender procedures associated with the introduction of the new system. At this time, while there have been many discussions and policy papers written, the only tangible progress has been the creation of the Health Insurance Organization (HIO), which has been appointed as the body responsible for the implementation of the new system. Reorganization and restructuring of the public health care sector and the Ministry of Health, along with the decentralization of health services are key priorities, which will only be fully realized after the implementation of the GHIS.

Assessment of the health system

The general mission of the health system is to safeguard population health and provide high quality health services; yet the current health system has many deficiencies. The fact that the public system does not provide universal coverage and approximately 17% of Cypriots must pay out of pocket to access the public health system, or purchase health care from the private sector, demonstrates that the health system does not guarantee financial protection for the entire population. Major issues include the fragmentation of services, inadequate coordination between the public and the private sector, and a lack of equity in financing. Empirical evidence shows that the health system is disproportionately funded by low- and middle-income households, as indirect taxes constitute 50% of state budget revenues. Nevertheless, the public health

system primarily provides services to low-income households. Other problems that have been identified include the uncontrolled deployment and use of high-cost medical technology in the private sector, long waiting times in the public sector, uninsured illegal immigrants and other shortages or inefficiencies in fields of care including rehabilitation, long-term and palliative care.

Surveys reveal that a high percentage of citizens hold a favourable opinion about the availability and accessibility of the system, despite long waiting lists. There are also contradictory findings from population-based surveys on quality and safety. In terms of outcomes, although barriers to access for some groups lead to unmet need, generally Cypriots are in good health compared to the populations of other EU countries. However, this is in jeopardy as risk factors such as obesity and smoking may have a negative impact on the future health status of the population.

There is room for improvement in efficiency, transparency, quality and accountability. Additional patient empowerment and citizen participation in decision making, better hospital management and governance, and better control of biomedical technology deployment and use, are some of the priorities necessary to improve performance.

1. Introduction

Cyprus, a European Union (EU) and Eurozone country, is an island republic covering an area of 9250 sq km in the eastern Mediterranean Sea with a population of 838 897 in the government-controlled area in 2011 (Statistical Service, 2012).

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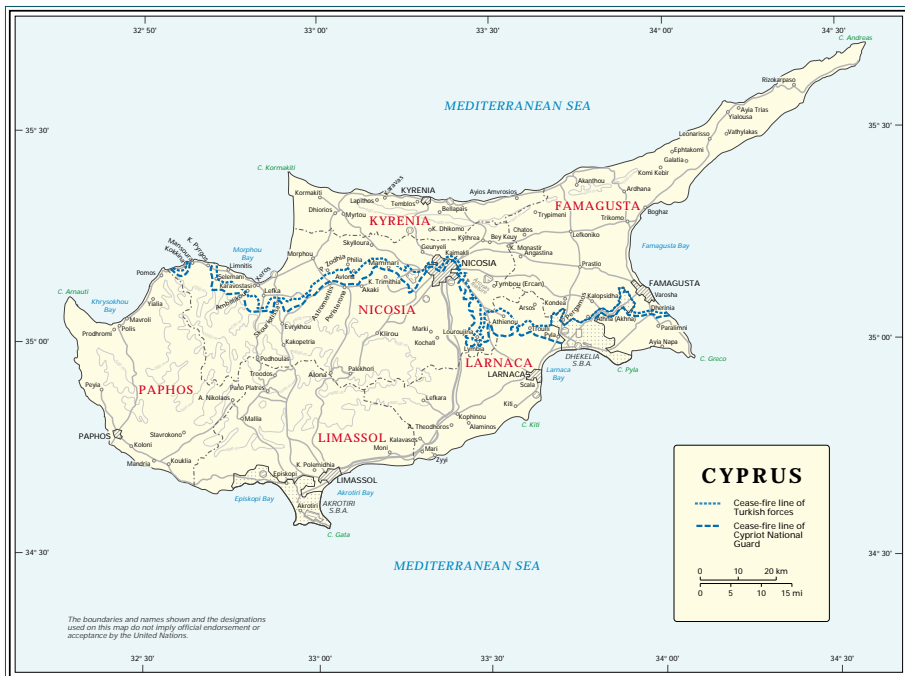
1.1 Geography and sociodemography

Cyprus is the third largest Mediterranean island after Sicily and Sardinia, and is located 60 km south of Turkey and 300 km north of Egypt. Situated at the intersection of important transport and communication routes linking Europe to the Middle East and Asia, it has historically been influenced culturally and economically by its geographical location.

The island consists of a large central plain (Messaoria plain) and two mountain ranges – the Pentadaktylos range along the north coast and the Troodos massif in its central and south-western parts. It has approximately 648 km of Mediterranean coastline. Administratively, the country is divided into six districts: Nicosia, Famagusta, Kyrenia, Larnaca, Limassol and Paphos (Fig. 1.1). Approximately 70.2% of the population resides in urban areas with an average household size of 2.84 persons (Statistical Service, 2012). Cyprus has an intense Mediterranean climate with hot, dry summers and mild, rainy winters separated by short autumn and spring seasons.

Fig. 1.1

Map of Cyprus



Source: United Nations Cartographic Section, 1997.

Cyprus has been a divided island since 1974; in-depth discussion of this issue is not appropriate for this report. In general, the government of the Republic of Cyprus has no access to information concerning the northern part of the island. Consequently, unless otherwise stated, all figures and discussions in this report refer to those areas of the Republic of Cyprus in which the government of the Republic of Cyprus exercises effective control.

In 2011, Cyprus's total population was 838 897, an increase of 21.7% from the previous census in 2001. Of the total population, 78.6% are Cypriot citizens, with the remaining population comprising Europeans (13.4%) and third-country nationals (8.0%) (Statistical Service, 2012).

Since the mid-1980s, the total fertility rate has for the most part declined significantly, from a peak of 2.46 children per woman in the period 1982–1985 to 1.51 in the period 2001–2004 and has decreased further to 1.43 in the period 2005–2008. In 2009 the total fertility rate was 1.51 (Statistical Service, 2011).

According to Eurostat data available in 2012, the crude death rate (ratio of the number of events to the average population in a given year) was 6.5 per 1000 inhabitants in 2009, which was tied with Ireland for the lowest rate in the EU27. Consequently, the second highest natural population growth in the EU in 2009 was registered in Cyprus (+5.5%).

Cyprus exhibits the typical demographic characteristics of an ageing country with a declining rate of population growth: a declining proportion of the population is aged less than 15 years and an increasing proportion of the population aged over 65 years (Table 1.1). Although in comparison with other EU countries the population in Cyprus is relatively young, there has been a steady increase in the over-65 population (0.3% growth from 1995 to 2005, compared to 0.9% growth from 2005 to 2009) (Eurostat, 2012a). This has prompted the government to introduce policies targeted at older people such as the development of primary care centres, chronic disease management programmes and other community services, in addition to policies that support young couples with children.

Cyprus demonstrates a high educational attainment level, with 3.0% of students in non-university programmes, 84.9% in undergraduate programmes, 9.7% in postgraduate Master's programmes and 2.4% in doctoral (PhD) programmes (Statistical Service, 2012).

Table 1.1

Trends in population/demographic indicators, selected years

	1995	2000	2005	2009
Total population (thousands)	656.3	697.5	766.4	803.1
Population, female (% of total)	50.5	50.8	50.7	50.4
Population ages 0–14 (% of total)	24.6	22.3	18.4	16.9
Population ages 15–64 (% of total)	64.3	66.4	69.5	70.1
Population ages 65 and above (% of total)	11.0	11.3	12.1	13.0
Population growth (annual growth rate)	1.7	1.0	2.3	0.8
Population density (people per sq km)	81	85	92	96
Fertility rate, total (births per woman)	2.03	1.64	1.42	1.51
Birth rate, crude (per 1 000 people)	15.2	12.2	10.9	12.0
Death rate, crude (per 1 000 people)	7.6	7.7	7.2	6.5
Age dependency ratio [(population 0–14 and 65+/(population 15–64 years)]	55.4	50.5	43.8	42.7
Share of urban population (% of total)	68.1	68.8	69.6	70.2
Average household size (people per household)	3.23	3.09	2.97	2.84
Highest educational attainment for persons 20 years and over				
	1997	2001	2005	2009
Secondary education (% of total)	40	43	47	47
Tertiary education (% of total)	17	25	25	30

Source: Statistical Service, 2012.

The higher education system in Cyprus is shaped by the European higher education area as outlined by the Bologna process. It consists of three public universities (The University of Cyprus, The Open University of Cyprus and The Cyprus University of Technology) and four private universities (European University, Frederick University, University of Nicosia and Neapolis University). In recent years there has been a significant increase in the number of Cypriot students who choose to stay in Cyprus for their studies, as well as an increase in the number of foreign students. Of the over 20 000 Cypriots studying abroad, their main countries of study were: Greece (51.2%), United Kingdom (39.8%), United States of America (1.8%), Bulgaria (1.2%), Hungary (1.1%), France (0.9%) and Germany (0.8%) (Statistical Service, 2012).

1.2 Economic context

Cyprus formally joined the EU as a full member on 1 May 2004. Accession brought the free movement of products, services, employment and capital between Cyprus and the rest of the EU. Cyprus joined the Eurozone in 2008, introducing the euro as its official currency.

Over the past decade, Cyprus has enjoyed economic growth and increasing prosperity mainly due to tourism and services provision (e.g. finance and shipping). The financial sector is mostly comprised of the banking sector, which also provides both insurance and asset management services. There are 43 banks operating in Cyprus, of which eight have Cyprus as their home country with assets of approximately €108.3 billion; the rest are branches or subsidiaries of foreign banks.

Real GDP has been growing at an average annual rate of almost 4% since 1995, compared to less than 2% growth in the euro area (Table 1.2). Concurrently, employment has grown by approximately 2%, sustained by inflows of foreign workers.

Table 1.2
Macroeconomic indicators, selected years

	1995	2000	2005	2009
GDP at current market prices (Euro mn)	7 150.4	9 883.2	13 462.3	16 945.7
GDP at constant market prices (Euro mn)	9 536.3	11 482.3	13 462.3	15 017.4
GDP, PPP (Euro) valuation of country GDP	10 757	14 083	18 592	22 746
GDP per capita at current prices (national currency per person)	11 079.04	14 313.31	17 969.23	21 266.2
GDP per capita, PPP (Euro)	16 667.71	20 394.73	24 816.6	28 544.14
GDP average annual growth rate (%)	6.1	5.04	3.95	-1.74
Cash surplus/deficit (% of GDP)	-0.7	-2.2	-2.3	1.0 (2008)
Public debt (% of GDP)	–	-2.3	-2.4	-6.0
Value added in industry (% of GDP)	22	19	19	20
Value added in agriculture (% of GDP)	5	4	3	2
Value added in services (% of GDP)	72	77	78	78 (2008)
Labour force (total), Cyprus employment in million persons	0.284	0.296	0.348	0.383
Unemployment, total (% of labour force)	2.6	4.9	5.3	5.3
Income or wealth inequality (Gini coefficient x100)	n/a	n/a	28.7	28.4
Poverty rate ^a	n/a	n/a	16.1	16.2
Official exchange rate (Euro)	n/a	n/a	n/a	0.585274 CYP per 1 Euro

Sources: Eurostat, 2012a; Statistical Service, 2012; World Bank, 2012.

Notes: ^a For 2005, this is the percentage of the population that has income below 7 894 Euro; for 2009, it is the percentage of the population with income below 10 459 Euro; n/a, not available.

The economy contracted in 2009 due to the financial crisis, with GDP growth declining by 1.9% (Eurostat, 2012a). The economic slump was driven by negative growth in construction, hotels and restaurants, manufacturing, wholesale and retail trade and transport, storage and communication. However, the financial sector continued to expand, although growth was slower than in 2007 and 2008.

The unemployment rate has been relatively low in recent decades. In the last few years there has been a notable increase in the unemployment rate from 3.6% in 2008 reaching a seasonally adjusted rate of 9.3% in December 2011 (Eurostat, 2012a), which is the highest unemployment rate ever reported and is expected to have implications for health and the health system. Specifically, consistent with a number of studies (Burchell, 1994; Economou, Nikolaou & Theodosiou, 2007; Karsten & Moser, 2009), the increase in unemployment could have an impact on cardiovascular diseases, mental health and disease prevention.

The impact of the financial crisis has already been felt in the health system. In particular, since the financial crisis, anecdotal evidence suggests that there has been a shift in use from private to public services. The impact of the financial crisis on the health system is expected to be higher than in other EU countries because Cypriots already pay nearly half of health care costs out of pocket (see Chapter 3). The continued increase in the share of patients receiving public health care services will cause further stress on the health care budget.

1.3 Political context

Cyprus is an independent, sovereign republic with a presidential democracy. Under the 1960 Constitution, executive power is vested in the President of the Republic, elected by universal direct suffrage for a five-year term. The President appoints the Cabinet of the Republic of Cyprus. The Ministers may be chosen from outside the House of Representatives. Each minister exercises executive power on all subjects within his or her ministry's domain. Legislative power is exercised by the 59 members of the House of Representatives, elected every five years by universal direct suffrage, where 56 members are elected based on proportional representation and three observer members are elected by minority groups. All citizens over the age of 18 years have the right to vote. The House of Representatives enacts legislation and monitors government policies. The Constitution of the Republic of Cyprus provides for a clear separation of powers. Executive power is exercised by the President, the Vice-President and the Council of Ministers; judicial power lies with the courts of the Republic; and legislative power is exercised by the House of Representatives and the Communal Chambers, which are courts that deal with issues related to religion, education, culture and personal status.

Parliamentary elections last took place in May 2011. DISY emerged as the leading party, garnering 34.3% of votes, with AKEL a close second with 32.7%. Each party is represented by 20 and 19 members of parliament (MPs), respectively. Other parties represented in parliament include DIKO (nine seats), EDEK (five seats), EUROKO (two seats) and the Greens (one seat).

1.4 Health status

Life expectancy at birth in EU countries has increased by six years since 1980, reaching 79.4 years in 2008 (Eurostat, 2012a). On average across the 27 EU countries, life expectancy at birth for the three-year period 2005–2007 stood at 75.8 years for men and 81.9 years for women (Eurostat, 2012a). Table 1.3 shows that life expectancy at birth is 77.9 years for males and 82.4 years for females, which is among the highest in the EU.

Table 1.3
Mortality and health indicators, selected years

	1995	2000	2005	2009
Life expectancy at birth, total (years)	77.0	78.0	79.0	80.0
Life expectancy at birth, male (years)	75.3	76.1	77.0	77.9
Life expectancy at birth, female (years)	79.8	81.0	81.7	82.4
Total mortality rate per 1 000 population, adult, male	8.1	8.0	7.6	7.0
Total mortality rate per 1 000 population, adult, female	7.1	7.1	6.7	6.0

Source: Statistical Service, 2011.

According to the European Health Interview Survey 2008 published in 2010, 79.6% of the population aged 15 years and over considers their health status as good or very good, 15.2% consider their health status to be fair and 5.1% bad or very bad (Statistical Service, 2010a). The most frequent longstanding health problems are hypertension, lower back disorders or other chronic back defects, hyperlipidaemia (including hypercholesterolaemia) allergies, neck disorders or other chronic neck defects, severe headaches, asthma, ulcers and diabetes. Cyprus has been almost free of many common infectious and parasitic diseases and has achieved significant progress in communicable disease control compared to the average rate of EU27 (Table 1.4). The pattern of illness in Cyprus largely resembles that of developed industrial countries.

Table 1.4

Notification rate per 100 000 population in selected communicable diseases for Cyprus and EU27

Disease category	2006		2007		2008		2009	
	CY	EU	CY	EU	CY	EU	CY	EU
Sexually transmitted infections including HIV and blood-borne viruses								
Chlamydia infections	0.8	119.5	0.0	135.5	0.1	171.2	0.5	176.1
Gonorrhoea infection	1.02	10.9	0.63	10.5	0.25	9.5	0.87	9.8
Hepatitis B virus infection	0.90	1.66	1.65	1.52	0.88	1.31	0.87	1.15
Hepatitis C virus infection	0.64	7.05	1.14	6.97	0.25	8.0	3.61	7.58
HIV	4.5	6.4	5.8	6.5	4.6	6.5	4.7	5.7
Syphilis	1.7	5.0	1.3	4.7	1.7	4.7	1.9	4.6
Respiratory tract infections								
Legionnaires' disease (legionellosis)	0.13	1.36	0.13	1.24	1.14	1.28	0.38	1.03
Tuberculosis	4.8	n/a	5.43	16.9	6.3	16.4	6.8	9.2
Food and waterborne diseases and zoonoses								
Brucellosis	0.0	0.2	0.0	0.13	0.0	0.15	0.0	0.08
Echinococcus	0.78	0.24	0.51	0.22	0.13	0.22	0.12	0.18
Giardiasis	0.78	5.44	0.51	4.93	0.88	6.38	0.25	5.60
Hepatitis A	0.39	3.94	0.51	2.81	0.50	3.36	0.50	3.47
Leptospirosis	0.0	0.19	0.0	0.22	0.0	0.15	0.0	0.14
Listeriosis	0.13	0.36	0.0	0.34	0.0	0.30	0.0	0.35
Salmonellosis	12.7	35.3	20.6	34.2	21.2	29.6	17.2	23.6
Shigellosis	0.26	1.79	0.0	2.10	0.13	1.78	0.25	1.62
Toxoplasmosis	0.0	0.01	0.0	0.01	0.0	0.01	0.0	0.01
Trichinellosis	0.0	0.14	0.0	0.16	0.0	0.14	0.0	0.15
Typhoid/paratyphoid	0.0	0.27	0.13	0.50	0.63	0.31	0.37	0.30
Emerging and vector-borne diseases								
Malaria	0.13	0.98	0.13	0.88	0.0	1.19	0.13	0.89
Q fever	0.26	0.12	1.01	0.15	3.90	0.50	0.37	0.62
Vaccine-preventable diseases								
Diphtheria	0.0	0.02	0.0	0.0	0.0	0.01	0.0	0.0
Invasive haemophilus	0.0	0.30	0.0	0.34	0.0	0.40	0.25	0.38
Invasive meningococcal disease	0.39	0.94	0.51	1.04	0.25	1.09	0.12	0.89
Invasive pneumococcal disease (IPD)	0.90	5.50	0.77	5.49	2.63	4.15	1.24	4.10
Measles	0.0	1.47	0.0	0.56	0.12	1.72	0.0	0.85
Mumps	0.0	8.81	0.63	4.14	0.38	2.79	0.62	3.22
Pertussis	1.02	2.19	1.01	3.17	0.25	4.19	0.99	3.39
Rubella	0.0	0.21	0.0	1.17	0.0	1.86	0.0	0.14
Tetanus	0.0	0.04	0.0	0.03	0.0	0.03	0.0	0.02

Source: European Centre for Disease Prevention and Control, 2011, adapted by authors.
Note: n/a, not available.

Cyprus has a low prevalence of HIV infections, with an estimated prevalence rate of 0.1% (adult population 20–64 years). From 1986 to 2010, 681 HIV cases were documented in the Ministry of Health surveillance system, with a mean annual incidence of 27 new cases (Ministry of Health, 2012c).

The National AIDS Programme promotes collaboration between governmental and non-governmental stakeholders to minimize the impact of AIDS on the Cypriot population. Adolescent health education and contraceptive use are mainly performed by gynaecologists and paediatricians. Cyprus also recently established a surveillance system to monitor communicable diseases. However, staffing will need to be increased further in order to ensure that monitoring and surveillance targets are fully met.

According to the Ministry of Health, the leading causes of mortality are diseases of the circulatory system, followed by neoplasms, diseases of the respiratory system, endocrine, nutritional and metabolic diseases, and external causes of injury and poisoning (Table 1.5) (Ministry of Health, 2012a). The Ministry of Health implements prevention and health promotion programmes, including successful vaccination and thalassaemia prevention programmes. In particular, by increasing awareness among the general population, by screening carriers and by providing genetic counselling and prenatal diagnoses, new cases of children suffering from thalassaemia have almost been eliminated in Cyprus.

Table 1.5

Main causes of death, number of cases, selected years

Causes of death	2005	2009	2010
Diseases of the circulatory system	2 125	1 951	1 928
Neoplasms	1 012	1 177	1 156
Diseases of the respiratory system	364	395	360
Endocrine, nutritional and metabolic diseases	387	359	365
Symptoms, signs, abnormal findings, ill-defined causes	494	323	264
External causes of injury and poisoning	410	312	291
Diseases of the digestive system	174	141	176
Diseases of the genito-urinary system	140	145	179
Diseases of the nervous system and the sense organs	104	136	133
Infectious and parasitic diseases	54	71	59
Mental and behavioural disorders	41	56	68
Diseases of the blood-forming organs, immunological disorders	31	37	30
Diseases of the skin and subcutaneous tissue	29	29	26
Diseases of the musculoskeletal system/connective tissue	23	22	25
Certain conditions originating in the perinatal period	26	18	20
Congenital malformations and chromosomal abnormalities	11	10	14
Complications of pregnancy, childbirth and puerperium	0	0	1
Total number of deaths in each year	5 425	5 182	5 095

Source: Death register, Health Monitoring Unit, Ministry of Health, 2012a.

The standardized death rate from motor vehicle accidents in 2009 was 10.4 per 100 000 people, which is significantly higher than the EU27 average of 6.7 deaths per 100 000, although it has declined in recent years (WHO Regional Office for Europe, 2012). For the period 2004–2008, the most frequent cancers for men were prostate (27.6% of all sites), colorectal (12.3%), trachea, bronchus and lung (11.7%) and bladder (8.4%). Among women the most frequent cancers were breast cancer (34.9% of all sites), colorectal (11.4%), uterus (6.0%) and thyroid (5.9%) (Ministry of Health, 2012b). Data from the National Cancer Registry, established in 1998 by the Ministry of Health, show an average incidence of 400 female breast cancer cases per year. This corresponds to an age-standardized incidence rate for breast cancer of 73 per 100 000 population, which is comparable to the rates seen in other southern European countries. Cyprus is in need of comprehensive, tailored and targeted campaigns aimed at prevention and early diagnosis of breast cancer. According to a recent study using multivariate models, family history of breast cancer was the strongest predictor of breast cancer risk in the Cypriot population (Hadjisavvas et al., 2010).

Obesity is a significant health problem in Cyprus as it is in all EU countries. On average across EU countries, 15.5% of the adult population is obese (OECD, 2010). A study estimated a paediatric obesity prevalence of 10.3% for males and 9.1% for females in Cyprus, with approximately 15% of both sexes defined as overweight during the period from October 1999 to June 2000 (Savva et al., 2002). A multifaceted public health policy approach is required for reversing the current obesity epidemic that should include educational interventions with health professionals beginning during early childhood, informational initiatives emphasizing the improvement of the nutritional information labelling system, and the control of food and drink advertising (Savva, Chadjoannou & Tornaritis, 2007). According to another recent study in Cyprus, sedentary behaviour, such as watching TV, may be more important than physical activity as a predictor of childhood obesity (Lazarou & Soteriades, 2010). Interventions targeting sedentary behaviours may help in the prevention and treatment of obesity among Cypriot children.

Infant mortality, under-five mortality and maternal mortality have improved over the last decade (Table 1.6). Based on a perinatal health survey for 2007–2009, 36.2% of births were by caesarean section. Caesarean sections are more prevalent in the private sector than in the public sector. Overall, 19.7% of mothers underwent a caesarean section that was scheduled before the onset of labour (Ministry of Health, 2012d).

Table 1.6

Maternal, child and adolescent health indicators, selected years

	1995	2000	2005	Latest available year
Adolescent birth rate	413	274	180	169 (2009)
Infant mortality rate	8.5	5.6	4.6	3.3 (2009)
Early neonatal mortality rate per 1 000 live births	n/a	n/a	2.9	1.1 (2009)
Late neonatal mortality rate per 1 000 live births	n/a	n/a	0.5	0.7 (2009)
Neonatal mortality rate per 1 000 live births	n/a	n/a	3.4	1.9 (2009)
Under-five mortality rate	10.5	8.0	5.7	4.3 (2009)
Maternal mortality rate (modelled estimate, per 100 000 live births)	17	14	11	10 (2008)
Syphilis incidence rate	23	37	21	19 (2010)
Gonococcal infection incidence rate	56	56	16	22 (2010)

Source: Health Monitoring Unit, Ministry of Health, 2012c.
Note: n/a, not available.

Dental health is mostly provided by the private sector. There has been a steady decrease in the level of decayed/missing/filled teeth among children (Charalambous & Theodorou, 2011).

Immunization coverage is very high (see section 5.1.1). The Ministry of Health determines its child immunization policy in line with WHO guidelines. Significant improvements have been achieved by establishing targeted diseases and effectively managing sporadic cases and restricted outbreaks through improved cooperation with the Paediatric Association and paediatricians working in the private sector. High immunization coverage has led to the eradication of neonatal tetanus and diphtheria. It has also led to almost complete eradication of poliomyelitis. Only two cases of poliomyelitis have been reported since 1980, the most recent in 1995. Immunizations in the public sector are provided free of charge and performed by health visitors under the supervision of public health physicians and paediatricians in the maternal and child health centres or school health services. However, the majority of immunizations (58%) are performed by private sector paediatricians paid under a fee-for-service scheme.

Overall, Cypriots enjoy quite good health similar to other European countries, with an average life expectancy at birth of 80 years; however, a number of issues remain to be addressed. The main challenges include the prevalence of obesity, smoking and non-communicable diseases, and providing health care for immigrant and other at-risk populations.

2. Organization and governance

The health system consists of two parallel delivery systems: a public one and a separate private one. The public system is highly centralized and almost everything regarding planning, organization, administration and regulation is the responsibility of the Ministry of Health. It is exclusively financed by the state budget, with services provided through a network of hospitals and health centres directly controlled by the Ministry of Health. Public providers have the status of civil servants and are salaried employees. The private system is financed mostly by out-of-pocket payments and to some degree by voluntary health insurance (VHI). It largely consists of independent providers and facilities are often physician-owned or private companies in which doctors are usually shareholders. Other minor health care delivery sub-systems include the Workers' Union schemes, which mostly provide primary care services, and the schemes offered by semi-state organizations such as the Cyprus Telecommunication Authority (ATHK) and the Electricity Authority of Cyprus (AHK). The first mostly have their own network of providers, while the second use private providers. Other public health programmes are administered by a number of other ministries and agencies, such as the Ministry of Education and Culture, the Ministry of Agriculture, the police, and several non-governmental organizations (NGOs).

In terms of regulation of providers, personnel, pharmaceuticals and medical devices, Cyprus is almost fully in line with corresponding EU directives, which have been incorporated into national legislation. Despite this legislation, in the private sector there are difficulties controlling and regulating areas such as the development of health facilities, high-cost medical technology, staffing and human resource development and quality of services. Additionally, patient empowerment remains an important issue, and there have been positive steps with the enactment of the Safeguarding and Protection of the Patients' Rights Law in 2004.

2.1 Overview of the health system

The health system consists of two parallel delivery systems: a public one and a private one. The public system is exclusively financed by the state budget, with services provided through a network of hospitals and health centres directly controlled by the Ministry of Health. Public providers have the status of civil servants and are salaried employees. The private system is financed mostly by out-of-pocket payments and to some degree by VHI. Other minor health care delivery sub-systems include the Workers' Union schemes, which mostly provide primary care services, and the schemes offered by semi-state organizations such as the ATHK and the AHK. The first mostly have their own network of providers, while the second use private providers.

Health services in the public system are provided by six hospitals (five district hospitals and one paediatric/gynaecological hospital), four specialist centres (Thalassemia Centre, Cyprus Institute of Neurology and Genetics, Bank of Cyprus Oncology Centre, and the Arodafnousa Palliative Care Centre), three small rural hospitals and 38 health centres, as well as many sub-centres for primary services. The private sector is comprised of for-profit hospitals, polyclinics, clinics, diagnostic centres and independent practices.

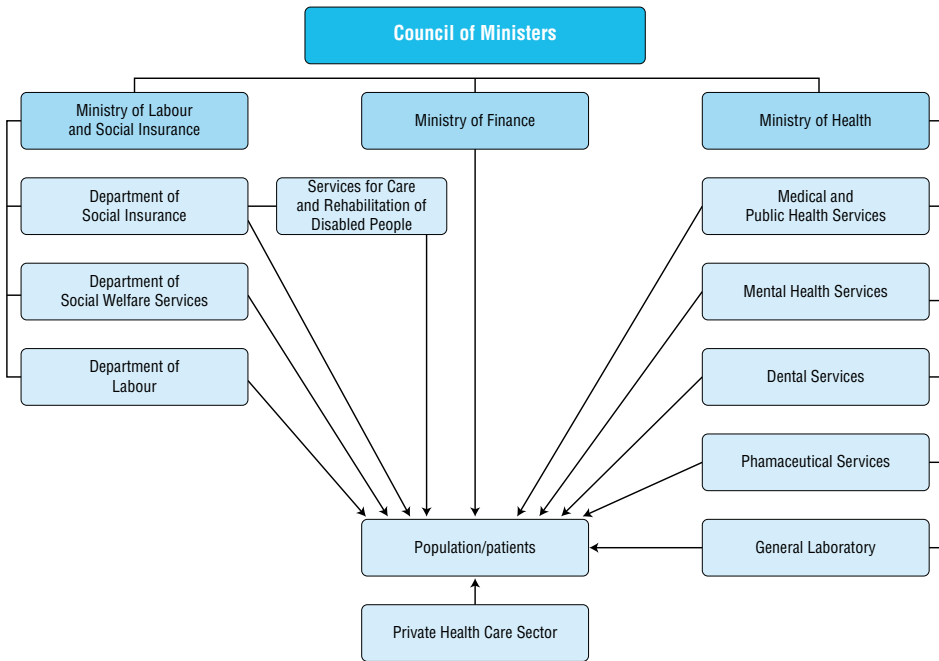
The main actors in the health care system are the Ministry of Health, the Ministry of Finance, the Ministry of Labour and Social Insurance and to a lesser degree the Ministries of Education and Culture, Defence, Commerce, Industry & Tourism, and Agriculture, Natural Resources & Environment. Professional associations also play an important role. These include the Cyprus Medical Association, the Cyprus Nurses and Midwives Association, the Union of Public Doctors and the Union of Public Nurses, the Pancyprian Association of Private Hospitals, the workers' union of Pancyprian Federation of Labour (PEO), Cyprus Workers' Confederation (SEK), and Democratic Labour Federation of Cyprus (DEOK), and some voluntary organizations and NGOs. Some of these organizations are politically influential in the health care planning process. A general overview of the current social protection system is shown in Fig. 2.1.

2.2 Historical background

The history of health care in Cyprus dates back thousands of years. The Bronze Tablet of Idalion inscribed with signs of the Cypriot syllabary (480–470 BC, Bibliotheque Nationale, Paris) is an agreement between the King of ancient Idalion Stasikypros and the city on the one hand, and the doctor Onasilos and

his brothers on the other. According to the tablet, Onasilos and his brothers made an agreement to look after the wounded free of charge during the siege of Idalion by the Persians and the Kitians. As a reward, the King agreed to give the brothers land and money.

Fig. 2.1
Organization of the social protection system



Little was known about the Cypriot health system before 1957 when Cyprus first introduced state-funded health care as a British colony. The scheme was based on a report prepared by the British Middle East Office in Cairo, in response to a request made by the government of Cyprus (Clucas, 1952). The system was founded on Beveridge principles and funded by taxes. However, it has undergone several reforms since its introduction. Most significantly, in 1980 the health system was converted to one in which eligibility for public services was based on income.

In the 1990s, calls for universal health care coverage and for care to be free of charge at the point of service dominated public dialogue. Thus, the cabinet in 1991 decided to commission a study on the creation of a new health scheme, which was conducted by a team of academics from the universities of Leeds,

York and Harvard. A year later the team delivered its final report with proposals on the principles and objectives, organization, management and financing of the new proposed health system (Proposals for a National Health Insurance Scheme, 1992a).

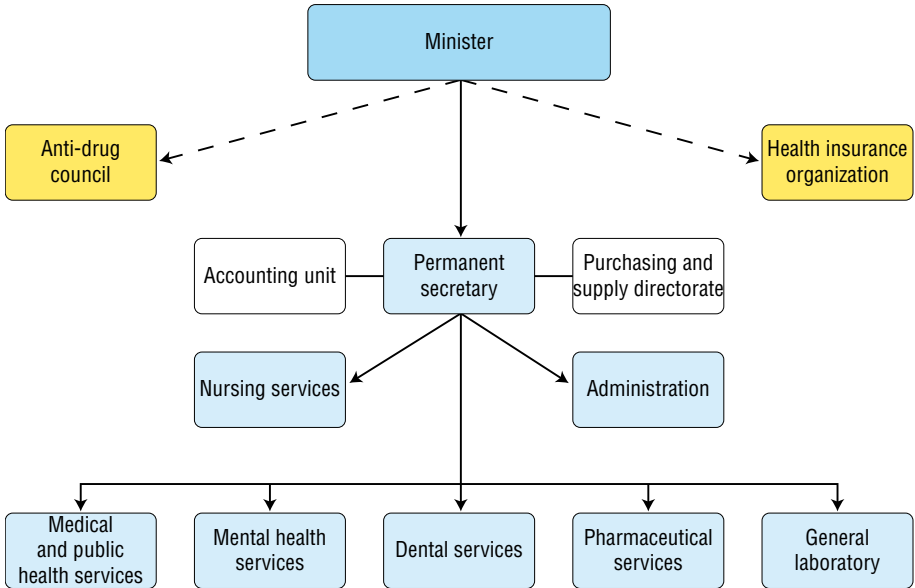
After a long period of public dialogue and preparation, the new GHIS law was finally passed by parliament in 2001. According to the provisions of the Law, the Health Insurance Organization (HIO) was established in 2001 and its Board of Directors was appointed. However, the GHIS itself had not yet been realized. To this end, in 2007 an amendment bill was submitted to the House of Parliament and is pending approval. Despite studies on the expected costs of the GHIS (Proposals for a National Health Insurance Scheme, 1992b; Hsiao & Jakab, 2003; Mercer, 2008), the delay in implementation continues, partially due to concerns over costs, which have been exacerbated by the economic crisis.

2.3 Organization

Through a highly centralized public administration system, the Ministry of Health is responsible for ensuring access to health services for all beneficiaries. Services are provided mainly by public hospitals and health centres, while priority setting, resource allocation, management, decision making, budgeting and the preparation of relevant legislation are exclusively the responsibility of the Ministry of Health. The ministry is also responsible for inspecting, regulating and licensing private hospitals and polyclinics.

The Ministry of Health is organized into various departments including State General Laboratory, Pharmaceutical Services, Medical and Public Health Services, Mental Health Services, Dental Services and Nursing Services (Fig. 2.2). The Anti-drug Council and HIO are also under the supervision of the ministry. As such, one could argue that the organization of the health system is quite simple, lacking multiple administrative levels, multiple agencies and other complexities.

Fig. 2.2
Organization of the Ministry of Health



Source: Ministry of Health, 2012b.

Apart from the Ministry of Health, other ministries and agencies have roles and responsibilities in the broader health care and social protection sector. The Ministry of Labour and Social Insurance can be considered as the second pillar of the overall social protection system. It is responsible for the implementation of government policies for employment, social insurance, social welfare and industrial relations. It also provides social services at home to older and disabled people and is responsible for maternity allowances, sickness benefits, unemployment benefits, old-age pensions, invalidity pensions, widows’ pensions, orphans’ benefits, missing persons’ allowances, marriage grants, maternity grants, funeral grants and benefits for employment accidents and occupational diseases, including injury, disablement and death benefits.

The Ministry of Finance (MoF) has a very important role as it prepares and controls the national budget and consequently decides on the amount of money allocated to the Ministry of Health; it has an indirect role in defining health policy and setting priorities for the broader health care sector. Additionally, the ministry is responsible for the administration of specific allowances and grants such as mobility allowances to disabled workers, financial assistance to persons

with disabilities, child benefits and mothers' allowances. Furthermore, the MoF is responsible for the salaries of public health professionals and the creation and approval of any new job positions in the public health care sector.

The Ministry of Education and Culture is responsible for the education of health professionals, primarily within public and private universities in Cyprus, including the specialties of nursing, health care management and physiotherapy. Further, in cooperation with the Ministry of Health, the Ministry of Education and Culture provides health services as well as health promotion and educational programmes to all pupils in primary and secondary schools.

The Ministry of Defence operates one small military hospital and a network of physicians based in camps. The Ministry of Commerce, Industry and Tourism is responsible for setting regulations regarding medical devices in collaboration with the Ministry of Health, while the Ministry of Agriculture, Natural Resources and Environment is responsible for setting regulations regarding waste disposal.

There are also a number of voluntary organizations and NGOs that play a significant role in providing health care services for specific segments of the population (e.g. the Anti-Cancer Association runs a special centre for palliative care for cancer patients). These organizations are funded mostly by donations, as well as by the Ministry of Health.

Workers' unions, such as PEO, SEK and DEOK also play a role in the health system. Apart from their political influence, these three unions run their own parallel health systems that provide services to their members (see sections 3.3.1 and 3.6.1).

Local authorities play only a minor role in planning, organization and provision of health care services, as they do not have enough power or economic resources to implement policies at a regional level. However, they are responsible for the maintenance of the public health centres located in their area and some of the larger municipalities operate welfare programmes. Nine municipalities have their own health inspectors, responsible for the control and monitoring of public swimming pools, restaurants and mini-markets and for drinking water in their region.

Professional associations of doctors, dentists, pharmacists and nurses have their own role in the health system. Each group has its own Pancyprian Association, in which registration is mandatory for all health professionals. These associations are professional bodies that protect and promote the interests of

their members and are responsible for Continuing Professional Development (CPD) by organizing conferences and seminars. Most of them have enough power to influence political decisions regarding health care planning.

Finally, the role of patients' associations is very limited, since they typically advocate on behalf of very specific groups, such as those suffering from a particular disease. Further, they have no institutional role in health care planning and priority setting, although in some cases they may be asked to submit their own proposals.

2.4 Decentralization and centralization

Cyprus is a small country with a highly centralized public administration system. Public health care services are directly controlled by the Ministry of Health. Most of the system's organizational, administrative and regulatory functions take place at the state level; the lower administrative levels work together with the central administration primarily on public health and health promotion initiatives.

Over the last two decades, there have been proposals to reorganize the Ministry of Health and transfer some administrative authority to public hospitals (Nuffield Institute for Health, 1994). According to these proposals, instead of being decentralized units of the Ministry of Health, public hospitals would be converted into legal public entities, allowing them a considerable degree of autonomy to manage their resources while remaining accountable to the Ministry of Health. As a result, in 2004 the Council of Ministers approved the legal framework for the reorganization of public hospitals (Decision No. 60 377). In July 2007 the Council of Ministers approved a set of guidelines to be incorporated in a draft bill concerning, among other things, issues on the establishment of a legal entity to manage government hospitals (National Reform Programme of Cyprus, 2007). Thus, the ministry would be limited to a strategic role in planning health policy and public health. However, the delay of the GHIS implementation has also led to the delay of any attempts at decentralization.

2.5 Planning

Since the health system is highly centralized, any planning in the public sector originates in the Ministry of Health. Usually any planning starts from a group of directors in the Ministry of Health under the guidance of the Permanent Secretary of the ministry and is subject to final approval by the minister. All discussed and approved proposals are included in the five-year operational plan, which is submitted along with the ministry's budget to parliament for approval. Naturally, any plan or action must be discussed with the MoF in order to secure adequate financing.

The HIO, which is under the supervision of the Ministry of Health, is in charge of planning, implementation and eventually the administration of GHIS. Thus, the Ministry of Health is responsible for planning in the current health system and the HIO will be responsible for planning in the new system with the approval of the Ministry of Health. Apart from the Ministry of Health, the MoF and HIO, there are no other authorities or agencies involved in public health care planning at the central or district level.

Health planning in the public sector is lacking and results in long waiting lists for some services. The uncontrolled deployment of high-cost medical technology in the private sector, as well as the oversupply of private doctors and the continued postponement of the Private Hospital Act (2001) concerning human resources requirements, construction and equipment procurement, are also symptoms of the absence of an effective planning mechanism.

2.6 Intersectorality

Apart from the Ministry of Health, a number of other ministries and agencies contribute to health promotion and prevention. There are several examples of intersectoral planning, implementation and cooperation in the broader health care sector, which mainly relate to food safety, school health services, lifestyle and health education, environmental policies and road safety. The Ministry of Health is collaborating with the Ministry of Education and Culture to offer school health services such as screening, immunization and oral examination. Additionally, health promotion and educational programmes are offered for HIV and sexually transmitted diseases in secondary schools and for smoking, healthy eating, cardiovascular health and accident prevention in primary schools. The Ministries of Health, Agriculture, Natural Resources and Environment, Commerce, Industry and Tourism and Education and Culture are involved in

food safety and healthy diet promotion. A number of campaigns have been undertaken in collaboration with the Cyprus Consumer Association to increase public awareness of the risks of food poisoning and the preventive measures that can be taken throughout the food production process. The Cyprus Police and the Cyprus Fire Service have run campaigns, lectures and training seminars on issues including blood alcohol tests for drivers, violence in stadiums, family violence and child abuse, and illegal drugs. The Asylum Service of the Ministry of Interior offers a range of health and social services to immigrants and asylum seekers, such as social assistance and psychological support.

2.7 Health information management

2.7.1 Information systems

The Department of Statistics and Research (CYSTAT) in the Ministry of Finance is the official public agency responsible for collecting, analysing and disseminating health data. Usually health data are collected through surveys, censuses, public hospitals and health centres. Official health data are published annually in Health and Hospital Statistics and, every six years, in the Family Budget Survey.

Additionally, the Ministry of Health prepares and disseminates an annual report containing data and information on the previous year's activities in the ministerial departments (e.g. Medical and Public Health Services, Mental Health Services, Dental Health Services and Pharmaceutical Services) and the General Laboratory, which administratively is under the Ministry of Health. The Health Monitoring Unit of the ministry collects and codes data on the causes of death and collaborates with the Statistical Service in preparing the national mortality files. The unit is also responsible for the Cancer Registry, perinatal statistics from public maternity units and collection of hospital-based data on injury attendances at emergency departments.

CYSTAT's annual Health and Hospital Statistics report includes data on discharges, outpatient visits, surgical operations, radio diagnostic and laboratory services, maternal and child health services, health personnel, deaths by cause and sex, health status and expenditures. The report is based on data collected from all public hospitals and health centres. Statistical forms are distributed to public medical institutions and completed forms are forwarded to the Statistical Service for compilation, tabulation and analysis. Public hospitals collect data primarily via computerized systems, which have been promoted as

part of the Ministry of Health's strategic plan for increasing the level of hospital computerization. To this end, the Ministry of Health has brought in consultants to implement the Integrated Health Care Information System project, which is the largest health care information system project in Cyprus. The project includes the delivery of hardware and network infrastructure, software and technical services. The main areas recorded within the system are: inpatient and outpatient administration, electronic medical records (EMRs), clinical laboratories and radiology, electronic orders and prescriptions, financial billing, accounting and costing, human resource management and stock control. Nicosia General Hospital and Famagusta General Hospital currently have operational computerized data systems. Data sharing between hospitals and health centres (particularly rural health centres) has been encouraged but is not fully realized. The new electronic system is also able to record individual patient-level health data from visits to hospitals and health centres.

Nevertheless, there are inadequate data for many aspects of the health system, particularly the private sector. Apart from private health expenditure data collected through the Family Budget Surveys and limited data collected on private hospital beds, doctors and nurses, nothing else is officially recorded. This is mainly due to the reluctance of private providers to collect and submit data to the Ministry of Health or the Department of Statistics and Research in the Ministry of Finance. Data are also lacking on chronic diseases, epidemiology and health system performance.

2.7.2 Health technology assessment

Currently there is no system for health technology assessment (HTA). The Ministry of Health did, however, participate in the EUnetHTA (European network for Health Technology Assessment) project in 2006. Safety and performance of medical devices is ensured by CE (European Conformity) marking. Specific health technologies such as MRI and CT scanners, gamma cameras and X-ray units are operated under the Protection from Ionizing Radiation Laws (N. 115(I)/2002); responsibility for this law is held by the Department of Labour Inspection in the Ministry of Labour and Social Insurance.

2.8 Regulation

2.8.1 Regulation and governance of third-party payers

Private insurers and the three small semi-state organizations that run their own health insurance schemes are supervised by the MoF. Private insurers are required to fully comply with EU regulation regarding solvency requirements.

2.8.2 Regulation and governance of providers

Public hospitals and health centres, as decentralized units of the Ministry of Health, are under its jurisdiction and are accountable to the Minister of Health. Each one is governed by a senior official, appointed by the ministry, with relatively limited authority and power. Hospitals and health centres have no financial or managerial autonomy when setting priorities or implementing health programmes. Private hospitals and polyclinics are regulated, controlled and supervised by the Ministry of Health in accordance with the Private Hospital Act (2001). Private laboratories are regulated, controlled and supervised by the Ministry of Health in accordance with the Operation and Registration of Clinical Laboratories Law 1988 (N. 132/88).

2.8.3 Registration and planning of human resources

Cyprus fully complies with the EU Directive 2005/36/EC provisions for the mutual recognition of professional qualifications in EU member states. The relevant national legislation describes all necessary procedures for recognition of qualifications and enrolment in the corresponding register, licensing, accreditation, revalidation and continuing training and education. Cyprus maintains registers for the following categories of health professionals: doctors, dentists, general and mental health nurses, midwives, health visitors, physiotherapists, opticians, chiropractors, dental technicians, occupational therapists, speech therapists and pathologists, laboratory technicians, radiation technologists, pharmacists and chemists. Doctors, nurses, dentists and pharmacists are the largest professional groups in the system.

The Cyprus Medical Council (CMC), consisting of seven members, is the authority responsible for monitoring doctors' qualifications and authorizing doctors to practise medicine. The powers granted by law to the CMC are: keeping medical records, recognizing professional qualifications and registering/removing doctors to/from the Cyprus Medical Register.

Similar provisions exist in order to practise dentistry, where the Cyprus Dental Council (CDC) is the authority responsible for the registration of dentists and the recognition of dental specialties. The CDC is made up of seven dentists, appointed by the Council of Ministers for a period of five years. The Dentists' Registration Law 2004 Article 4(1) provides specific requirements that must be fulfilled in order to practise dentistry.

The Cyprus Nursing and Midwifery Council is the authority responsible for the evaluation of professional qualifications and registration in the corresponding register. It also has the authority to conduct disciplinary investigations. According to the Nursing and Midwifery Laws 1988–2006, registration is compulsory for practising nursing and midwifery.

2.8.4 Regulation and governance of pharmaceuticals

Pharmaceutical products

All drugs sold must be approved and registered by the Drugs Council, which acts as a medicines agency responsible for: (a) issuing market authorization licences; (b) classifying pharmaceuticals; (c) pharmacovigilance; and (d) inspecting manufacturers.

The Department of Pharmaceutical Services (DPhS), which falls under the Ministry of Health, acts as the Secretariat of the Drugs Council. All relevant activities are regulated by a law governing medical products, which has been adopted to fit EU regulations. Consequently, pharmaceutical products are authorized through a Mutual Recognition Procedure (MRP), the Centrally Authorized Procedure (CAP) or a National Procedure.

Pharmaceuticals are divided into two broad classes: prescription-only medicines (POM) and over-the-counter (OTC) products, based on the guidelines of the Council of Europe. The body responsible for the categorization of pharmaceuticals into these classes is the Ministry of Health, which usually adopts the recommendations of the Council of Europe unless special local conditions exist, at which point it may change an OTC pharmaceutical to a POM.

Patent protection is harmonized with EU legislation under the European Patent Convention and guarantees market protection for original pharmaceuticals for 20 years. Under EU legislation there is the possibility of extending this for a further five years under a Supplementary Protection Certificate. Under the recently adopted EU legislation, authorities are also obliged to provide data protection for an 8 + 2 + 1 year period. This provides for an additional

protection period for patented pharmaceuticals. Only after eight years can the pharmaceuticals agency process applications for generic pharmaceuticals under the European Commission Bolar amendment, which can then be marketed when the 10-year data protection period ends (provided that by that time the patent has also expired). Authorities may provide for an additional year of data protection for further innovative indications.

The Marketing Directives, as stipulated in Directive 2001/83/EC, have been implemented in Cyprus through the enactment of the Pharmaceuticals for Human Use (Control of Quality, Supply and Prices) Act, which is administered by the Drugs Council. This act stipulates the conditions under which pharmaceutical advertising can be carried out. The act also restricts giving gifts of significant value to prescribers, as well as the provision of samples to doctors. Samples can be given only after a written request by a physician and the market authorization holder (MAH) must keep a log of all samples given.

Wholesalers and pharmacies

The majority of wholesalers distribute pharmaceutical products through general distributors, although some use their own distribution networks. Distribution companies are joint ventures between the wholesalers and some include repacking units. There is one wholesalers' association – the Cyprus Association of Pharmaceutical Companies (SFEK). Members of this association are wholesalers and/or local agents of multinational companies.

There are no restrictions on establishing pharmacies and most are concentrated in urban areas. Neither internet nor mail-order pharmacies are allowed. The Pharmaceutical Council is responsible for recognizing pharmacists' qualifications and registering pharmacists. The council is also responsible for the opening and licensing of new pharmacies. There is one organization – the Pancyprian Pharmaceutical Association – which the law states all registered pharmacists must join. The DPhS within the Ministry of Health acts as the Secretariat of the Pharmaceutical Council and performs pharmacy inspections.

Pricing

External price referencing is used for all imported pharmaceuticals (brand name, generics, POMs and OTC drugs) and cost-plus pricing is used for locally produced pharmaceuticals (all generics). A price list including pharmacy retail prices (PRPs) for all products available in the private market is published once a year. According to the 2010 price list there are 3407 registered pharmaceuticals, while according to sales data, only 1900 are available on the market. Prices of pharmaceuticals are regulated according to the Pharmaceuticals for Human Use (Control of Quality, Supply and Prices) Act of 2001–2006 [L. 70(I) 2001–2006].

Statutory pricing is applied to all pharmaceuticals dependent upon receipt of a market authorization licence. The MAH must apply to the Price Control Committee and the DPhS for this licence. Following the recommendations of the Price Control Committee, the Ministry of Health sets prices, although it is not bound by the Price Control Committee's recommendations in its final decision. The price of a pharmaceutical must be set within 90 days of receipt of a fully completed application; otherwise, the applicant may freely set the price.

Pricing reforms have taken place from 2003 to 2009, at times leading to reductions in pharmaceutical prices in the private sector. In 2003, a reduction of the margins added onto ex-factory prices resulted in price reductions varying from 15% to 17%. As of 2005, the prices of imported pharmaceuticals are determined by external price referencing. Prices are calculated based on the average of prices in four reference EU countries plus an additional mark-up for the pharmacist. According to reforms in 2009, the pharmacist margin has been set at 37%. The prices of imported generics after external price referencing cannot exceed 80% of the price of the original branded product marketed in Cyprus. For locally manufactured generics, the ex-factory price is based on the production cost plus a mark-up of 20%, which should not exceed 80% of the cost of the original product. Recently, in March 2011, a value-added tax (VAT) of 5% was added to the price of all pharmaceuticals.

Greece is one of the most frequently used reference countries, factoring into the majority of pharmaceutical product prices in Cyprus. Ideally, reference pricing is based on the pattern HMML, requiring that one country with high prices (H), two with medium prices (MM) and one with low prices (L) comprise the basket of reference countries in order to calculate the average price (Fig. 2.3)

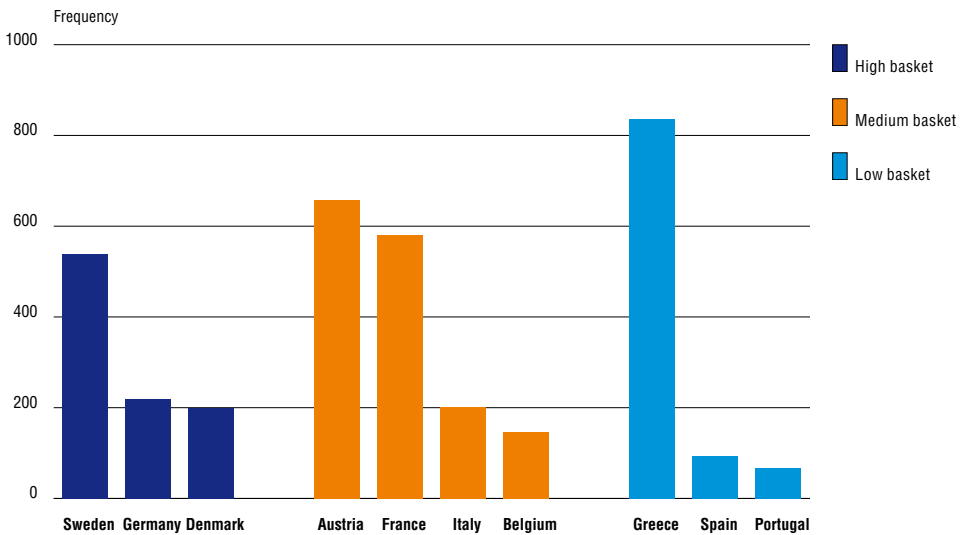
Public reimbursement of pharmaceuticals

The Drugs Committee, part of the DPhS, is responsible for the List of Approved Pharmaceuticals, which consists of all pharmaceuticals that are fully reimbursed. The Drugs Committee manages and updates the list and informs public sector physicians of any changes. In order for a new product to be added to the list, a formal pharmaceutical request form has to be submitted to the Clinical Pharmacy Department of Pharmaceutical Services (i.e. the Secretariat of the Committee) by a specialist physician practising in a public hospital. The Drugs Committee also issues guidelines and adherence is monitored by public pharmacies. For example, guidelines are in place mandating either the use of generics as a first choice or the use of the cheapest among me-too drugs (e.g. statins, sartans). In cases where a specific protocol has been set,

a pharmaceutical is not dispensed unless the protocol is followed. There are no sanctions for not following protocols apart from refusal to dispense the pharmaceutical.

Fig. 2.3

Frequency of use as preference country (2009)



Source: Pharmaceutical Services, Ministry of Health, unpublished data, 2012.

According to existing laws and regulations, the government can purchase pharmaceuticals based on their International Non-proprietary Name (INN) through a tendering process, which usually leads to lower prices. The tender documents must reflect need as declared in the public sector formulary and be in line with the Drugs Committee's decisions on coverage. Recently new methods have been employed in order to increase efficiency of pharmaceutical care in the public sector. In particular, price-volume agreements, risk-sharing agreements and disinvestment programmes have been selectively used as methods to promote access to new expensive products despite budget constraints, especially in oncology.

According to the latest available data, public sector pharmaceutical expenditure accounts for approximately 43% of total pharmaceutical spending despite high demand (Table 2.1). More than 80% of the population is eligible to receive pharmaceuticals free of charge.

Table 2.1

Pharmaceutical expenditure in Cyprus, 2008

Total pharmaceutical expenditure (in million €)	229.4
Pharmaceutical expenditure as % of health expenditure	21.5
Pharmaceutical expenditure as % of GDP	1.33
Public pharmaceutical expenditure (in million €)	98.3
Public pharmaceutical expenditure as % of total pharmaceutical expenditure	42.9
Total pharmaceutical expenditure per capita (€)	287.9

Source: Pharmaceutical Services, Ministry of Health, unpublished data, 2012.

Since 2005, cost-containment measures have been successfully introduced to slow the growth of public sector pharmaceutical expenditures. Growth has been slowed from an average annual rate of 20% (as experienced before 2005) to less than 10%, while in the last three years pharmaceutical expenditure growth has slowed significantly, to only 1.5% from 2008 to 2009 and 3.2% from 2009 to 2010, reaching €103 million. The presence of a highly regulated public sector may play a role in slowing private sector pharmaceutical price growth.

2.8.5 Regulation of medical devices and aids

According to EU legislation, medical devices in the European market must comply with the requirements of the Medical Devices Directives; Cyprus has incorporated these directives in its national legislation. The legislation that currently controls the manufacture and supply of medical devices in Cyprus is as follows:

- Cyprus Regulation 597/2003 on in vitro medical devices (harmonization with the directive 98/79/EC);
- Cyprus Regulation 598/2003 concerning medical devices (harmonization with the directives 93/42/EEC, 2003/12/EC and 2005/50/EC);
- Cyprus Regulation 599/2003 relating to active implantable medical devices (harmonization with the directive 90/385/EEC); and
- Cyprus Regulation 187/2005 with respect to medical devices manufactured utilizing tissues of animal origin (harmonization with the directive 2003/32/EC).

The Department of Medical and Public Health Services in the Ministry of Health is charged with medical device regulation. It is responsible for protecting the health of the population and ensuring that the market functions smoothly. More specifically, its main responsibilities are to:

- safeguard public health by ensuring that devices meet the required standards as laid out in the relevant regulations;
- investigate and monitor adverse incidents involving medical devices and take any necessary action to safeguard public health, for example through safety warnings, removing products from the market or improving designs;
- operate market surveillance systems;
- register persons responsible for placing devices on the market;
- regulate clinical trials of medical devices;
- oversee and designate those who audit medical device manufacturers;
- cooperate with the authorities of the EU member states; and
- provide the public, health professionals, manufacturers or distributors with authoritative information in different areas of interest.

2.8.6 Regulation of capital investment

There is no authority responsible for the regulation of capital investment in the health care sector. In practice, planning and regulation of the public sector is the responsibility of the Ministry of Health, mostly on an ad hoc basis. The most common criterion to ensure equitable distribution of capital investment is area population size, although political pressures from within localities often play a role. In the private sector regulation is very limited, although the Private Hospital Act of 2001 contains the rules and prerequisites for private hospitals and clinics. Any individual can establish a health care centre without major difficulties.

2.9 Patient empowerment

2.9.1 Patient information

In practice, patients often lack adequate information about health care services. There are no data on the extent to which patients have access to this sort of information. The information available on the web sites of public hospitals include inter alia working days and hours for outpatient and emergency departments, patients' rights and obligations, information about religious and social services, information about hospital clinics and departments, and the

annual reports of the hospital. Improvements in patient health literacy are needed. The information deficit is more severe for immigrants, often due to language barriers.

2.9.2 Patient choice

Theoretically, patients can choose between the public and private sectors, as well as between different hospitals and health centres, doctors and even treatments. In reality, however, the health system does not provide a wide range of choices for patients. The right of a patient to choose any public hospital for treatment exists, as there is no referral system, although choice is limited because each district has only one public hospital; in most cases patients prefer to visit the hospital in their own district. Usually patients visit a hospital outside their district only if they need a second medical opinion or require specialized services that are only provided in the referral hospital in Nicosia. Choosing a private provider generally means that a patient believes the private sector delivers better quality or more personalized care, or that a patient is not willing to wait to receive care from the public system, and further, that he/she can afford the cost; it could also be because a specific therapy is not offered in the public sector.

2.9.3 Patient rights

The Safeguarding and Protection of the Patients' Rights Law, 2004, addresses issues regarding patient rights, such as the rights to health care and treatment, dignified treatment, access to health care services, prohibition of unfavourable discrimination, health care in a medical emergency or in a life-threatening situation, medical examination in an emergency department, information, health care with the consent of the patient, medical information, health care without the consent of the patient, participation of the patient in scientific research or experimental treatment, confidentiality, protection of the patient's privacy, keeping of medical records, and finally the right of a patient's representation. The law also includes provisions for control mechanisms under the following headings: exercise of the rights pursuant to the law, patients' rights officer for the safeguarding of the patients' rights in a state hospital, complaints examination committee, obligation to inform patients for submission of complaints and offences, and penalties for those providers who contravene any of the law provisions.

2.9.4 Complaints procedures (mediation claims)

The law for patients' rights includes provisions for submission and management of patients' complaints. Article 23 refers to the establishment of a Complaints Examination Committee in each district, which is responsible for investigating patients' complaints. The committee consists of five members appointed by the Minister of Health for a term of four years. The chairman of the committee and each member examining a particular complaint must be independent from the health care services and/or the medical institution to which the complaint relates. Article 24 refers to the submission procedures and the obligation of any public medical institution to inform patients of the names of the persons comprising the Complaints Committee and the name of the patients' rights officer. At this time both articles for submission and management of patients' complaints have been implemented in all districts and public hospitals, although there are no relevant data available.

2.9.5 Population participation/involvement

The government is not obliged to safeguard population participation in governing the health system. Nevertheless, the Ministry of Health is receptive to the ideas of interested groups, including patients, citizens, providers, trade unions or local authorities on action plans and draft laws. Additionally, the Ministry of Health takes satisfaction surveys into account, as they provide important information about patients' and citizens' opinions and perceptions on various aspects of health care services. In 2009, on behalf of the Ministry of Health, the Open University of Cyprus conducted three satisfaction surveys on outpatient care, inpatient care and health professionals (Theodorou, 2009a, b; Makris, Theodorou & Middleton, 2011). Findings from these surveys are presented in Table 2.2.

Table 2.2

General satisfaction in Cyprus public hospitals

	Very satisfied or satisfied (%)	Very dissatisfied or dissatisfied (%)	Neutral (%)	No answer (%)
General satisfaction with visit to the hospital outpatient department	61.8	14.8	20.3	3.1
General satisfaction with the inpatient care provided in hospital	88.9	4.3	3.6	3.2
General satisfaction in your hospital job	80.7	17.1	n/a	2.2

Sources: Theodorou, 2009a, b; Makris, Theodorou & Middleton, 2011.
Note: n/a, not available.

2.9.6 Patient and cross-border health care

Cross-border health care is important, because Cyprus has:

- many tourists, more than 2.4 million annually, which is three times its population
- many immigrants, nearly 200 000
- more than 10 000 foreign retirees living permanently in Cyprus
- Cypriot patients who are sent to specialized centres abroad for treatment.

Cyprus complies with the EU regulations 883/04 and 987/09 to facilitate cross-border health care among EU member states. The latest figures available from the Ministry of Health are shown in Table 2.3.

Migrant health remains a complicated issue in all EU member states, especially in southern European countries such as Cyprus, which receive a high volume of immigrants from developing countries. A challenge is how to meet the health needs of illegal immigrants and third country nationals (see Chapter 3). Cyprus has developed the Action Plan 2010–2012 for the Immigrants' Social Inclusion with health as one of its priorities.

Table 2.3

Cross-border health care for Cyprus, from and to the EU and European Free Trade Association (EFTA) countries*

Category of cross-border patients	Number of patients	Approximate cost (€)
EU and EFTA country citizens who visited Cyprus and had an emergency visit to a hospital and stayed in at least one night in 2009	4 640	2 500 000
Cypriots who visited EU and EFTA countries and had an emergency visit to a hospital and stayed in at least one night in 2009	617	237 000
Foreign retirees from EU and EFTA countries living in Cyprus in 2007, entitled to free access to public hospitals	10 081	11 500 000
Cypriot retirees living in EU and EFTA countries in 2007, entitled to free access to public hospitals	129	222 000

Source: Ministry of Health, unpublished data, 2012.

Note: *27 EU countries plus Iceland, Norway, Principality of Liechtenstein and Switzerland.

Despite the improvements in health infrastructure more than 2000 patients every year seek treatment in specialized centres and hospitals abroad, with a total cost of 35 million euros (Table 2.4). More than half of these patients choose the United Kingdom, followed by Israel and Greece. Patients treated abroad suffer mainly from cardiovascular diseases, but also from cancer and ophthalmological and orthopaedic problems. Most of them have pre-authorization from a medical board and the final decision for receiving treatment abroad is made by the Minister of Health. Apart from the severity of illness, current legislation stipulates that financial criteria must be taken into account to determine eligibility to be sent for treatment abroad.

Table 2.4

Number of patients and cost per year for treatment abroad

Year	Number of patients	Cost (€)
2006	1 034	25 453 077
2007	1 844	35 641 158
2008	1 942	34 807 090
2009	2 051	35 631 231

Source: Ministry of Health, unpublished data, 2012.

Finally it is worth noting that Cyprus has put health tourism on its agenda for the near future. Although there are no available data, many believe that Cyprus could be developed into an attractive and competitive destination for people wishing to combine health and tourism. The private health care sector in Cyprus has highly skilled health professionals, modern infrastructure and medical technology in the fields of dentistry, orthopaedic surgery, cosmetic surgery, ophthalmology and fertilization techniques.

3. Financing

Despite its relatively strong economy, Cyprus devotes a low share of its financial resources to health care. According to National Health Accounts data, total health care expenditures (THE) in Cyprus in 2010 accounted for 6.0% of GDP, with 41.5% of health care expenditures government funded and 58.5% privately funded. The health expenditure share of total government expenditure (5.3%) is the lowest of all EU countries. OOP payments are the dominant private source of health care expenditures and Cyprus has one of Europe's highest proportions of health care spending by households.

The MoF is responsible for collecting tax revenues, which are allocated at the beginning of the year to the different ministries through annual budgets. The final Ministry of Health budget is approved by the government after a budget creation process that involves numerous stakeholders. The Ministry of Health is exclusively responsible for the implementation of the budget and no public provider is able to spend beyond approved amounts. All health professionals in the public sector have civil servant status and their payment is on a salary basis.

The public system does not secure universal coverage. It is estimated that only 83% of the population has the right of access to the public health system free of charge, while the rest of the population must pay to use public services according to fee schedules set by the Ministry of Health. The legal basis for entitlement to public services is Cypriot or EU citizenship and proof of having earned below a certain level of income, although for some groups, free-of-charge coverage is granted without proof of income or other criteria. A fairly high share of the population is also entitled to health services funded either by workers' unions or semi-state organizations. VHI provides coverage to more than 20% of the population through group or individual schemes.

The services provided by the public system include primary care, specialist services, diagnostic tests, paramedical services, emergency services, hospital care, pharmaceutical care, dental care, rehabilitation and home care. Cost-sharing measures in the public system are not significant and thereby do not constitute a barrier to access for most people; there is no evidence for informal payments, which in any case are likely to be considered minimal and negligible.

3.1 Health expenditure

The economy has experienced considerable growth over the past decade, a relatively mild recession in 2009 (-1.9% growth of GDP) and encouraging signs in 2010, when economic growth was estimated to be positive. The government reached a budget deficit of around 5.3% of GDP in 2010, compared to a deficit of around 6% in 2009. This has affected public debt, which reached 60.9% of GDP by the end of 2010, compared to 58% by the end of 2009. Per capita income is €21 180 and the unemployment and inflation rates for 2010 were 6.2% and 2.6%, respectively (Cyprus National Reform Programme, 2011).

Despite fairly strong economic fundamentals, Cyprus devotes a relatively small share of resources to health care. According to WHO estimates (WHOSIS and WHO HFA Database), Cyprus's health care expenditure as a share of GDP is one of the lowest among EU countries and well below the EU average (Table 3.1 and Fig. 3.1). From 1995 to 2008, THE grew on average at a faster rate than GDP, rising from 4.7% of GDP in 1995 to 6.0% in 2010 (Table 3.1 and Fig. 3.2).

Cyprus' total health expenditure as a percentage of GDP and government health spending as a percentage of total government expenditure are both quite low (Table 3.1). Per capita spending in 2010 was \$1842 US PPP, which is below the EU average (Fig. 3.3). A 2008 study by Mercer Limited found that the government reported level of THE may be underestimated by around 5%. Even after adjusting for this discrepancy, Cyprus remains among the European countries that are low spenders on health. This may be due to the absence of universal coverage, the relatively young population, limited spending on medical research and the favourable climate and environmental conditions (Golna et al., 2004; Andreou, Pashardes & Pashourtidou, 2010).

Table 3.1

Trends in health expenditure in Cyprus, selected years

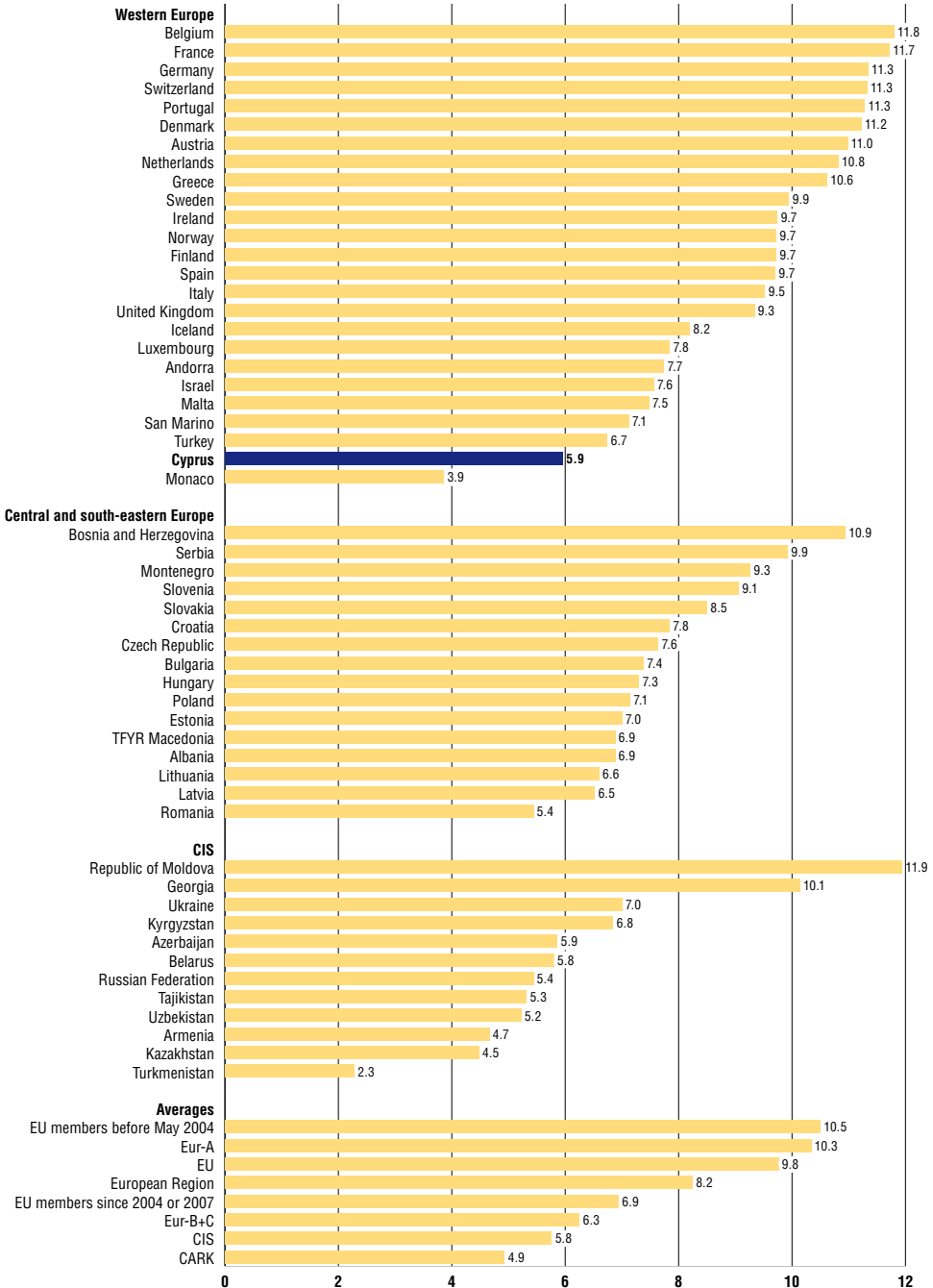
	1995	2000	2005	2010
Total expenditure on health per capita (international \$)	723.9	1 106.9	1 549.1	1 841.6
Total health expenditure (THE) as % of gross domestic product (GDP)	4.7	5.8	6.4	6.0
Average annual growth rate in per capita health expenditure (%)	n/a	8.9	7.0	3.5
Average annual growth rate in per capita GDP (%)	n/a	4.7	4.9	4.9
Public expenditure on health as % of THE	35.8	41.7	41.8	41.5
Private expenditure on health as % of THE	64.2	58.3	58.2	58.5
Government health spending as % of general government expenditure	5.1	6.5	6.2	5.3
Government health spending as % of GDP	1.7	2.4	2.7	2.5
OOP expenditure as % of THE	63.3	55.9	47.0	48.8
OOP expenditure as % of private expenditure on health	98.6	95.7	80.8	83.5
VHI as % of THE	0.9	2.5	6.2	5.5
VHI as % of private expenditure on health	1.4	4.3	10.7	9.4

Source: National Health Accounts, WHO, unpublished data, 2012.

Note: n/a, not available.

Fig. 3.1

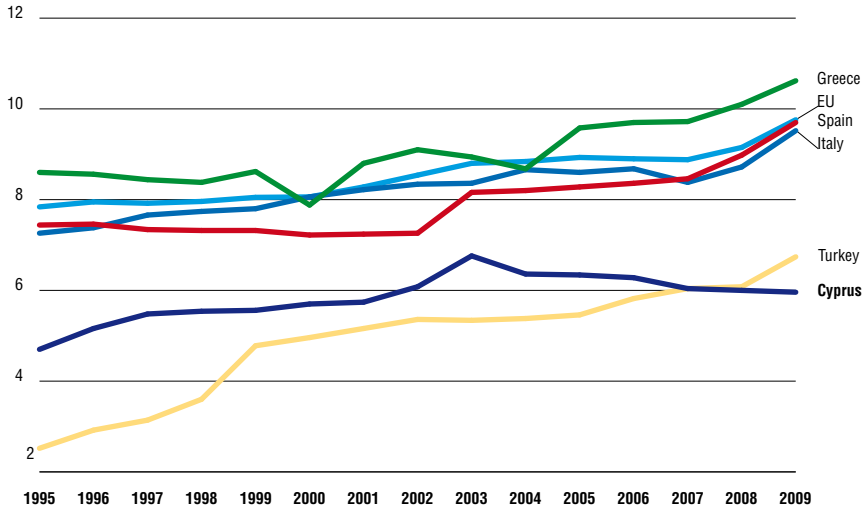
Health expenditure as a share (%) of GDP in the WHO European Region, latest available year



Source: WHO Regional Office for Europe, 2012.

Fig. 3.2

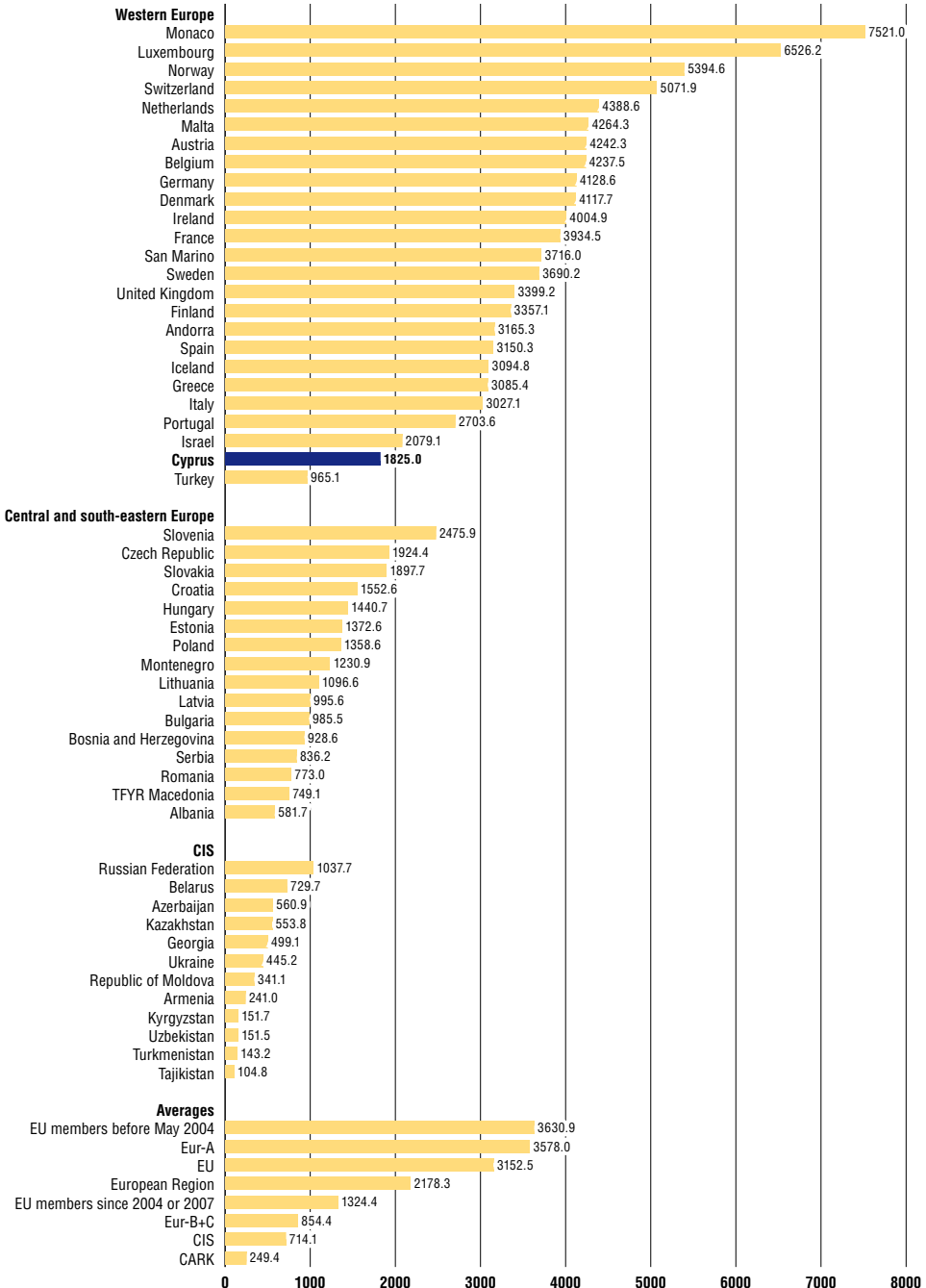
Trends in health expenditure as a share (%) of GDP in Cyprus and selected countries, 1995 to latest available year



Source: WHO Regional Office for Europe, 2012.

Fig. 3.3

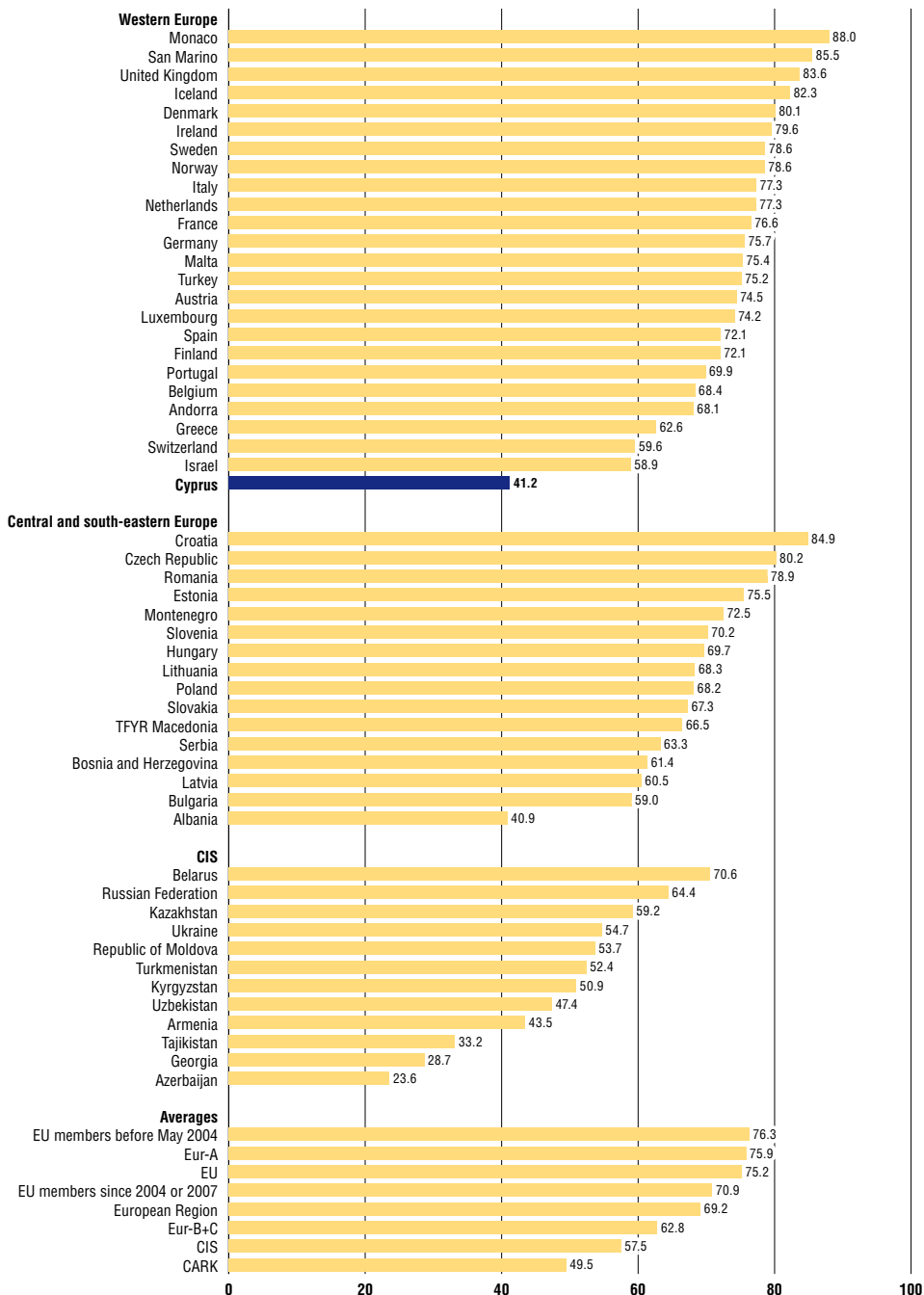
Health expenditure in PPP per capita in the WHO European Region, latest available year



Source: WHO Regional Office for Europe, 2012.

Fig. 3.4

Health expenditure from public sources as a percentage of total health expenditure in the WHO European Region, latest available year



Source: WHO Regional Office for Europe, 2012.

Public expenditure as a share of THE has remained at least below half of THE since 1995 (Table 3.1), and is among the lowest in the European Region (Fig. 3.4). Additionally, at only 5.3%, low health spending as a share of total government spending reveals that the health sector is a low priority for the government. The private share of THE has consistently been high in comparison with other EU countries. This may appear somewhat surprising as Cyprus claims to provide care free of charge at the point of service for approximately 83% of the population. Private expenditures primarily consist of direct payments for private sector health care services, statutory co-payments and premiums for private health insurance schemes. In 2010, 83.5% of private expenditures were OOP payments and 9.4% were payments by private insurance schemes.

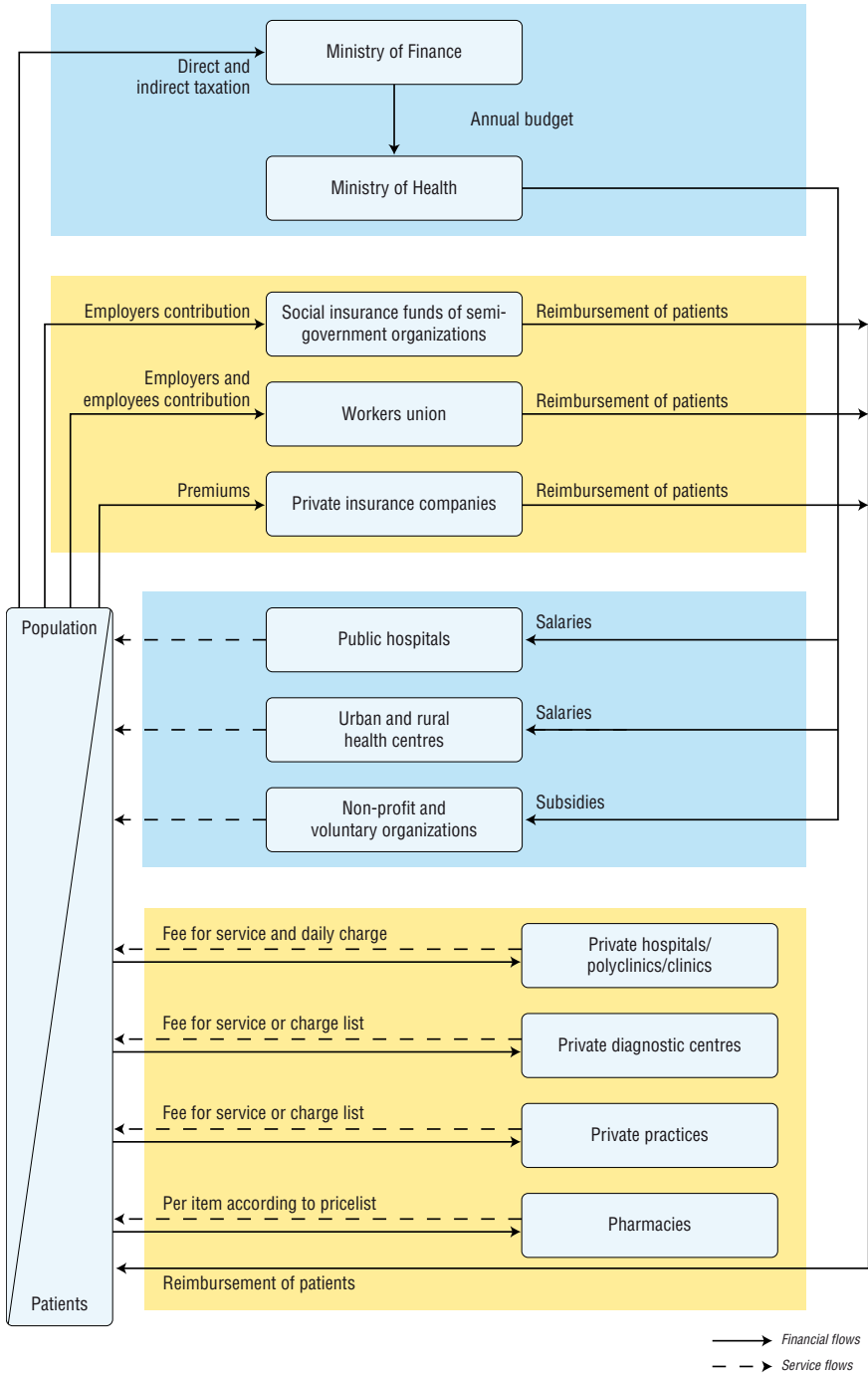
3.2 Sources of revenue and financial flows

The health system in Cyprus is financed mainly through the state budget, OOP payments, and to a small extent by VHI (Fig. 3.5). In total in 2010, 41.5% of health expenditure was from the state budget, 48.8% from OOP payments, and 5.5% from VHI (Table 3.1). Public revenues are collected by the MoF and allocated via annual budgets to all other ministries, including the Ministry of Health. No sources of funds are specifically earmarked for the health sector. However, the situation may change in the future with the implementation of the new GHIS. Under the new GHIS, health care financing will be tripartite, with the revenues coming from employee contributions (as well as pensioners and rentiers¹), employer contributions and the state budget, in addition to co-payments. All revenues will be transferred to a central fund and be administered by the HIO, which will act as the exclusive purchaser of health care services for all beneficiaries through contracted public and private providers.

The current legal basis for entitlement to public services is Cypriot or EU citizenship and having earned below a certain level of annual income. Some groups including civil servants, soldiers and students receive care free of charge, while other citizens suffering from specific illnesses such as multiple sclerosis, Alzheimer's, thalassaemia, myopathy, cystic fibrosis, diabetes and cancer also receive all or some health services free of charge, regardless of income. The services provided include primary care, specialist services, diagnostic tests, paramedical services, emergency services, hospital care, pharmaceutical care, dental care, rehabilitation and home care.

¹ A rentier is a person who lives on income from property or securities.

Fig. 3.5
Financial flows and flow of services in the Cyprus health system



OOP payments are made by those purchasing health care services from the private sector, those not entitled to free publicly provided medical care due to high income levels and for statutory co-payments. While VHI is currently somewhat more common due to the absence of universal coverage, once the new GHIS is implemented, VHI is expected take on a more supplementary role. It is estimated that around 21.5% of the population currently has private health insurance coverage under group or individual schemes (Insurance in Cyprus, 2010). Non EU nationals – immigrants living and working legally on the island – are one segment of the population that generally purchases private health insurance, as it is a requirement of entering and working in Cyprus.

3.3 Overview of the statutory financing system

3.3.1 Coverage

Although statutory benefits are funded through general taxation, there is no universal coverage. According to the Ministry of Health, 83% of the population in 2007 had comprehensive coverage that was almost free of charge at the point of service. The rest of the population has access to public health care services but must pay out of pocket at either reduced or full rates (2% and 15% of the population, respectively). These rates are determined according to fee schedules set up by regulatory administrative acts and ratified by the cabinet (regulatory administrative Acts 225/2000, 660/2002, 455/2004, 364/2005 and 629/2007, based on Law 40/1978). Those who enjoy almost free-of-charge provision are referred to as Beneficiaries “A”, those who are entitled to reduced rates are referred to as Beneficiaries “B”, and those who have no access unless they pay the full rates are the group of Non-beneficiaries.

Entitlement to publicly provided medical care for almost free (Beneficiaries “A”), or at reduced rates (Beneficiaries “B”) is based on citizenship (Cyprus or EU) and gross annual earnings. Any individual Cypriot or EU citizen living permanently in Cyprus with income below €15 380 per annum, two-member families with household income below €30 750 per annum (increased by €1700 for each dependent child) and families with three or more children are eligible for a medical card type “A”, which secures almost free access to all public health care services, although there are some small user charges even for low income citizens (see section 3.4.1). Citizens of EU member-states (mostly pensioners) living permanently in Cyprus who are entitled to free medical treatment in their own country also have access to free

publicly provided medical treatment in Cyprus. Almost free access regardless of annual income is granted to all civil servants, including police and full-time military personnel and their families, those serving their term in the National Force, students of all Cypriot universities, political officials and diplomats, and people with disabilities or some chronic life-threatening diseases. Public hospitals also provide free medical treatment to all patients with contagious diseases, and free access to accident and emergency departments irrespective of income or nationality.

The second group (Beneficiaries “B”) is comprised of those Cypriots or EU citizens whose gross annual income is between €15 380 and €20 500 for individuals, or €30 750–37 590 for two-member families, increased by €1700 for each dependent child. Because of the small size of this group and the very limited revenues raised by hospitals from these beneficiaries, there are proposals to abolish this group and allow them access to free medical care similar to Beneficiaries “A”. Of course this change is irrelevant if the new GHIS is implemented soon. The income criteria for entitlement and rate schedules were last adjusted in 2005.

The third group (Non-beneficiaries) includes all Cypriots of high annual income and EU citizens who are not eligible for public health care in their home countries, as well as all legal and illegal immigrants from non-EU countries living in Cyprus. Most legal immigrants are covered through VHI, while the rest are obliged to pay out of pocket for visits to public or private sector providers. Regardless of coverage type, any person is free to visit private providers if they so choose; however, they are usually required to pay for their care using their own private funds.

Apart from public coverage, a fairly high percentage of the population is also entitled to health care services provided either by funds of workers’ unions or the funds of semi-state organizations. It is estimated that more than 15% of the population are either direct or indirect beneficiaries of the ambulatory health services provided by PEO, SEK and DEOK, the three workers’ unions in Cyprus. Additionally, the health services package provided by semi-state organizations, including the Cyprus Union of Bank Employees (ETYK), AHK and ATHK, is comprehensive and much more attractive than the public services package. This group of beneficiaries (employees and dependent family members) is estimated to account for about 4% of the population.

Beneficiaries “A” have access to a comprehensive package of health services that is determined by the Ministry of Health and approved by the cabinet. The package includes general practitioner and specialist outpatient care, diagnostic

tests, paramedical examinations, medicines, inpatient care, dental care, medical rehabilitation and provision of prosthetics, home visits, ambulance and emergency services, public health and preventive services, mental health care, services for the treatment of thalassaemia and treatment abroad for patients who cannot be treated in Cyprus. The list of services provided by the public system is decided by the Ministry of Health and more or less includes all services provided by the most developed European health systems. The only explicitly excluded services are for some dental services such as orthodontics and fixed prosthetics. Beneficiaries “B” have access to the same services but must pay higher user charges. In the very few cases in which the public system, for various reasons, cannot provide a specific service, the patient can be referred to the private sector, which will be paid for by the Ministry of Health. Despite having coverage, many Cypriots who enjoy free care from the public sector choose to purchase health care from the private sector. This is often due to long waiting lists, which are discussed in more depth in section 5.2.

Those excluded from free coverage under the public system are mostly Cyprus and EU citizens with high annual income and non-EU immigrants. Serious difficulties exist in accessing and using public services for immigrants from non-EU countries due to restricted access² but also as a result of health illiteracy, cost, language barriers and cultural barriers (Theodorou et al., 2011). The situation is much worse for illegal immigrants, who have free access only to the accident and emergency departments of public hospitals where they receive treatment only for life-threatening conditions and contagious diseases (e.g. HIV, hepatitis B and C, syphilis and tuberculosis). However, they have access to immunization services provided by the Public Sector, free of charge.

3.3.2 Collection

The main financing sources under the current system are taxation and OOP payments. Half of the total government budget is derived from indirect taxes, mostly VAT, and 34% is from direct income taxation. The current taxation system is progressive, with individuals earning up to €19 500 annually paying no income taxes. For individuals earning between €19 501 and €28 000 the tax rate starts at 20% and does not exceed 30% for income up to €36 300. The MoF is responsible for collecting tax revenue.

² Immigrants from non-EU countries living and working legally in Cyprus have access to the public health care sector through private medical insurance contracts. This is a prerequisite not only for admission to the country but also for both residence and work permits. The insurance contract, which is standard and uniform for all immigrants, offers very limited coverage, due to many exceptions and low reimbursements per service. As a result, in many cases the immigrant or his employer is burdened financially by health care costs.

There are no statutory health insurance funds in Cyprus and therefore there are no social insurance contributions or payroll taxes earmarked for health. Small semi-state organizations and public universities, which are insured by VHI schemes (section 3.5), can provide free access to public sector services for their employees by paying the Ministry of Health an annual per person fee. However, this accounts for a very small share³ of health care financing in Cyprus.

3.3.3 Pooling of funds

All financial resources for publicly provided health care are transferred from the MoF to the Ministry of Health through the annual budget. The creation of the Ministry of Health annual budget is a “bottom up” process, quite complicated and time consuming, involving discussions between the directorates, hospitals and organizations financed or subsidized by the Ministry of Health. In practice, the Ministry of Health’s budget is constructed by the aggregation of smaller budgets and is generally based on the previous year’s allocations, adjusted for inflation and overall budget growth. The budget is then confirmed with the MoF, followed by the Cabinet of Ministers, and finally is submitted to parliament for approval. The budget for health care services is decided by the government, taking into consideration the health needs of the population, the priorities in other public sectors, the wider economic environment and the available state revenues.

In implementing the line item budget, the Ministry of Health’s responsibilities include the payroll of health professionals, administrative and auxiliary personnel, as well as paying for pharmaceuticals and other consumables, medical devices, private providers, the costs of treatment abroad and investment expenditures. Health care financing in Cyprus is very centralized and spending strictly follows the originally planned budget. A basic principle is that all public organizations, including hospitals, must make all spending decisions based on their approved budgets and credits given by the MoF to avoid deficits and overspending. Public hospitals and health centres, which are decentralized units of the Ministry of Health, have no administrative, operational or financial autonomy. Although the Ministry of Health provides an annual budget for every public hospital, in practice only a small part of it is administered by the hospital since most payments are made centrally by the Ministry of Health. The Ministry of Health 2012 budget, estimated at €609 million, is lower than in 2011 (€643 million) and around the same level as 2010 (€603 million) (Annual Government Budget, 2012).

³ In 2007, approximately 7000 employees had complementary coverage through this arrangement, paying the Ministry of Health €3 million in 2007 and €5 million in 2009.

3.3.4 Purchasing and purchase–provider relations

As described in Chapter 2, the public health system is a state-controlled, centralized system, where hospitals and health centres belong to the state and all health professionals and other related employees are salaried civil servants. In that context there are no purchaser–provider relations in the public sector, since there is no purchaser–provider split. Limited purchaser–provider relations between public and private sector exist when the public sector purchases services, mainly on a fee-for-service basis, from private providers.

Conversely, purchaser–provider relations in the private sector are quite complicated, with many stakeholders and remuneration methods. For contracts between providers and purchasers, such as workers’ unions, semi-state organizations and insurance companies, the terms of contracts and particularly the prices are subject to negotiation between the two parties.

3.4 Out-of-pocket payments

OOP payments represent over 83% of private health care expenditure, or nearly half of THE. Although OOP spending as a share of total private expenditure has declined since the 1990s, it remains at a very high level relative to other EU countries. During the same period, private health insurance rose considerably as a share of private expenditure, from 1.4% in 1995 to 9.4% in 2009 (Table 3.1).

Household surveys conducted every six years by the Department of Statistics and Research in the MoF are an important source of data on OOP expenditures (Family Budget Surveys, 1999, 2006, 2011). According to these data the mean annual OOP expenditure for health services per adult equivalent⁴ in the lowest income decile was €357 in 1996/97, €436 in 2003 and €608 in 2009. Among those in the highest income decile, the corresponding figures are €627, €1170 and €1749, respectively (Table 3.2). Low-consumption and low-income households spend a higher proportion of their annual income and consumption on health compared to richer households, which reveals that the distribution of health expenditure is regressive.

⁴ The OECD scale counts the head of the household as 1.0 unit, additional adults (aged over 13) as 0.5 units and children (13 years of age and under) as 0.3 units. For example, a household of four of which two are aged 40 and 30 and the other two are aged 12 and 6 have an equivalent household size of $1+0.5+0.3+0.3=2.1$.

Table 3.2

Mean annual consumption expenditure in health per adult equivalent by income decile

Income decile	Mean annual consumption expenditure in health								
	Survey 1996/97			Survey 2003			Survey 2009		
	€	% of total annual income	% of total annual consumption	€	% of total annual income	% of total annual consumption	€	% of total annual income	% of total annual consumption
I (lowest)	357	15.64	7.40	436	7.30	6.94	608	7.23	6.20
II	436	9.20	6.94	420	5.27	5.39	847	7.42	6.65
III	374	6.05	5.21	500	5.15	5.31	1 051	7.69	7.23
IV	417	5.59	4.92	660	5.70	5.55	808	5.11	4.77
V	456	5.26	4.71	660	4.99	5.03	1 086	6.04	5.75
VI	581	5.86	5.85	682	4.54	4.78	1 145	5.59	5.48
VII	516	4.48	4.65	738	4.30	4.54	962	4.13	4.29
VIII	653	4.87	5.21	822	4.13	4.46	1 395	5.11	5.58
IX	613	3.81	4.18	945	3.95	4.38	1 510	4.60	5.13
X (highest)	627	2.50	3.13	1 170	3.31	4.16	1 749	3.39	4.67

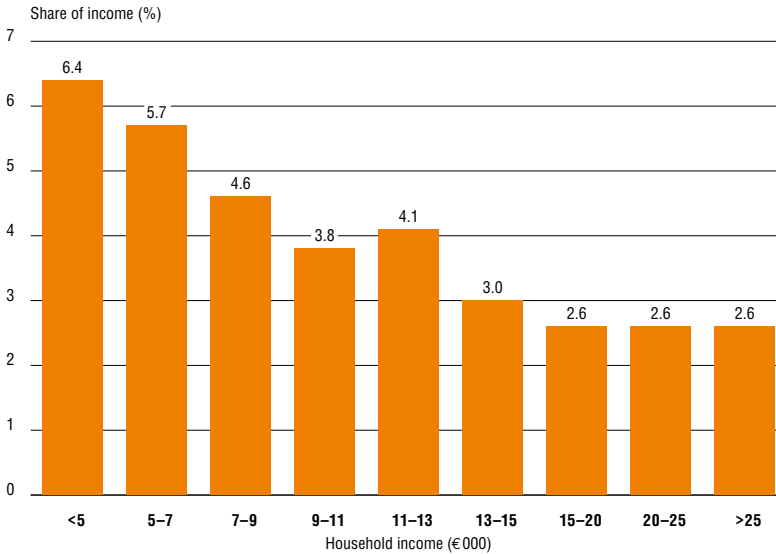
Sources: Family Budget Surveys, 1999, 2006, 2011.

The findings of a household survey from 2002 by the Harvard School of Public Health are similar (Hsiao & Jakab, 2003). The median household, reporting an annual income between £C9000 (€15 457) and £C11 000 (€18 892), was found to spend nearly 4% of its income on health care services. Those with an annual household income below the median level spent 4.6–6.4% of their income on health, while those above the median income level spent 2.6–3.0% of their household income on health (Fig. 3.6). Expenditure levels for households that spend a large share of their income on health are increasing steadily, indicating that households with chronic or severe acute illness may face catastrophic levels of health expenditure. The financial burden of health expenditures has increased more for lower income households than for those with a higher income.

The burden of OOP payments, especially for low- and middle-income households, is quite large. One possible explanation for such high OOP expenditures is that for reasons including long waiting lists, quality issues and health illiteracy, most people choose to purchase health care services from the private sector even though they are entitled to free access in the public sector.

Fig. 3.6

Mean OOP payments as share of household income



Source: Hsiao & Jakab, 2003.

3.4.1 User charges

Approximately 85% of the population has free or reduced rate access to public health care services; the rest of the population pays full rates set by the Ministry of Health. However, for those patients in beneficiary group “B” and non-beneficiaries who use the public sector for their health needs, user charges can be substantial (Table 3.3). Data from the Ministry of Health show that the majority of non-beneficiaries choose the private sector for health care, as only a small amount of public revenues were raised in 2009 from payments by non-beneficiaries, amounting to barely 1.8% of total hospital expenditures (€6 million).

Table 3.3

User charges for health services provided by the public sector

Health service	User charges by beneficiary group		
	Beneficiaries "A"	Beneficiaries "B"	Non-beneficiaries
Outpatient services			
GP visit	€2 ^a	€6.50	€14.50
Specialist visit	€2 ^a	€8.50	€20.50
X-rays, laboratory and paramedical tests, pharmacies, etc.	Free	50% of rate	100% of rate
Dentures (upper and lower)	€153.77 ^b	No coverage	No coverage
Inpatient stay (per day)			
Intensive care unit	€20.50 ^c	€102.52 ^d	€205.03 ^e
Single-bed hospital room	€20.50 ^c	€61.51 ^d	€123.02 ^e
Two-bed hospital room	€10.25 ^c	€51.01 ^d	€102.02 ^e
Three-bed or more hospital room	€6.83 ^c	€35.88 ^d	€71.76 ^e
Pharmaceuticals	Free	50% reimbursement ^f	No coverage

Notes:

^a Beneficiaries "A" over 65 years, receivers of public assistance benefit, health professionals of the public sector, etc., are excluded from this charge.

^b Receivers of public assistance benefit are excluded.

^c Rates paid only by civil servants and state officers; all other "A" beneficiaries have free-of-charge hospitalization.

^d This figure is 50% of the rate paid by non-beneficiaries, which is set by the Ministry of Health. It is usually lower than the actual cost. There is a maximum sum per year (ceiling), which is estimated for each beneficiary on the basis of annual income and number of dependants, and expenditures beyond this ceiling must be paid out of the hospital budget.

^e Additionally, non-beneficiaries pay rates for operations, medicines, laboratory and paramedical tests. A discount is offered when the total amount exceeds the maximum amount (ceiling).

^f Patients can be reimbursed only if the medicine is included in the approved positive list.

An interesting element of the fee schedule is the payment ceiling for hospital care, estimated as a percentage of annual income for every beneficiary, based on income level and the number of dependants. Expenditures beyond this ceiling must be paid out of the hospital budget. For example, the payment ceiling for a two-member family with €40 000 annual income is €2141. Table 3.4 shows the income ranges, and the corresponding maximum percentage of annual income that can be spent on hospital care. This provision protects individuals from catastrophic levels of expenditure on inpatient care.

The cabinet, followed by the parliament, is responsible for approving user charges policies, setting prices and imposing user charges, based on proposals made by the Ministry of Health.

Table 3.4

Estimation of payment ceilings as a percentage of patient income

Annual income	Payment ceiling estimated as % of annual income
Individual without dependants	
Annual income up to €15 380	0
Annual income €15 380–25 630	20
Annual income €25 630–34 170	25
Annual income above €34 170	30
Family member	
Family income up to €30 750, adjusted by €1 700 per dependent child	0
Family income €30 750–34 170	20
Family income €34 170–42 710	25
Family income above €42 710	30

Source: Ministry of Health, unpublished data, 2012.

3.4.2 Direct payments

Theoretically, most medical services are covered and should be provided by the public sector to all beneficiaries in group “A”, except for some dental services such as orthodontics, fixed prosthetics and implants. For those services, patients must visit private dentists and pay out of pocket. In very few instances when for various reasons the public sector cannot provide a particular service, services can be purchased from the private sector. Direct payments are a common means of provider reimbursement for semi-state organizations and workers’ funds, as well as for many VHI schemes.

3.4.3 Informal payments

There is limited anecdotal evidence of informal payments in the public and private sectors. High physician salaries and very strict legislation generally prevent informal payments, although in some cases it may occur. For example, women who want to deliver their child in a public hospital with the gynaecologist or obstetrician of their choice usually offer a gift to their doctor.

3.5 Voluntary health insurance

3.5.1 Market role and size

Although the development of local insurance companies began in the 1980s, the private medical insurance sector in Cyprus has not grown at a fast pace. In general, it is believed that the low number of private health insurance schemes is due to the lack of significant tax incentives. Most companies offering health insurance do so mainly as an additional employee benefit and the health benefits included tend to be simple. With medical costs rising and demand for comprehensive coverage growing, only 15 out of 34 private insurance companies provide health insurance schemes (Insurance in Cyprus, 2010).

3.5.2 Market structure

Although there are no relevant data, it is believed that in most cases the role of VHI is substitutive because of the absence of universal coverage in Cyprus. Group coverage is mainly purchased by medium and large private companies for their employees, while individual schemes are usually purchased by those in the higher income bracket. Tailor-made plans only occur in large group schemes, and there are no restrictions on what insurers are permitted to cover. Those with pre-existing conditions such as AIDS/HIV, chronic illnesses, congenital deformities, or who have had cosmetic treatment or take part in dangerous sports are normally excluded; in most cases age limits exist. Otherwise, everyone is eligible subject to underwriting criteria of private insurers.

3.5.3 Market conduct

Private medical insurance contracts cover inpatient care – or inpatient plus outpatient care – indemnity cover on an annually renewable basis, and in some cases, coverage for treatment abroad. Long-term care insurance is not currently available. VHI beneficiaries usually receive benefits in cash or in kind. Outpatient coverage, where available, is reimbursed in cash at typically 90% of the cost borne by the insured. Inpatient coverage is in some cases received in kind, meaning that the beneficiary receives care free of charge at the point of service.

Gross premiums for health insurance were €66.9 million in 2008 and €71.3 in 2009, while the benefits paid were €27.3 million and €24.2 million, respectively (Table 3.5). The large discrepancy between premiums and benefits is to some extent due to high commissions paid to insurance agents for finding

new customers and other administrative costs. The number of people insured under individual or group contracts was 167 789 in 2008 and 172 876 in 2009, which is about 21.5% of the total Cyprus population. The ratio between those with individual contracts and those with group contracts is 60:40.

Table 3.5
VHI in Cyprus

	Individual schemes		Group schemes	
	2008	2009	2008	2009
Gross premiums written in € millions	35.6	30.3	41.3	30.1
Benefits paid in € millions	13.9	11.4	13.4	12.8
Persons covered in health insurance	102 764	103 097	65 065	69 779

Source: Insurance in Cyprus 2009, 2010.

Private medical insurance group schemes are funded through membership subscriptions and employer contributions, which vary from 33% to 100% of total premiums. The remaining cost is paid by employees. Premiums are revised by insurers every 2–4 years, adjusted by medical inflation to ensure they are sufficient to cover the benefits provided.

3.5.4 Public policy

The private insurance market is regulated under a legal framework based on European directives and regulations that have been transposed to national law. The responsible authority for supervising VHI is the Insurance Companies Control Service in the MoF. The Insurance Association of Cyprus is the official representative body for insurance companies, and is charged with maintaining good relations between the insurance industry and the government.

As an incentive to those taking up insurance, up to one-sixth of taxable income can be deducted for the following allowances: social insurance contributions for life insurance premiums, provident funds, pension funds and medical funds. In the case of medical funds, however, these need to be pre-approved by the tax authorities before premiums can be deducted. Various conditions must be fulfilled before a medical fund is qualified for approval by the tax authorities but these are still pending and remain unclear.

3.6 Other financing

3.6.1 Parallel health systems

In addition to the public and VHI sectors, there are a few other health care schemes, which cover a significant percentage of the population. The two largest schemes are the following:

- Workers' unions that provide medical services, mostly primary care, to their members through contracted private sector health facilities and doctors. Prices are negotiated and are lower than market prices. It is estimated that beneficiaries of this system comprise more than 15% of the population.
- Employer- and employee-sponsored arrangements, mainly of semi-state organizations, such as telecommunications and electricity authorities, which provide free medical care through private sector health facilities. In 2009, 12 500 employees and 20 500 members of their families, or 4% of the population, were covered under these schemes.

There are no adequate data regarding the volume of services provided and the total expenditures of these schemes.

3.6.2 External sources of funds

EU structural funds over the last decade have been a considerable external source of financing, mainly for mental health reform, hospital infrastructure, computerization, monitoring and continuous education. There are no relevant data available.

3.6.3 Other sources of financing

In the broader field of health and social care, there are more than one hundred voluntary, philanthropic and charitable organizations, which are mainly non-profit and non-governmental. Some of them are well known for their significant social and philanthropic work, especially in the fields of palliative care, rehabilitation services, specialized laboratory tests and diagnostic screening, and other services not provided by the public sector. Some well-known institutions with significant activity and provision of services are the Cyprus Anti-Cancer Society and the Palliative Care Centre "Arodafnousa", the Thalassaemia International Federation, the Cyprus Red Cross, the Rehabilitation Centre "Melathron Agoniston for the National Organization

of Cypriot Fighters (EOKA)", the Cyprus Association of Cancer Patients and Friends, and the Centre for Preventive Paediatrics. Apart from subsidies from the Ministry of Health, these organizations raise revenue from private donations, telethons, festivities, shows and other philanthropic, social and sports activities.

3.7 Payment mechanisms

All payment mechanisms are shown in Tables 3.6 and 3.7. The existence of both public and private systems has led to the development of different methods of payment. In the public sector, the financing mechanism for hospitals and health centres is very simple, based on annual budgets; all health professionals have civil servant status and their payment is on a salary basis. Conversely, the private sector has adopted a variety of payment mechanisms and a combination of payment methods, which are presented in detail.

3.7.1 Paying for health services

Table 3.6 presents methods used to pay health providers. Due to the public–private mix of provision and funding the payment mechanisms are quite complex, although it appears simple in the following description.

Table 3.6

Provider-payment mechanisms

Providers	Payers	Ministry of Health public system	Funds of semi-state organizations	Workers' union provision	Voluntary health insurance	Direct payments
GPs		S	FFS	FFS	FFS	FFS
Ambulatory specialists		S	FFS	FFS	FFS	FFS
Other ambulatory provision		S	FFS	FFS	FFS	FFS
Acute hospital		S	FFS	FFS	FFS	FFS
Other hospital		S	FFS	FFS	FFS	FFS
Hospital outpatient		S	FFS	FFS	FFS	FFS
Dentists		S	FFS	FFS	FFS	FFS
Pharmacies		S	FFS	FFS	FFS	FFS
Public health services		S	FFS	FFS	FFS	FFS
Social care		S	FFS	FFS	FFS	FFS

Notes: S, salaries; FFS, fee for service.

The financing of the public system comes from the Ministry of Health, which pays the salaries of all health professionals, consumables, medical devices, pharmaceuticals and the everyday costs of running hospitals and

health centres. For semi-state organizations, the basic mechanism for provider remuneration is direct payment by patients, who request reimbursement from their insurer on a fee-for-service (FFS) basis. Costs are based on market prices with a maximum reimbursement level per service or maximum reimbursement percentage per operation, dental service or diagnostic test.

In the case of workers' union provision, all providers are contracted and remunerated on a FFS basis with agreed prices. Access to contracted doctors is secured by a referral from the fund and providers are either remunerated by the beneficiaries with direct payments or by the workers' union fund.

For VHI, the method of provider payment depends on the terms of the insurance contract, but the prevailing method is FFS based on market prices with beneficiaries choosing their providers. Providers of ambulatory care are directly paid by patients, who request reimbursement later, while hospitals are reimbursed directly by insurance companies.

3.7.2 Paying health workers

All health workers in the public sector are paid by monthly salary, according to the public service wage scale that ranges from €15 700 gross annual wages to €91 000. The payment system does not offer any financial or other incentives to providers in the public system. The mean starting annual income is €26 000 for administrative personnel (university graduates), €36 000 for medical personnel and €17 000 for nursing personnel. There is no differentiation in salary between health professionals working in health centres or hospitals.

In the private sector, very few doctors are salaried employees of hospitals or diagnostic centres; those that are salaried are typically only at the beginning of their career. The majority of doctors are solo private practitioners and their income depends on clientele and prices. The rest work in private hospitals and diagnostic centres, and are either shareholders or contracted. Private sector dentists are directly reimbursed by patients on a FFS basis, while pharmacists are paid based on a percentage of the value of each prescription. Salaries in the private sector for all health care personnel are quite low compared to the public sector, resulting in a steady flow of health workers, especially nurses, from the private to the public sector.

It is worth noting that the payment methods used (Table 3.7) do not generate incentives for efficiency or quality. In the private sector, FFS remuneration leads to provider-induced demand, especially in areas where there are no monitoring mechanisms.

Table 3.7

Payment methods for health care personnel

Health care personnel category	Payment method
Personnel of all categories in the public system	Monthly salary
Private doctors and dentists contracted with workers' funds	FFS with agreed prices
Private doctors	Monthly salary FFS Profits as shareholders in private hospitals
Private dentists	FFS
Private pharmacists	% of value of each prescription
Other personnel of private sector	Monthly salary FFS

Note: FFS, fee for service.

4. Physical and human resources

Physical and human resources are split between government hospitals and health care centres, and private hospitals, clinics and polyclinics. The majority of physicians, dentists and pharmacists work in the private sector whereas the majority of nurses are employed in the public sector. Over the last decade most newly qualified physicians have pursued careers in non-primary care specialties. As a result there has been a decrease of 20% in the number of GPs from 1995 to 2000.

Since the annual Ministry of Health budget includes a specific allocation for each public hospital according to required needs, there are no incentives for cost-awareness, quality assurance or efficient use of available resources. The pluralistic health system has resulted in a lack of adequate resource distribution and utilization between the public and private sectors. As an illustration, Cyprus has a very high number of CTs and MRIs as compared with the OECD country average, with most of these scanners concentrated in the private sector. Moreover, the health care system is characterized by under-utilization of information technology and the lack of a universal electronic medical record system to facilitate data mining, coordination and continuity of care, and quality improvement.

There has been a continued increase in the number of graduating nurses as a result of new nursing training programmes at four local universities (one public and three private). A relative increase in the supply of physicians and pharmacists is also expected as local universities have recently initiated their first medical and pharmacy programmes, respectively; a national workforce capacity plan for health workers is needed to ensure these new workers are able to find employment. Moreover, CPD and revalidation of qualifications issues need to be addressed in order to ensure medical competency, quality of care and patient safety.

4.1 Physical resources

4.1.1 Capital stock and investments

Current capital stock

Primary care in the public sector is delivered through 38 primary care centres, and 235 primary care sub-centres are located in rural areas working on an itinerant medical team basis. Secondary and tertiary health care is provided by public and private hospitals and by specialist centres (e.g. Thalassaemia Centre, Cyprus Institute of Neurology and Genetics, Bank of Cyprus Oncology Centre, Arodafnousa Hospice). The public sector is dominated by five district general hospitals located in Nicosia, Larnaca, Limassol, Famagusta and Paphos (Table 4.1).

Table 4.1

Public hospitals in Cyprus

	Year established	No of beds
Nicosia General Hospital	2006	414
Limassol General Hospital	1993	305
Larnaca General Hospital	1984	172
Paphos General Hospital	1989	135
Famagusta General Hospital	2008	70

Source: Ministry of Health, unpublished data, 2012.

Nicosia General Hospital (NGH) is the largest hospital and is considered the referral hospital for specialist care not provided elsewhere in the country. There are also two small rural hospitals in relatively isolated areas that offer a comprehensive set of services that include specialist inpatient services: the Kyperounta Rural Hospital and the Polis Chrysochou Rural Hospital. The public sector also runs a mental health hospital, the Athalassa Hospital, for psychiatric patients. In Nicosia the Archbishop Makarios III, a specialized hospital for children and women, opened in 1984. Cyprus also has 81 private hospitals, polyclinics, clinics and day care clinics in the government-controlled area, which offer a wide selection of specialized care.

Investment funding

The annual Ministry of Health budget includes a specific line item for each public hospital based on its historical expenditures, adjusted for inflation; capital investments are a very small portion of that amount and must be requested the year before. Public health care centres are also funded by the government

and are administratively attached to hospitals. Large capital investments are controlled more centrally, while hospitals have some autonomy over smaller investments. Non-profit hospitals are financed through donations by charitable foundations and the government. Private hospitals are for-profit organizations that usually exist in the form of limited liability companies; their shareholders are namely physicians.

Investment projects that are planned for 2012 include the expansion of Larnaca Hospital and upgrading of its equipment, as well as adding radiotherapy units in Nicosia and Limassol. Additionally in 2012, the government plans to invest in an MRI scanner and a heart surgery unit in Limassol General Hospital, and to upgrade the CT scanner in Paphos. In 2011 only 28% of the development budget was actually implemented because many projects were postponed (e.g. radiotherapy centre in Limassol General Hospital, primary care centres in Limassol and Nicosia) due to the time it takes for the tendering process. According to the Ministry of Health, in 2009 only 49% of the development budget was spent and only 41% of the development budget was spent in 2010. Despite anticipated health care reforms to strengthen the primary care system, current and planned capital investments do not reflect this shift in priorities.

Recently a team of physicians (oncologists, radiotherapists and surgeons) along with a large team of investors announced their plans for the creation of a new Oncology Medical Centre near Limassol that meets all international standards and requirements of modern cancer treatment. The centre will provide the highest level of therapeutic oncology services (diagnosis, treatment, rehabilitation, patient support, palliative care). The centre will participate in oncology research and in biomedical research in general. It is planned to open in 2015 and is expected to become a regional centre of cancer therapy and research.

4.1.2 Infrastructure

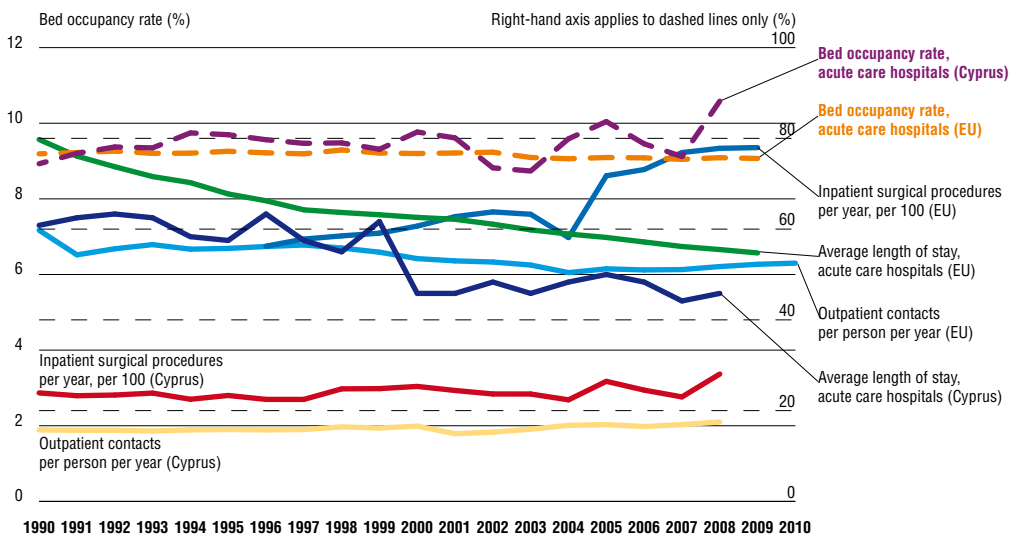
Nearly all hospitals in Cyprus are acute care hospitals, although many specialty services are available. In the public sector there is a fairly even distribution of hospital beds dedicated to a wide variety of specialties. In 2008 there was a total of nearly 3000 hospital beds, around half in the public sector and half in the private sector (Statistical Service, 2010b). The public sector also runs a mental health hospital, the Athalassa Hospital, which has 160 beds for psychiatric patients and 10 beds for drug-addiction rehabilitation. NGH has 26 beds and the Limassol General Hospital has 24 beds for mental health patients. The Archbishop Makarios III has 200 beds (Ministry of Health, 2012c). Private

hospitals contain in total approximately 777 beds, private polyclinics contain 338 beds, private clinics have 294 beds and private day care clinics have around 60 beds (Statistical Service, 2010b; Ministry of Health, 2012c).

Cyprus performs better than the EU average on a number of operating indicators (Fig. 4.1). According to data available for 2008, average length of stay in acute care hospitals is shorter by over a day in Cyprus (5.5 days) than in EU average (6.7 days). Comparatively high levels of efficiency are also evident based on occupancy rate (88.2%), which is higher than other Mediterranean countries including Spain, Italy, Turkey and Greece. However, Cyprus reports significantly fewer inpatient surgical procedures per population than the EU average, as well as far fewer outpatient contacts per person per year, indicating that some members of the population may not have regular access to health care services or prefer the private sector. Across the EU, as well as in Cyprus, the number of acute care hospital beds has generally decreased over time since 1990, although Cyprus has maintained a consistently higher acute care bed-to-population ratio than the EU average (Fig. 4.2). From 1990 to 2008, the difference between the EU average and Cyprus has been approximately 57 acute care beds per 100 000 population.

Fig. 4.1

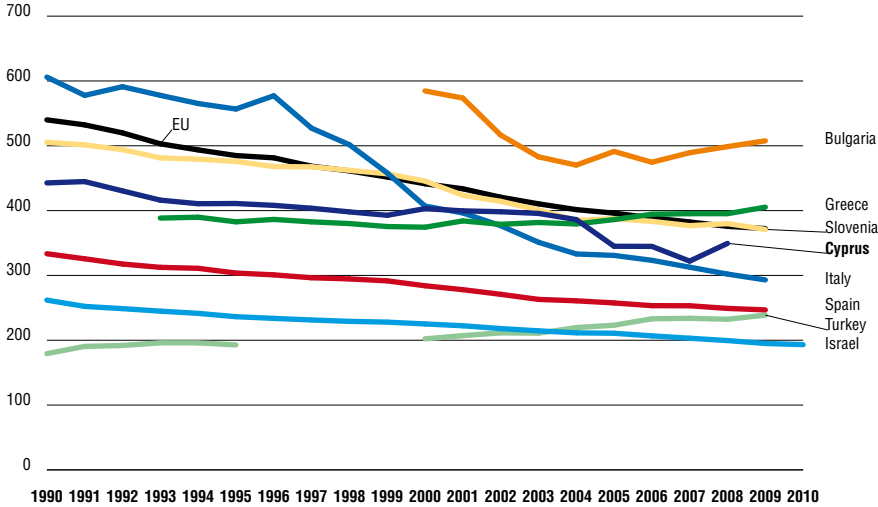
Operating indicators in Cyprus and EU average, 1990 to latest available year



Source: WHO Regional Office for Europe, 2012.

Fig. 4.2

Beds in acute care hospitals per 100 000 population in Cyprus and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe, 2012.

4.1.3 Medical equipment

The recently established Purchasing and Supply Directorate, which operates within the Ministry of Health, is in charge of managing the tendering process for procuring:

- medical and non-medical equipment
- disposable goods
- private sector services.

The directorate has the authority to approve tenders of up to €51 000 following the open tender process. Tenders between €51 000 and €171 000 can be approved by the Tender Board of the Ministry of Health; these tenders are prepared (i.e. wording of terms, specifications of tenders, evaluation of tenders and assessment of needs) by the Purchasing and Supply Directorate. Tenders exceeding €171 000 are awarded by the Main Tender Board, which is responsible for the entire tender process and authorization.

HTA is not utilized for making decisions regarding funding of medical equipment, although the Ministry of Health is a member of the EUnetHTA network, which aims to identify best medical practices to help decision makers invest in safe, effective technologies, and avoid spending scarce resources on methods that are not safe and effective, or are even perhaps harmful. All public hospitals and primary care centres can obtain medical equipment and disposable goods via the Ministry of Health Procurement Department.

One issue that has worsened recently due to the financial crisis is the underuse of private services and overuse of public services. Uncontrolled expansion of private sector capacity has led to a decrease in the number of services rendered per unit, putting quality of care at risk due to lack of provider experience using equipment and resulting in increased costs. For example, in comparison with other European countries, Cyprus has a very high number of MRI and CT scanners per population, with the vast majority available in the private sector (Table 4.2). The public sector has fewer available MRIs than the private sector, and public sector MRI waiting lists are long.

Table 4.2

Items of functioning diagnostic imaging technologies (mammography machines, MRI units, CT scanners) per 100 000 population in 2009, selected countries

	Mammography machines	MRI scanners	CT scanners
Bulgaria	n/a	0.4	2.7
Denmark	1.7	1.5	2.4
Greece	4.9	2.2	3.4
France	n/a	0.6	1.1
Italy	3.1	2.1	3.1
Cyprus	4.4	1.9	3.4
Malta	3.9	0.7	3.1
Netherlands	n/a	1.1	1.1
Austria	n/a	1.8	2.9
Slovenia	1.7	0.4	1.2
United Kingdom	0.9	0.6	0.8

Source: Eurostat, 2012a.

Note: n/a, not available.

4.1.4 Information technology

By 2010, about half of the Cyprus population (53%) used the internet and 54% of households had an internet connection; these figures are lower than most EU27 countries (Eurostat, 2012b).

Cyprus is at an early stage regarding the use of information technology (IT) in the health sector. Under the anticipated GHIS, IT will be used to ensure continuity of care, coordination of care, manage claims and maintain electronic patient health records (Samoutis et al., 2007). The Ministry of Health has established an IT department, the mission of which is to carry out projects related to timely management of information, access to external and internal databases, moving towards paperless and filmless hospital data through the introduction of EMRs, introducing a smart medical card and providing remote medical services (internet, telemedicine and robotics) (Ministry of Health, 2012e). The computerization of public hospitals is in progress. It has almost been completed in NGH and Famagusta Hospital and the Ministry of Health is in the process of expanding it to other hospitals (see section 2.7.1).

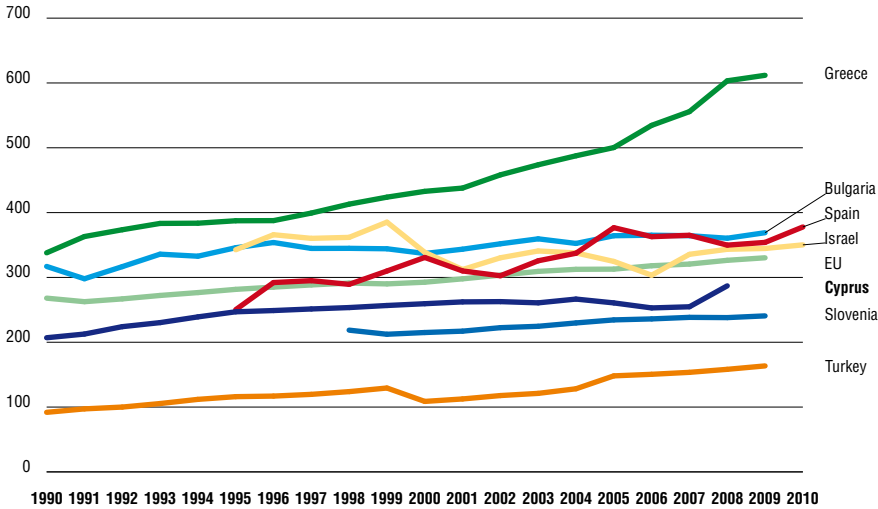
4.2 Human resources

4.2.1 Health workforce trends

The number of active physicians has risen consistently over the past years reaching a current total of 2 444 physicians (Cyprus Medical Association, 2011); 70% (1704 physicians) are employed by the private sector. These numbers include trainee physicians who are in the specialization process. Physicians are predominantly male (64%, 1 563 physicians). More than half the physicians are over 45 years old. The total number of practising physicians per 100 000 inhabitants (287 in 2008) is well below the EU average (326 in 2008) (Fig. 4.3).

Fig. 4.3

Number of physicians per 100 000 population in Cyprus and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe, 2012.

Over the last decade most of the newly qualified physicians have pursued careers in non-primary care specialties. As a result there has been a decrease of 20% in the number of GPs between 1995 and 2000 (Samoutis, Samoutis & Tedeschi, 2010). Since patients have direct access to specialist care in the public sector, public primary care physicians mainly treat minor illnesses, provide prescriptions and order laboratory tests. There is currently no government policy to increase the number of GPs. A primary care workforce plan is imperative in the near future in order to secure a sufficient number of trained GPs for the anticipated GHIS, which is planned as a primary care driven system that will include gate-keeping in some capacity.

Cyprus has had a fairly constant supply of nurses since 1990, although significantly fewer per 100 000 population than the overall EU average (Fig. 4.4). There are approximately 1.6 nurses for every physician in Cyprus, which is among the lower nurse-to-physician ratios in Europe (Fig. 4.5). Although the private sector employs the most doctors, the overwhelming majority of nursing staff is employed in the public sector. In 1980, of 1707 total nurses, 1427 (84%) were employed in the public sector. In 2008, 3710 nurses were employed by the public sector, an increase of nearly 260% (Table 4.3). Recently created nursing programmes at four local universities (one public and three private) have also

contributed to increases in the nursing supply. The increase in nursing school graduates in the last few years may have led to difficulties in absorption by the labour market.

Table 4.3

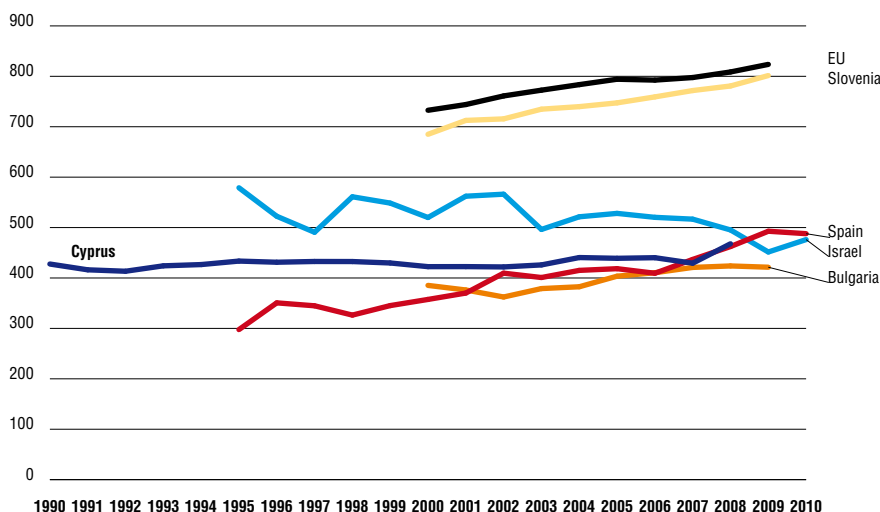
Health workers in Cyprus and relative percentages (selected years)

	1990	1995	2000	2006	2007	2008
Physicians						
Total	1 199	1 607	1 800	1 950	2 143	2 218
Public	371 (31%)	469 (29%)	512 (28%)	645 (33%)	688 (32%)	711 (32%)
Private	828 (69%)	1 138 (71%)	1 288 (72%)	1 305 (67%)	1 455 (68%)	1 507 (68%)
Dentists						
Total	428	543	619	715	723	743
Public	36 (8%)	34 (6%)	33 (5%)	41 (6%)	43 (6%)	43 (6%)
Private	392 (92%)	509 (94%)	586 (95%)	674 (94%)	680 (94%)	700 (94%)
Nurses						
Total	2 478	2 821	2 931	3 394	3 612	3 710
Public	1 858 (75%)	1 982 (70%)	2 198 (75%)	2 691 (79%)	2 870 (79%)	2 974 (80%)
Private	620 (25%)	839 (30%)	733 (25%)	703 (21%)	742 (21%)	736 (20%)

Source: Ministry of Health, 2012c.

Fig. 4.4

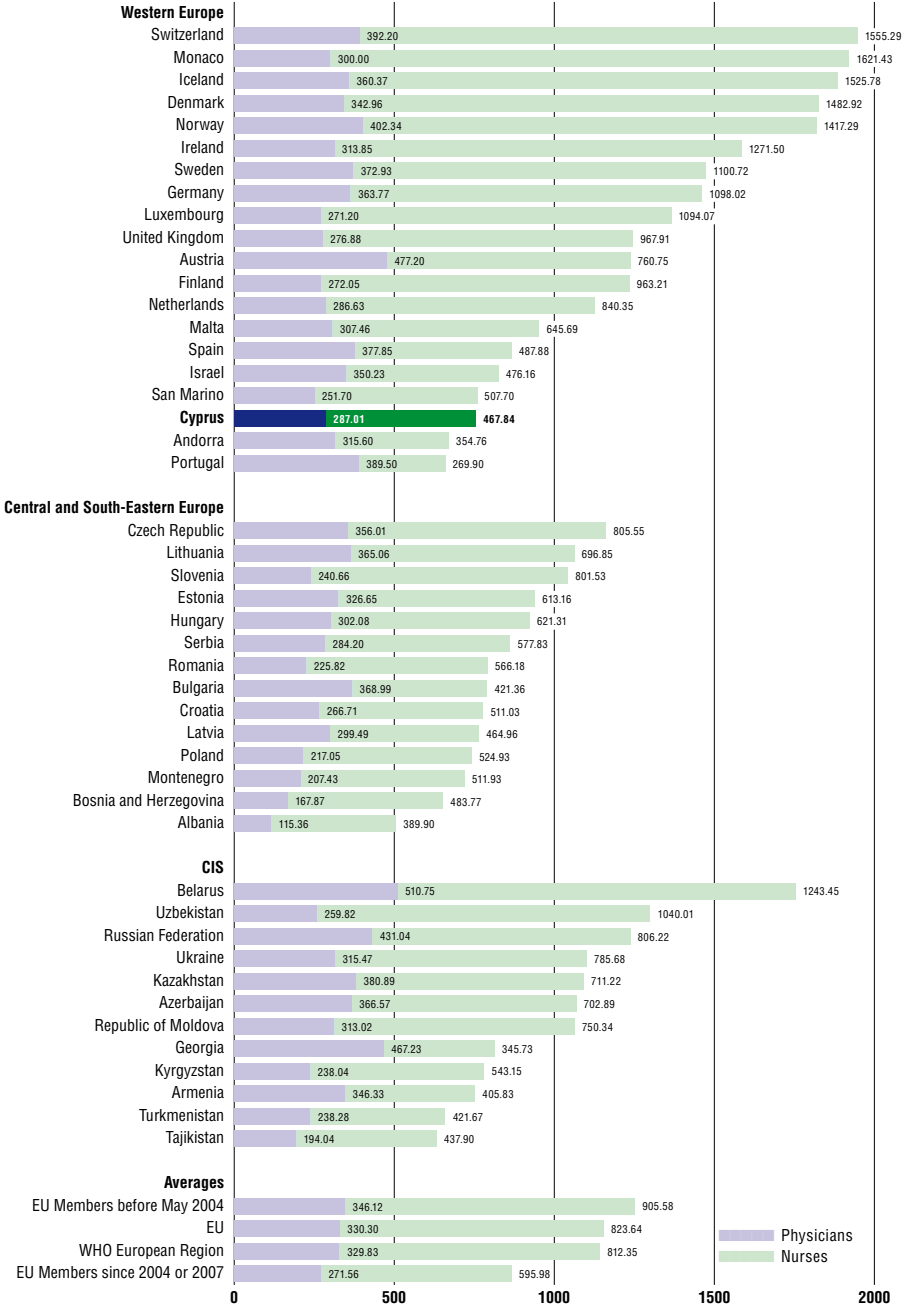
Number of nurses per 100 000 population in Cyprus and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe, 2012.

Fig. 4.5

Number of physicians and nurses per 1 000 000 population in the WHO European Region, latest available year

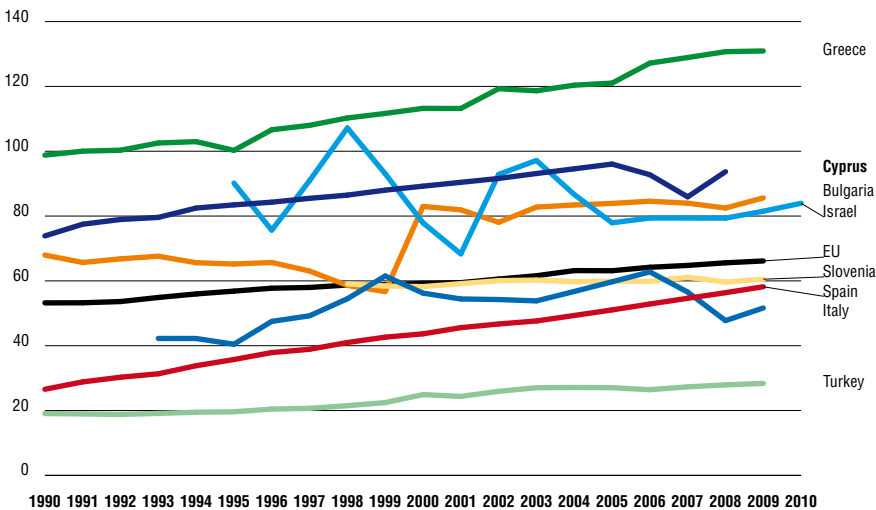


Source: WHO Regional Office for Europe, 2012.

Compared to other Mediterranean countries, Cyprus has a fairly high density of dentists, which has generally increased over time (Fig. 4.6). The pharmacist-to-population ratio, however, is much lower than the EU average (21.19 per 100 000 population in Cyprus compared to 74.72 per 100 000 population in the EU) and has remained reasonably constant over time (Fig. 4.7). Most pharmacists work in the private sector.

Fig. 4.6

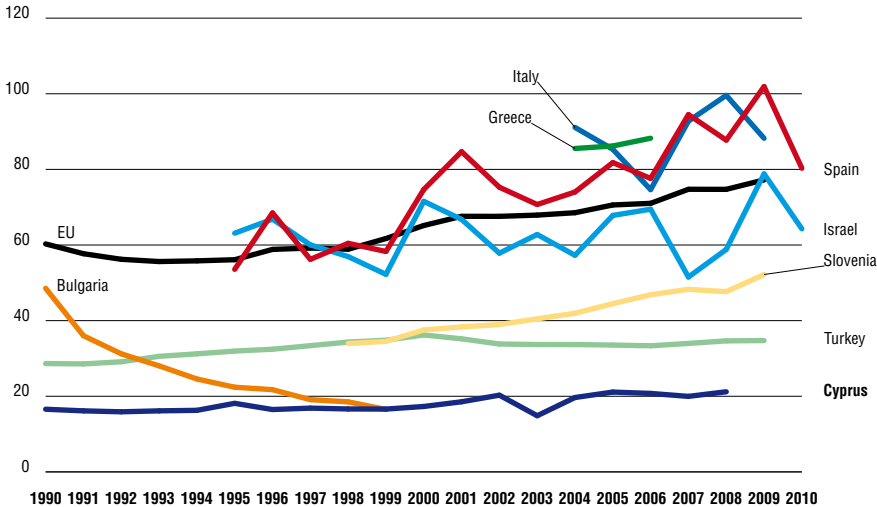
Number of dentists per 100 000 population in Cyprus and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe, 2012.

Fig. 4.7

Number of pharmacists per 100 000 population in Cyprus and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe, 2012.

4.2.2 Professional mobility of health workers

Most health workers are Cypriot, although the number of physicians from the EU has increased over the last few years mostly due to immigration from Greece, which has increased during the last year due to the severe economic crisis. Until a few years ago there was a lack of Cypriot nurses that led to recruitment from other countries, especially Greece and eastern European countries. A substantial number of health care professionals, especially physicians, prefer not to return to Cyprus after their studies abroad (especially those studying in Greece, the United Kingdom, Germany and the United States of America), either because of better working terms or because of the lack of high-quality tertiary medical education in Cyprus. This “brain drain” can potentially be addressed by establishing tertiary medical and pharmacy education, independent biomedical research centres and more research funding.

4.2.3 Training of health workers

Cyprus has historically not had a medical school, which is why the majority of physicians have been trained abroad (mainly in Greece and the United Kingdom). However, medical specialization training has been available

in Cyprus public hospitals for the last decade, and thus a small number of medical school graduates has completed their specialist training in Cyprus. The requirements for medical specialist training in Cyprus include registration with the Cyprus General Medical Council (GMC) and passing written and oral examinations. There is a need to update and improve the specialization programme and the Ministry of Health has recently decided to designate a committee to this task. The main body responsible for approving specialties and medical training in Cyprus is the GMC. Presently, there is no process in place for the revalidation of qualifications. Additionally, although a significant number of CPD activities take place each year, mostly in conferences, CPD has not received adequate attention by the Cyprus Medical Association or the Ministry of Health.

Recently the Ministerial Council has approved governing rules for the School of Medicine, which will come into existence in 2013. The Cyprus University of Technology has also announced plans for the establishment of a School of Pharmacy and a Rehabilitation Department in the next few years. In parallel, legislation on franchising tertiary education programmes has changed the education map in Cyprus. UK universities have created branches in Cyprus that offer “mirror programmes” that are similar to those taught in the UK.

A nursing and midwifery school has been in operation for more than 50 years under the Ministry of Health. After the establishment of the Cyprus University of Technology, the Nursing School was upgraded to university status.

4.2.4 Doctors’ career paths

The health care professional recruitment process in the public health sector is the same for all types of health care professional. Every position offered in the public sector is publicized by a government publication, which lists the full qualifications necessary for an applicant to be a valid candidate. Selection and recruitment is carried out by the Civil Service Committee after a draft selection and recommendations from intradepartmental committees of the Ministry of Health. As a result, hospital managers cannot easily encourage employee motivation because managers lack hiring authority. All public sector health care professionals are salaried employees of the government. They belong to a centralized civil service staffing system that assigns them to different positions on the basis of defined needs. In the planned GHIS, hospitals will have more managerial control over health worker recruitment.

There are no specific procedures or policies followed for the recruitment of physicians or other health professionals in the private sector. The vast majority of physicians in private hospitals are hospital shareholders. The majority of pharmacists have their own private pharmacies, and some work in pharmaceutical companies.

5. Provision of services

The public system has a large network of providers throughout the country. This network operates alongside that of the private sector, which offers primarily ambulatory care and to some extent hospital care, although data and documentation regarding the private sector is sparse. The link between secondary care and the social care system is informal, the latter of which is mostly the responsibility of the Ministry of Labour and Social Security.

The fragmentation of the health system, with little continuity of care and poor communication between doctors and other health care providers within and between the private and public sectors, is a major weakness that leads to inefficiencies in both sectors, duplication of services and underutilization in the private sector. Within the public sector there are problems related to organization and coverage since there is no referral system. There are also difficulties accessing some services due to long waiting times. Access for specific groups, such as immigrants, is problematic while there is limited coverage in dental care (since orthodontics and fixed prosthetics are not provided by the public sector), long-term care, rehabilitation care and palliative care, the last two of which are mostly provided by NGOs and the charitable sector. Additionally, there is an issue of affordability, especially for the above-mentioned services, since patients in many cases bear the cost of care. The affordability issue is evident not only from several Eurobarometer surveys but also by high private expenditure as a percentage of total health expenditure.

5.1 Public health

The importance of public health and specifically prevention and health promotion has long been recognized by the Ministry of Health as a cost-effective way to improve population health. The Department of Medical and Public

Health Services within the Ministry of Health is responsible for organizing and delivering a wide spectrum of preventive and health promotion activities, including:

- epidemiological monitoring
- control of sexually transmitted diseases
- services for expectant parents, pregnant women and children
- school health services
- immunization services
- control of environmental and communicable diseases
- occupational health
- health education and promotion.

To accomplish these objectives various programmes have been implemented by the medical and public health services, the health visitors and the mother and child health centres in cooperation with local authorities, voluntary and non-profit organizations, as well as other ministries such as Agriculture, Natural Resources and Environment, Labour and Social Insurance, and Education and Culture.

Public health services are mainly delivered by health professionals in public health centres and hospitals. The public health services in close cooperation with the State General Laboratory monitor and control food and water safety. Furthermore the State General Laboratory monitors and controls pharmaceuticals and illegal drugs, cosmetics, children's toys and other industrial supplies, and environmental pollutants. To a lesser degree, public health is delivered by the private sector, local authorities, non-profit organizations and other ministries.

5.1.1 Immunization services

The Ministry of Health specifies the child immunization policy in line with WHO guidelines. Immunizations in the public sector are provided free of charge and performed by health visitors under the guidance of doctors/paediatricians and in the private sector by paediatricians. The Ministry of Health estimates that 58% of immunizations are performed by paediatricians in the private sector. The immunization coverage for DTP (diphtheria, tetanus, pertussis), OPV/IPV (oral polio/inactivated polio) and HBV (hepatitis B) vaccines is almost 100%, leading to the eradication of neonatal tetanus, diphtheria and poliomyelitis. The

coverage for MMR (measles, mumps, rubella) is 87% and therefore cases of measles and rubella appear very rarely. Data from a survey on immunization coverage among children aged 17–24 months are presented in Table 5.1.

Table 5.1

Immunization coverage 2000–2009

	2009	2006	2003	2000
DTP1	100%	99.5	100.0	99.6
DTP2	100.0	98.4	99.4	99.2
DTP3	98.6	96.8	97.8	97.5
OPV1	99.8	99.5	100.0	99.2
OPV2	99.8	98.4	99.4	98.7
OPV3	98.6	96.5	97.5	97.5
MMR	86.9	87.0	86.3	84.7
HBV1	99.5	98.6	97.5	94.9
HBV2	99.5	97.8	95.3	93.6
HBV3	96.4	93.2	88.4	89.0

Source: Ministry of Health, 2010.

Notes: DTP, diphtheria, tetanus and pertussis vaccine; OPV, oral polio vaccine; MMR: measles, mumps and rubella; HBV: hepatitis B vaccine.

5.1.2 Food safety and water sanitation

The Public Health Services department of the Ministry of Health is charged with implementation of the community and national (harmonized) legislation for foodstuffs and drinking water. In cooperation with the other departments of the Ministry of Health, the Public Health Services of the municipalities along with the Ministry of Agriculture, Natural Resources and Environment (Veterinary Services and Department of Agriculture) have developed a uniform and integrated policy for food safety in Cyprus. Ninety-four Health Officers/Inspectors spread all over Cyprus are responsible for taking samples of foodstuffs from food businesses, restaurants, hotels etc., and of drinking water in order to ensure food safety and water sanitation. In 2010 they undertook 15 348 official control inspections collecting 3279 samples of foodstuffs and 6981 samples of drinking water that were sent to the General Laboratory for further examination (Ministry of Health, 2012c). If samples do not meet the relevant legislation, the Public Health Services department takes the necessary corrective and enforcement measures. In addition to food safety and drinking water quality control, Health Officers/Inspectors are also responsible for guaranteeing the water used in public swimming pools and beaches, campaigns against rats, mosquitos and other pests, as well as the audit and control of smoking products and implementation of smoking related legislation.

The Food Safety Board is responsible for proposing food safety policies, defining priorities and coordinating activities between the above-mentioned institutions. All competent authorities are represented on the board, which is chaired by the Permanent Secretary of the Ministry of Health.

5.1.3 School health services

The Department of Medical and Public Health Services in the Ministry of Health is also responsible for collaborating with health visitors and the Ministry of Education and Culture for the planning and provision of preventive services in schools. Paediatricians, general practitioners and health visitors play a role in delivering school health services. The main school health activities include medical and dental examinations, screening tests for vision, hearing, scoliometresis, provision of vaccinations and prevention and control of epidemics. Emphasis is given to maintaining and promoting a healthy school environment. There are activities to promote student physical and psychosocial health, some of which target domestic abuse, drug addiction and school bullying. This is carried out in cooperation with other services such as psychiatric and social services and the Ministry of Education and Culture.

5.1.4 Services for expectant parents, pregnant women and children

Health promotion for infants, children and pregnant women is also the responsibility of the Department of Medical and Public Health Services. Health visitors in collaboration with other professionals carry out health education programmes in addition to specialized services such as screening tests, assessment of children's growth, and counselling and support to parents.

5.1.5 Control of sexually transmitted diseases

Another responsibility of the Department of Medical and Public Health Services is the control of sexually transmitted diseases, with special emphasis on HIV/AIDS. Cyprus has a low prevalence of HIV/AIDS, with an estimated prevalence rate of 0.1%. According to data from the Ministry of Health, 681 people have been infected between 1986 and 2010 – 410 Cyprus residents and 271 non-residents; in 2010 there were 41 new cases. Prevention of the sexual transmission of the virus is one of the main objectives of the National AIDS Programme through intersectoral collaboration and introduction of relevant educational programmes to high-risk groups. Patient treatment, clinical care

and antiretroviral drug therapy, counselling, diagnosis and follow-up tests are provided free of charge. Additionally, there are programmes for psychological and financial support as well as programmes to combat prejudice and stigma.

5.1.6 Surveillance and control of infectious diseases

Since 2004 a special unit has been established under the Department of Medical and Public Health Services that is responsible for surveillance of all infectious and communicable diseases, early detection and control of epidemics, and the monitoring and evaluation of control programmes. This surveillance system has five components:

- the obligatory reporting system of communicable disease incidence to WHO
- the voluntary reporting system of infectious diseases for which diagnosis is via laboratory tests
- the reporting system of diseases and syndromes for which diagnosis is only clinical
- the reporting system of sexually transmitted diseases
- the reporting system for foodborne infectious diseases.

5.1.7 Health Monitoring Unit

The Health Monitoring Unit in the Ministry of Health is relatively new, and is mainly responsible for setting up mechanisms for the collection, analysis and dissemination of data related to current trends and determinants of population health. Indicators cover causes of death, cancer incidence, perinatal statistics, injury data and diabetes. The Health Monitoring Unit is also responsible for clinical coding in public hospitals, necessary for the introduction of a remuneration system based on diagnosis-related groups (DRGs).

5.1.8 Other activities related to public health

Other public health programmes include the national screening programmes for the early detection of breast cancer for women aged 50–69¹, the screening programme for detection of chromosomal abnormalities in pregnant women, the national thalassaemia screening programme, the monitoring and surveillance programme for pandemic influenza (H1N1), the nutrition programme in

¹ During the 2003–2008 period 118 569 invitations were sent to women and 34 317 received mammograms; 2503 were recalled for ultrasound and in the final stage 1539 were recalled again for further investigation.

elementary schools, participation in the European network of health-promoting schools, research for the assessment of the oral health status of children 7–12 years old and studies conducted for particular issues and problems of occupational and environmental health. Smoking indoors in public places is also prohibited in Cyprus.

5.1.9 Intersectoral activities in the field of public health

As mentioned (see section 2.6), apart from the Ministry of Health, other ministries (e.g. Labour and Social Insurance, Agriculture, Natural Resources and Environment, Education and Culture, Commerce, Industry and Tourism, Interior) and agencies independently or in collaboration with the Ministry of Health and/or other public organizations or NGOs (e.g. consumer associations, police, fire service) plan and implement public health programmes for food safety, school health services, lifestyle and health education, environmental policies and road safety. For example, the Department of Labour Inspection within the Ministry of Labour and Social Insurance is responsible for occupational health and safety, air quality and air emissions; all relevant information, programmes and other measures are presented each year in an annual report (Ministry of Labour and Social Insurance, 2011). There are several examples of intersectoral cooperation in the planning and implementation of programmes for the prevention of family violence and child abuse, childhood obesity, illegal drug use and sexually transmitted diseases, as well as programmes geared towards food safety and promoting healthy diets.

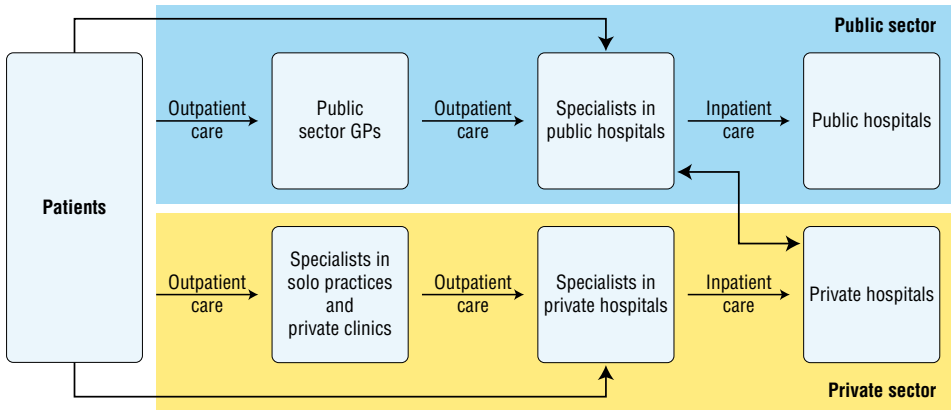
5.1.10 Accessibility, adequacy and quality

Although there are little data available, public health services appear to be accessible and of high quality. This conclusion is based on data that indirectly can be connected to particular components of public health services. Such data include the high (nearly 100%) immunization coverage for basic vaccines, the low prevalence of HIV/AIDS, the effectiveness of the thalassaemia programme that has nearly eliminated new thalassaemia cases, the low values for fundamental health indicators such as infant and neonatal mortality, and the generally good level of health. Prevention programmes targeting childhood obesity, smoking, healthy diet and driving practices have not so far demonstrated positive results.

5.2 Patient pathway

With minor exceptions, all residents at any time of day and without appointment can visit a physician, usually a GP, in any urban or rural health centre with a co-payment of €2. The health centre physician may prescribe any necessary medications or tests or refer the patient to a specialist at a public hospital for care. Most patients have free access to public hospitals; however, long waiting lists for some specialties or screening tests lead to serious barriers to access for those services. For this reason, some patients choose to visit specialists and diagnostic centres in the private sector where they are obliged to pay their own fees. Likewise, patients requiring hospital care may also choose between public and private hospitals, although again, any costs must be paid by the patient or by their VHI. Patients in general may decide whether to obtain care in the private sector depending on the severity of their illness, the existing barriers to access in the public sector, the patient's willingness to wait for care, a desire for more personalized care, the incurred expenditure in combination with the patient's ability to pay and the existence of a VHI contract. Patients who choose to obtain care in the private sector do so of their own accord, and not because physicians refer them to the private sector. Currently, due to the economic crisis, patients have become less willing to pay out of pocket and there has been something of a resurgence of public sector utilization.

There is no gate-keeping mechanism or referral system between health centres and hospitals. Anyone can visit a provider without any prerequisite although, as mentioned, long waiting lists implicitly limit public sector access. If the new GHIS is implemented, family doctors will have a role as gate-keepers. Fig. 5.1 shows a patient's pathway in the current health system.

Fig. 5.1**The patient pathway****5.3 Primary/ambulatory care**

Primary/ambulatory care services – which include health centres and outpatient departments – are delivered by a mix of public and private providers. Public sector services are delivered by a network of 38 health centres, 30 of which are rural and scattered all over the island, and 8 of which are urban and located in the Nicosia District. Additionally, primary/ambulatory care services are delivered by the outpatient departments of five district and two specialized hospitals (see section 4.1.2). All centres are well equipped and adequately staffed by a variety of health professionals who provide curative services, health promotion and preventive services (i.e. maternal and child health care), immunization coverage, health education and school health care, and prescribing and other pharmacy services. The outpatient departments of public hospitals also cover all specialties and visits are scheduled by appointment. All outpatient departments of hospitals provide services daily from 7:30 to 14:30 and primary health centres usually from 7:30 to 19:00, with some rural centres providing services 24 hours a day; each consultation requires a €2 co-payment. Teams of health professionals from each health centre also visit about 235 different villages weekly or every second week to provide basic primary health care services.

There is no strict gate-keeping or referral system. The annual number of visits to the outpatient departments of public hospitals is slightly higher than to health centres. A survey conducted by the Statistical Service of Cyprus in 2008 found that 59.3% of the population had visited a specialist during a 12-month period, while only 11% had visited a GP (Statistical Service, 2010a). This utilization imbalance is evidence that GPs do not have a gate-keeping role. The average number of public sector primary/ambulatory visits is 2.8 per person per year and it is thought that a comparable number of visits per person occurs in the private sector. An increase in the number of visits in the public sector is expected as a result of the ongoing economic crisis and the increasing number of Turkish-Cypriots and migrants who choose to visit public sector health care facilities. Despite long waiting times, the public primary care system is easily accessible and patients are free to choose providers. The small size of the island, the good network of roads and the high density of primary care facilities in both urban and rural areas facilitate easy access to health services.

A significant portion of primary/ambulatory services is provided by the private sector. Most of the 1704 doctors working in the private sector provide mainly primary and secondary health services either in solo or group practice facilities. According to the Ministry of Health in 2011, 134 private health care group practice facilities (hospitals, polyclinics and clinics)² were operating, all of which may offer primary/ambulatory health care services. Almost all doctors in the private sector are specialists and are supported by modern medical diagnostic equipment. Access to care is easy, without major barriers aside from cost, and there is freedom of choice. The prevailing method of payment is FFS based on market prices. Additional, although smaller, sources of primary care are workers' unions that provide ambulatory services to their members through contracted private sector health facilities and doctors (see section 3.6). No data exist on the volume of services delivered by the private sector, although it is assumed to be in line with the quantity delivered by the public sector.

Three patient satisfaction surveys conducted in 1996, 2002 and 2009 reveal patient viewpoints on the quality of outpatient care (Hsiao, 1997; Hsiao & Jakab, 2003; Theodorou, 2009a). The results of the first two surveys are presented in Table 5.2, revealing high satisfaction with the outpatient departments of both the public and private sectors. Minor differences between the sectors exist, with the

² According to the ministry's taxonomy of private health units, **hospitals** should have at least 30 beds along with an ambulance, **polyclinics** should have up to 5 medical specialties and fewer than 30 beds and **clinics** up to 2 medical specialties and not fewer than 3 beds.

greatest being in patients' ability to choose providers; the private sector rating was 9.74 in 1996 and 9.70 in 2002, compared to 7.69 in 1996 and 7.40 in 2002 in the public sector.

Table 5.2

Quality ratings of outpatient care in 1996 and 2002 on a scale of 1 (very poor) to 10 (excellent)

Dimensions of quality	1996		2002	
	Public sector	Private sector	Public sector	Private sector
Perceptions of clinical quality				
The outcome of medical services	9.04	9.37	8.55	9.20
The ability of the doctor to give you the correct diagnosis and treatment	9.21	9.45	8.90	9.40
Perceptions of interpersonal aspects of care including doctor-patient communication and choice				
Doctor explained your medical problem, tests and procedures	8.73	9.54	8.50	9.50
Courtesy and helpfulness of your doctor	8.80	9.57	8.70	9.50
The amount of time the doctor spends with you	8.62	9.42	8.30	9.30
The ability to choose your doctor	7.69	9.74	7.40	9.70
Other				
Cleanliness and comfort of the waiting and consultation areas	9.08	9.55	8.80	9.60

Sources: Hsiao, 1997; Hsiao & Jakab, 2003.

Findings of the third survey are not as positive as those of the two earlier surveys. Only 61.9% of patients reported that they were satisfied after their visit to public outpatient departments, while 14.5% were dissatisfied and 20.6% neutral, with significant variations across hospitals (Theodorou, 2009a). Additionally, according to patients, the most serious problem in the health system is long waiting times, while the most highly rated element of a health care visit is the doctor's respect towards the patient (Table 5.3). A Eurobarometer survey in 2010 also found that one of the most important elements of high quality health care in Cyprus is "respect of a patient's dignity".

Table 5.3**Patient views on aspects of an outpatient visit****The negative elements of a visit (i.e. those with lower scores)**

- The difficulties in finding a parking position (2.59)
- The long time between the patient's wish for examination and the day the visit was finally made in the outpatient department (2.59)
- The limited freedom to choose day and time for laboratory tests (2.66)
- The long waiting time for an appointment for laboratory tests (2.86)
- The long waiting time in the waiting room in order to have your scheduled laboratory tests (2.92)
- The limited freedom to choose day and time for a visit to a specialist (2.98)
- The long waiting time in the waiting room in order to have your scheduled doctor visit (3.00)

The positive elements of a visit (i.e. those with higher scores)

- The doctor's respect towards the patient (4.27)
- The cleanliness of the clinic (4.20)
- The kindness and willingness of the personnel to schedule the appointment (4.20)
- The politeness of the nursing personnel (4.15)
- The cleanliness of the waiting room (4.13)
- The kindness and willingness of staff at the information desk (4.03)

Source: Theodorou, 2009b.

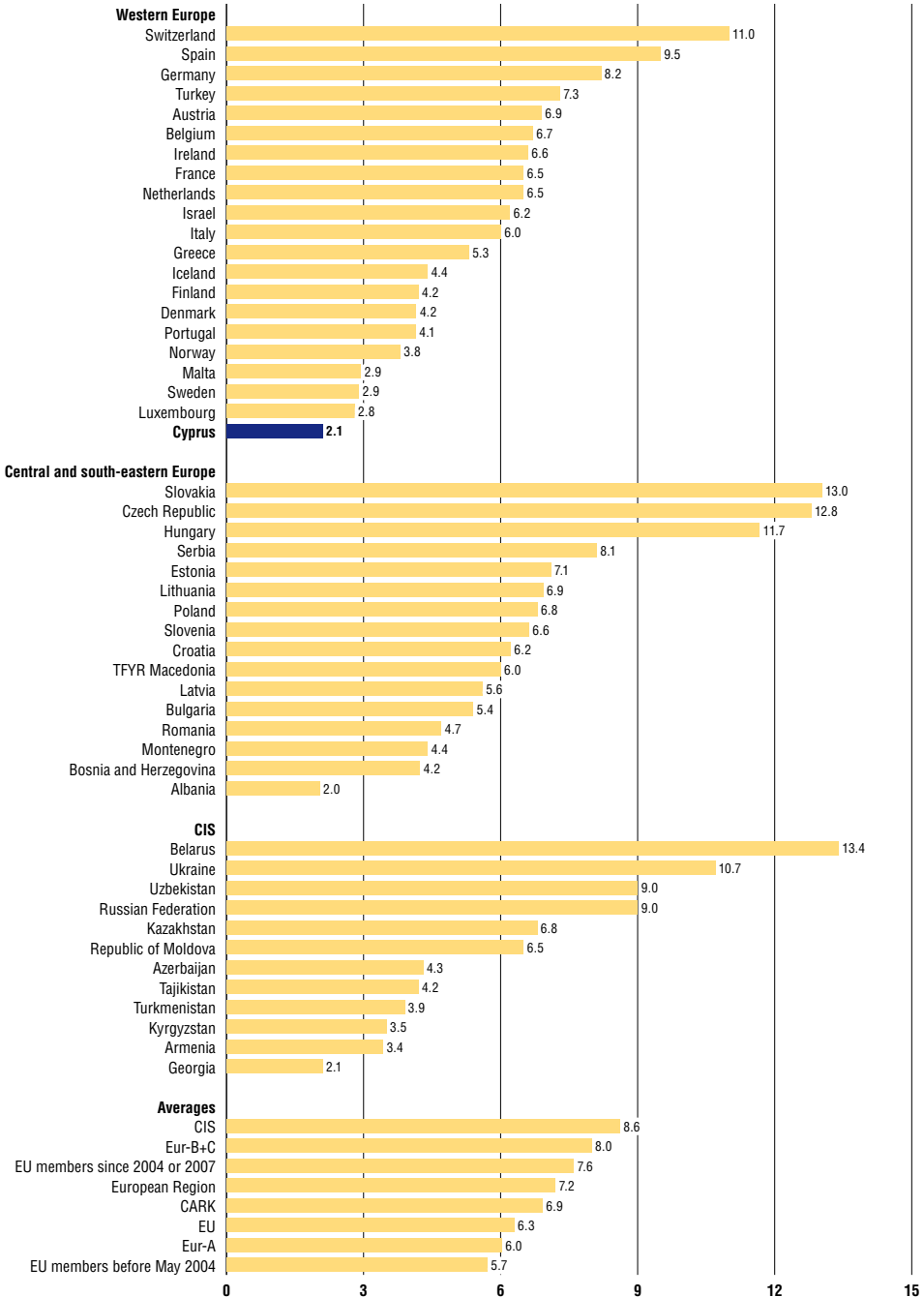
Note: the rating varies between 0 and 5; the higher the score of an element, the better its evaluation.

According to the WHO Health For All Database, Cypriots had 2.1 outpatient contacts per person per year in the public sector (Fig. 5.2). This figure refers to all visits in public health centres and hospital outpatient departments, and as mentioned, there is a comparably large private sector for which data are not available. The number of outpatient contacts per person is significantly fewer than the EU average of 6.3, although these statistics are not comparable across countries because they refer to different types of providers and sectors.

There have been no significant changes in the field of primary/ambulatory care in recent years apart from the rapid enlargement of the private sector. This has mainly been due to growth in the number of health professionals, especially doctors, and better equipment in health facilities. Growth in the number of public sector primary health care visits is expected to continue as long as the economic crisis persists, causing some patients to abandon the private sector. Significant changes are expected with the eventual implementation of the new GHIS, including a revamping of the primary care sector, the introduction of gate-keeping for GPs, better linkages between the primary and hospital sectors, as well as better linkages between the public and private sectors.

Fig. 5.2

Outpatient contacts per person per year in the WHO European Region,
latest available year



Source: WHO Regional Office for Europe, 2012.

5.4 Inpatient care

Inpatient care is provided by public and private hospitals, with around 3000 beds roughly allocated equally between the public and private sectors. The bed occupancy rate in the public sector is around 90% while in the private sector the occupancy rate is below 50% (Statistical Service, 2010b).

Although no data are available, admission rates are lower in private hospitals than in public hospitals. Citizens generally prefer public hospitals, not only because they are free of charge but also because many feel that the public facilities offer better specialized care. For example, fewer than five private hospitals have established specialized facilities for kidney transplantations or open-heart surgery; the government often contracts with these facilities to treat some eligible patients.

The public health system is highly centralized and the hospitals, as decentralized units of the Ministry of Health, are centrally administered. All basic administrative functions are carried out by the Ministry of Health or other ministries such as the MoF. Although the Ministry of Health appoints a director for each hospital, these directors have minimal autonomy. In the private sector, due to the small size of each facility, management is often exercised by the doctor who is also the owner of the facility, although in some cases it can be undertaken by an appointed manager. Management of both public and private hospitals under the current system is minor, as there are very few data for managing costs and monitoring health outcomes.

Despite the absence of clinical audit and quality assurance programmes, different surveys indicate that patients are largely satisfied with inpatient care – 61.9% of respondents are satisfied by inpatient care (Theodorou, 2009b) and 69% of respondents declare hospital quality to be good (Eurobarometer, 2007a).

There have been sporadic efforts to increase hospital efficiency, including introducing day surgery for certain cases and an increase in home care services, although neither can be considered as an integrated policy substitution for more complex care. In 2009, there were 2714 home care visits by health professionals from ten units in public hospitals and health centres. During the same year, home care and especially nursing and psychological/counselling services, was provided by the Cyprus Anti-Cancer Society to around 900 patients (Cyprus Anti-Cancer Society, 2011).

The relationship between primary and secondary care is minimal since there is no referral system or statutory procedure for managing patients between different levels of care or health facilities. Apart from the barrier of long waiting lists, it is relatively easy for a patient to move between primary and secondary care facilities or to visit any public hospital. According to Eurobarometer in 2007, 74% of Cypriots considered availability and accessibility of hospitals to be easy, which is slightly lower than the EU27 average of 76% (Eurobarometer, 2007a). The link between secondary care and the social care system is also informal, the latter being mostly the responsibility of the Ministry of Labour and Social Security. The fragmentation of the health system, with little continuity of care and poor communication between doctors and other health care providers within and between the private and public sectors, is a major weakness that leads to inefficiencies in both sectors, duplication of services and underutilization in the private sector.

5.4.1 Day care

There are no available data on day care services provided by the public or private sectors, although due to developments in medical technology, day care is becoming more common. For example, most of the public and private hospitals offer day care for some needs (e.g. cataract, pacemaker placement, cannulation, haemodialysis and chemotherapy) whereby patients receive care and are discharged on the same day.

5.5 Emergency care

Emergency care includes all necessary medical services to patients who are in life-threatening conditions that require urgent treatment. Emergency services in Cyprus are provided by the casualty departments of all public hospitals, but also by some large private hospitals. Patient transport to the casualty departments is the responsibility of the ambulance service of the Ministry of Health, which owns 60 ambulances and 2 specially equipped for newborns and people with special needs (e.g. paraplegics). The Ministry of Health has recently modernized its ambulance fleet by purchasing new specialized ambulances and has organized training programmes for ambulance staff.

Ambulances are based in all 8 A&E departments, as well as in 12 other health centres and some ambulance stations. All ambulances are staffed by a nurse, and where needed, by a doctor, who can provide first aid and other immediate care. Additionally, an ambulance call centre is located in the NGH

and a geographical information system for ambulances is planned for 2013. During 2009, there were 33 585 emergency calls, 20% of which were for car accidents; 50% of calls were for emergencies and 50% were for other reasons (Ministry of Health, 2010).

Emergency departments are in operation 24 hours a day and are easily accessed by anyone, as they do not require referrals or payment by patients. There are no data on availability and quality of services provided. Some problems with accessing services exist primarily during weekends due to high utilization, often by immigrants, who prefer to visit emergency departments because they are free of charge (Theodorou et al., 2011). Nearly all non-emergency cases visit the casualty departments directly using their own transportation or sometimes using the Ministry of Health's ambulances if they request transportation. Once casualty department personnel determine that a patient requires impatient care, the patient is admitted to the hospital.

5.6 Pharmaceutical care

Medicinal products in Cyprus are divided into two broad classes, POM and OTC products, based on the guidelines of the Council of Europe. Classification of pharmaceuticals is determined by the ministry and published in a ministerial decree. Before a medicinal product can be sold it must be approved and registered by the Drugs' Council – the national authority responsible for regulation and surveillance of the development, manufacture and sale of drugs and other medicinal products.

Pharmacies are the exclusive distributors of all medicinal products, with the exception of aspirin, which can be sold elsewhere (e.g. supermarkets). There are 8 public hospital pharmacies, 43 public community pharmacies and 435 private pharmacies employing about 500 pharmacists. There are no restrictions on establishing private pharmacies and most are concentrated in urban areas. Neither internet nor mail-order pharmacies are allowed.

Public sector physicians are required to prescribe pharmaceuticals included in the Formulary of Hospital Drugs and must follow specific prescribing guidelines set by the Drugs Council (see also section 2.8.4). While in the public sector, generics and generic substitutions are common, in the private sector there are no incentives for doctors and pharmacists to prescribe generics

(Theodorou et al., 2009). The market share of generics in Cyprus (19%) is relatively close to the average when compared to selected European countries, mainly because of high generic prescribing in the public sector.

In 2008, the total annual gross expenditure for human medicinal products was €229.4 million. Public pharmaceutical expenditure comprised 42.85% of total pharmaceutical spending, while total pharmaceutical expenditure per capita was €287.90.

The laws governing parallel importation of medicinal products in Cyprus are regulated under national law, which adopts relevant European Court of Justice decisions. The Drugs Council oversees the issue of parallel import licences subject to the importer fulfilling specific requirements and relevant documentation. The parallel imported product must be covered by the marketing authorization of the medicinal product (referred to as the “reference product”) manufactured by the same company for which the marketing authorization has been granted and sold under the same name. Additionally, market authorizations must be valid in both the member state from which the product is imported and Cyprus.

Due to the small market size, serious availability problems exist for several medicinal products that lack market authorization. In order to solve this problem the Drugs Council has implemented Article 126a (known as the Cyprus clause) of Directive 2001/83, which allows for medicinal products authorized in another member state to be allowed in the market when needed for public health. Repackaging of any medicines is permitted only when authorized by the Drugs Council. Imported products must be identical to the reference product.

There are about 65 wholesalers of medicinal products for human use in Cyprus. The top 10–12 importers account for approximately half of the trade in medicines. Authorized wholesalers in Cyprus must always have available an adequate supply of medicinal products and be able to deliver them in a short period of time to meet the requirements of the geographical area specified in their wholesale distribution authorization; they must also have an emergency plan to recall products effectively from the market if deemed necessary and comply with the principles and guidelines of good distribution practice.

5.7 Rehabilitation/intermediate care

Rehabilitation services are grouped into inpatient and outpatient services. Both types are available in the private and public sectors. Outpatient rehabilitation consists of individualized therapy treatment that can be based at a hospital (for the public sector and for some private hospitals) or can be based at private offices or centres. Private rehabilitation services are usually paid for by the patient with some limited coverage by VHI, which may be a significant financial cost. Inpatient services are mostly physical rehabilitation, primarily physiotherapy. Outpatient services such as speech-language/cognitive therapy, occupational therapy and psychological services are also offered in a limited capacity. Patients who are treated by the public health system and require extensive inpatient rehabilitation can receive treatment at the spinal cord injury rehabilitation centre of the NGH or at the Melathron Agoniston EOKA rehabilitation centre. The spinal cord injury rehabilitation centre has 20 beds for inpatient care and provides services for the rehabilitation of paraplegia/quadruplegia. In 2009, 62 patients were admitted to the centre mainly with paraplegia/quadruplegia, and 3115 patients visited the centre (Ministry of Health, 2010). The Melathron Agoniston EOKA is a 9-bed rehabilitation centre, housed at an 80-bed nursing home in a small town outside Limassol; it is a non-profit NGO nursing home and physiotherapy and rehabilitation centre, treating patients with neurological and musculoskeletal diseases.

In addition to the two main rehabilitation centres, there are others that can address rehabilitation problems of less complexity in inpatient and/or outpatient settings:

- the Cyprus Red Cross Paediatric Rehabilitation Centre located in Limassol covers general musculoskeletal paediatric problems for outpatients;
- the Theotokos Institution Paediatric Rehabilitation Centre, a non-profit NGO located in Limassol caring for handicapped children who suffer from mental retardation, has inpatient, outpatient and nursing departments;
- the Limassol Centre of Physical and Rehabilitation Medicine treats patients in all aspects of physical rehabilitation;
- the outpatient private medical centre of Physical Medicine and Rehabilitation in Limassol for physical medicine, medical rehabilitation and sports medicine;

- two outpatient units for cardiac rehabilitation located in Limassol and Nicosia for patients with heart problems.

Patients who are not able to function independently at home or with family assistance are often discharged to a nursing home for long-term care. Costs of long-term care are financed by patients with some subsidy by the government depending on financial eligibility.

Rehabilitation services in Cyprus are faced with the following challenges:

- lack of coordination among and between inpatient and outpatient centres in both the public and private sectors;
- need to focus on physical rehabilitation and the lack of a comprehensive, team approach to treatment that incorporates all rehabilitative disciplines;
- inadequate treatment frequency and intensity for comprehensive services;
- limited research in the area of rehabilitation and evidence-based treatment approaches;
- lack of consideration of the WHO's International Classification of Functioning, Disability and Health model; the focus is typically on impairment with limited success in community reintegration for severe cases;
- low interest among policy-makers in improving resource allocation for efficient and effective comprehensive rehabilitation;
- significant financial burden for patients who do not qualify for care free of charge;
- lack of regulation.

The development of rehabilitation-based research will serve as a catalyst to improve rehabilitation services. One such effort is the creation of the Centre for Applied Neuroscience at the University of Cyprus. The centre will engage in epidemiological research on common disorders and their impact on the Cypriot population, and will conduct clinical trials to identify effective treatments for patients. In addition to the centre, the creation of academic programmes at public and private universities to train health care professionals and conduct research to address rehabilitation-driven questions will generate important resources. These in turn could be used by health policy makers to improve rehabilitation services and outcomes.

5.8 Long-term care

Long-term care services are provided mainly to people with a high level of dependency, often older people, those with chronic diseases, and people with physical, learning and mental disabilities. These services are provided either by the state, communities, voluntary organizations or the private sector in a variety of settings such as geriatric clinics, homes for older people, hospices, state homes, day care centres, psychiatric clinics of public hospitals and Athalassa mental health hospital. Long-term care is also provided by a network of community nurses with home visits to mental patients, disabled people and older people living alone.

The bulk of long-term care services are offered mainly to people with mental problems and to older people living in nursing homes. Information on long-term care for mental health patients is presented in section 5.11. In 2010 there were 134 nursing homes, of which 12 were public, 49 community based and 73 private; 48% were located in the Nicosia district and 29% in the Limassol district. Older people living in nursing homes or hospices and meeting certain criteria are entitled to a public assistance benefit from the social services of the Ministry of Labour and Social Security. In recent years there has been a shift from institutional to home services mainly due to financial incentives offered by the Ministry of Labour to encourage families to provide care for older family members at home. Thus, the number of public assistance recipients for nursing home care decreased by 34% from 2007 to 2009, while the number of home care benefit recipients increased by 90%.

There are limited data on the quality of long-term services. In one survey, 25% of respondents said that the quality of services provided by nursing homes in Cyprus is bad, which is a slightly higher percentage than the EU27 average (23%) (Eurobarometer, 2007a). The picture is better regarding the accessibility and availability of long-term care, while a high percentage of Cypriots consider that services provided to dependent people and nursing home services are not affordable (35 and 40%, respectively).

According to the National Strategy reports on Social Protection and Social Inclusion, the main challenges in long-term care include:

- the development of an adequate and sustainable policy in the field of long-term care
- the development of long-term care facilities in the community
- the promotion of deinstitutionalization

- continuous quality improvement in the provision of adequate and sustainable long-term care services
- the development and reinforcement of human resources for long-term care services
- coordination of health and long-term care services (Ministry of Labour and Social Insurance, 2008).

There will also be increased challenges for long-term care services due to ageing.

5.9 Services for informal carers

The Ministry of Health is largely uninvolved in regulating informal care. Although there are limited data regarding informal carers, family members play a central role in the provision of unpaid care giving, mainly for older people or people with physical and learning disabilities. This is mostly based on the general values of Cypriot society and the close ties between family members.

According to the 2007 Eurobarometer survey, 98% of Cypriots (the highest proportion among EU countries, with the EU27 average being 86%) stated that they were personally involved in helping older or disabled people (Eurobarometer, 2007a) (Table 5.4). Two-thirds of these informal carers indicate that they regularly visit a person to keep them company, nearly six out of ten help with mobility, and four out of ten clean and do household maintenance or help with bathing or showering. For 8 out of the 11 activities shown in Table 5.4, the percentage of people involved is higher in Cyprus than the EU average. Women are more often involved in informal care than men.

Most informal carers are volunteers. According to the annual report of the Pancyprian Volunteerism Coordinative Council, in 2010 more than 1200 volunteers provided health and social care services to families, children and people with special needs (older people, mentally ill, cancer patients, etc.). These services are usually offered mainly to patients at home, but in some cases also to patients living in nursing homes, hospices, day care centres and community centres for mental care (Pancyprian Volunteerism Coordinative Council, 2010). Challenges for informal care include continued mobilization of community volunteers through public awareness campaigns and additional incentives for individuals to deliver care.

Table 5.4

Services offered to long-term care patients by informal carers in Cyprus and EU27 as percentage of respondents

Type of offered service or activity	CY (%)	EU27 (%)
Visiting regularly to keep company	67	49
Cooking and preparing meals	38	32
Doing shopping	37	42
Cleaning and household maintenance	41	34
Taking care of finances and everyday administrative tasks	19	30
Help with feeding	29	23
Help with mobility	57	33
Help with dressing	35	27
Help with using the toilet	34	21
Help in bathing or showering	41	24
Organizing professional care	8	21

Source: Eurobarometer, 2007b.

5.10 Palliative care

Palliative care services in the public sector are very limited, mostly provided by the oncology departments of Nicosia and Limassol General Hospitals, as well as by the Bank of Cyprus Oncology Centre (Table 5.5). These services are also provided by a number of private oncologists practising medical oncology and haematology that are mostly located in Nicosia.

Table 5.5

Palliative care facilities in Cyprus, 2011

Name of institution	Hospice	Hospital care	Day care	Home care	Physio-therapy	Psycho-social support	Transport service
Cyprus Association of Cancer Patients and Friends	-	-	1	1	1	1	1
Cyprus Anti-Cancer Society	2	-	1	1	1	1	1
The Friends of the Paphos Hospice	1	-	-	-	-	-	-
Friends for Life	1	-	-	-	-	-	-
Nicosia General Hospital Oncology Unit	-	1	-	-	-	-	-
Limassol General Hospital Oncology Unit	-	1	-	-	-	-	-
Bank of Cyprus Oncology Centre	-	1	-	-	-	-	-
Total	4	3	2	2	2	2	2

Source: Malas, 2011 (updated by authors).

The lack of palliative care is partially covered by voluntary NGOs. There are currently two major NGOs providing palliative care services in Cyprus: the Cyprus Anti-Cancer Society and the Cyprus Association of Cancer Patients and Friends. They depend mainly on annual government subsidies, fundraising events and public donations. The Cyprus Anti-Cancer Society runs two hospices (Arodafnousa Palliative Care Centre in Nicosia and Evagorion Palliative Care Centre in Limassol), which serve patients dying of cancer. In 2000, Arodafnousa hospice was officially recognized as a palliative care centre and is now an 18-bed inpatient facility (Malas, 2011). It provides home and day care, psychological and social support, physiotherapy, lymphoedema services and post-mastectomy support.

Two new NGOs providing only palliative hospice care have recently been established, one in Paphos called the Friends of the Paphos Hospice and one in Limassol called the Friends for Life. The Friends of the Paphos Hospice is a small voluntary organization and is a member of the worldwide hospice movement. It is run by a volunteer committee of trustees. The Friends for Life is a registered charitable association that was established in 2007.

Over the last 20 years, palliative care in Cyprus has made many positive advances including training of health professionals in palliative care. However, work is needed for more educational programmes in palliative care for health professionals, improvement of communication between home-care teams and oncologists, increased referrals, better cooperation among all palliative care organizations and increased public funding.

5.11 Mental health care

Mental health services are organized and administered by the Mental Health Services Department of the Ministry of Health, which has its own budget. The provision of services is dominated by the public sector, which has a special hospital – the Athalassa Mental Hospital – with 144 beds, the two psychiatric units in the general hospitals of Nicosia and Limassol with a capacity of 46 beds (22 in Nicosia and 24 in Limassol) as well as other care settings. The participation of the private sector in the provision of services is very limited, with a few psychiatric physicians and a number of clinical psychologists and psychotherapists practising in solo clinics on a FFS basis.

The provision of psychiatric services in Cyprus changed considerably after the 1997 mental health reform. Since then, the Ministry's policy on mental health has focused on transferring services to community-based care outside the Athalassa psychiatric hospital. In line with the new mental health legislation, a five-year plan was developed in 1997 to further decentralize mental health services and expand services in the community. According to this plan, the country was divided into five mental health administrative sectors, each one supervised by a mental health centre that provides most of the facilities required for patient rehabilitation. Priority is given to social inclusion, social cohesion and de-stigmatization. The main objective of the plan is to develop services within the community that will enable patients to be supported within their own family environment and maintain social activities. Policies focus on prevention and rehabilitation. Parallel to that, there are ongoing efforts to improve the quality of life for patients in mental hospital.

The mental health services reform also altered the settings for delivery of services. The number of psychiatric patients in the Athalassa hospital fell from 700 in 1977, to 584 in 1990, to 151 in 2000 and to 87 in 2011, largely as a result of patients receiving community-based care. Mental health care services today are provided in a variety of settings that include the aforementioned inpatient care, the mental health outpatient departments of other district and rural hospitals, community mental health centres, day centres, vocational training facilities, detoxification centres, therapeutic units for drug-addicted persons, and information and counselling centres for teenagers and families.

Services for drug addiction are mainly provided by the Therapeutic Unit for Addicted Persons (THEMEA) and Anosis therapeutic units for addicted individuals. Drug abuse has been increasing over the last few years. In recent years, emphasis has been given to mental health problems in children and adolescents, as well as addiction, prevention and treatment.

According to the Ministry of Health, in 2011 both psychiatric units in Nicosia and Limassol general hospitals had a total of 687 patient admissions and readmissions, with an 11.5 day average length of stay and occupancy rates of 57% for Nicosia and 40% for Limassol. As far as the Athalassa Mental Hospital is concerned, in 2011 the total number of patient admissions and readmissions was 430. The number of visits at outpatient departments of district hospitals as well as at the 16 urban and rural health centres increased from 49 865 visits in 2007 to 66 801 in 2011, an increase of 34%. In 2011, 15 951 home visits were

made to 1557 patients. Finally during 2011, 112 patients took advantage of vocational rehabilitation programmes; 18 patients found employment and 11 were or are on a trial period for work.

5.12 Dental care

The provision of dental care is dominated by the private sector, with most needs covered by private dentists working in solo practice. Nevertheless, a significant proportion of care, particularly for low-income citizens and pensioners, is covered by the Public Dental Services (PDS) in outpatient departments of hospitals and health centres. Citizens entitled to free treatment in the PDS are low-income people (annual income less than €16 000), civil servants and government employees regardless of income, schoolchildren and all persons registered as disabled. It is estimated that only 10% of the population accesses dental care in the public sector and only 7.4% of the total annual visits to dentists are made in the public sector (Statistical Service, 2005). According to the Eurobarometer survey on Oral Health, 91% of Cypriots prefer private to public dental clinics (Eurobarometer, 2010b). Services in the public sector are provided either free of charge or with a small co-payment, while in the private sector care is FFS paid out of pocket.

The only recognized specialists are those of orthodontics, oral surgery, dento-alveolar surgery and oral and maxillofacial surgery. Most dentists work in the private sector; only around 5%, along with 38 dental assistants and 12 dental technicians, are employed in the public sector (Ministry of Health, 2010). Dental care provided by the public sector includes both curative and preventive services. The package of curative services includes restorative dentistry, periodontology, endodontology, paedodontics as well as oral and maxillofacial surgery, and partial and complete dentures. The preventive services mainly provide schoolchildren with oral education programmes.

The location and density of both public and private dental clinics make dental care accessible to all citizens. According to the Eurobarometer survey on oral health, 96% of Cypriots (the highest percentage among the EU27 countries) reported that it would be possible to see a dentist when needed within 30 minutes. Findings from another Eurobarometer Survey in 2007 show that 90% of Cypriots consider that dental care is accessible and available, but 6 out of 10 (62%) declared that it is not affordable. The quality of services provided by public facilities is very high, as 88% reported that their perceived quality of dental care in Cyprus is good (Eurobarometer, 2007a). This is also evident by

increases in visits to the PDS: 92 802 in 2007 to 109 262 in 2010 (an increase of 17.7%). As regards dentition, 57% of Cypriots reported that they still had all their teeth (the highest percentage along with Malta among the EU27). However, despite the high level of oral health, when it comes to attitudes towards visiting a dentist, 54% answered that the last visit to a dentist was less than a year ago (EU27 average 57%) and 45% stated that the reason for visiting was for emergency care (EU27 average 17%), which was the highest among EU27 countries (Eurobarometer, 2010b).

5.13 Complementary and alternative medicine

Cyprus has no institutional framework that regulates complementary and alternative medicine (CAM) issues. Specialties such as osteopathy, naturopathy, chiropractic and homeopathy are not officially recognized and therefore doctors in these fields cannot be officially registered to work as doctors. The only recognized specialty in Cyprus is that of acupuncture, and candidates with at least 300 hours of training in traditional Chinese medicine. Eighteen acupuncturists are licensed, all working in solo practices in the private sector. The exclusion of CAM therapies from the mainstream health system can be attributed to the opposition expressed by the Cyprus Medical Association. There are no data about the number of CAM professionals working in Cyprus and therefore there is no reliable information on the quality and cost of these therapies.

5.14 Health services for specific populations

Vulnerable groups are primarily foreigners: third country nationals, illegal immigrants, asylum seekers, refugees, prisoners and Greek Cypriots not living in the government-controlled area. Members of these groups either do not have easy access to the health system or are almost excluded from access. Other vulnerable groups such as Roma, the homeless and street children exist in negligible quantities and thus do not constitute a serious problem for the health system.

In most cases, the Ministry of Health operates programmes to assist these groups. Coverage for prisoners, asylum seekers and political refugees is satisfactory. Prisoners have daily access to a physician and weekly access to a dentist: frequent visits are made by health visitors and nurses for health

education, health promotion activities and vaccinations. Regarding Greek Cypriots in the island living in areas that are not under the effective control of the republic, specialists make visits, medicines are sent and, when needed, transportation is provided for inpatient care in the government-controlled area. Finally, asylum seekers and political refugees are entitled to free access and use of the public health system. According to the Ministry of Health, cards for free access to the public system have been granted to at least 3477 political refugees and asylum seekers.

Major problems exist for illegal immigrants, who can only visit A&E departments at public hospitals, and do so even in non-emergency cases (Theodorou et al., 2011). Another group that may have difficulties accessing the public health system is Turkish Cypriots, who are citizens of the Republic of Cyprus living in areas that are not under the effective control of the republic. Although they have free access to all facilities in the public system, they must cross the so-called green line, which can be time consuming. Data from the Ministry of Health show that in the period April 2003–December 2010, 107 734 Turkish Cypriots visited public facilities in the Republic of Cyprus.

6. Principal health care reforms

Accession to the EU led to many reforms in the health system, particularly in terms of policy, regulation and the provision of services. Major challenges include reducing the rising costs of health care, addressing inequalities in access to health care services and improving the quality of services and financing of the health system. Reforms in these areas will help to maintain the progress achieved in controlling communicable diseases, to reduce the incidence of chronic diseases and to maintain the environment in a way that safeguards quality of life.

Prior to EU accession, the parliament approved a law that called for a new health system based on the principles of solidarity, justice and universality. The General Health Insurance System (GHIS) is designed to provide universal coverage within a comprehensive health system. However, the starting date of the GHIS has been repeatedly postponed due to three main reasons: (a) government concerns over costs, (b) the negative impact of the financial crisis on the fiscal revenues, and (c) the time-consuming tender procedures associated with the introduction of the new system. At this time, while there have been many discussions and policy papers written, the only tangible progress has been the creation of the HIO, which has been appointed as the body responsible for implementation of the new system. Reorganization and restructuring of the public health care sector and the Ministry of Health, along with decentralization of health services, are key priorities, which will only be fully realized after the implementation of the GHIS.

6.1 Analysis of recent reforms

Accession to the EU led to many reforms in the Cyprus health system, particularly in terms of policy, regulation and the provision of services. With the re-launch of the Lisbon Strategy in 2005, the EU and its member states

committed themselves to a new partnership and to undertake reforms in a coordinated manner. Within this framework, in 2006 the government issued its “Strategic Plan for 2007–2013”, which highlighted reforms of the organizational and financial structures of the health system as priorities (Ministry of Health, 2006; Revised National Lisbon Reform Programme of Cyprus for the period 2008–2010, 2008).

Prior to EU accession, the parliament passed Law 89(1) 2001 “for the introduction of a General Health System”, which called for a new health system based on the principles of solidarity, justice and universality (see section 2.2 for further historical background). However, the start date of the GHIS has been repeatedly postponed for three main reasons: (a) government concerns over costs, (b) the negative impact of the financial crisis on the fiscal revenues, and (c) the time-consuming tender procedures associated with the introduction of the new system (Cyprus National Reform Programme, 2011). Currently, while there have been many discussions and policy papers written, the only tangible progress has been the creation of the HIO, which has been appointed as the body responsible for implementation of the new system.

In 2007, the HIO introduced thematic work teams. With the guidance of an international consultancy firm, the teams have created policy papers and documents that describe the basic principles of operation of the new health system. Specifically, these documents describe the current system and highlight challenges for the transition to the new health system, including how health care service providers will interact and be compensated under the new system. These documents form the basis of negotiations with stakeholders (Cyprus National Reform Programme, 2011). In addition, HIO has designed the operational processes in the context of the new IT system.

In 2011 the Ministry of Health established the Purchasing and Supply Directorate in order to:

- be more flexible in decision making and prompt the launch of procedures for ensuring supplies and medical equipment for the needs of public hospitals;
- strengthen the bargaining power of the management and secure lower prices for achieving economies of scale;
- use public money effectively;
- strengthen risk control and avoid fraud.

A list of reforms that the Ministry of Health has already taken is shown in Box 6.1.

Box 6.1**Reforms already taken by the Ministry of Health**

- Computerized system in Nicosia and Famagusta General Hospitals (see section 2.7.1).
- Continuous Worker Training Plan (i.e. the organization of seminars, scholarships, establishment of the “Health Library”).
- Development of a referral system for patients who go abroad or to the private sector for care.
- Upgrades for hospital care, including the new Nicosia General Hospital in 2006, new Primary Health Care Centres (Linopetra, Egkomi), new blood centre in Nicosia, upgraded Intensive Care Units, upgraded Ambulance Service, upgraded Clinical Laboratories, reorganization of A&E departments, establishment of Interventional Cardiology Department in Limassol.
- Introduction of a Health Monitoring System that conducts epidemiological surveillance and control of infectious diseases (see section 5.1.7).
- Establishment of the Purchasing and Supply Directorate at the level of the Ministry of Health.
- Preparation of the National Plan of Action against Smoking and establishment of smoking cessation clinics in all public hospitals.
- Establishment of a National (public) Transplant Centre within the Nicosia General Hospital.
- Elaboration and implementation by the Ministry of Health of a 10-year action plan for the development of better health care services for older people.
- Implementation of the National Drug Strategy and the Action Plan for Drug Demand Reduction, (2004–2008). The Cyprus Antidrug Council is in the process of drafting a new national Drug Strategy for 2009–2012, through which special attention will be given to social reintegration measures. A new board for the Cyprus Antidrug Council has also been nominated by the Ministerial Council in the last year.

Other major reforms include the implementation of “The Safeguarding and Protection of the Patients’ Rights Law”, 2004, which addresses issues regarding patient rights (see section 2.9), as well as pharmaceutical pricing reforms between 2003 and 2009 (see section 2.8.4).

6.2 Future developments

As discussed, the major future reform is the GHIS. The introduction of the GHIS is by far the most important planned health reform in Cyprus, and will provide universal coverage within a comprehensive health system. In general, the new system is expected to:

- be based on contributions from employers, employees (as well as pensioners and rentiers) and state general revenues;
- provide universal coverage;
- encourage competition between and among providers in both the public and private sectors;
- encourage a primary care-driven referral system by paying GPs based on capitation and performance indicators; specialists will be paid on a FFS basis under a global budget by specialty;
- remunerate inpatient care using DRGs.

Many details of the proposed GHIS are still not determined. The new system is expected to improve the performance of health care provision by:

- decentralizing managerial responsibilities from the Ministry of Health to public hospitals, whereby the Ministry of Health will gradually be transformed to a policy-making body regulating public and private sector providers;
- reforming the financial management system through the introduction of modern cost accounting systems;
- establishing rules and regulations to ensure minimum standards for the quality of health services;
- promoting greater continuity of care for patients through the development of a robust GP system.

At the same time, it is expected that the introduction of the GHIS will lead to savings due to:

- bulk purchasing of drugs and establishing a drugs list
- bulk purchasing of diagnostic tests and cost-based pricing
- reductions in provider payments
- better regulation and capacity planning for human resources and medical equipment

- the establishment of an IT system to improve transparency and collection of health data.

However, there are a number of reasons why costs could increase. For example, by reducing OOP costs at the point of service, utilization may increase. At the same time, while GPs (for these purposes including paediatricians and gynaecologists) will have referral power, it may still be possible for patients to bypass them and visit specialists directly, limiting their gate-keeping role. Additionally, employee and employer insurance contributions will place additional burden on household incomes.

To be able to adapt to the anticipated challenges, exercise effective cost-control on health care spending and improve the quality of health care provision, the Ministry of Health aims to implement a system of more effective autonomy for public hospitals. This entails reinforcing managerial structures, allocating budgets to each hospital and each clinic and creating hospital clusters between neighbouring districts. Draft legislation was prepared to serve as a basis for continuing dialogue with relevant stakeholders. However, the process has been delayed because of uncertainties over how and whether to alter the employment status of employees in public hospitals, who are currently civil servants but who would probably be remunerated differently under the new system. A team of consultants has been appointed, and under their guidance 11 working groups have been set up at the Ministry of Health to prepare action plans and discuss the next steps.

Predictions about when the GHIS will be implemented are futile because of the economic recession and the political situation. Presidential elections will take place in early 2013 and negotiations regarding unification of Cyprus are at a critical point. All political parties unanimously agree that the sooner the GHIS is implemented the better but in view of the presidential elections in early 2013, no predictions can be made as to when the GHIS will be implemented.

Although there is no time frame for implementation, other future health reforms include:

- improving care for older people and expansion of nursing home care
- creation of new health centres
- upgrade of neurology care in the public sector
- establishment of a radiotherapy unit in Limassol and a second one in Nicosia
- upgrade of rehabilitation units

- community nursing
- reorganization of pharmaceutical services and the introduction of an independent Cyprus Medicines Agency
- establishment of a Food Safety Authority
- update and implementation of the National Drug Strategy
- development of a Cardiovascular Surgical Unit at Limassol Hospital.

7. Assessment of the health system

The general mission of the health system is to safeguard population health and provide high quality health services, yet the current health system has many deficiencies. Major issues include the fragmentation of services, inadequate coordination between the public and the private sector, and a lack of equity in financing. Other problems that have been identified include the uncontrolled deployment and use of high-cost medical technology in the private sector, long waiting times in the public sector, uninsured illegal immigrants and other shortages or inefficiencies in fields of care including rehabilitation, long-term care and palliative care.

The fact that the public system does not provide universal coverage and approximately 17% of Cypriots must pay out of pocket to access the public health system, or must purchase health care from the private sector, demonstrates that the health system does not guarantee financial protection for the entire population. Empirical evidence shows that the health system is disproportionately funded by low- and middle-income households, as indirect taxes constitute 50% of state budget revenues. Nevertheless, the public health system primarily provides services to low-income households.

Surveys reveal that a high percentage of citizens holds a favourable opinion about the availability and accessibility of the system, despite long waiting lists. There are also contradictory findings from population-based surveys on quality and safety. In terms of outcome, despite barriers to access for some groups leading to unmet need, generally Cypriots are in good health compared to the populations of other EU countries. However, this is in jeopardy as risk factors such as obesity and smoking may have a negative impact on the future health status of the population.

There is room for improvement in efficiency, transparency, quality and accountability. Additional patient empowerment and citizen participation in decision making, better hospital management and governance, and better control of biomedical technology deployment and use are some of the priorities to improve performance.

7.1 Stated objectives of the health system

The current health system does not provide universal coverage. Approximately 17% of Cypriots must pay out of pocket to access the public health system, or must purchase health care from the private sector (see section 3.3.1 for more details). Major health system issues include the fragmentation of services, inadequate coordination between the public and the private sector and a lack of equity in financing. Other problems that have been identified include the uncontrolled deployment and use of high-cost medical technology in the private sector, long waiting times in the public sector, uninsured illegal immigrants and other shortages or inefficiencies in fields of care including rehabilitation, long-term care and palliative care.

Resolving these issues is a key objective of the new GHIS. Despite the delays and other difficulties in implementation of the GHIS, the Ministry of Health continues to work “to safeguard population’s health and the provision of high quality health care” (Ministry of Health, 2012c). According to the Ministry of Health 2010 Annual Report, the Ministry of Health has taken actions to fulfil its stated objectives including:

- restructuring the Ministry of Health and its departments, reallocating existing personnel, introducing internal audits and better controlling beneficiaries’ referrals to the private sector and abroad for treatment;
- developing and implementing prevention programmes for all the serious public health problems such as addictive substances, chronic and communicable diseases, and cancer;
- reorganizing and computerizing public hospitals;
- improving continuing education for all health professionals of the public sector.

7.2 Financial protection and equity in financing

7.2.1 Financial protection

Generally, financial protection is closely linked to the breadth, scope and depth of coverage. Since the current system does not secure universal coverage and free-of-charge services at the point of provision for all Cypriots, it can be argued that the health system does not provide adequate protection from the financial consequences of illness. Additionally, in many instances beneficiaries may choose to visit the private sector even knowing that they themselves will bear the financial burden.

The fact that over 50% of total health expenditures are from private sources is sufficient evidence that the health system in Cyprus does not guarantee basic financial protection for the population. This may to some extent be explained by the absence of universal coverage but a significant proportion of private expenditure is for individuals who can receive care free of charge from the public system. Medium and low annual income households spend a higher proportion of their income in the form of OOP payments for health services compared with high-income households (Family Budget Survey 1996/97, 1999; Family Budget Survey 2003, 2006; Family Budget Survey 2009, 2011; Hsiao & Jakab, 2003). Another recent survey finds that as income increases, household health expenditure increases too, although at a slower rate (Andreou Pashardes & Pashourtidou, 2010). Private health expenditure and OOP payments have remained at high levels, although both have slightly declined as a share of total health expenditures.

There is limited data regarding affordability of health care and no analysis of the level of catastrophic health spending. Eurobarometer finds that for EU27 member states, a significant percentage of Cypriots feels that basic health services are not affordable in Cyprus (Eurobarometer, 2007a). The relevant percentages are 62% for dental care (EU27 average 51%), 66% for medical or surgical specialties (EU27 average 35%), 39% for family doctors or GPs (EU27 average 11%) and 35% for care services for dependent people who receive home care (EU27 average 32%). In addition 6.7% of Cypriots reported unmet needs during the past twelve months, with half of those individuals stating that the reason for having perceived unmet medical needs was that they could not afford care or thought it was too expensive (Baert & De Norre, 2009).

7.2.2 Equity in financing

The public health system is financed by the state budget. Taking into consideration that individuals and families with high annual incomes contribute a large share of the state budget, it could be argued that the system helps to redistribute resources from the wealthy to those with low incomes, particularly older people and pensioners. This is confirmed by research made by the Economic Research Centre of the University of Cyprus, which shows that the public health system in Cyprus mostly benefits low-income households and those with very young or old heads-of-household, which could indicate that the current system is equitable to some extent (Andreou Pashardes & Pashourtidou, 2010). However, the effect of this redistribution in favour of the poor is reduced due to high OOP payments that are regressive (Family Budget Survey 1996/97, 1999; Family Budget Survey 2003, 2006; Family Budget Survey 2009, 2011; Hsiao & Jakab, 2003). There are other examples where the system does not promote equity in financing, including the fact that all current and retired civil servants, as well as 12 other smaller population groups, enjoy free access to the public health system regardless of their annual income.

The fact that most high-income households do not have free access to health care even though they pay taxes is an issue that is expected to be addressed in the new GHIS. According to Law 89(I) 2001, the financing of the new health system will come from employers, employees (including pensioners and renters) and the state. These three parties will be obliged to pay contributions, based on the gross salaries of employees and pensioners. This new method of financing for Cyprus cannot be assessed in terms of equity and redistribution of resources before it is put into practice.

7.3 User experience and equity of access to health care

7.3.1 User experience

For Cypriots “respect of a patient’s dignity” is one of the most important elements of high quality health care and patient satisfaction (Eurobarometer, 2010a). There are conflicting findings from different patient satisfaction surveys. Although general patient satisfaction for the health system is quite high, 14.5% reported being dissatisfied mainly due to long waiting times (Theodorou, 2009a). Evaluating hospitalization in public hospitals, the vast majority of patients reported being very satisfied with health professionals (e.g. communication, respect, politeness and visit duration), while factors

such as food, visiting hours and noise during sleep were assessed lower in the satisfaction scale (Theodorou, 2009b). Despite the high level of satisfaction with the health system, 88% of Cypriots (the highest percentage among EU27 countries) expressed their willingness to travel to another EU country to receive medical care (Eurobarometer, 2007b). Cypriots' willingness to travel to receive care could be considered inconsistent with the declared high level of satisfaction, even though it can perhaps be attributed partly to geographical, as well as economic and cultural, characteristics of the Cypriots.

7.3.2 Equity of access to health care

Since the current system does not guarantee universal coverage, one can assume that there is no equity of access across the entire population. Vulnerable groups including third country nationals, illegal immigrants, asylum seekers, refugees, prisoners and Greek Cypriots not living in the government-controlled area often have difficulty accessing health care services. For example, 18.9% of immigrants reported unmet medical needs due to access barriers, mainly for preventive services (particularly laboratory and screening tests) and dental care (Theodorou et al., 2011). Among public system beneficiaries, there are no serious access barriers due to long distances or poor transportation. User charges, which are relatively low in the public sector, also do not create distortions in access, while informal payments are not a major issue. Despite affordability issues for some, Eurobarometer (2007a) finds that Cypriots tend to have favourable opinions about the availability and accessibility of hospitals (74% in Cyprus vs 76% in EU27), dental care (90% vs 74%), medical and surgical services (86% vs 62%) and family doctors or GPs (95% vs 88%).

However, there are some access problems due to the long waiting lists for certain surgical operations and high-cost screening tests, which limit access to care and force patients to seek care in the private sector. Although there is no evidence, it is possible that long waiting lists prevent equitable access, since low-income groups must either wait for a long time for care with the potential for negative consequences for their health, or must visit the private sector and pay high costs. In addition, equity of access is not ensured for immigrants, particularly those who are illegal and undocumented. Research on the health of immigrants identified five major barriers to accessing care – cost, language, dependency on employer and lack of autonomy, culture and religion, and health illiteracy (Pithara, Michalinos & Theodorou, 2012).

7.4 Health outcomes, health service outcomes and quality of care

7.4.1 Population health

It is widely accepted that the determinants of health are varied and mostly outside the health system. As a result, it is difficult to attribute changes in the health status of a population only to health services. In Cyprus, apart from limited data available on morbidity and mortality, there is a lack of epidemiological studies on population health.

Basic health indicators such as life expectancy at birth, infant mortality and crude mortality rates have steadily improved over time (see section 1.4). However, major risk factors such as smoking and alcohol consumption, risky driving and other unhealthy lifestyles may have serious negative impacts on health status in the future. More than 30% of the population aged over 15 years smokes, 34.4% is overweight and 14.8% is obese (Statistical Service, 2010a). Particularly alarming are data on childhood obesity. Results from a cross-sectional study conducted in 2000 in Cyprus showed that the prevalence of obesity in children 6–17 years old was 10.3% among males and 9.1% among females; an additional 16.9% of males and 13.1% of females were defined as overweight (Savva et al., 2002).

Although it is impossible to directly link health improvements to the health system, there have been some achievements, particularly in the field of public health, that are clearly due to specific actions. For example, high child immunization coverage has led to the eradication of neonatal tetanus, diphtheria and poliomyelitis. Furthermore, the successful thalassaemia prevention programme has led to almost zero new cases.

7.4.2 Health service outcomes and quality of care

There are several different perspectives on what constitutes quality in health care: quality from the professional perspective, quality from a management perspective and quality from a patient perspective. It is expected that a comprehensive system should incorporate elements from all three. Evidence presented here on the quality of health care services in Cyprus is mainly from the patient's perspective. Other quality dimensions and indicators such as the high rates of vaccinations and barriers to access are discussed elsewhere in this chapter.

In the 2010 Eurobarometer survey on patient safety and quality of healthcare, 73% of Cypriots (compared to 70% in EU27) evaluated overall quality of health services in Cyprus as good, although 35% reported that quality in Cyprus is worse in comparison with other EU member states. Regarding safety, Cypriots had the second highest percentage in the EU27 that felt there was a high likelihood of being harmed by hospital care (81%) or by non-hospital care (77%). Cypriots, along with Greeks, also gave the highest scores regarding the probability of adverse effects of health care. Thus, 85% of respondents believe that it is likely that they will have an incorrect, missed or delayed diagnosis, 78% believe they will get a hospital infection, 76% worry about surgical errors, 75% worry about medication-related errors and 68% worry about medical device or other equipment-related errors. Not surprisingly given these sentiments, 35% of respondents reported that they or a member of their family had previously experienced an adverse event when receiving health care (compared to 26% of EU27 respondents). Needless to say, the findings from patient surveys are contradictory. Quite high levels of satisfaction regarding services provided and sufficiently positive perceptions about quality of services, coupled with high percentages of individuals who believe that they may suffer from an adverse event in the hospital or have already experienced such an event, are difficult to reconcile.

Relevant information on quality and safety of health services in Cyprus from the professional perspective is limited. According to the OECD, an important quality indicator for patient safety is the number of hospital-acquired infections (OECD, 2009). Findings from an epidemiological study on hospital-acquired infections in the public sector of Cyprus revealed that the number of patients with such infections was 6.1 cases per 100 patients in 2006, with a higher prevalence (21.7%) in intensive care units (Medical School, University of Crete, 2009). Additionally, other research on physician perceptions and adherence to guidelines for management of hypertension show that the overall agreement rate between physicians' recommendations and European guidelines was 70.4%. Moreover, it was found that 72.9% of patients were correctly advised to receive anti-hypertensive medication, although only 60.5% of patients were correctly advised to adopt particular lifestyle changes (Theodorou et al., unpublished).

Better measurement of quality and safety can only be achieved through the implementation of quality assurance programmes, which are currently lacking.

The majority of public as well as private primary care settings have limited monitoring systems and inconsistent use of clinical standards of care, such as chronic disease management guidelines and patient satisfaction surveys

(Zachariadou et al., 2006). Hospital information systems, which have been recently installed (Nicosia and Famagusta), along with the monitoring unit at the Ministry of Health, will prove to be invaluable.

7.4.3 Equity of outcomes

No official survey or report concerning health and health care outcomes across different population groups has ever been conducted in Cyprus. However, there are indications that serious barriers to access for some groups, such as immigrants, may lead to limited utilization of services and ultimately adverse health outcomes. Other smaller groups such as prisoners, asylum seekers, refugees and Greek Cypriots living in the occupied area are usually covered through Ministry of Health programmes and so are less likely to have poor health outcomes for access reasons.

It is also expected that inequalities in access and utilization of services between different socioeconomic groups, particularly between those who have access only to the public system and those who have access to both the public and the private systems, can create the conditions for inequalities in health outcomes. There is no evidence that inequalities of outcomes exist between men and women or between people living in different regions.

7.5 Health system efficiency

7.5.1 Allocative efficiency

The health system does not currently employ complex mechanisms, tools or formulas for allocating resources. Resource allocation is made in a rather simplistic way via annual budgets, based on estimates of increases in need since the previous budget. This way of budgeting based on historical patterns of expenditure can be affected by political and societal pressures that mostly emanate from clientelistic perceptions, which can lead to negative results for equity of the system and resource efficiency. There is no statutory procedure whereby resource needs are discussed and documented in line with a Resource Allocation Working Party formula, where competing needs are financed according to the priorities of the Ministry of Health. As such, Cyprus health policy is mainly based on national level priorities.

There are also inadequate legal provisions for controlling the dispersion of high-cost medical technology. Cyprus, along with Greece, has the highest densities of diagnostic imaging technologies in the EU (see Table 4.2).

In most cases, priorities and objectives are based on epidemiological data and real medical needs, such as the thalassaemia problem, which was and still remains a policy priority in Cyprus. Health priorities set by the EU are always adopted and financed by the Ministry of Health. For example, priorities for combating chronic and communicable diseases, which have been priorities for the EU, have also been adopted as priorities for Cyprus's health policy.

Public participation in priority setting and resource allocation is very limited, although in instances in which the Ministry of Health is developing action plans for combating particular diseases or other major public health problems, the Ministry of Health usually consults with interested groups and other stakeholders. Despite the lack of documentation, it is commonsense that Cypriot citizens and health professionals want and should have greater participation in priority setting and resource allocation. Evidence from a study in Greece documents the desire of both the Greek public and health care professionals to have active involvement in the process of priority setting and resource allocation. In fact, 83% of Greek citizens stated that their opinions should inform decisions regarding prevention and programmes targeted at population groups, while a slightly lower percentage – 70% – believe that their opinions should also be heard regarding medical procedures (Theodorou et al., 2010).

7.5.2 Technical efficiency

Although the health system consumes a small share of economic resources, this does not mean it is efficient. In many areas the potential exists for efficiency and quality gains. In terms of health policy, the lack of a favourable management environment in public hospitals and health centres is a serious issue for efficiency. Furthermore, the financing of public hospitals via annual budgets does not generate incentives for increased productivity, since there is no direct connection between hospital performance and budget allocation. The same issue is valid for public sector doctors, who are paid on a salary basis, without incentives to increase productivity and improve service quality. In addition, overutilization of services occurs due to limited public–private coordination and lack of IT systems.

At the micro-level, basic hospital indicators are quite good although there is considerable room for further improvement (see Figure 4.1). Policies towards a more active role for nurses within operating teams, which is limited at the moment, health professionals' continuous education/training and change of skill mix, and better organization and management of the hospital operating theatres can significantly increase technical efficiency and reduce the current long waiting lists.

In the field of pharmaceuticals there is also room for savings through the generic substitution of branded drugs. While in the public sector, generics and generic substitution are common, in the private sector this is limited and there are no incentives for doctors and pharmacists to do so. E-prescribing is also eventually expected to result in savings.

In the private sector there are efficiency issues due to the absence of specific legal provisions for the control of high-cost health technology, which leads to waste through provider-induced demand and duplication of services.

7.6 Transparency and accountability

Transparency and accountability enhance the credibility and performance of the health care system, foster public trust, promote public confidence in health professionals and protect the interests of the public. Even though there are no internationally accepted standards and indicators to measure transparency and accountability, most agree that patient and citizen empowerment, the protection of patients' rights, the fight against corruption and fraud in the system, and addressing inequalities in access and financing constitute milestones of any such policy.

In Cyprus steps have been taken to improve health system transparency and accountability. Some of these steps are:

- the establishment and operation of the Office of the Administration Commissioner (Ombudsman);
- the enactment of the law for the safeguarding and protection of patients' rights;
- the operation of offices in all public hospitals for receiving and management of citizens' complaints;

- the established practice of the Ministry of Health to request the opinion of interest groups (patients, citizens, providers, trade unions, local authorities) before major changes;
- the participation of employers and employees in the governing board of HIO;
- the adoption of European Council Directive 89/105/EEC for the transparency of national provisions regulating the pricing and reimbursement of medicinal products.

All the above measures constitute major steps in the right direction, even though there are no relevant data on the results of these interventions. Undoubtedly, there is much room for further improvement, including:

- a better and more effective system for management of patients' complaints;
- greater citizen and patient information about their rights, entitlements and costs;
- awareness of health benefits and health literacy improvement;
- better management of appointment systems for outpatient departments, diagnostic tests and waiting lists in hospitals to reduce external interventions;
- adherence to existing laws and rules for personnel recruitment/ promotion and procurement.

Similarly, new measures such as the installation of monitoring systems, the introduction of clinical audit, and a new method of hospital financing and doctor remuneration based on performance will strengthen accountability. The ongoing computerization of public hospital, will also facilitate this objective.

8. Conclusions

The health system in Cyprus is comprised of separate public and private systems of comparable size. Government expenditure on health care accounts for only around 40% of total health expenditure, which is a considerably lower percentage than in all other EU countries. The public health system, which is financed by the state budget, is highly centralized and tightly controlled by the Ministry of Health. Entitlement to free health services is based on citizenship and income level and, as a result, no more than 83% of the population has free access to health care. The public sector mainly provides outpatient and hospital care services, and offers some specialist services that are otherwise not available from the private sector. All health professionals working in the public system have civil servant status and are remunerated on a salary basis. There are notable deficiencies in the public system, such as long waiting lists for some services, as well as a lack of computerization, performance payment incentives, monitoring systems and other tools for the improvement of efficiency and quality.

The private sector is almost completely separate from the public health system and is largely unregulated by the government. As only about one-fifth of the population has coverage through VHI, the majority of private expenditure is out of pocket at the point of service, with a significant share of private sector utilization and expenditure by beneficiaries who have free access to the public system. Private sector physicians provide ambulatory care services and work mostly in solo practices, their own surgery centres or are shareholders in private hospitals and polyclinics; they are paid mostly on a FFS basis. The private system suffers from low utilization rates in some areas, including for high-cost medical equipment, which is often installed without consideration for cost or current levels of capacity. Moreover, there is also a lack of data on the performance of the private system, which does not provide information to the Ministry of Health for assessment and review.

Despite similarities in their sizes, there is disequilibrium between the public and private sectors. The public system suffers from long waiting lists for many services, which has been worsened by the recent economic crisis, while the private sector has an overcapacity of expensive medical technology that is underutilized. There is also an imbalance in nursing supply between the public and private sectors, as well as shortages in both sectors in some fields of care, particularly long-term care, rehabilitation care and palliative care. Public sector inefficiencies under the current system lead to very high OOP payments in the private sector, and often there is duplication of services between the public and private sectors. Ultimately, it is the vulnerable and low-income groups who suffer the most from inequalities in financing, access and outcomes.

Cyprus is trying to move to a comprehensive system of universal coverage with better benefits, more effective financing mechanisms, cooperation between the public and private sectors, and reorganization and computerization of all public hospitals. To this end, a new health insurance system has been planned, although it is uncertain as to when this system will ultimately be implemented. To enable the success of the new system, a number of steps must be taken. For example, while computerization has begun in two public hospitals, IT should be improved and expanded where there is no comprehensive health data collection mechanism. The design of adequate payment mechanisms and associated incentives for doctors and hospitals will largely depend on the existence of quality data.

Other future challenges for the new health system include:

- the ageing population, which will potentially lead to increases in special needs and consequently costs;
- better equity and transparency;
- control of the number of new doctors and other health workers;
- introduction of medical audits and quality assurance programmes;
- better management and incentives for cost containment and increased effectiveness, efficiency and quality;
- introduction of a referral system;
- control of high-cost medical technology in the private sector;
- better planning of health services and addressing shortages in long-term care, rehabilitation care and palliative care;
- reduction of long waiting times;

- reduction of tobacco, alcohol and unhealthy diets, which are the emerging health problems that need to be addressed in order to prevent the reversal of positive trends in life expectancy;
- improving and developing health professional educational programmes.

Despite shortcomings, inefficiencies and the relatively low expenditure as a percentage of GDP (second only to Romania in the EU27), the health system in Cyprus produces very positive results according to many performance measures. Basic health indicators, such as high life expectancy at birth, low infant mortality rate and low incidence of communicable diseases rank Cyprus fairly high in EU and international comparisons. Likewise, according to many surveys, patient satisfaction is fairly high and care in the public sector is perceived to be of high quality. Major changes associated with the new GHIS are expected to enhance the quality of services, further improve health outcomes and ensure that all Cypriots benefit from health care provision.

9. Appendices

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9.2 Useful web sites

Association for the Psychosocial Health of Children and Adolescents:
www.epsype.gr

The Cyprus Anti-Cancer Society: www.anticancersociety.org.cy

Cyprus Anti-Drugs Council: www.ask.org.cy/

Cyprus Dental Association: <http://www.dental.org.cy/>

Cyprus Government Gazette: <http://www.cygazette.net>

Cyprus Government Web Portal: <http://www.cyprus.gov.cy>

Cyprus Institute of Neurology and Genetics: <http://www.cing.ac.cy>

Cyprus Medical Association: <http://www.cymaAdmin@cyma.org.cy>

Cyprus Ministry of Health: <http://www.moh.gov.cy>

Cyprus Nurses and Midwives Association: <http://www.cyna.org/>

Cyprus Pharmaceutical Association: <http://www.cpa.org.cy/>

Cyprus Safety and Health Association: www.cysha.org.cy

Cyprus Statistical Services: <http://www.mof.gov.cy/mof/cystat/statistics.nsf>

Health Insurance Organization: <http://www.hio.org.cy/C>

Parliament: <http://www.parliament.cy>

Pharmaceutical Services, Ministry of Health: www.moh.gov.cy/phs

9.3 HiT methodology and production process

HiTs are produced by country experts in collaboration with the Observatory's research directors and staff. They are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The most recent template is available online at:

<http://www.euro.who.int/en/home/projects/observatory/publications/health-system-profiles-hits/hit-template-2010>.

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to published literature. Furthermore, international data sources may be incorporated, such as those of the OECD and the World Bank. The OECD Health Data contain over 1200 indicators for the 34 OECD countries. Data are drawn from information collected by national statistical bureaux and health ministries. The World Bank provides World Development Indicators, which also rely on official sources.

In addition to the information and data provided by the country experts, the Observatory supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the European Health for All database. The Health for All database contains more than 600 indicators defined by the WHO Regional Office for Europe for the purpose of monitoring Health in All Policies in Europe. It is updated for distribution twice a year from various sources, relying largely upon official figures provided by governments, as well as health statistics collected by the technical units of the WHO Regional Office for Europe. The standard Health for All data have been officially approved by national governments. With its summer 2007 edition, the Health for All database started to take account of the enlarged EU of 27 Member States.

HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

A typical HiT consists of nine chapters.

1. Introduction: outlines the broader context of the health system, including geography and sociodemography, economic and political context, and population health.
2. Organization and governance: provides an overview of how the health system in the country is organized, governed, planned and regulated, as well as the historical background of the system; outlines the main actors and their decision-making powers; and describes the level of patient empowerment in the areas of information, choice, rights, complaints procedures, public participation and cross-border health care.
3. Financing: provides information on the level of expenditure and the distribution of health spending across different service areas, sources of revenue, how resources are pooled and allocated, who is covered, what benefits are covered, the extent of user charges and other out-of-pocket payments, voluntary health insurance and how providers are paid.

4. Physical and human resources: deals with the planning and distribution of capital stock and investments, infrastructure and medical equipment; the context in which IT systems operate; and human resource input into the health system, including information on workforce trends, professional mobility, training and career paths.
5. Provision of services: concentrates on the organization and delivery of services and patient flows, addressing public health, primary care, secondary and tertiary care, day care, emergency care, pharmaceutical care, rehabilitation, long-term care, services for informal carers, palliative care, mental health care, dental care, complementary and alternative medicine, and health services for specific populations.
6. Principal health reforms: reviews reforms, policies and organizational changes; and provides an overview of future developments.
7. Assessment of the health system: provides an assessment based on the stated objectives of the health system, financial protection and equity in financing; user experience and equity of access to health care; health outcomes, health service outcomes and quality of care; health system efficiency; and transparency and accountability.
8. Conclusions: identifies key findings, highlights the lessons learned from health system changes; and summarizes remaining challenges and future prospects.
9. Appendices: includes references, useful web sites and legislation.

The quality of HiTs is of real importance since they inform policy-making and meta-analysis. HiTs are the subject of wide consultation throughout the writing and editing process, which involves multiple iterations. They are then subject to the following.

- A rigorous review process (see the following section).
- There are further efforts to ensure quality while the report is finalized that focus on copy-editing and proofreading.
- HiTs are disseminated (hard copies, electronic publication, translations and launches). The editor supports the authors throughout the production process and in close consultation with the authors ensures that all stages of the process are taken forward as effectively as possible.

One of the authors is also a member of the Observatory staff team and they are responsible for supporting the other authors throughout the writing and production process. They consult closely with each other to ensure that

all stages of the process are as effective as possible and that HiTs meet the series standard and can support both national decision-making and comparisons across countries.

The review process

This consists of three stages. Initially the text of the HiT is checked, reviewed and approved by the series editors of the European Observatory. It is then sent for review to two independent academic experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health, or appropriate authority, and policy-makers within those bodies are restricted to checking for factual errors within the HiT.

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Key

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^f Romanian

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^h Spanish

ⁱ Turkish

^j Estonian

^k Polish

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HiTs are in-depth profiles of health systems and policies, produced using a standardized approach that allows comparison across countries. They provide facts, figures and analysis and highlight reform initiatives in progress.