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Health system review

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Health Systems in Transition

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Preface

The Health Systems in Transition (HiT) profiles are country-based reports 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 profile is produced by country experts in collaboration with the Observatory's research directors and staff. In order to facilitate comparisons between countries, the profiles are based on a template, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a profile.

HiT profiles 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.

Compiling the profiles 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 Health for All database, national statistical offices, Eurostat, the Organisation for Economic Co-operation and Development (OECD) Health Data, the International Monetary Fund (IMF), the World Bank, and any other relevant sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate series.

A standardized profile 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. The HiT profiles 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.

HiT profiles and HiT summaries are available on the Observatory's web site at www.euro.who.int/observatory. A glossary of terms used in the profiles can be found at the following web page: www.euro.who.int/observatory/glossary/toppage.

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The Estonian Health Systems in Transition (HiT) profile was written by Agris Koppel (Health Policy and Systems Officer, WHO Country Office in Estonia, WHO Regional Office for Europe), Kristiina Kahur (Senior Health Economist, Estonian Health Insurance Fund (EHIF)), Triin Habicht (Head of Health Economics Department, EHIF), Pille Saar (Chief Specialist on Human Resource Planning of Health Care, Ministry of Social Affairs), Jarno Habicht (Head of Country Office, WHO Regional Office for Europe), and in collaboration with Ewout van Ginneken (European Observatory on Health Systems and Policies/Berlin University of Technology). It was edited by Ewout van Ginneken. The European Observatory on Health Systems and Policies' Research Director responsible for the Estonian HiT was Reinhard Busse (Berlin University of Technology).

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The current series of HiT profiles has been prepared by the staff of the European Observatory on Health Systems and Policies. The European Observatory on Health Systems and Policies is a partnership between the WHO Regional Office for Europe, the Governments of Belgium, Finland, Greece, Norway, Slovenia, Spain and Sweden, the Veneto Region of Italy, the European Investment Bank, the Open Society Institute, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine.

The Observatory team working on the HiT profiles is led by Josep Figueras, Director, and Elias Mossialos, Co-Director and Heads of the Research Hubs, Martin McKee, Reinhard Busse and Richard Saltman. Technical coordination is led by the WHO Country Office in Estonia in close collaboration with the European Observatory on Health Systems and Policies.

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List of abbreviations

ABC	Activity-based costing
ADD	Average daily dose
AIDS	Acquired immunodeficiency syndrome
ALOS	Average length of stay
ATC	Anatomic Therapeutic Chemical (classification)
BMI	Body mass index
BUPA	British United Provident Association
CIS	Commonwealth of Independent States
CPI	Consumer price index
CT	Computerized tomography
DALY	Disability-adjusted life year(s)
DDD	Defined daily dose
DPH	Department of Public Health
DRG	Diagnosis-related group
EC	European Commission
ECBHS	Estonian Centre of Behavioural and Health Sciences (University of Tartu)
EEA	European Economic Area
EEK	Estonian kroon
EGP	Estonian Genome Project
EHIC	European Health Insurance Card
EHIF	Estonian Health Insurance Fund
EHR	Electronic health record
EM	Emergency medicine
EMA	Estonian Medical Association
EPAA	Estonian Patients Advocacy Association
ERDF	European Regional Development Fund
ESPAD	European School Survey Project on Alcohol and Other Drugs
EU	European Union
EU12	The 10 Member States that acceded to the European Union in May 2004, plus the 2 that joined in January 2007
EU15	The 15 Member States of the European Union prior to accession of 10 new Member States in 2004
EU27	The entire EU, consisting of 27 Member States
GATS	General Agreement on Trade in Services

GDP	Gross domestic product
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GP	General practitioner
HALE	Health-adjusted life expectancy
HBSC	Health Behaviour of School-aged Children (study)
HCB	Health Care Board
HFA	Health for All
HI	Health insurance
HiT	Health Systems in Transition
HIV	Human immunodeficiency virus
HNDP	Hospital Network Development Plan
HPI	Health Protection Inspectorate
HRH	Human resources for health
HTA	Health technology assessment
ICD	International Classification of Diseases
IMF	International Monetary Fund
INN	International Nonproprietary Name
IT	Information technology
IVF	In vitro fertilization
LE	Life expectancy
MRI	Magnetic resonance imaging
NATO	North Atlantic Treaty Organization
NGO	Nongovernmental organization
NIHD	National Institute for Health Development
OECD	Organisation for Economic Co-operation and Development
OOP	Out-of-pocket (payments)
OTC	Over-the-counter (pharmaceuticals)
PATH	Performance Assessment Tool for Hospitals (WHO)
PHC	Primary health care
PPP	Purchasing power parity
QALY	Quality-adjusted life year(s)
SAM	State Agency of Medicines
SANEPID	Sanitary epidemiological service
SDR	Standardized death rate
SHI	Social health insurance
SHIC	State Health Insurance Council
SIB	Social Insurance Board
STI	Sexually transmitted infection
TB	Tuberculosis
TFYR Macedonia	The former Yugoslav Republic of Macedonia
TRIPS	Trade-Related Aspects of Intellectual Property Rights (Agreement)
UNAIDS	Joint United Nations Programme on HIV/AIDS
USSR	Union of Soviet Socialist Republics
US$	United States dollars
VAT	Value added tax
VFB	Veterinary and Food Board
VHI	Voluntary health insurance
WHO	World Health Organization
WTO	World Trade Organization

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Abstract

The Health Systems in Transition (HiT) profiles are country-based reports that provide a detailed description of a health system and of policy initiatives in progress or under development. HiTs examine different approaches to the organization, financing and delivery of health services and the role of the main actors in health systems; describe the institutional framework, process, content and implementation of health and health care policies; and highlight challenges and areas that require more in-depth analysis.

Estonia has vigorously and quite successfully reformed its health system over the last decades. Whereas incremental changes are observed in the last five years, larger scale legislative reforms had been implemented since the early 1990s and at the beginning of this century. The current system is built on solidarity based health financing; a modern provider network based on family-medicine centred primary health care (PHC); modern hospital services and more attention for a public health. This has resulted in a steadily increasing life expectancy and continuously high population satisfaction rates with access and quality.

However, as in any health system, a number of challenges remain. They include reducing inequities in health status and health behaviour; improving control of and responding to the consequences of the high rates of HIV and related conditions; improving regulation of providers to ensure better public accountability; and, sustaining health expenditures and human resources on a level that ensures timely access and high quality of care. The last challenge is particularly important in the face of rising patient expectations and increased costs and volume of health care services. If solidarity and equity are to be maintained and guaranteed for the future, additional resources need to be found from public sources of revenue.

Executive summary

Estonia is the northernmost of the Baltic states, which lie on the east coast of the Baltic Sea, with Latvia to the south and Russia to the east. Estonia is a democratic parliamentary republic and has belonged to the North Atlantic Treaty Organizaton (NATO) and the European Union (EU) since 2004. Since regaining independence, the political environment has been stable enough to implement various economic and social sector reforms which aim to further ensure stability in Estonia. Estonia has enjoyed a level of continuous annual economic growth in recent years that is above the EU average. Several positive trends can be observed in the economic environment, such as the unemployment rate decreasing to 4.7% in 2007; the employment rate increasing for women and people over 65; as well as wage increases. This is supported by a conservative fiscal policy and balanced public budget policy, along with a simple taxation system. However, vulnerability is high because Estonia has a small and open economy, with a large, persistent current account deficit and a rapidly expanding gross external debt. Estonia has a population of 1 340 000 in 2008. Since the late 1990s, an increasing birth rate has been observed, yet this is lower than current death rates. The life expectancy (LE) in 2005 for women was 78.1 years and for men 67.3 years, which is lower than the relative EU averages, but has been steadily increasing since 1999.

The main challenge in terms of disease burden is premature mortality caused by external causes and lifestyle-related risk factors. The working-age population bears more than half the current burden of disease. The main risk factors leading to ill health are related to tobacco use, low levels of physical activity, alcohol consumption and obesity. Although positive trends are visible regarding decreasing tobacco use among adults, the rising alcohol consumption among adolescents is a worrying trend. Other positive trends include high

vaccination rates and decreasing incidence rates of communicable diseases. However, the most serious health challenge facing the Estonian health system is the high HIV incidence (which peaked in 2001) and prevalence.

Organization and regulation

The steward of the health system in Estonia is the Ministry of Social Affairs. The organizational structure in the health system is advanced and comprises numerous actors, including various agencies under the Ministry of Social Affairs (e.g. State Agency of Medicines (SAM), Health Care Board (HCB), National Institute for Health Development (NIHD), Health Protection Inspectorate (HPI)); public independent bodies (the EHIF); (mainly publicly owned) hospitals under private regulation and private primary care units; and various nongovernmental organizations (NGOs) and professional associations. In recent years, other sectors (e.g. agriculture, justice, economy, environment and transport) have started to be more actively involved in health system activities due to the development and implementation of intersectoral public health strategies. In this environment, with many stakeholders and diverging responsibilities, a correct balance between the stewardship role, direct control mechanisms, good governance and proper accountability is continuously aimed for within the Ministry of Social Affairs and within the health system.

Fundamental reforms aiming to develop a modern health system took place in the early 1990s. These were followed by a second legislative review during 2000–2003 that addressed various areas including health financing, service provision and regulation of relations between different actors (e.g. purchaser, provider and patient). In recent years, further adjustment to regulation has been implemented to harmonize the framework with EU legislation and to respond to emerging needs. However, these adjustments have been marginal compared to the reforms of the previous periods. The period since 2004 can be characterized by preparing, launching and implementing various intersectoral public health strategies (e.g. those dealing with cardiovascular disease and HIV/AIDS). Important differences compared to the previous (smaller scale) public health policies have included the clear mandate, improved accountability, firm commitment, the allocated resources and the large-scale preparation process involving all stakeholders. Consultation on the preparation of a long-term overall National Health Strategy covering the whole health system is an ongoing process as of 2008.

Financing

The Estonian health care system is mainly publicly funded through solidarity-based mandatory health insurance contributions in the form of earmarked social payroll tax, which mounts to almost two thirds of total health care expenditure. The Ministry of Social Affairs is responsible for financing emergency care for uninsured people, as well as for ambulance services and public health programmes. The role of the local municipalities in health financing is relatively small, and yet diverse. Private expenditure comprises approximately a quarter of all health expenditure, mostly in the form of co-payments for pharmaceuticals and dental care. This growing out-of-pocket (OOP) expenditure may hinder access to health care for low-income population groups. As a consequence, health financing has become more regressive over recent years.

The core purchaser of health care services for insured people is the Estonian Health Insurance Fund (EHIF). The health insurance system is mandatory, covering about 95% of the population. Contributions are related to employment, but the share of non-contributing individuals (such as children and pensioners) represents almost half of the insured. In the longer term this is a threat to the financial sustainability of the health system, as the narrow revenue base is mostly related to wages and the population is ageing. This is complicated by a potential downturn in economic activity. Over recent years, steps have been taken to increase population coverage as well as the revenue base, but the impact of these steps is still marginal. More resources have been allocated to health care and public health programmes which increased the activities, but further fragmentation of financing sources needs to be closely monitored and avoided. Health services purchasing builds on a contractual relationship with providers as well as financial incentives. Contracts and procedures to involve providers in negotiations have continuously been developed and, similarly, new payment mechanisms have been introduced. For hospitals a diagnosis-related group(s) (DRG) system has been implemented since 2004, complementing the fee-for-service payments and those related to bed-days. With regard to primary care, age-adjusted capitation, fee-for-service payments for selected areas and basic allowances have been complemented by a quality bonus system, implemented in 2006, which aims to foster disease prevention and management of selected chronic conditions.

Physical and human resources

Estonia inherited from the Soviet era a large, ineffective hospital network with poor facilities. Various structural and managerial reforms in the 1990s reduced the number of hospitals (and beds) and restructured the providers'

network. The reforms aim to modernize the network and enable the provision of high-quality services while also ensuring sufficient health services access. This process to modernize the current facilities is ongoing and is supported by various resources, including those from the EU structural funds. Estonia has developed a well-equipped infrastructure for primary care that builds on family physicians and nurses. Medical training for doctors is provided by one university and for other professionals (including nurses) this has been centralized to some medical schools to ensure higher quality of training. The curricula for health specialists and workers were reviewed in the 1990s and were brought in line with EU law in anticipation of the 2004 accession. Since a general lack of human resources exists in the health care sector, strong emphasis has been laid on long-term planning and increasing training for nurses and doctors. EU accession in 2004 led to a temporary migration spike of doctors and nurses migrating to neighbouring EU countries. In recent years, however, migration has decreased and the main challenges are to retain qualified professionals in the health care sector, along with the ageing of the current workforce. The period since the mid-1990s can also be characterized by high investments in information and communication technologies. This has led to e-health solutions which aim to achieve better coordination, improved access and transparency. This development builds on information technology (IT) solutions which have been implemented since the 1990s. Since 2005, a countrywide e-health approach encompasses four innovative pillars: Electronic Health Records (EHR), Digital Registrations, Digital Imaging and Digital Prescriptions.

Provision of services

Reforms which started in the early 1990s introduced the principles of a purchaser and provider split; strengthening primary care; free choice of provider; and a high level of provider autonomy in the Estonian health care system. As a result, the current Estonian health care system is built around countrywide primary care which is centred around family medicine, with specially trained doctors and nurses. Primary care is supported by ambulance services available all over Estonia. Specialized care has increasingly been provided in outpatient settings and care involving high technology has been centralized to fewer institutions. Furthermore, over the years, availability of and access to pharmaceuticals has increased significantly. Increasing importance of public health services has led to development of services and standards, raised awareness of the population, as well as an increased public health approach to health care services.

Increasing concerns of the population are waiting times to access outpatient services and overall access to health care services. Various initiatives have been implemented, including opening a 24-hour primary care call centre in late 2005; widening the scope of services; and introducing financial incentives as quality bonus. In addition, more emphasis is put on quality of care, which is visible in initiatives such as voluntary accreditation of professionals by their associations, introduction of quality handbooks in hospitals and developing clinical guidelines. In relation to both access and quality, the coordination of and approach to tackling chronic conditions are a continuous concern. In this respect several additional topics need further attention, most noticeably patient empowerment, self-care, development of further home care as well as long-term care services.

Conclusion

Estonia has vigorously and quite successfully reformed its health system over recent decades. Whereas incremental changes can be observed during the period 2003–2008, larger scale legislative reforms had been implemented since the early 1990s and at the beginning of this century. The current system is built on solidarity-based health financing; a modern provider network based on family medicine-centred PHC; modern hospital services; and more concentration on public health. This has resulted in a steadily increasing LE and continuously high rates of population satisfaction with access and quality.

However, as in any health system, a number of challenges remain. In Estonia they include reducing inequities in health status and health behaviour; improving control of and responding to the consequences of the high rates of HIV and related conditions; improving regulation of providers to ensure better public accountability; and sustaining health expenditure and human resources at levels that ensure timely access to and high quality of care. This last challenge is particularly important in the face of rising patient expectations, as well as increased costs and volume of health care services. If solidarity and equity are to be maintained and guaranteed for the future, additional resources need to be found from public sources of revenue.

1 Introduction

1.1 Geography and sociodemography

Estonia is the smallest of the Baltic states, the three republics that lie on the east coast of the Baltic Sea. The country is situated on the eastern border of the European Union (EU), bordered by the Russian Federation to the east and Latvia to the south (see Fig. 1.1) and it covers an area of approximately 45 227 km^2, which is slightly larger than Denmark or the Netherlands, for example. Estonia has a long coastline, reaching 3794 km in length. The climate is milder than the usual continental climate, with an annual average temperature of 5°C and between 160 and 190 rainy days per year.

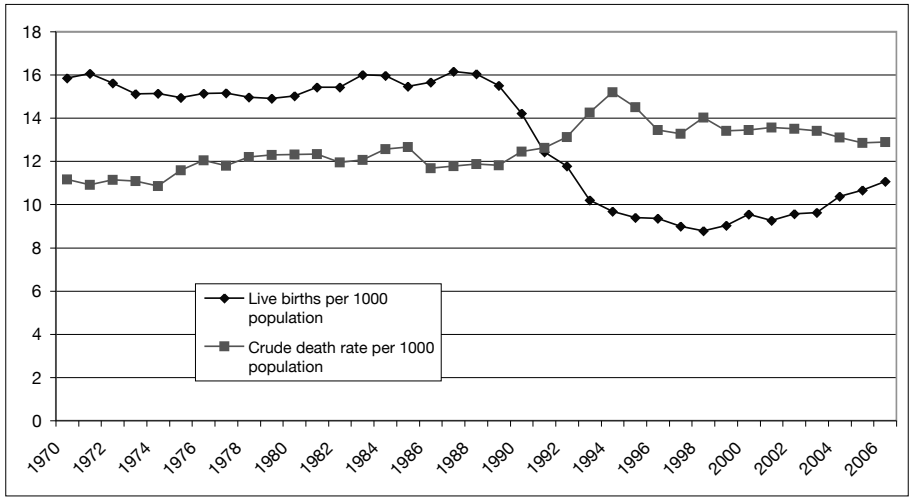
Estonia has a population of 1 340 602 (as of 1 January 2008), approximately one third of whom live in rural areas. Since 1990, the population has decreased by approximately 200 000, as a result of migration to the east and west, as well as natural negative growth. Although the crude birth rate has increased continuously since 1998 (a low of 8.8 live births per 1000) and despite the death rate falling steadily since 1994, the combined effect has not been sufficient to result in positive population growth (see Fig. 1.2). In terms of the population's age structure, fewer than 15% are aged between 0 and 14 years and the share of the population of 65 years and older (17.1%) and 80 years and older (3.5%) is increasing (2007). These trends are not reflected yet by the age–dependency ratio, which has slightly decreased from 49% in 2000 to 47% in 2007, but the burden of an ageing population is expected to increase in coming years, as the working-age population will decline (see Table 1.1).

During the period of Soviet occupation a large Russian minority developed in Estonia (30.3% in 1989). As almost one third of the Russians migrated from Estonia in the period 1989–2000, the proportion of this minority in Estonia has decreased to 25.7% (2006). Other minority groups include Ukrainians (2.1%) and Belarusians (1.2%) of which in total more than 40% migrated from Estonia

Fig. 1.1 Map of Estonia

Source: United Nations Cartographic Section 2004

Fig. 1.2 Birth and death rates 1970–2006



Source: Statistics Estonia 2008

Table 1.1 Demographic indicators, 1970–2006 (selected years)

Indicator	1970	1980	1990	2000	2005	2006
Population, total (millions)	1.365	1.477	1.569	1.370	1.346	1.341
Population, female (% of total)	54.27	53.75	53.21	53.90	54.02	54.03
Population aged 0–14 (% of total)	22.08	21.70	22.34	18.02	15.19	14.89
Population aged 65 and over (% of total)	11.72	12.48	11.28	15.08	16.51	16.63
Population aged 80 and over (% of total) [a]	1.9	2.1	2.5	2.6	3.1	3.3
Annual population growth (%)	1.07	0.62	0.06	-0.45	-0.21	-0.37
Population density (people per km^2)	32.20	34.84	37.01	32.31	31.76	31.64
Fertility rate, total (births per woman)	2.16	2.02	2.04	1.34	1.50	1.55[a]
Birth rate, crude (per 1000 population)	15.22	15.50	14.20	9.50	10.66	11.07[a]
Death rate, crude (per 1000 population)	10.92	12.22	12.50	13.40	12.86	12.89[a]
Age–dependency ratio (ratio of dependants to working-age population)	0.51	0.52	0.51	0.49	0.46	0.46
Distribution of population (% of rural population)	35.10	30.30	28.90	30.60	30.90	30.86
Proportion of single-person households (%)	n/a	n/a	n/a	33.5[a]	n/a	n/a
Literacy rate, adult total (% of people aged 15 and over)	n/a	n/a	n/a	99.77	n/a	n/a

Sources: World Bank 2008 and [a]Statistics Estonia 2008
Notes: n/a: Not available

after 1989. Over 90% of the Russian-speaking population live in Tallinn and the cities of north-east Estonia, near the border with the Russian Federation.

1.2 Economic context

Estonia embarked on significant economic reforms at the beginning of the 1990s, and by 1993 the country had succeeded in reversing the declining trend of its gross domestic product (GDP), using conservative fiscal policy combined with a liberal economic policy and a simple taxation system. By 2006, the GDP per capita was US$ 18 378 in purchasing power parity (PPP), approximately 35% below the average for the entire EU (EU27), but higher than other Baltic states (Eurostat 2007a). The annual inflation rate in consumer prices, which

had been 47.7% in 1994, fell to a low of 1.3% in 2003 (World Bank 2008). However, recent data reflect decreasing economic activities and increasing inflation pressure, with an inflation rate of 11% compared to a GDP growth of approximately 7.3% in 2007 (Statistics Estonia 2008).

Economic reforms have had a positive impact on the labour market. After peaking in 2000 at 12.8%, the unemployment rate has since been decreasing to 4.7% in 2007, lower than the average for the 15 Member States belonging to the EU prior to May 2004 (EU15) of 7.0% in 2007 (Eurostat 2008). The working-age population has stabilized and increased slightly as the "singing revolution" generation (born in the period 1988–1990) enters the labour market. In the meantime, an outflow of labour force to other EU countries can be observed. Compared to other EU countries, the proportion of women and elderly people actively participating in the labour market is sizeable in Estonia, partly because age limits for working in the health and education sectors no longer apply. Since 2002, the growth of salaries has been at least 10% per year, reaching 25% in 2006. High salary growth has been an important factor in inducing the high inflation rate.

Estonia operates a conservative fiscal policy, which together with a liberal economic policy (including, for example, tax-free reinvesting of profit), a simple taxation system (with flat-rate personal income tax and very clear deduction schemes) and a yearly balanced budget, guarantees a favourable and stable environment for economic development. The Government is committed to long-term fiscal sustainability, but is also aware of the need to deal with the macroeconomic implications of the ageing Estonian population. This conservative approach is also pursued in the health insurance budget, which so far has balanced satisfactorily. The national currency, the Estonian kroon (EEK), has a fixed exchange rate of 15.6466 EEK to the Euro (€).

The Estonian taxation system is simple and transparent, with few exceptions and differentiations. The Estonian flat-rate personal income tax is one of the liberal tax regimes in the world. A reduction in the personal income tax rate by one percentage point per year would bring the rate from 26% in 2004 to 18% in 2011 (at 21% in 2008). In addition, companies are exempted from income tax on profit if the profit is reinvested in the development of the company. This reform supports the government policy of low taxation on earnings. However, indirect taxation is currently quite high and excise taxes on car fuel, alcohol and tobacco will increase significantly in 2008, which also increases the regressivity of taxation (lower income households pay relatively more for consumer goods). Increasing excise taxes for alcohol (over 30%) and tobacco (82%) could have a beneficial impact on health status through decreased consumption of these goods. The higher tax burden on labour stems mainly from social insurance tax, which is 33% of salaries and is paid by employers on behalf of employees. Of

this revenue, 13% is earmarked for health insurance and 20% funds pensions for retirees. In 2002 a compulsory unemployment insurance scheme was implemented, with contributions paid by both employees and employers. The contribution rate for employees must be between 0.5% and 2.0% (0.6% in 2008) and employers should pay between 0.25% and 1.0% (0.3% in 2008), calculated on the basis of employees' monthly salaries (Unemployment Insurance Act of 2001 – see Section 10.2 *Principal legislation*).

Estonia was among the 10 countries that joined the EU in 2004. This has had a significant impact on economic development in these countries. Estonia has since enjoyed an annual GDP growth of over 10% (see Table 1.2), which resulted in an increase in the incomes of residents of Estonia and a booming property market. Recent research has shown that, as with all national economies, the Estonian economy is highly depending on its population health status. Suhrcke, Võrk & Mazzuco (2006) studied the negative effects of ill health on the labour market and, as a result, the possible impacts on the economy as well. The main findings of this work show that male and female workers with poor health status tend to work less, earn less income and retire earlier than those with good health status in Estonia. This results in a potential decrease in future GDP per capita of between 6% and 15%. However, if morbidity and mortality could be decreased by as little as 1.5%, an estimated 14% increase of GDP per capita could be achieved after 25 years. Further macroeconomic indicators are presented in Table 1.2.

1.3 Political context

Estonia is a democratic parliamentary republic. It first gained independence on 24 February 1918. In 1940, at the beginning of the Second World War, the country was occupied by the Union of Soviet Socialist Republics (USSR). Independence was restored on 20 August 1991. The legislative and supervisory power over Government is exercised by a unicameral Parliament (*Riigikogu*), which consists of 101 members and is elected for a period of four years. Since 1920 there have been a total of 11 *Riigikogu* Plenary Assemblies. The Government of the Republic of Estonia exercises executive power pursuant to the Constitution and the laws of the Republic. Since 1992, when the first elections in independent Estonia were held, all governments have been coalition governments of two or three political parties. Although none of the coalitions has governed for a full term, they have been stable enough to launch and implement economic and social reforms.

Table 1.2 Macroeconomic indicators, 1994–2005

Indicator	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP												
In PPP (in millions of current international $)	8 474	9 039	9 616	10 862	11 470	11 672	12 863	14 182	15 587	17 030	18 887	21 495
Per capita (in constant EEK)	47 648	50 705	53 722	60 366	63 675	64 360	69 726	75 368	81 736	87 854	95 262	105 467
In PPP per capita (in current international $)	5 792	6 290	6 791	7 758	8 275	8 484	9 392	10 397	11 472	12 582	14 001	15 968
GDP growth (annual %)	-1.64	4.53	4.40	11.10	4.44	0.31	7.85	7.66	8.02	7.08	8.07	10.47
Short-term debt (% of total external debt)	4.30	10.35	72.98	42.95	37.40	34.24	36.75	36.08	33.54	35.03	29.97	35.53
Contribution to GDP (%)												
Industry	30.17	29.27	27.98	27.11	27.24	24.95	27.82	28.36	28.42	28.61	28.13	28.51
Agriculture	9.63	8.02	7.63	7.13	6.54	5.98	4.87	4.70	4.18	3.68	3.81	3.73
Services	60.20	62.71	64.39	65.76	66.21	69.07	67.31	66.94	67.40	67.71	68.06	67.75
Overall budget balance, including grants (% GDP)	1.39	–0.57	–0.83	2.55	–5.75	–0.16	0.16	2.55	n/a	n/a	n/a	n/a
Labour force, total	740 159	710 737	694 367	678 351	677 024	671 865	670 239	670 355	666 027	674 087	662 500	663 222
Unemployment, total (% of labour force)	7.60	9.40	9.90	9.30	9.30	12.20	12.80	12.60	10.30	10.00	9.60	8.10[a]
Official exchange rate (EEK per US$, period average)	12.99125	11.46475	12.03800	13.88175	14.07467	14.67758	16.96864	17.47807	16.61179	13.85641	12.59556	12.58379
Real interest rate (%)	-10.8	-9.4	-7.6	1.2	5.6	6.3	-0.8	2.4	2.8	3.2	3.4	-1.7
Income inequality (Gini coefficient)[a]	n/a	n/a	0.34	0.37	0.38	0.38	0.37	0.37	0.37	0.36	0.36	0.37

Sources: World Bank 2008; [a]Statistics Estonia 2008
Notes: GDP: Gross domestic product; PPP: Purchasing power parity

The Head of State is the President, elected for a 5-year term by the *Riigikogu*, or an electoral body consisting of members of the *Riigikogu* and more than 200 representatives from local municipalities. Independent Estonia has seen three Presidents to date, and at the time of writing the position is held by Mr Toomas Hendrik Ilves. The main roles of the President, who holds no executive power, are representing Estonia internationally and domestically, and proclaiming or refusing the laws passed in the *Riigikogu*. Furthermore, he controls the *Riigikogu*, nominates the Prime Minister for the *Riigikogu*, but also appoints and releases from service Members of Government and senior public servants.

The latest parliamentary elections were held in March 2007, resulting in a 3-party centre-right coalition. A total of 11 active political parties participated in the 2007 *Riigikogu* elections, each having more than 1000 members in 2007 (The National Electoral Committee 2007). Estonian political parties tend to be at the centre or to the right of the political spectrum. At the time of writing, all governments have been mainly on the right, although social democratic values and ideology have become more visible in recent years.

Administratively, Estonia is divided into 15 counties, with populations ranging from approximately 10 000 to 500 000. Each county is run by a governor and an administrative structure known as the county government. Both the governor and the county government staff members are civil servants of the central administration. However, many state agencies, including those engaged in health care administration and finance, operate not on a county basis but through regional departments that cover two to six counties.

The second political tier in Estonia consists of 227 municipalities (including 33 cities). Municipalities have on average 5500 citizens, but they range in size from approximately 70 to 100 000 people (Statistics Estonia 2008). The capital city, Tallinn, with approximately 400 000 inhabitants, is the largest municipality. Municipal elections are held every four years. Municipalities have budgetary autonomy and local tax-raising powers. The State is legally obliged to transfer 11.9% (2007) of personal income tax paid by people living in a particular municipality to that municipality.

The influence of organized interest groups in Estonia is growing as their competence and membership are increasing. Although only approximately one third of employees have joined trade unions, they have a power to negotiate with the State and employers. Furthermore, there are various organized interest groups in health care such as the Estonian Hospital Association, medical and nurses associations, wholesalers of pharmaceuticals and patient organizations.

The most important political development for Estonia both internationally and domestically has been its accession to the EU and the North Atlantic Treaty Organization (NATO) in May and December 2004, respectively. The

process leading up to entering these organizations has been the leading driver for political and economic change in Estonia since the mid-1990s. The level of satisfaction of Estonians with EU membership has increased and was above the EU27 average in 2007. One reason for this could be the visible financial support received from the EU since the country's accession. Not surprisingly, 80% of Estonians think that Estonia has benefited from EU membership (compared to a 58% EU27 average on this issue). Furthermore, the latest results of the Eurobarometer survey (TNS Opinion & Social network 2007) show increasing satisfaction with the health system in Estonia and almost half of the population (47%) supports joint policy-making at EU level (Hämmal 2007). As of early 2008 there are ongoing negotiations to become a member of the Organisation for Economic Co-operation and Development (OECD).

At the beginning of the 1990s, Estonia signed almost 30 of the most important United Nations conventions, including the International Convention on Civil and Political Rights, the Convention on Rights of the Child and the Convention on the Elimination of Discrimination against Women. Estonia has also signed the Framework Convention of National Minorities of the Council of Europe, the revised European Social Charter and the European Convention on Human Rights and Biomedicine (Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine). In many cases, automatic ratification of international regulations and conventions was a condition for EU accession. In 2005 Estonia also re-ratified the World Health Organization (WHO) Constitution with all its amendments and approved the WHO Framework Convention on Tobacco Control.

When joining the World Trade Organization (WTO) in 1999, Estonia signed up to the General Agreement on Trade in Services (GATS), making commitments relating to trade in medical and dental services as well as health and social services. While no limitations have been put on consumption abroad, cross-border supply and foreign commercial presence come under specific Estonian regulations.

All monitoring reports and relevant committee reports on compliance with the conventions and charter are publicly available on the web sites of the Ministry of Foreign Affairs and the Ministry of Social Affairs. In general, these reports acknowledge Estonia's efforts to comply with the conventions' obligations. The main concern raised in the reports relates to the high proportion of "stateless persons" among Estonian residents. These people consist of former Soviet citizens who have not taken up Estonian, Russian or any other citizenship. However, as reported by the Citizenship and Migration Board, the number of people falling into this category of population has decreased by one third since 2002 to 116 237 in 2008.

According to the 2007 Worldwide Governance Indicators of the World Bank, Estonia belongs in the top 20% of the 212 countries assessed. High scores were acquired in five dimensions (out of six), including voice and accountability; government effectiveness; regulatory quality; rule of law; and control of corruption; while only political stability has dropped to the 1998 level (Kaufmann, Kraay & Mastruzzi 2007). According to Transparency International's annual assessments on corruption, Estonia ranks 24th among 163 countries in the Corruption Perception Index, the highest position among new EU Member States and higher than Portugal, Italy and Greece, for example (Transparency International 2006).

1.4 Health status

Health issues received scant political attention during the 1990s, although major decisions were made and changes in health systems were implemented. Since 2000, public health has received higher political priority and new legislation concerning the organization of health financing and services has been prepared. Health data in Estonia are gathered mainly by the Ministry of Social Affairs Department of Health Information and Analysis. This department has been reorganized over recent years and more emphasis is placed on policy analysis and providing useful information to policy-makers. Data on health services, resources and health status are provided directly by the health services providers or gathered through other public institutions, such as the Health Care Board (HCB), the Health Protection Inspectorate (HPI), the Estonian Health Insurance Fund (EHIF) and the National Institute for Health Development (NIHD). Statistics Estonia provides all relevant information on public statistics, including demographic data and a selection of health data. Even though most health data are collected by public organizations, these are not under direct government control. Most databases are organized according to European or international standards. Therefore, the Estonian databases are comparable at international level.

Trends in health status have not been as positive as economic trends. However, they mirror trends in the other Baltic countries. At the end of the 1930s, life expectancy (LE) in Estonia matched that of the Scandinavian countries, but the Second World War and the Soviet occupation led to a decrease and then stagnation in LE. By 1950, male LE was still lower than it had been in the late 1930s (Leinsalu 2004). In the 1960s and early 1970s there was no difference between LEs of Estonian and Finnish men and women, but in 1977 a 3-years difference existed (World Bank 2008). Prior to the economic transition, average

LE at birth was at its highest in 1988 (70.7 years), after which it fell to a low of 67.0 years in 1994. The pre-independence and pre-reform peak of 1988 was not overtaken until 2000. LE then stabilized until 2002, after which it started to increase steadily, reaching 72.5 years in 2005. In 2005, life expectancy for Estonian women was two years less than that for Danish women, compared to eight years for men. Overall, between 1960 and 2006, men gained 2.6 and women 5.9 years on their LE (World Bank 2008). Over the last 10 years the healthy life years of Estonians have been increasing, but still there is a long way to go to reach the target of 60 healthy life years for men and 65 healthy life years for women by 2020 (National Health Strategy 2008 [unpublished data]). The increasing LE trend is presented in Table 1.3.

Infant mortality has fallen steadily in recent years. World Bank figures show a decline from 12.4 in 1990 to 6.0 in 2005 (see Table 1.3). The infant mortality figure of 6.0 is higher than the EU15 average, but lower than the average of the new Member States joining the EU in May 2004 and January 2007 (EU12) and is decreasing steadily. As in other transition countries, the birth rate fell dramatically, to 8.8 per 1000 population in 1998. Since 1998 it has increased, reaching 10.7 per 1000 population in 2005 (equal to the EU12 rate), but demographers do not expect it to reach population replacement levels. The frequency of abortions – a common method of birth control in all former Soviet republics – has declined from almost 1600 abortions per 1000 live births in 1980 to fewer than 600 per 1000 live births in 2006, but it is still almost three times higher than the EU15 average (WHO Regional Office for Europe 2007). Estonia has the second highest abortion rate after Romania and in terms of under 20-year-olds, Estonia ranks fourth after Sweden, Finland and Slovenia (WHO Regional Office for Europe 2007).

Table 1.3 Mortality and health indicators, 1970–2005 (selected years)

Indicator	1970	1980	1990	2000	2005
Life expectancy at birth, total (years)	70.0	69.1	69.5	70.9	72.6
Life expectancy at birth, female (years)	74.4	74.2	74.6	76.4	78.1
Life expectancy at birth, male (years)	65.7	64.2	64.6	65.6	67.3
Mortality rate, adult, female (per 1000 female adults)	104.1	109.6	106.1	114.0	94.4
Mortality rate, adult, male (per 1000 male adults)	250.9	291.0	285.8	316.0	288.0
Mortality rate, infant (per 1000 live births)	21.0	20.0	12.4	8.4	6.0
Mortality rate, under 5 years (per 1000 live births)	26.0	24.0	16.2	11.3	7.0

Source: World Bank 2008

As can be seen in Table 1.4, cardiovascular (circulatory) diseases are the main cause of death in Estonia, accounting for 47.1% of deaths among men and 54.9% among women (2005). Although there is a downward trend in the cardiovascular mortality rate for both men and women, it still is a significant cause of premature death, and in 2005 was at a level more than double that of the EU15 and Scandinavian averages. The next most significant cause of death is cancer (malignant neoplasm) at 20.9% for men and 19.9% for women. A worrying indication is that the death rate from cancer is increasing among men, while in the EU as a whole these rates are declining. Although declining over recent years, death due to external causes (13.9% for men, 6.7% for women) constitutes the third most significant cause of death. According to a recent study

Table 1.4 Main causes of death, 1996–2005

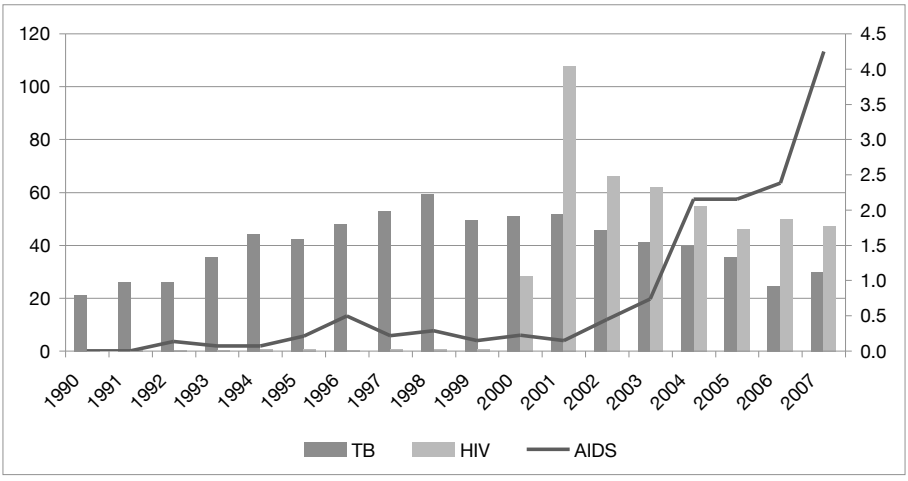
Indicators	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
SDR, all causes, all ages, per 100 000	1177.0	1145.3	1195.3	1126.1	1109.2	1116.1	1090.6	1066.2	1028.0	993.6
SDR, all causes, 0–64 years, per 100 000, male	847.0	835.3	868.3	804.6	781.3	819.8	788.1	738.6	733.8	682.9
SDR, all causes, 0–64 years, per 100 000, female	280.5	281.9	290.1	279.3	271.3	275.9	249.9	249.2	228.5	223.5
SDR, diseases of the circulatory system, all ages, per 100 000	623.3	590.9	620.3	584.9	569.8	563.1	560.4	551.8	515.4	498.2
SDR, malignant neoplasms, all ages, per 100 000	204.0	206.0	208.0	197.0	202.4	197.2	200.6	194.5	198.1	196.9
SDR, trachea/ bronchus/lung cancer, all ages, per 100 000	41.1	44.1	43.0	39.3	40.8	40.3	40.4	41.1	38.0	36.6
SDR, transport accidents, all ages, per 100 000	19.1	24.2	24.5	19.9	17.8	17.1	18.0	13.6	14.3	14.6
SDR, infectious and parasitic diseases, all ages, per 100 000	12.1	12.4	13.1	12.8	10.5	9.9	8.4	10.5	10.7	7.3
SDR, diseases of the respiratory system, all ages, per 100 000	37.3	34.0	38.3	33.3	38.2	36.7	36.3	37.1	33.5	27.5
SDR, diseases of the digestive system, all ages, per 100 000	31.9	35.6	41.1	36.2	40.6	42.7	42.8	40.3	40.3	42.9
SDR, mental disorders and diseases of the nervous system and sense organ, all ages, per 100 000	12.9	14.3	13.8	13.8	14.2	20.3	19.6	24.4	25.1	29.9
SDR, TB, all ages, per 100 000	10.0	9.9	10.3	10.1	7.5	6.6	6.1	6.6	7.0	3.4

Source: WHO Regional Office for Europe 2007
Notes: SDR: Standardized death rate; TB: Tuberculosis

by Lai et al. (2007) almost 400 000 healthy life years (as measured by disability-adjusted life years (DALY)) are lost annually among the 1.3 million population of Estonia. The major sources of burden of disease were cardiovascular diseases, injuries and cancer, which cause more than two thirds of the loss of life years (Lai et al. 2005).

At the time of writing, fighting HIV/AIDS is the most serious health problem and the major public health and health system challenge in Estonia, as proclaimed by the Ministry of Social Affairs at the beginning of the epidemic in 2001. The HIV/AIDS epidemic began among injecting drug users in the north-eastern part of the country, and by the end of 2007 the total number of people diagnosed as HIV-positive was 6364, equal to 0.47% of the population (Health Care Board 2008). However, the actual number of HIV-infected individuals may be even higher. The Joint United Nations Programme on HIV/AIDS (UNAIDS) has estimated the HIV incidence to be as high as 10 000 (UNAIDS 2008). To date, a total of 191 individuals have been diagnosed with AIDS. Furthermore, tuberculosis (TB) incidence needs renewed attention (see Fig. 1.3). In 2007 the incidence rate of TB was increasing again, up to 30 per 100 000 population, after experiencing the lowest incidence in 2006 (25 cases per 100 000) after years of steady decline from a peak in 2000 (43 cases per 100 000). In 2007, among the 400 TB patients in Estonia, 48 were also HIV-positive. A complicating factor is the high rate of multidrug-resistant TB.

Fig. 1.3 Incidences of TB, AIDS and HIV per 100 000, 1990–2007



Sources: WHO Regional Office for Europe 2007; Health Protection Inspectorate 2008
Notes: TB: Tuberculosis; HIV: Human immunodeficiency virus; AIDS: Acquired immunodeficiency syndrome

Table 1.5 shows that while the average LE at birth has increased by approximately 4.5 years for men, this is not matched by health-adjusted life expectancy (HALE), which has only increased a fraction over two years for the period 1990–2004. Women, however, gained approximately 2.2 years on their average LE, which is slightly less than their gains in HALE for the same period.

Table 1.5 LE and HALE, 1990–2004 (selected years)

Year	1990	1992	1994	1996	1998	2000	2002	2004
LE at birth, male	61.7	63.4	60.5	64.1	63.7	65.1	65.1	66.0
HALE at birth, male	56.8	59.9	57.3	59.2	58.7	60.2	58.8	58.9
LE at birth, female	74.7	74.6	72.8	75.4	75.3	76.0	77.0	76.9
HALE at birth, female	66.4	68.8	65.0	67.3	68.5	68.2	69.6	68.9

Source: Aru 2006
Notes: LE: Life expectancy; HALE: Health-adjusted life expectancy

Estonia used to be one of the central and eastern European countries in which it was possible to comment on the outcome of medical treatment. Therefore, Estonian scientists and public agencies have quite successfully participated in research and health policy projects at European level (such as EU Framework Programmes, EUROCARE). Since the early 2000s, however, the linking of different registries and databases has been complicated by new and stricter personal data protection regulations. This affected data exchange, and thus availability, between national institutions and research projects. Since 2008 the official registries are managed by the NIHD, which also has the right to data management for research purposes. Therefore, trends in health status could now be assessed more easily again.

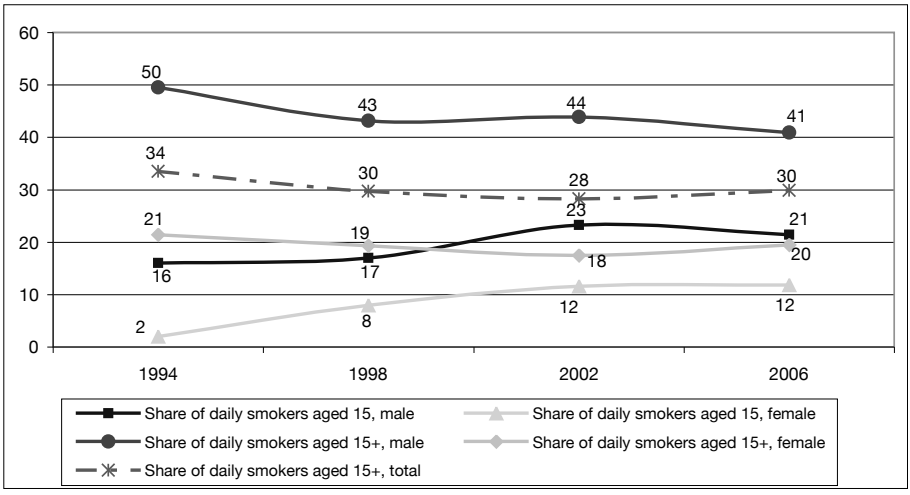
Health behaviour of children and adolescents

Since 1993–1994 Estonia has participated in the Health Behaviour of School-Aged Children study (HBSC) in the WHO European Region[1], which investigates health behaviour among 11-, 13- and 15-year-old schoolchildren (Allaste 2008). Comparing to the previous HBSC study in 2001–2002, the 2005–2006 HBSC study found that children are more satisfied with life, which is related to better health status, family relationships and satisfaction with school activities. The positive signs are higher consumption of fresh fruit and vegetables, increased physical activity rates and higher usage rate of condoms. A total of 9% of children are overweight, but the situation has not worsened. However, Estonian

[1] For details of WHO European Region countries, visit http://www.who.int/about/regions/euro/en/index.html.

children try their first cigarette and have already been drunk at age 13–15, which is earlier than in most other countries. Although daily smoking has been decreasing for the overall population, it has remained stable among young girls (see Fig. 1.4). Another worrying indication is that almost every third boy and every fifth girl have tried to smoke cannabis at age 15. According to the 2003 and 2007 European School Survey Project on Alcohol and Other Drugs (ESPAD) data, Estonian schoolchildren aged 15–16 drink more strong alcohol and use more illegal drugs (especially inhalants, poppers and ecstasy), but smoke a little less than in 1995 and 1999 (Aasvee et al. 2007).

Fig. 1.4 Share of daily smokers aged 15 and over, 1994–2006 (selected years)



Sources: Allaste 2008; Maser 2004; NIHD 2005; Tekkel and Veideman 2007

Health behaviour of adults

In many areas, the behaviour of the Estonian adult population has become more health-enhancing. Approximately 30% of people in Estonia engage in physical exercise more often than once a week. In 2006 the average body mass index (BMI) was 25.2 and the share of overweight people in Estonia averaged 45.7% (50.6% of males and 41.2% of females) (Tekkel and Veideman 2007). The biggest changes in dietary habits include the replacement of animal fats with vegetable fats in food preparation and a general decrease in the consumption of fats. At the beginning of the 1990s only 28% of people used vegetable oil as the main fatty substance in food preparation; by 2000 this proportion increased to 86%. The frequency of daily consumption of fresh fruit and vegetables has also increased since the beginning of the 1990s. In these cases, the change has

resulted from the significantly improved availability of vegetable oils and fresh fruit and vegetables throughout the year.

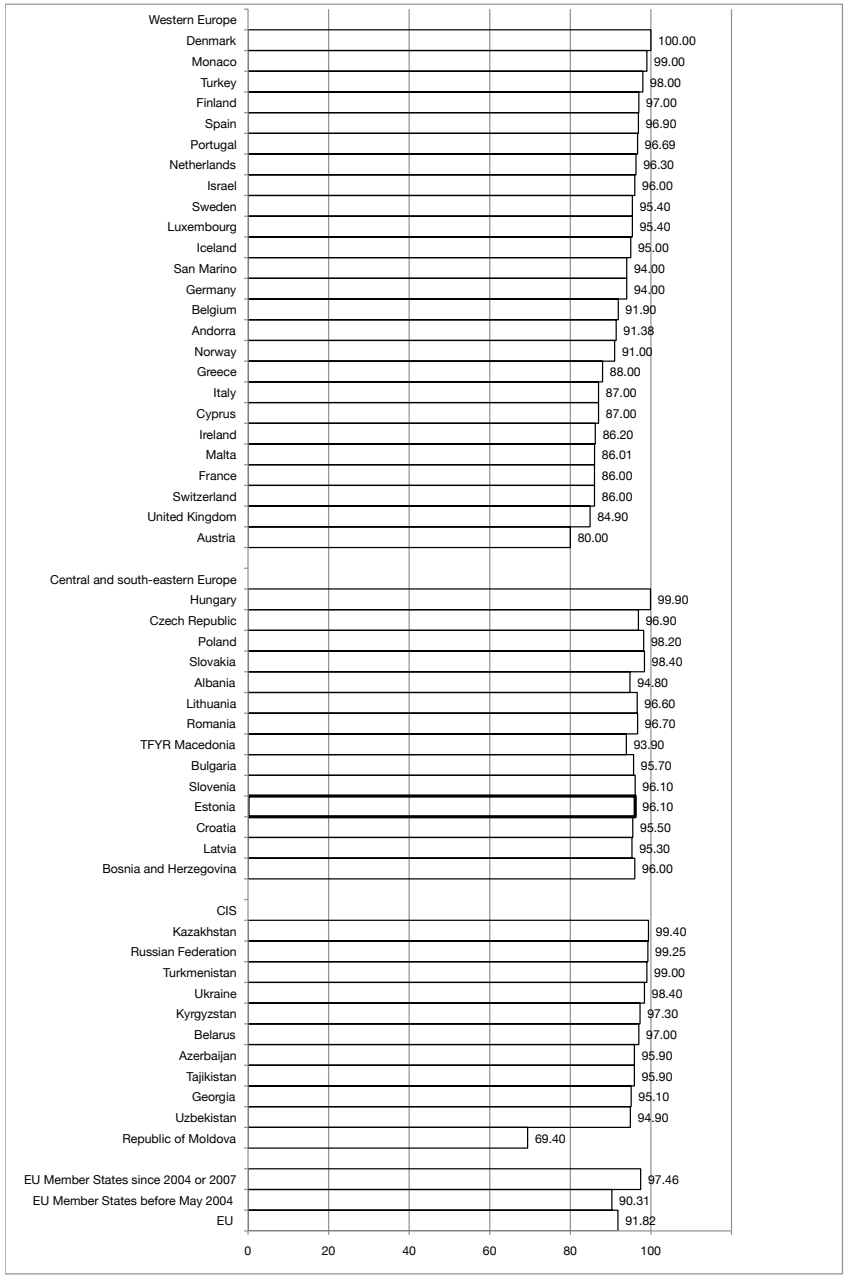
The prevalence of daily smoking among the population older than 15 increased from 27.5% in 1990 to 33.5% in 1994, but it has decreased steadily since, reaching a low of 28.3% in 2002 (NIHD 2005), before steadily increasing again to approximately 30% in 2006. There are more daily smokers among men (40.9% in 2006); for women, regular daily smoking peaked in 1994 at 21.4%, falling to 17.5% in 2002 and increasing again to 19.5% in 2006 (Tekkel and Veideman 2007). In total, smoking contributes up to 8.3% of the total disease burden in Estonia, at 12.5% for men and 3.5% for women. The biggest loss of healthy life years because of smoking among men is due to cancers (half occurring in men in the age group 15–44), whereas for women cardiovascular disease is the largest factor (Lai, Vals & Kiivet 2004).

Another public health problem in Estonia is increasing alcohol consumption. The amount of pure alcohol consumed among the population older than 15 years has doubled since 1997. In 2004 the average amount of alcohol consumed in Estonia was 13.4 litres per capita, while the average EU27 consumption in 2003 was 9.1 litres per capita (WHO Regional Office for Europe 2007). Similarly to smoking, alcohol consumption contributes to 6.7% of the total health burden in Estonia (men 12.0%, women 1.0%). Most of the alcohol-related disease burden occurs among men between 45–64 years old and one third of healthy life years lost is accounted for by alcohol-related external causes, such as traffic accidents and violence (Lai, Vals & Kiivet 2004; Lai et al. 2007).

The first comprehensive study of inequalities in health in Estonia was initiated by the World Bank in 2002 (Kunst et al. 2002). Various studies show differences in health behaviour and status among population groups (distinguished on the basis of income, education level, place of residence and ethnicity/language group). In line with findings from studies published in other countries, higher health status and health-enhancing behaviour were more common in groups with university-level education and greater income. During the 1990s, inequalities in mortality and health behaviour increased among socioeconomic groups and ethnic/language groups. For example, Russian speakers had higher rates of mortality from nearly all causes of death, and in particular alcohol poisoning and homicide. The main exception was traffic accidents, which as a cause of death was higher among ethnic Estonians. For further information on health inequalities, see Section 6.1 *Public health*.

In 2002 the number of homes in urban areas connected to the country's water supply system was 96%, while in rural areas two thirds of homes are connected to the water supply system, bringing the overall average to 87% in Estonia (WHO Regional Office for Europe 2007). While access to water is

Fig. 1.5 Levels of immunization for measles in the WHO European Region, 2006 or latest available year



Source: WHO Regional Office for Europe 2007
Notes: EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia

good, poor water quality (in most cases increased iron levels) is a problem for almost one fifth of the population in 2004 (NIHD 2005).

The level of vaccination coverage in Estonia is rather good, as in all relevant immunization categories coverage of children is over 95%. This is illustrated in particular by the level of immunization for measles, which was slightly over 96% in 2006 (see Fig. 1.5). The programme of vaccination of infants against Haemophilus influenzae type B was officially started in 2003 and the coverage has since then increased from 27% that year to 88% in 2006 (WHO Regional Office for Europe 2007).

After regaining independence, Estonia made significant progress in dental health, which is visible among 12-year-old children (see Table 1.6). This can be explained mainly by healthier eating habits and improved dental care quality. Unfortunately, there are no figures to illustrate whether this trend has continued.

Table 1.6 DMFT at age 12 years, 1990–2000 (selected years)

Year	1990	1992	1997	2000
DMFT	4.1	4.1	2.7	2.4

Source: WHO Regional Office for Europe 2007
Note: DMFT: Decayed, missing and filled teeth

Table 1.7 Maternal and child health indicators, 1996–2006

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Neonatal deaths per 1000 live births	6.95	5.65	5.59	6.04	5.82	4.99	3.62	3.99	4.15	3.28	n/a
Postnatal deaths per 1000 live births	3.55	4.45	3.78	3.54	2.60	3.80	2.08	2.99	2.29	2.16	n/a
Perinatal deaths per 1000 births	9.62	9.75	7.59	7.83	6.37	5.79	6.00	5.84	5.16	6.07	4.17
Maternal deaths per 100 000 live births	n/a	15.90	16.44	16.10	45.92	7.92	7.69	30.68	28.59	13.94	6.72
Abortions per 1000 live births	1275.26	1321.06	1298.43	1167.24	975.36	922.74	833.71	815.05	720.48	670.31	631.44
% of all live births to mothers aged under 20 years	12.97	12.03	11.15	10.70	10.03	9.73	8.76	8.42	8.05	7.78	7.46
Syphilis incidence per 100 000	68.66	78.53	75.75	58.44	44.18	29.91	21.05	15.51	14.23	8.25	9.30
Gonococcal infection incidence per 100 000	172.15	140.69	113.77	83.31	63.31	48.24	39.52	39.30	35.20	21.40	20.84

Source: WHO Regional Office for Europe 2007
Note: n/a: Not available

Maternal and child health indicators have improved significantly over the last 10 years (see Table 1.7). Death rates for children have steadily decreased and the maternal mortality rate in 2006 (6.72) was close to the EU27 average in 2005 (6.01). Improved and easily accessible health education has certainly played a role in the significant decrease in abortions, as well as in live births and sexually transmitted infection (STI) incidence (such as syphilis and gonococcal infections) in people under 20 years old in the period 1996–2006.

2 Organizational structure

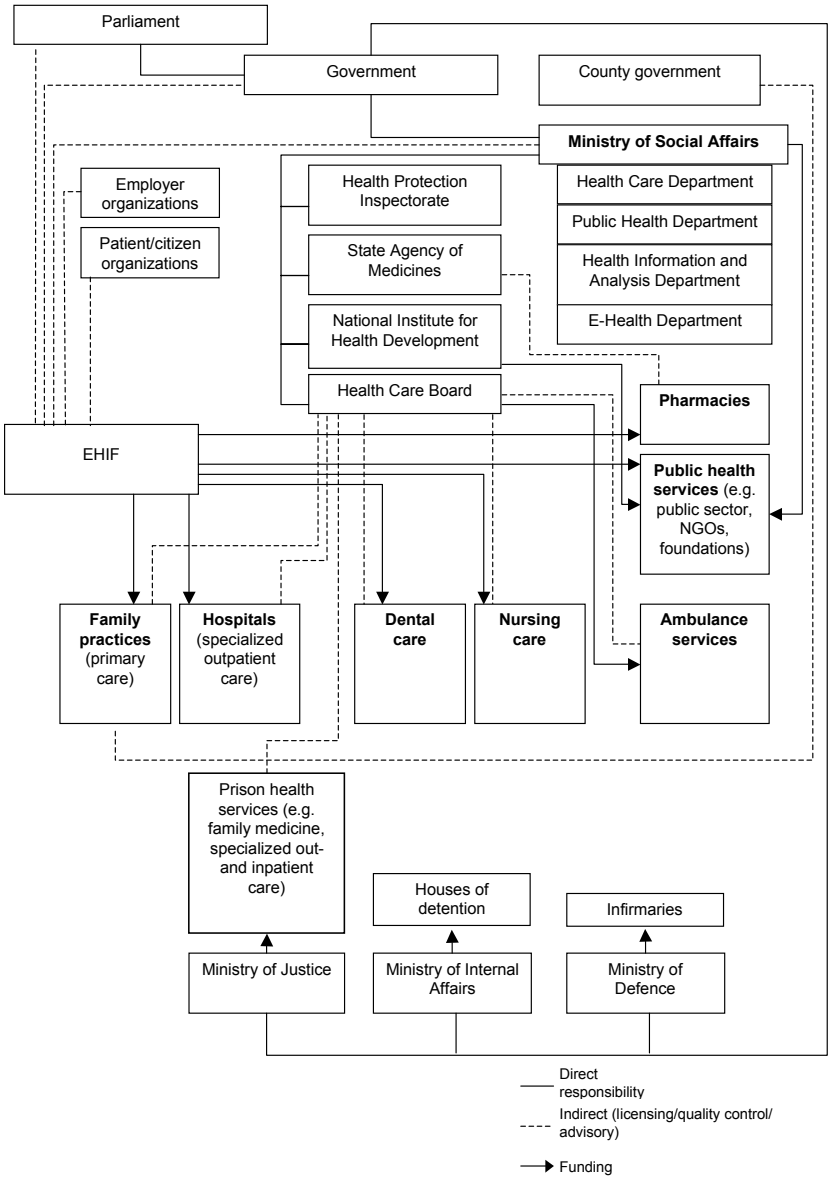
2.1 Overview of the health system

The Estonian health system is built around a basis of compulsory, solidarity-based insurance and universal access to health services made available by providers that operate under private law. Stewardship and supervision as well as health policy development are the duties of the Ministry of Social Affairs and its agencies. The financing of health care is mainly organized through the independent EHIF, which has also increasingly become one of the leaders in health system-related innovation. The Ministry of Social Affairs and its agencies are responsible for the financing and management of public health services, that is, the share paid by the state budget. Local municipalities have a minor, rather voluntary, role in organizing and financing health services. The Estonian health system has developed with the strong participation of professional organizations and, increasingly, patients and their organizations, which have gained more influence in recent years. Estonia has received international acclaim for its energetic health reforms and the efficiency gains it has made, but major challenges persist regarding accessibility and quality of health care, as well as patient safety and empowerment issues. An overview of the Estonian health system as a whole is presented in Fig. 2.1.

2.2 Historical background

Foreign dominance in Estonia began with the invasion of German crusaders at the start of the 13th century. From the 13th to the 18th centuries, Estonia formed part of the Danish and Swedish Kingdoms. In 1721, the Swedish King lost Estonian territory after fighting with the Russian tsar. A strong German

Fig. 2.1 Organizational structure of the health care system



Source: Authors' own compilation
Notes: EHIF: Estonian Health Insurance Fund; NGO: Nongovernmental organization

presence and influence subsequently remained in Estonia due to the existence of German landowners until 1918, when Estonia first gained independence in the aftermath of the First World War. A secret German–Soviet pact in 1939 (the Molotov-Ribbentrop Pact), agreeing to a division of European territories between Germany and the USSR, placed Estonia in the Soviet arena. Occupation of the Estonian Republic by the USSR followed in 1940, after the outbreak of the Second World War. The long-lasting German and Swedish, but also Russian, presence in Estonia was influential in shaping political and cultural behaviour, administrative structures and the development of the health system. Some of these structures and values were silently retained during the USSR occupation and later formed the valuable basis for establishing the social security systems in Estonia after regaining independence in 1991. During the course of the 20th century, the Estonian health system experienced several dramatic changes, reflecting changes in its historical and political context. The time can be divided into three periods: before 1940, 1940–1990 and 1990–2007, as demonstrated in the subsections that follow.

Before 1940

Prior to Soviet occupation in 1940, health system organization in Estonia was comparable to other western European countries. University-level training of doctors and worldwide medical science had been carried out in Estonia since the establishment of the University of Tartu in 1632. By the beginning of the 20th century, a basic system of health care was in place, although no social security system existed as such. The health system was highly decentralized, with services developed and managed locally. Three types of hospitals provided inpatient care: private hospitals (supplying most of it), several municipal hospitals for poor people and some state-owned hospitals. The state hospitals owned and operated clinics for mothers and children, TB dispensaries, sanatoria and institutions for the mentally ill. Most outpatient care was provided by private doctors, with dispensaries owned by sickness funds and schools. Municipal doctors were responsible for caring for poor people. The first sickness funds on Estonian territory were formed under Russian legislation in 1913–1914 by employees of large enterprises. During the period 1918–1940 there were several attempts to create new health insurance legislation, but these attempts faded into endless discussions and debates between employer and employee organizations. As a general principle, the Estonian health insurance system was based on Russian legislation (with some adaptations in 1923, 1934 and 1936). As a result, health insurance was mostly regionally organized and mainly covered employees and their family members. In 1920 and 1921, the sickness funds' activities expanded, the number of doctors increased and physicians' professional associations were founded. However, Estonia still had one of the

lowest levels of health insurance coverage compared to other European countries and only approximately 18% of its population were covered in the late 1920s. At the end of the 1930s, some health insurance acts were implemented, covering civil servants and university teachers, as well as army personnel.

1940–1990

In 1940, the occupation of the Estonian Republic by the USSR interrupted the earlier developments of the health system and led to the introduction of the Soviet Semashko system, in which health care was funded from the state budget and directed by the Government through central planning. The rapid changes that took place had lasting consequences. For example, a large number of health professionals left Estonia during the Second World War, severely affecting the structure of the health workforce – an effect that is still felt today (see Section 5.2 *Human resources*). The preoccupation with quantitative targets led to a substantial overprovision of hospital beds and, by the end of the Soviet era, the regionalization of different sectors within the USSR resulted in overcapacity in surgical specialties. This overcapacity was partly due to the provision of services to people outside Estonia, but also due to the fact that Estonia was considered to be strategically important during the Cold War period. During the Soviet era there was no private sector involvement in health care. All citizens had nominally "free" access to health services provided by salaried government employees. The technical level of medical personnel and the basic quality and availability of health services was good, with the exception of access to newer pharmaceuticals. Informal payments in Estonia were not as widespread as in other parts of the former USSR, although it was common to thank medical personnel on discharge with small gifts such as flowers, sweets, coffee or cognac.

1990–2007

After regaining independence in 1991, health system financing and planning in Estonia underwent almost total reform once again. The reforms that took place during the 1990s aimed to establish financing through social health insurance (SHI) and to encourage decentralization. They were undertaken partly in response to the changing needs of the Estonian population and partly, given the state of the economy, in response to concerns about financial sustainability. Some of the reforms had been planned even before independence was declared in August 1991. For example, it had already been decided to establish a system of SHI by the following year. The Health Insurance Act of 1991 and the Health Services Organization Act of 1994 provided the legal basis for reforms, and while there have been some amendments in the course of reform – notably a

reconsidering of the initial decentralization envisaged, and recentralization of some tasks – the original plans set out in this legislation have not changed substantially. Parallel to these developments, a Public Health Act was introduced in 1995 with the aim of reshaping the old USSR Sanitary-Epidemiological (SANEPID) service network into a modern system of public health services.

More recently, however, there have been further developments. For example, the EHIF was transformed into an independent public body in the year 2000, a new version of the Health Services Organization Act was adopted by Parliament in 2001, and a new Health Insurance Act was adopted in 2002. As a result of these changes, all health service providers have been legally mandated to operate under private law, even though in most cases institutions continue to be publicly owned by the State or municipalities. In addition, the passing of the Law of Obligations Act (which entered into force in 2002) established a new relationship between patients and providers. For the first time, this relationship has been legally defined as a binding agreement with responsibilities on both sides. Finally, health issues have been considered in other sectors as well, and public health regulations have been integrated into several legislative acts within other sectors. As a result, the 1995 Public Health Act has been amended every year, and the drafting of new legislation in this area is expected.

These more recent changes have been prompted by the lessons learned from the first round of reform implementation, and they are motivated by a desire to improve regulation of new phenomena such as the rising cost of pharmaceuticals; implement strategies to manage decentralized hospital networks; optimize the planning and pricing of health services; and transform the patient–doctor relationship into a client–service relationship. One of the challenges for Estonia at the time of writing is the implementation of an E-health system, which encompasses the whole population and integrates all health system databases into a single information system. Over recent years, growth of the elderly population has spurred a discussion on how to improve integration between health and social welfare systems.

For more detailed analysis of health care reforms during this period, see Chapter 7 *Principal health care reforms*.

2.3 Organizational overview

Since regaining independence in 1991, the Estonian health system has undergone two major shifts: first, from a centralized, state-controlled system to a decentralized one; and second, from a system funded by the state budget to one funded through SHI contributions. At the same time, there has been a

growing emphasis on primary care and public health. The restructuring of the health system has taken place in several phases. The beginning of the 1990s saw the introduction of a SHI system operated through the Central Sickness Fund and 22 regional sickness funds. In 1994, responsibility for planning health services was partially decentralized to the county level through the 15 county governors and the county doctors. Some "parallel" health systems providing health care to the police, railway workers and others were integrated into the national health system in the early 1990s.

The current organizational and management principles were established between 1999 and 2002 by acts of Parliament intended to recentralize some health system functions (see later in this section and Chapter 7 *Principal health care reforms* for more detailed analysis). The main bodies responsible for planning, administration, regulation and financing of the health system are the Ministry of Social Affairs, the HCB, the State Agency of Medicines (SAM), the HPI, the NIHD and the EHIF. This section begins with a brief outline of the roles played by the following health system stakeholders: the state and its agencies, the EHIF, the county and local governments, health care providers and professional and patient organizations.

The role of the State and its agencies

The Parliament of Estonia (Riigikogu) has the role of approving legislative acts and the supervision of Government. Among other standing committees of the *Riigikogu*, the Social Affairs Committee, formed in 1992, deals with draft acts concerning social insurance, labour relations and health care. The Chairman of the Committee is an elected member of the *Riigikogu* and is a member of the EHIF's Supervisory Board.

The *Cabinet of Ministers* (referred to as the *Government*) holds the executive power pursuant to the Constitution and the laws of the Republic of Estonia. It has the responsibility of developing and implementing state policies. In the health sector, the Government plays a planning and regulatory role by approving regulatory acts involving public health issues, including setting health care prices (see Section 3.6 *Payment mechanisms*) as well as approving development plans for the hospital network. The Government also has the obligation of nominating members to the EHIF Supervisory Board (see later in this section), including a representative from the Ministry of Social Affairs, five members from patient organizations and five members from employer organizations.

Through the *Ministry of Social Affairs* and its agencies, the State is responsible for the development and implementation of overall health policy, including public health policy, as well as for the supervision of health service quality and access. Its main function is regulation. The Ministry of Social Affairs

was created in 1993 as a result of the merger of three separate ministries: the Ministry of Health, Ministry of Social Welfare and the Ministry of Labour. Consequently, it has three major policy divisions: health, social services and employment. Since the mid-1990s, the subdivision of health policy areas into separate departments has changed many times and from 2008 onwards the health division is further subdivided into four administrative departments: the Health Care Department, responsible for health care, investment and pharmaceutical policy; the Public Health Department, responsible for public health policy, prevention programmes and health protection legislation; the Health Information and Analysis Department, responsible for coordinating the collection of health statistics and conducting policy analysis; and the E-health Department, responsible for management, coordination, planning and implementing of E-health projects.

State administrative responsibility in Estonia lies with the Secretary General, a civil servant, who reports to the Minister of Social Affairs. The Deputy Secretary General on Health heads the health division. During 2003–2007 the coalition governments included a position of Political Assistant Minister for health care who reported to the Minister of Social Affairs only. The position has in fact been filled with two different individuals, but has not had the envisaged added value with regard to transparent and effective health policy development, and at the time of writing the Minister of Social Affairs has not nominated the Political Assistant Minister. However, in 2008, the position of political advisor on health care was introduced.

In the health field, the Ministry's general responsibilities include health policy formulation, monitoring population health and shaping the organization of the national health system by determining the scope of primary, secondary, tertiary and public health services. Its main health tasks include:

- preparing public health, health care, health protection and occupational health legislation;
- ensuring the supervision of health-related law enforcement;
- developing and preparing legislation on standards for health care provision;
- developing and overseeing the implementation of public health programmes;
- planning and funding health services for uninsured individuals.

The main functions of the four health departments are described in Table 2.1.

Table 2.1 The main functions of health departments

Name	Functions
Health Care Department	• Formulate health care policy and organize its implementation with the objective of ensuring access, quality and safety of health care services and pharmaceuticals • Ensure population awareness and satisfaction with health care services • Play a leading role in all health care and pharmaceutical policy developments in all health sectors and within health policy itself • Take responsibility for procurement and delivery of pharmaceuticals for national health programmes (e.g. antiretroviral and anti-TB drugs, vaccines)
Public Health Department	• Formulate health policy and organize its implementation with the objective of ensuring health protection and a healthy environment, promoting health, preventing diseases and damage caused by disease • Play a leading role in health policy developments in the following areas: environment-related health risks (e.g. drinking water, food and chemical safety); control of infectious diseases; prevention of noncommunicable diseases, child and adolescence-related health issues
E-Health Department	• Management and coordination of the planning and implementation of e-health projects • Administration and development of health information systems, standardization and implementation of data sets nomenclature and classification of medical documents
Health Information and Analysis Department	• Create the conditions for knowledge-based policy-making in the Ministry, to ensure the objective assessment of health systems development and impact of implemented or planned policies • Coordinate the collection of health statistics • Liaise to ensure best international practices • Support the development and efficient implementation of intellectual capacity

Source: Ministry of Social Affairs 2008
Note: TB: Tuberculosis

Four subordinate health agencies operate under the Ministry of Social Affairs. The Ministry's health division coordinates the activities of the HCB, the SAM, the HPI and the NIHD, although each agency is directly responsible only to the Minister. Occupational health issues also come under the Ministry's health division.

The *HCB* became operational in 2002. Its main functions include licensing health care providers and registering health professionals, controlling the quality of health care provision (mainly by processing patient complaints) and funding and organizing ambulance services. It is also responsible for ensuring adequate standards of hygiene and health protection, but in this it cooperates with other agencies such as the HPI. The HCB also has an occupational health department which aims to create and implement occupational health development plans. Moreover, it coordinates the registering and training of occupational health specialists.

Responsibility for the registration and quality control of human and veterinary pharmaceuticals as well as regulation of pharmaceutical trade (including imports and marketing) lies with the *SAM*. This agency also ensures the safety of donated blood and tissue transplants and is responsible for the authorization and supervision of medical technology (see Section 5.1 *Physical resource*s, Subsection *Medical equipment, devices and aids*).

The *HPI* is the successor to the Soviet SANEPID service, with which it shares many similarities, particularly in terms of its organization and main areas of responsibility. The structure of the HPI consists of one central office, four regional offices, 11 county offices, 1 Estonian Sanitary Quarantine Bureau and four laboratories (which include physics, chemistry, virology and microbiology). It enforces health protection legislation and is responsible for communicable disease surveillance, national and local epidemiological services and implementation of the national immunization programme.

In 2003, the *NIHD* was established by merging three smaller public health institutions. Within a short time NIHD has become a centre of excellence in the area of public health, assuming responsibility for applied research and analysis in public health, environmental health and communicable diseases, as well as public health monitoring and reporting. It is also responsible for implementing national public health programmes and supporting local public health activities, and it has a training centre offering public health and health management programmes. Until 2007, the NIHD structure consisted of separate research and development divisions, as well as a training and information centre. From 2008 the research department comprises research units in different medical areas, but also performs a surveillance and evaluation function and maintains

medical registers. All public health programmes and activities, together with public relations, are managed under the development department.

In 2001, the *EHIF* obtained its present status as a public independent legal body, replacing the Central Sickness Fund and the 17 regional sickness funds. Its main role is to act as an active purchasing agency and its responsibilities include contracting with health care providers, paying for health services, reimbursing pharmaceutical expenditure and paying for temporary sick leave and maternity benefits. The EHIF is governed by the 15-member Supervisory Board consisting of representatives from state, employer and insured individuals' organizations (see also Section 2.5 *Patient empowerment*, Subsection *Patient participation*). To ensure consistency between the Ministry of Social Affairs and the EHIF, as well as political accountability, the Supervisory Board is chaired by the Minister of Social Affairs. The Supervisory Board approves the EHIF's 4-year development plans, annual budget, regular reports and criteria for selecting providers for contracting. It also provides the Government with views on health care prices. Responsibility for operational management lies with the EHIF's Management Board, which can have three to seven members and is elected for a 5-year period. Population needs assessments, contracting and claims processing are carried out by the EHIF's central and four regional departments.

The *Ministry of Finance* plays a strategic role in the health sector by managing health finances through the state budget and through its Minister's involvement as a member of the EHIF Supervisory Board.

The *Ministry of Justice* is responsible for providing and financing outpatient and inpatient health care in prisons. There are five prisons in Estonia at which family medicine, dental services and selected specialties (such as gynaecology, psychiatry, radiology and treatment of infectious diseases) are provided. Two prisons (in Tallinn and Tartu) have inpatient wards that provide psychiatric and/or infectious disease (mainly TB) treatment. However, if a prisoner needs health services that are not supplied by the prison health system, treatment will be organized through the general health care system. Since 2002, attempts have been made to develop an integrated health system that would encompass the prison as well as the non-prison population, although health care for prisoners would still be funded by the Ministry of Justice. Furthermore, public health services for both types of population are planned and provided together, with very good results in TB prevention, but activities in the field of HIV/AIDS services still need attention.

The *Ministry of Internal Affairs* organizes health check-ups in detention houses (for individuals under continuous surveillance in special facilities, but not in prisons specifically). If the person needs treatment against infectious disease or for psychiatric condition(s) s/he would be referred to hospital.

The *Ministry of Defence* maintains a system of medical services aimed to help its personnel if outpatient care is needed during military service. All inpatient care is offered through civil hospitals. Military personnel are covered by compulsory health insurance during (mandatory) military service, but all costs of medical services and medicines are covered by the state budget.

The role of county and local governments

Estonia has two administrative levels: state and municipal. County government represents the state regionally but without any legal power. In terms of health, county governors have certain responsibilities in primary care, including announcing family doctor vacancies and approving their appointments. These governors also assign service areas for family doctors and organize the supervision of practices within their respective counties. Recently, the role of county governors in organizing health care has been reduced, but it is to some degree increasing in the field of public health (see later in this section).

As of 2001, local governments no longer have any legal responsibility for funding or organizing health care. However, most hospitals belong to local governments, which either own them outright as limited companies or manage them through non-profit-making foundations. These non-profit-making organizations operate under private law, and since their founders can nominate members of their governing bodies, local governments continue to play a role in health care through hospital governance structures. From 2008 an amendment of the Health Services Organization Act gives local municipalities the right to establish or (partly) own family practices. The amendment was introduced to counter the shortage of family doctors by attracting funding for facilities from local municipalities (currently some local governments provide primary care providers with financial support) and by making it easier to employ family doctors. However, as yet it is too early to see results of this regulation. Some municipalities partially reimburse pharmaceutical expenses and nursing care costs for low-income households and for the elderly.

The role of health care providers

Health care provision has been almost completely decentralized since the passing of the new Health Services Organization Act in May 2001 (with effect from 2002). The Act defines four types of health care: primary care provided by family doctors, emergency medical care, specialized (secondary and tertiary) medical care and nursing care. Health care providers are autonomous. Services can only be provided by individuals or institutions operating as private legal entities: a limited liability company, a foundation or a private entrepreneur. Most hospitals are either limited liability companies owned by local governments, or

foundations established by the State, municipalities or other public agencies. In this sense, they are owned and managed as public institutions, either on a profit-making (limited liability company) or non-profit-making (foundation) basis. Most ambulatory providers are privately owned. All family doctors are private entrepreneurs or salaried employees of private companies (owned by family doctors); these companies are restricted to providing only primary and nursing care services. The only areas of direct state control include county governors' decisions on family doctor service areas within their locality and the Ministry of Social Affairs' decisions on the number of ambulance units to be financed by the state budget. The State's influence on specialized care and nursing care is most evident in the areas of licensing, supervision and public financing.

Compared to organizations that receive public funding or are directly overseen by the State, purely private entities play a greater role in providing outpatient specialist services, such as gynaecology, ophthalmology, urology, surgery involving the head and neck, psychiatry and orthopaedics. However, they also operate in other specialties where public funding is limited or non-existent, such as dental care and plastic surgery. In this respect, limited public funding is the key driver in the market for private health care. For more detailed information, see Chapter 6 *Provision of services*.

In the public health sector, the picture is far more fragmented, as no specific requirements apply to the organizations providing public health services to the general population or specific target groups. Most organizations act as nongovernmental organizations (NGOs) or foundations and their activities are mostly project based. Although many of these organizations provide similar services for similar groups of people (such as HIV/AIDS services), there is scant visible collaboration and coordination. Therefore, there seems to be potential for closer collaboration, and perhaps even mergers, to increase fund-raising capacity and manage larger high-impact projects in the future.

The role of professional and patient organizations

The most prominent professional group is the *Estonian Medical Association (EMA)*, which represents about half of all Estonian doctors. It was re-established in 1988 and is the main representative association for doctors involved in public negotiations with employers or the Ministry of Social Affairs. A total of 35 main medical specialties are defined by the Minister. These specialties all have their own professional associations, and each nominates a representative to negotiate with the Ministry. Recently, the EMA took on a more labour union role; it has been very active during recent years, together with the Estonian Nurses Union (see later in this section), in negotiating for minimum wages.

As a result the minimum wages for health care workers have nearly doubled from 2003 to 2006.

One of the most powerful and visible professional organizations aside from the EMA has been the Estonian *Society of Family Doctors*, which was established in 1991. The Society has played an important role in developing family medicine in Estonia and implementing the family medicine reform since 1997. The Society unites the majority of more than 900 family doctors, which form approximately 20% of all doctors working in Estonia.

The *Estonian Nurses Union* represents about half of all nurses in the country and has increased in power in recent years. For example, it is the only organization that has managed to organize a strike. In 2002 its members took strike action to combat the Hospital Association's reluctance to enter into negotiations on minimum wage. Together with the EMA and other professional organizations they have achieved a two-times increase in minimum wages for nurses and carers. The Union has also been active in redefining professional standards in nursing and improving the nurses' training curriculum. At the time of writing there are 4 main nursing specialties, with 14 subspecialties and, similarly to medical specialties, these areas have created their own development plans.

Hospitals have joined together to form the *Estonian Hospital Association*, which had 21 members at the end of 2007. Most of these members are acute care hospitals, but some nursing hospitals have also joined the Association, as there was no union for long-term nursing care organizations. In the past, the role of this Association has been slightly ambiguous as, until recently, hospitals were run by doctors, who simultaneously belong to the EMA. However, the Association has acquired the role of representing hospitals as employers in recent years and is negotiating with professional organizations about minimum wages. The Association also actively participates in discussions on health care legislation and policy developments. In 2005, long-term nursing care hospitals joined nursing care providers to form a separate section under the Estonian Geriatric and Gerontology Association. This association has been actively involved in discussions about nursing care policy development and service planning.

There used to be several organizations claiming to represent patients, but recently the oldest of these – the *Estonian Patients Advocacy Association* (*Eesti Patsientide Esindusühing*, abbreviated in English to EPAA) – has become the most accepted organization. The EPAA has been actively involved in mental health policy and in drafting and debating legislation. It is currently involved in most ministerial working groups set up to discuss new policies or strategies, such as the new project on a national electronic health information system. The Ministry of Social Affairs has traditionally provided limited financial support to the EPAA. However, since 2003 the funds for patient representation have

been distributed through open competition. Additional support comes from alternative sources on a project basis. Patient groups have also been formed to represent people with specific illnesses or disabilities, such as the Diabetic Society, the Multiple Sclerosis Society and the Heart Association.

Patient/consumer involvement in health care debates has become more significant in recent years. For example, the Society for Disabled People is represented on the EHIF Supervisory Board. A patient representation organization linked to the pharmaceutical industry was created during a period of debate about introducing a reference pricing system for pharmaceutical reimbursements, which is the only time it has been publicly active.

Research organizations

A remarkable influence on health issues is wielded by Tartu University, as it is the only academic medical institution in Estonia. Besides medical, pharmaceutical and nursing training, it carries out a wide range of health research activities. On health policy issues, the Department of Public Health (DPH) has been visible promoting applied research on public health, health management and economics. In recent years, the collaboration between DPH and NIHD has increased and is expected to develop further. At the time of writing there are, among others, joint projects in human resource development and epidemiology. Furthermore, Tallinn University and the Tallinn University of Technology have carried out research in the areas of public health and biosciences.

In 2001 an interdisciplinary unit, the Estonian Centre of Behavioural and Health Sciences (ECBHS) at the University of Tartu Faculty of Social Sciences, was recognized as a national Centre of Excellence in research, approved by a Decree of the Estonian Minister of Education. The main objective of the Centre is to develop interdisciplinary research and organize doctoral studies in the fields of behavioural and health sciences (ECHBS 2008).

In the same year the Government set up the Estonian Genome Project Foundation and tasked it with responsibility for the Estonian Genome Project (EGP), with the goal of establishing a database of health, genealogy and genome data covering a large part of the Estonian population (EGP 2008). Since 2007 the EGP is the responsibility of Tartu University and approximately 10 000 human gene samples are stored here, available for national and international scientific research projects.

In 2000, the PRAXIS Centre for Policy Research was established as a foundation. Its main policy research areas, alongside health issues, include innovation and public policy, as well as social and labour policy. PRAXIS is a partner in many international networks and therefore has the potential to

foster links between international knowledge and experience and Estonian policy-making.

Media organizations

At the beginning of the 1990s there were only a few periodicals for medical professions, among them an academic journal, *Eesti Arst* (*Estonian Physician*), which is still the only peer-reviewed journal published in Estonian. Recently, however, there was a change of Editor, from the EMA to a private company, which may affect the academic character of the journal in the future. The period from the mid-1990s to the time of writing has been very fruitful for medical periodicals. Several publications edited by professional organizations have emerged, such as those by the Estonian Family Doctors Association and the Estonian Nurses Union, to inform professionals not only about developments in medical practice and science, but also about health policy issues. Other examples include the journal *Lege Artis* and newspaper *Meditsiiniuudised* (*Medical News*). The newspaper *Terviseleht* and the periodical *Haigekassa Teataja* (*EHIF Announcements*) mainly target patients and consumers.

With regard to sharing health-related information, health portals for medical professionals and patients have been established. Even though these web sites opened forums for discussions between different interest groups and to advise patients, more innovative developments are expected, such as the introduction of more interactive web-based solutions in Estonia. As a conclusion, it is evident that the media has been actively involved in sharing information on public health and health care-related topics, which is helping to increase the level of awareness of the Estonian population.

2.4 Decentralization and centralization

The reforms that took place at the start of the 1990s established a significant degree of decentralization in the health system, particularly given Estonia's small population. Planning of primary care and some specialist care was devolved to the municipalities. Deconcentration of health care planning and control to county level involved the establishment of health care administrator positions in county governors' offices and county offices for health protection. Sickness funds were established as independent public organizations in the counties and large cities in 1992.

However, problems arose from the fact that some functions had been decentralized to levels that were unable to ensure efficient performance. Most municipalities were too small and lacked sufficient financial resources to fulfil their new functions, while at county level there were difficulties in finding appropriately qualified personnel. Lack of coordination among the sickness funds led to the establishment of a Central Sickness Fund in 1994, which was subordinate to the Ministry of Social Affairs and responsible for the activities of the county-based sickness funds. Towards the end of the 1990s there were three main trends in recentralization. First, the responsibility for overall health care planning was firmly re-established at the national level under the control of the Ministry of Social Affairs. County- and municipal-level responsibilities for planning and administering health services were reduced (see Chapter 3 *Financing* and Chapter 4 *Regulation and planning*).

Second, organizations such as the EHIF and the HPI, which used to be represented in each county, centralized these offices so that they now cover several counties. These changes aimed to improve efficiency in the use of qualified personnel and the levels of administration costs. In the case of the EHIF, increased centralization has strengthened its purchasing function, optimized its administrative capacity and enabled the employment of full-time health economists and lawyers in the new regional offices, which had not been possible previously.

Third, increased rights and obligations have been delegated to managers within the EHIF and at the provider level. Health care providers now have legal status as private entities operating under private law, which means direct responsibility for provider performance has been delegated by the Ministry of Social Affairs and the municipalities to the hospital supervisory boards. In the case of primary care, the process of privatization began in 1998 and was completed in 2002. In 2001, the EHIF gained its current status as an independent public organization, and it is no longer subordinate to the Ministry of Social Affairs.

As the latest changes have taken place fairly recently, there has not yet been sufficient time for evaluation. So far, systematic problems have not emerged. In this respect it is worth noting that the reforms that took place at the end of the 1990s were prepared more carefully than those that were introduced at the beginning of that decade. For example, before awarding independent status to the EHIF, the experience of similar organizations was studied and political and public accountability mechanisms were carefully thought through and included in the legislation. Mechanisms for ensuring that EHIF activities would follow the national health policy framework were also included. Nevertheless, there are doubtless those who would prefer the Ministry of Social Affairs to have

more hierarchical control over the daily operational decisions of the EHIF. The greater challenges lie in ensuring that after the privatization of health services provision the autonomous providers follow national health policy preferences, and in creating mechanisms that are currently lacking in order to increase the public accountability of providers.

2.5 Patient empowerment

Patient information

Estonia is widely acknowledged as one of the leading countries in terms of E-health in eastern Europe. Health sector information systems have developed significantly, enabling actors to communicate more effectively as most of the information in the health sector is moving through electronic channels. The E-health concept is built around the idea that all information about patient health should be (1) managed centrally and (2) available to patients and health professionals on request. The patient has the right to decide how the personal (not critical for life) information should be handled by state authorities and health service providers. According to a 2007 survey conducted by the EHIF and the Ministry of Social Affairs, only 12% of patients want to block access to their health data for privacy reasons. The E-health system creates a different kind of infrastructure and information exchange by establishing connections to the web sites and databases of several actors (E-registration for health service providers/ patients, E-prescription for doctors, patients, pharmacies, the EHIF, etc.).

As yet, however, information related to health insurance is available from a variety of sources, rather than through one single channel. EHIF has set up different methods of conveying information, such as through web sites, local service desks, telephone services and information leaflets, as well as regular mass media advertisements. Estonian citizens have accessibility to personal health insurance information (for example on coverage, benefits received, medicine use) through a state-managed central database ("X-Way") which uses ID cards and passwords for privacy protection. Furthermore, the EHIF publishes on its web site information on health service entitlements, prices, reports on health services and benefits utilization, as well as lists of contracted health service providers. Patient information on different health conditions and problems is also available, which could help patients and their relatives to prevent – and cope with – these conditions. Information about entitlements and regulations on receiving cross-border care in the EU is made publicly available to patients through an EHIF web site and related publications. Most of the main

EHIF information is also available in Russian, and some general information about the Estonian health system is available in English.

The Ministry of Social Affairs and other state agencies (including the NIHD, HPI, SAM and HCB) have their own web sites and printed publications, mostly containing contact data, responsibilities and provide services, as well as reports and statistics of public interest. Health service providers and other health sector organizations (such as pharmaceutical firms) have developed their own web sites, where information is available on availability, accessibility and prices of reimbursed services. The accessibility of information regarding health services is the legal responsibility of health providers. There are also various health-related web sites on the Internet on which patients can find information about diseases and treatments, and web portals for contacting doctors and other health professionals are also widely used.

The EHIF and some health service providers have reviewed patient preferences on information sources. It has reported an increase of awareness of the population about health insurance issues (such as knowledge about insurance status and health insurance benefits), from 60% (2003) to 71% (2006), but at the same time, patients report having less knowledge about their rights regarding access to specialists and out-of-pocket (OOP) payments. For example, in 2007 only 44% knew that there is no need for a referral from a family physician to see a psychiatrist, and 30% of patients still wrongly assume at the time of writing that a family physician can charge insured individuals for outpatient visits. Furthermore, few people know about the right to formally complain about health services (for example on accessibility or quality) and only 27% of patients would inform the EHIF or HCB about problems they might encounter. This is further illustrated by the fact that in 2007 only 20% of patients used the health care providers' complaint systems, down from 32% in 2006 (Faktum and Ariko Ltd 2007), which may point to a decreasing public trust in (management of) health organizations.

Although an impressive volume of information is available about health system regulations and procedures, there is a lack of public information on the performance of the health system. The EHIF conducts clinical audits and controls medical procedures, as required by legislation, but this information is not accessible to patients. More effort is needed to supply patients with relevant information about the performance and quality of health services provided in Estonia.

Patient rights

In 1994 WHO launched the Declaration of Patients' Rights in Europe (WHO 1994), which has since been the basis for discussions and drafts of legislative documents in Estonia. The draft of the Patient Rights Act was even discussed in the *Riigikogu* in 1996 and 2002, but these discussions did not result in any legislation. Despite this, the rights and obligations of patients have been incorporated in the Law of Obligations Act in 2001 (enforced in 2002), as the relationship between patient and doctor is seen as a contractual relationship in which both parties have certain rights and obligations. In addition, Estonia has signed and ratified the Biomedical Convention, which entered into force on 1 June 2002 and regulates, among other things, issues surrounding gene testing. However, legal protection of patient rights remains rather complicated, as only few lawyers in Estonia are educated and experienced in health legislation matters.

Since 2002 the Law of Obligations Act defines the contractual relationship between patient and doctor and its consequences for that relationship, and requires the involvement of patients in decisions regarding their own health. When the Act was enforced, all health care providers introduced written informed consent documents to be signed by the patients before the provision of health services commences. The doctors have a duty to inform the patient about their health issues and required health services. The Act also states that a provider of health care services is not allowed to promise that a patient will recover or that an operation will be successful. The patient has the right to a second opinion regarding the diagnosis or treatment options, paid for by the EHIF.

The EPAA counsels and represents patients who have complaints as a result of malpractice or poor-quality health services. A representative of the EPAA is also a member of the Commission of Medical Quality by which most complaints are assessed. However, the general level of patient rights protection is quite weak in Estonia. This is a tradition inherited from health care in the Soviet era, during which the opinion of the doctor was the most important factor and the doctor had a defined right to decide what was best for the patient.

Patient choice

Estonian health insurance provides universal coverage and its scope in terms of in-kind and cash benefits for insured individuals is wide ranging. The choice of health service providers was limited for years, as local health insurance funds (later replaced by regional departments) mainly had contracts with regional health care providers, with the exception of tertiary care, which was provided in two regional hospitals in Estonia. Since 2006 the patient can choose the hospital

s/he prefers, including for outpatient care, as the EHIF has contracts with all providers. Furthermore, apart from the free choice of provider, a patient also has a free choice of doctor. However, this free choice may be constrained by the possibility that the "more preferred" doctors may have longer waiting lists.

At the primary health care (PHC) level all citizens in Estonia are registered on the practice lists of the family physician of their choice. Approximately 10% of individuals change family physician within a year. Of these people, 40% do this because they move elsewhere, but 28% of changes are due to dissatisfaction with the family physician. It is worth noting that family doctors can refuse to include the individual on their list of patients when the list is full or the person does not live within their practice catchment area. A total of 51% of the population was satisfied with the choice of health services covered by health insurance in 2007, up from 44% in 2003, whereas 21% was unsatisfied (Faktum and Ariko Ltd. 2007).

Patients and cross-border health care

Insured individuals in Estonia have always had the right to receive treatment abroad paid for by the State, regulated by the Health Insurance Act. Emergency care provided by publicly contracted providers abroad is covered and regulated under European Council (EC) Regulation EEC No. 1408/71, or otherwise through private insurance. In non-urgent treatment cases, prior authorization from the EHIF is required (see Section 3.2 *Population coverage and basis for entitlement*, Subsection *Coverage abroad*), which can be granted when the care is not available in Estonia; if the service is medically justifiable; and if it is of proven medical efficacy, with a probability of success of at least 50%. The EHIF only covers treatment costs and as such all other incurred costs (such as transportation, patient fees) must be covered by the patient. A 2006 study by Jesse and Kruuda found that the decision to seek treatment abroad was mostly dependent on whether the treatment would be covered by public revenue or not. Other evaluated aspects of cross-border care – foreign patients seeking health care in Estonia, for example – is difficult to assess as these data are not available from health care providers. However, Estonian spas have reported that 70% of their clients come from neighbouring countries, mostly from Finland and Sweden, but increasingly also from the Russian Federation and Germany. In other areas of health care, such as dental care, there is evidence of patient mobility. Dental care providers in bigger cities estimated that between 10% and 30% of their patients are from abroad (Jesse and Kruuda 2006). The main barrier for foreign patients for obtaining elective health care services is lack of information, as Estonian health care providers are not actively seeking foreign markets.

Complaints procedures (mediation, claims)

The Health Services Organization Act and Law of Obligations Act jointly regulate the complaints and claims procedures for health services and make the health care provider responsible for malpractice and low quality of health services. It is common practice that most complaints are settled between the health care provider and patient and there are no official data on how often this occurs. If damage to the patient's health is suspected or serious quality problems arise, official complaints are made to the HCB. The HCB runs the Health Care Quality Expert Commission, which managed 63 claims in 2007 (see Table 2.2). According to a regulation of the Minister of Social Affairs, the Health Care Quality Expert Commission's main role is to act as an independent counsellor for patients and its decisions have no legislative power. If the Health Care Quality Expert Commission finds the health care provider to be guilty of malpractice and causing health damage, the patient has a right to have their case heard in court and the HCB could fine or withdraw the licence of the health provider concerned. Unfortunately, data on legal disputes in courts are not available, which makes it hard to estimate to what extent malpractice cases and claims are an issue in Estonia.

Table 2.2 Official complaints made to the Health Care Quality Commission, 2004–2007

Year	2004	2005	2006	2007
Claims	73	60	78	63
Malpractice cases found by the Health Care Quality Commission	24	17	20	23

Source: Adapted from Health Care Board 2008

Patient safety and compensation

The main regulations or initiatives for preventing health care-related harm are based on the Health Services Organization Act and the Law of Obligations Act. The former requests health service providers to ensure the quality of their services and regulates conditions under which licences can be withdrawn from service providers. According to the latter, the patient and health service provider are involved in a contractual relationship, which has all the characteristics and consequences of "ordinary" legal service provision. In the event of malpractice, the health service provider must compensate the patient for the moral and material harm caused during the health services provision concerned. There is no obligation for health service providers to have civil liability insurance, but most hospitals and some professional organizations have such insurance, provided by large private insurance companies operating in Estonia. Unfortunately, data are not available on how many compensation claims have been applied for and how many settlements and compensation payments have been awarded under liability insurance. In addition, procedures exist for reporting adverse drug

reactions directly to SAM and the pharmaceutical market in Estonia is strictly regulated. No direct-to-consumer advertising of pharmaceuticals and medical devices is allowed by companies. Medical errors are not registered routinely, but the EHIF performs regular clinical audits on various health care services and organizations.

According to a Eurobarometer survey (TNS Opinion & Social network 2006), almost four in five EU citizens (78%) classify medical errors as a significant problem in their country, while in Estonia the share is 59% (35% do not see it as a problem), compared to 90% in Lithuania. Estonians are generally more passive about influencing the quality of care, as 71% of Estonians think that it is not likely that a hospital patient could have influence on avoiding medical errors (the equivalent EU27 level is 52%). Moreover, 21% of Estonians believe that a hospital patient could actively help in preventing medical errors, while the EU27 average is 40%.

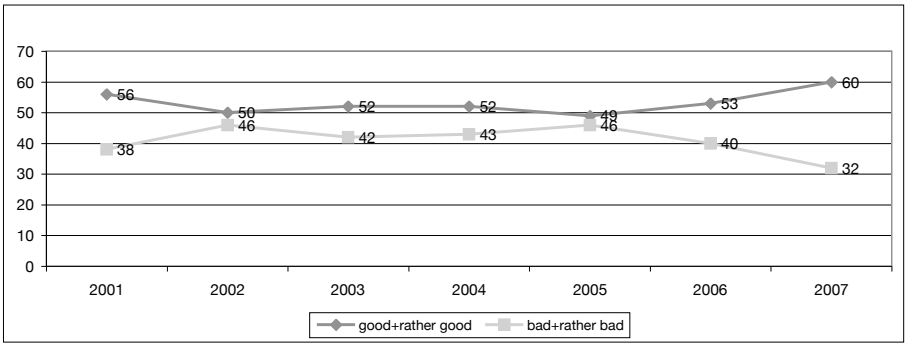
Patient participation/involvement

The main mechanism for patient participation has been the inclusion of representatives of insured groups in the EHIF Supervisory Board (and before on sickness funds' boards). This enables insured people (that is, patients) to influence purchasing decisions. A total of 30% of the Supervisory Board is filled by representative organizations of insured people, including such organizations as the Estonian Union for Child Welfare, the Estonian Employees' Unions' Confederation, the Confederation of Estonian Trade Unions, the Estonian Pensioners' Association and the Estonian Chamber of Disabled People. The EHIF Supervisory Board is obliged to approve the EHIF's long- and short-term strategies and the yearly health insurance budget. Furthermore, Estonian hospitals have a 2-tier management structure, with management and supervisory boards. Supervisory boards often seat local politicians who could be seen as representatives of their electorate. For example, supervisory boards have the power to decide on the level of (and possible exemptions to) patient fees and must approve hospital strategic plans and yearly budgets, which may reflect different values, for example concerning cost-efficiency and accessibility.

Since 1996 the EHIF (in collaboration with the Ministry of Social Affairs since 2005) has been conducting annual surveys on patient satisfaction with different aspects of the health system. The scope and depth of the studies have been broadened over time and there are already trends visible with respect to changes in health system. In general terms the satisfaction of the population with health service access and quality has been relatively high across various years (see Fig. 2.2). The proportion of the population that rates accessibility of health care services as "good" or "rather good" has increased from 49% in 2005 to 60% in 2007, while the share of those who are unsatisfied in terms

of access (deeming it to be "bad" or "rather bad") has decreased to 32%. In 2007, the three most positive aspects of the health systems, as seen by patients, were the family medicine reform (mentioned by 17% of population), access to health services (15%) and quality of health services (10%). On the other hand, the three most negative aspects were long waiting times in general (mentioned in 22% of cases), waiting times for specialists in particular (15%), along with general access to health services (6%).

Fig. 2.2 Opinion on health care accessibility (% of respondents), 2001–2007



Source: Adopted from EHIF and MOSA population satisfaction surveys, 2001–2007

According to the Population Satisfaction Surveys, Estonians are most satisfied with the quality of care provided by family doctors and dentists, but are the least satisfied with family nurses and nursing homes. However, this low satisfaction with family nurses may also be due to low awareness of the responsibilities and competences of these professionals. In addition to national surveys on patient satisfaction, the Eurobarometer surveys provide comparisons between European countries. According to these data, Estonians are less satisfied with quality, availability and accessibility of health care services (hospitals, dental care, medical and surgical specialists, family doctors and nursing care) when compared to the EU27 average, but on average when compared with the EU12 Member States (TNS Opinion & Social Network 2007) (see Table 2.3). The latest Eurobarometer survey also addresses public opinions regarding nursing care provision and care for the elderly, which both show satisfaction levels among Estonians as being below the EU27 average. The main concerns about nursing care are connected to the low affordability and quality of care, which are mainly due to low levels of public financing for nursing care.

Physical access

Physical conditions and construction of health facilities, including general building standards, are regulated by different legislative acts. Although standards

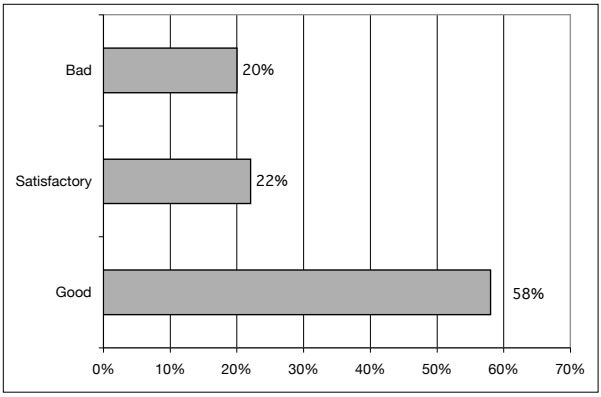
Table 2.3 Patient or citizen satisfaction with health care and the health system, 2007

Satisfaction levels	Estonia (ranking within the EU27)	EU27
Quality of the hospitals "good" (%)	67 (16)	71
Quality of dental care "good" (%)	78 (14)	74
Quality of medical or surgical specialists "very good" or "fairly good" (%)	68 (19)	74
Quality of services offered by family doctors "good" (%)	78 (18)	84
Quality of care services for dependent people in their home "good" (%)	25 (24)	42
Quality of nursing homes "good" (%)	23 (22)	41
Availability and accessibility of nursing homes "easy" (%)	15 (25)	39

Source: TNS Opinion & Social Network 2007
Note: EU27: All 27 EU Member States (up to and including January 2007)

are specified and all new buildings are required to ensure easy accessibility for all, including people with physical disabilities, in reality, many older health facilities do not fully meet disabled people's mobility needs. Studies show that, in general, geographical access and transportation to health facilities are "quite good" or "satisfactory", but mobility inside the buildings is more complicated. For example, the last survey on the accessibility of family practices shows that 58% of people assess accessibility to be good, but every fifth person is dissatisfied with mobility conditions (see Fig. 2.3). This may imply difficulties for disabled and elderly people when accessing health services and visiting doctors because there are no ramps or elevators in the buildings concerned, making things especially difficult for wheelchair users.

Fig. 2.3 Physical access and mobility conditions for the elderly and people with special needs within family practices



Source: Dive Service Quality Development Ltd 2007

3 Financing

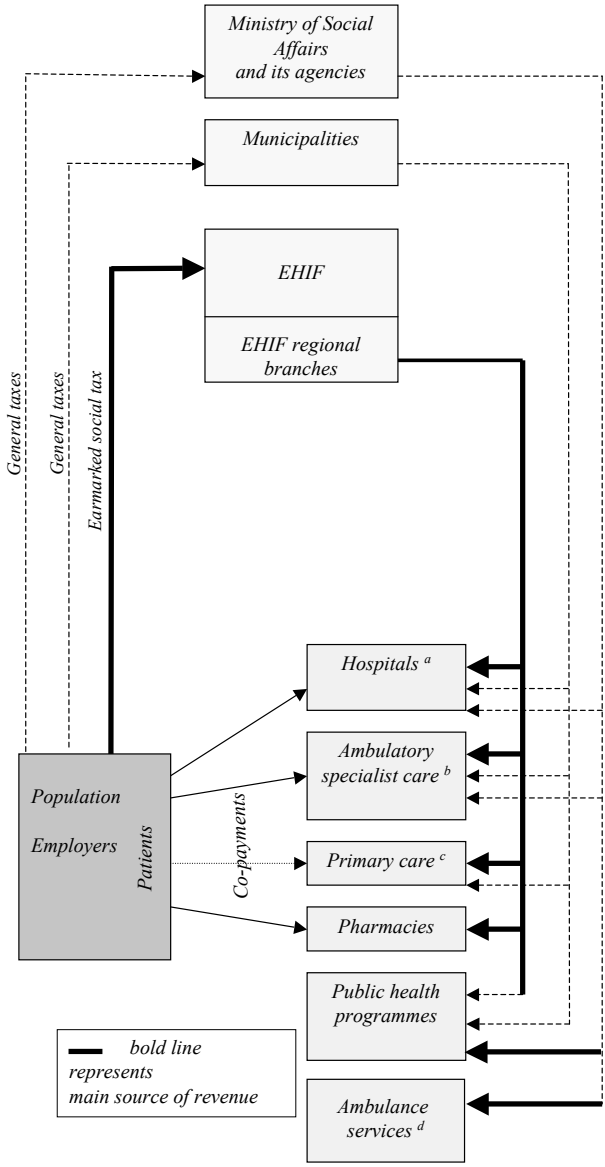
The Estonian health care system is mainly publicly funded through SHI contributions in the form of earmarked social payroll tax, which amounts to over 60% of total funding (for more details see Table 3.1). This earmarked payroll tax is then pooled by the EHIF, which has four regional branches but acts as a single purchaser of care. Other purchasers/payers of health care, who are funded instead by general tax revenue, include the Ministry of Social Affairs, which is responsible for covering the costs of ambulance care and emergency care for uninsured people and is the largest contributor to public health programmes; and the municipalities, which have a relatively small and yet diverse role. Private expenditure comprises approximately a quarter of all health expenditure, mostly in the form of co-payments. A broad picture of the financial flows in the Estonian system is provided in Fig. 3.1.

Table 3.1 Share of main sources of health care financing in Estonia, 1995–2006 (selected years)

Source of financing	1995	2000	2005	2006
Public	89.8	76.4	76.7	73.7
Taxes (state and municipal)	12.4	10.4	10.5	11.2
Social health insurance	77.4	66.0	66.2	62.5
Private	7.5	23.3	23.0	25.6
OOP payments	7.5	19.7	20.4	23.8
Private health insurance	0.0	1.0	0.3	1.1
Other	0.0	2.6	2.3	0.7
External sources	2.7	0.3	0.3	0.6

Source: Ministry of Social Affairs 1999–2006
Note: OOP: Out-of-pocket (payments)

Fig 3.1 Financial flows in the Estonian health system



Source: Authors' own compilation

Notes: a) fee-for-service payment + daily rate + some per-case payments; 50% of each case is reimbursed using diagnosis-related group (DRG) prices; contracts close-ended case-volume contracts; b) fee-for-service payment; close-ended case-volume contracts; c) weighted capitation + fee-for-service payment + additional fixed payments; d) general budgets and fixed payment per provider unit; EHIF: Estonian Health Insurance Fund

3.1 Health expenditure

Health care in Estonia is largely publicly financed, although the share of public financing has decreased over the years, mainly as a result of increasing OOP payments. Since 1992, earmarked payroll taxes have been the main source of health care financing. Other public sources of health care financing include the state and municipal budgets, accounting for approximately 9.4% and 1.8% of total health care expenditure, respectively. The public share of health care spending has declined from 89.8% in 1995 to 73.7% in 2006 (see Table 3.1, earlier).

In 2006, private sources of health care financing accounted for 25.6% of total expenditure on health care, rising from 7.5% in 1995. Increasing the real incomes of households and increasing the ability and willingness to spend on health care are two methods that are expected to increase the private share of expenditure in the future. Public expenditure relies heavily on health insurance which has a stable revenue base and therefore may not increase at the same speed as OOP expenditure. OOP payments account for 93% of private spending on health care. These payments have grown steadily since the mid-1990s and are mostly spent on pharmaceuticals and dental care. External sources of health care financing play a minor role in Estonia and fell to almost 0% of total health care expenditure in 2001.

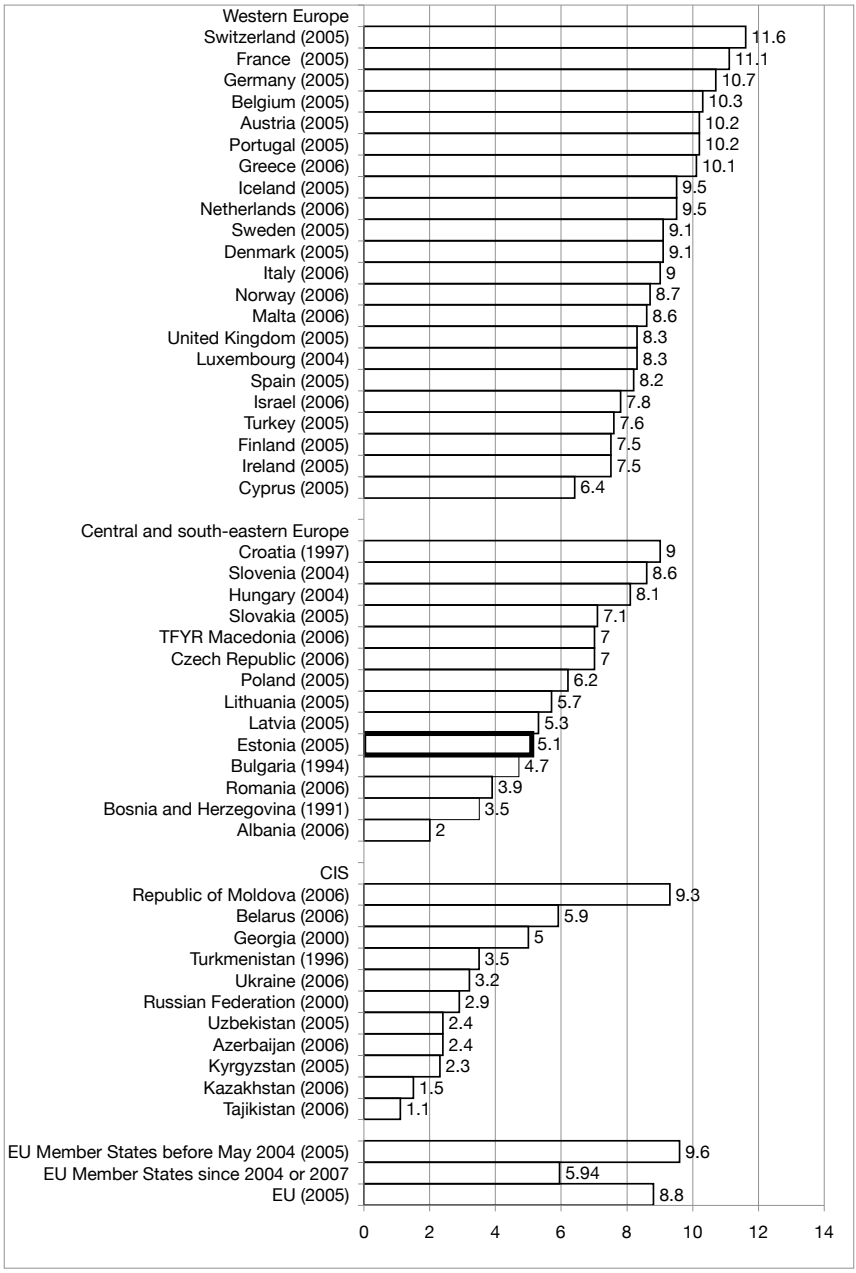
The Ministry of Social Affairs began systematically collecting data on health care expenditure in 1999, based on the OECD National Health Accounts methodology. The new methodology is slightly different from the old methodology and pre-1999 data should be interpreted with caution as they

Table 3.2 Trends in health care expenditure, 1995–2006 (selected years)

Total expenditure on health care	1995	2000	2005	2006
Mean annual nominal growth rate in GDP (%)	n/a	16.8	16.8	18.1
Mean annual nominal growth rate in total health expenditure (%)	n/a	4.0	12.9	18.3
Total government spending as a % of GDP	n/a	36.5	33.4	33.0
Government health spending as a % of total government spending	n/a	11.0	11.4	11.1
Total health expenditure in € PPP per capita	240	544	845	n/a
Share of GDP (%)	6.4	5.4	5.0	5.0
Public health spending share of GDP (%)	5.3	4.1	3.8	3.7
Private health spending share of GDP (%)	0.7	1.3	1.2	1.3

Source: Ministry of Social Affairs 1999–2006
Notes: GDP: Gross domestic product; n/a: Not available; PPP: Purchasing power parity

Fig. 3.2 Total health expenditure as a share (%) of GDP in the WHO European Region, latest available year

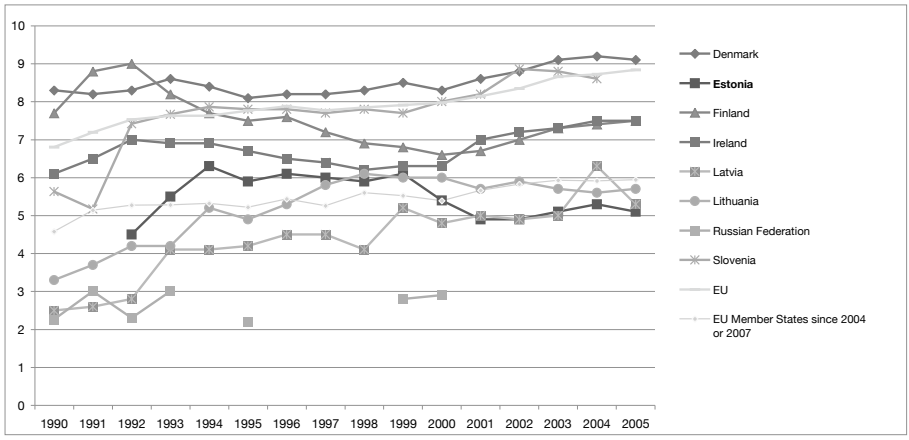


Source: **WHO Regional Office for Europe 2007**
Notes: **EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia; Countries for which data were not available have not been included**

may underrepresent private expenditure. In addition, the Ministry of Finance adjusts GDP statistics yearly and as these adjustments influence historical GDP numbers, the statistics on total health expenditures as share of GDP vary according to source.

The level of health expenditure in Estonia has been stable over time, with small variations due to changes in the economic environment. However, in the late 1990s it was somewhat higher (6.1% in 1999) and in recent years the health expenditure share of GDP has decreased slightly, reaching 5.0% in 2006 despite rapidly increasing health expenditure in absolute terms (see Table 3.2).

Fig. 3.3 Trends in health expenditure as share (%) of GDP in Estonia and selected countries and averages, 1990 to latest available year

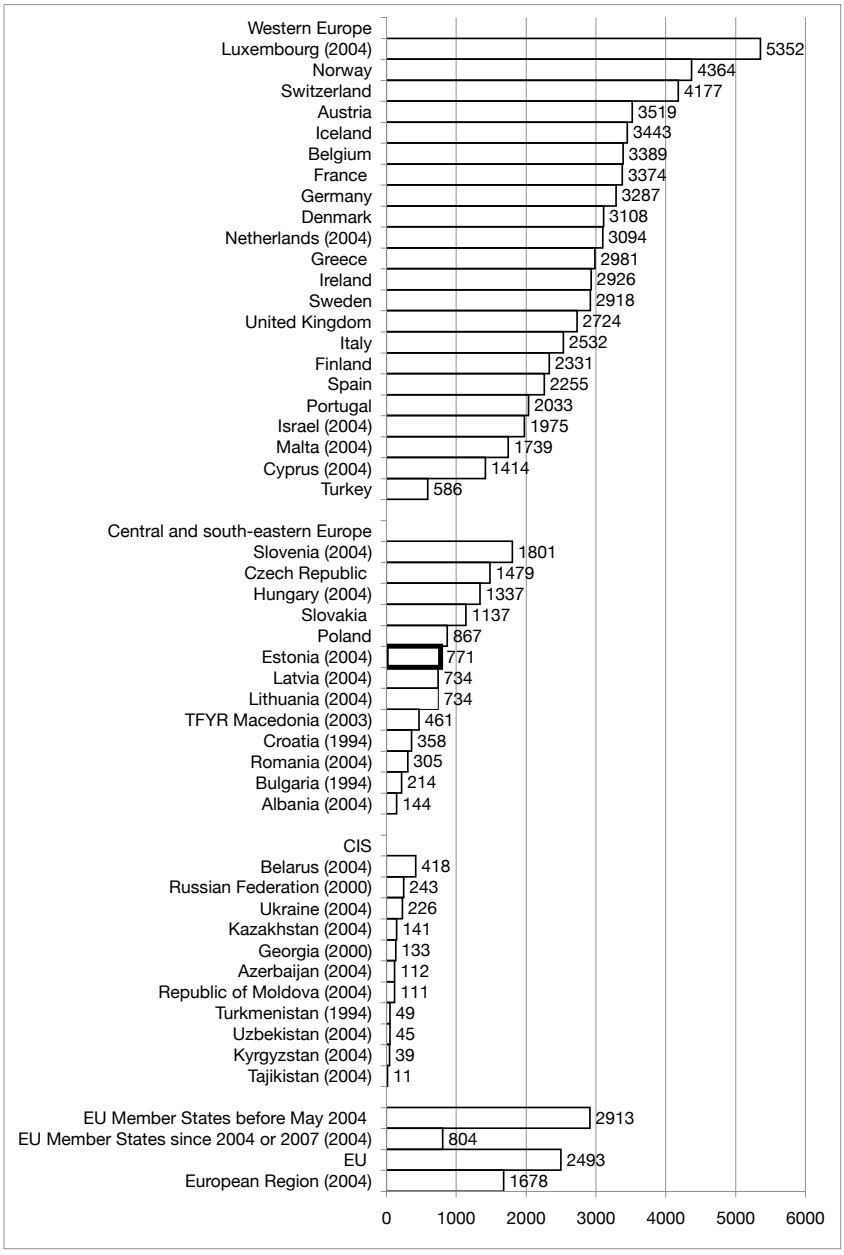


Source: WHO Regional Office for Europe 2007
Note: EU: European Union

The relatively low level of health care expenditure as a percentage of GDP, compared to the EU average level and some countries in the European Region (see Fig. 3.2 and Fig. 3.3), is the cause of dissatisfaction among the medical community. Although the Government does not set targets for the overall level of health care expenditure as a proportion of GDP, the EMA has proposed for a target of 6.5% of GDP for the year 2010 in their general meeting in December 2007 (EMA 2007).

Expenditure on health care rose in line with economic growth until 1998. The 1999 peak in health care expenditure as a proportion of GDP (6.1%) came about as a result of the economic slowdown caused by the economic crisis in the Russian Federation and a global economic downturn. Despite shortfalls in social tax revenues during 1999, the health insurance fund was able to use its reserves to pay providers, which meant that health care expenditure increased

Fig. 3.4 Total health expenditure, US$ PPP per capita in the WHO European Region, 2005 or latest available year



Source: WHO Regional Office for Europe 2007
Notes: PPP: Purchasing power parity; EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia; Countries for which data were not available have not been included

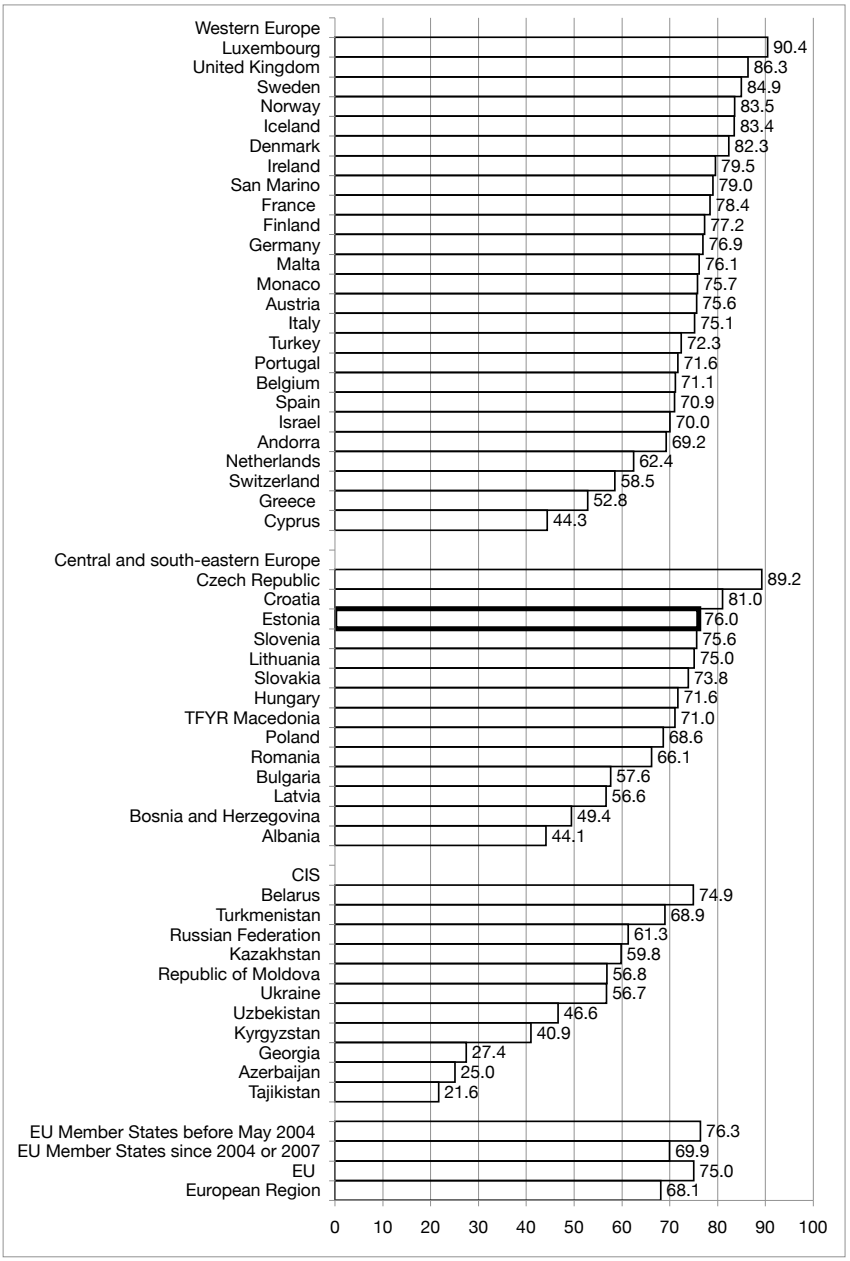
as a proportion of GDP. This explains the fall in health care expenditure that followed, dropping to 5.5% of GDP in 2000. The subsequent fall in health care expenditure as proportion of GDP and moderate increase of health care expenditure in nominal terms was caused by two main factors. First, the EHIF had to use some of its revenue to create new reserves (equal to 0.2% of GDP) and this contained the EHIF's running yearly expenditure. Second, state budget spending on health care did not keep up with increases in general tax revenue. Even in the late 1990s and early 2000s, the annual growth of health expenditure was relatively moderate (for example, approximately 4% nominal growth per year in 2000). Since 2002, the annual nominal growth rate has been much higher, reaching 19% in 2006. However, this has not resulted in an increase in the share of health expenditure as a proportion of GDP, as the nominal increase of GDP has taken place more rapidly due to increasing private consumption and investments.

Health care expenditure in PPP per capita has increased from a low of US$ 409 in 1995 to US$ 845 in 2005. In 2004 the per capita spending was slightly below the average of the EU12 (see Fig. 3.4) but slightly above that of the other Baltic states.

The public share of total expenditure on health care decreased during the 1990s (see Table 3.2). Although data are not available for the beginning of the 1990s, the public share of total spending was high. Figures showing public spending in the mid-1990s may have underestimated the level of private spending on health care, but data collected since 1999 are more reliable. In 1999 the public share of total health expenditure was 80.4%, which has been decreasing since then, reaching 73.7% in 2006. Although the public share of health expenditure has been decreasing over time, the share of public health expenditure as a proportion of total government expenditure has remained stable at 11.0% and 11.3% in 2001 and 2006, respectively. The balance between public and private spending has not been explicitly subjected to political debate or decision-making. However, it has been recognized that the current mix of public–private expenditure is reasonably optimal and increasing private expenditure should be treated with caution. In terms of international comparison, Estonia's level of public expenditure as a proportion of total expenditure on health is close to the EU15 average. Among central and eastern European countries the public share is only higher in the Czech Republic and Croatia (see Fig. 3.5).

The share of private spending as a proportion of total health expenditure has increased due to increasing OOP payments. In 2006 the level of OOP expenditure was 23.8%, which is three times higher compared to 1995 (7.5%). OOP payments have been the most rapidly increasing component of total

Fig. 3.5 Public sector health expenditure as share (%) of total health expenditure, WHO estimates, 2004



Source: WHO Regional Office for Europe 2007
Notes: EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia

health expenditure, due predominantly to rising expenditure on dental care and pharmaceuticals.

3.2 Population coverage and basis for entitlement

Population coverage

The core purchaser of health care services for insured people is the EHIF, an independent public body. The EHIF operates through four regional branches, each covering two to six counties, and its main responsibilities include pooling funds, contracting service providers, reimbursement of health services, pharmaceuticals as well as some responsibilities for sick leave and maternity benefits.

At the end of 2006, 95.2% of the population (almost 1.28 million people) were covered by mandatory health insurance offered by the EHIF. Entitlement to coverage is based on residence in Estonia and entitlement rules of specific groups are defined by law. There is no possibility of opting out of this insurance. The only group excluded from coverage is the prison population, whose health care is organized and paid for by the Ministry of Justice (see Chapter 2 *Organizational structure*, Subsection *The role of the State and its agencies*). Since the end of 2002, some groups who were not previously covered have been able to obtain coverage on a voluntary basis (see later in this section).

Those covered by mandatory health insurance fall into four main categories: those who make their own contributions; those who are covered by contributions from the State; those who are eligible for coverage without contributing; and those who are covered on the basis of international agreements. Table 3.3 outlines these different groups and shows the proportion of insured individuals in each group.

Since the end of 2002, voluntary coverage has been extended to those who might otherwise remain uninsured. Eligibility for voluntary coverage is restricted to Estonian residents who receive a pension from abroad (usually because they worked abroad and have returned to Estonia to retire) and to people who are not currently eligible for membership but who have been members for at least 12 months in the two years prior to applying for voluntary membership, as well as their dependants. The latter group includes students studying beyond what is considered to be the normal length of study and people temporarily out of work but not registered as unemployed. Voluntary members (232 people

Table 3.3 EHIF entitlement criteria and % of insured people in different entitlement groups, 2006

Group	Contribution/basis of entitlement	% of insured people
Insured covered by employer or self	***Employer or individual contribution***	***50.91***
Employees	13% of wages	47.56
Self-employed	13% of earnings	2.98
Others	13% of wages	0.34
Voluntary membership	13% of the previous year's average salary	0.02
Insured covered by State	***State contribution***	***2.52***
Individuals on parental leave with children younger than 3 years; one non-working parent of children younger than 8 years; and one parent in families with three children younger than 19 years	13% of an amount defined each year	1.41
Registered unemployed	13% of an amount defined each year (entitlement for 270 days)	0.53
Carers of disabled people	13% of an amount defined each year	0.34
Men participating in compulsory military service	13% of an amount defined each year	0.15
Individuals exposed to nuclear contamination (mainly related to the Chernobyl nuclear accident)	13% of an amount defined each year	0.02
People receiving social benefits	13% of an amount defined each year	0.01
Dependent spouses of diplomats	13% of an amount defined each year	0.07
Non-contributing insured people	***No contribution***	***46.30***
Children up to 19 years	Residence	21.79
Pensioners	Residence and entitlement to state pension	18.42
Disabled people entitled to special pensions	Residence and entitlement to disabled persons pension	3.22
Students	Studying (no contributions from students younger than 24 or within the "normal anticipated length of study")	2.77
Non-working spouses of insured individuals	Before 2003: all	0.03
	Since 2003: those five years from pensionable age	0.00
Non-working pregnant women from the 12th week of pregnancy	Residence	0.08
Insured based on international agreements		***0.28***
Russian retired military personnel	Contributions paid by the Russian Federation based on the average costs of the insured people in the respective age groups	0.24
Other agreements (including EU)	No contributions paid; costs reimbursed or waived	0.04

Source: EHIF 2007
Notes: EHIF: Estonian Health Insurance Fund; EU: European Union

in 2006) are entitled to exactly the same benefits as compulsory members. The minimum contract is for one year, and coverage begins a month after the contract has been signed.

People are covered regionally, on the basis of where they live and where they use health services. Those commuting between regions for work or for other reasons can choose the region in which they are registered. The EHIF recommends that they register in the region where their chosen family doctor is located. As the four regional branches contract with providers outside their regional territories, insured individuals are not limited to the use of regional providers alone. All insured people were formerly issued a plastic card with a magnetic stripe (paper cards were issued prior to 1998), which they were required to present when being treated. Since 1999, providers have been obliged to check that a patient's insurance card is valid, using an online information system that gives providers details of insurance status and family doctor. The online information system also permits the insured to check their own personal data (for example, name, address, employer, insurance validity and family doctor) through state electronic channels (E-state) and Internet banking channels offered by commercial banks. The health insurance card has gradually been replaced by a national identification card introduced in 2001. Patients can show providers any document that confirms their national identification number, such as a driver's licence. The European Health Insurance Card (EHIC) can be issued to those travelling within the EU.

As health insurance coverage is extended to all children and retired people, the uninsured population are among the working-age population between 20 and 60 (see Table 3.4). On average, the lack of insurance is twice as common among men as among women. The distribution of uninsured people varies among household expenditure quintiles, as it is four times higher among people in the lowest quintile compared to the highest quintile, in which every 10th

Table 3.4 Percentage of total uninsured population by age group, 2006

Age group	Uninsured
0–9	0.0
10–19	0.8
20–29	5.1
30–39	6.4
40–49	8.5
50–59	7.1
60–69	0.6
70+	0.0

Sources: Statistics Estonia 2008; EHIF 2007

person reports not having insurance. The geographical distribution of coverage shows that the rate of uninsured people is highest in the north-eastern part of Estonia (Ida-Virumaa), with 6.4% compared to a 4.5% national average in 2004 (Võrk 2008).

The new Government, which came into power in early 2007, has committed itself in the coalition agreement to extending the benefits package to include the currently uninsured population with regard to PHC services. However, the debate is ongoing in 2008 regarding the details of the financing arrangements and whether these include prevention, pharmaceuticals or other elective hospital services.

Definition of benefits

The EHIF's benefits can be divided into two groups: cash benefits (20.3% of expenditure on health insurance benefits in 2006) and benefits in kind (70.7% in the same year). The division of cash and benefits in kind has been relatively stable over recent years.

Cash benefits

In the first group of (cash) benefits (see Table 3.5), the EHIF provides compensation for temporary health-related incapacity for work, the costs of adult dental care and the additional reimbursement of costs of prescription pharmaceuticals on the positive list (where cumulative OOP expenditure is high). Compensation for temporary incapacity for work is paid in the case of temporary illness only to those in employment, based on earnings in the previous year, whereas the other cash benefits are available to all who are insured by the EHIF.

In-kind benefits

The second group of (in-kind) benefits covers the provision of preventive and curative health services, as well as pharmaceuticals and medical devices, which may be subjected to cost sharing. Overall, the range of health care benefits covered by the EHIF is very broad, due in large part to the fact that prior to the introduction of a system of health insurance, the state funded and provided universal, comprehensive health care coverage. The few services excluded include cosmetic surgery, alternative therapies and opticians' services. However, dental care is the main area in which coverage has gradually eroded. At the end of 2002, dental care for adults was excluded from the list of benefits in kind and replaced by cash benefits (see Table 3.5). Conversely, since 2003 the EHIF has introduced cover for long-term care, nursing care and some home care, thereby broadening its benefits package (see later in this section).

Table 3.5 Cash benefits provided by the EHIF, 2007

Type	Description	Reimbursement rate (amount in % or €)
Temporary incapacity to work[a]	Sickness benefit[b]	80% of the previous year's income eligible for social tax Hospitalization and outpatient care up to 182 days (240 for TB) 80%: temporary relief from employment duties (up to 60 days) 80%: quarantine (up to 7 days) 100%: occupational illness or accidents at work (up to 182 days) 100%: prevention of a criminal offence, protection of national or public interests or saving human life (up to 182 days)
	Maternity benefit	100%: pregnancy and maternity leave (up to 140 days, or 154 days for twins or complicated births)
	Adoption allowance	100%: adoption leave (70 days if child is under 10 years)
	Care allowance	80%: nursing a child under 12 in hospital (up to 14 days) 80%: nursing a family member at home (up to 7 days) 80%: caring for a disabled child under 16 years or child under 3 years if the carer is ill or receiving obstetric care (up to 10 days) 100%: nursing a child under 12 years (up to 14 days)
Adult dental care	Persons older than 19	€19.20 per calendar year
	Pregnant women	€28.80 per calendar year
	Mothers of children under 1 year	€28.80 per calendar year
	People with illnesses that affect need for dental care	€28.80 per calendar year
	Dentures for persons aged over 63 years and persons receiving old-age pensions	€255.50 per three calendar years
Additional reimbursement of outpatient drugs	Drugs on the positive list prescribed by ambulatory providers	50% of €383.40–639.00 per calendar year 75% of €639.00–1278.00 per calendar year 0% above €1278.00

Source: Health Insurance Act 2002

Notes: [a] The EHIF pays this from the second day after temporary incapacity for work. The benefit per calendar day is calculated according to the average salary of the individual concerned in the last full calendar year (based on the amount of social tax paid in that year); [b] Available up to a maximum of 250 days per calendar year. Working individuals who are older than 65 years or who receive a state pension for incapacity to work can obtain this benefit for 60 days per episode of illness, not to total more than 90 days per year; EHIF: Estonian Health Insurance Fund; TB: Tuberculosis.

In addition to health care services, the EHIF finances prevention and health promotion programmes. It has a special budget for health promotion activities, which are funded by public tendering according to set priority areas. Over the years the budget share allocated for health promoting activities has been decreasing, although in absolute terms the amount has been stable. Disease prevention programmes include school health, reproductive health and screenings (breast cancer, osteoporosis, phenylketonuria, and hypothyreosis, cervical cancer and hearing in neonates). This has broadened the scope of services supported by the EHIF, from purely curative to preventive services. At the same time many preventive health care services are increasingly financed through the primary and specialist care budget as part of statutorily provided care.

During the 1990s, the inclusion and exclusion of services from the benefits package was decided by the Ministry of Social Affairs, following evaluation by a Ministry committee made up of provider and sickness fund representatives. Evaluations were based on treatment effectiveness criteria, and, where possible, proposals for adding new treatments were weighed against existing treatments. For example, the sickness funds first began to cover in vitro fertilization (IVF) in 1999, but coverage was limited to three IVF procedures, and applied only to women younger than 35 years.

Since 2002, there have been clearer and more explicit rules for adding new services to the benefits package and establishing the appropriate level of cost sharing. When the EHIF was established as an independent public body, it was tasked with the responsibility for defining the benefits package in collaboration with other stakeholders. The benefits package is agreed by the EHIF and the Ministry of Social Affairs, and a final decision is made by the Government, which endorses the price list. At the same time, each item in the benefits package is given a price, so the terms "price list" and "benefits package" are used interchangeably in the Estonian system of health insurance. On the basis of the rules outlined here, the EHIF Managerial Board conducts an extensive evaluation process, then puts forward inclusion/exclusion proposals for the EHIF Supervisory Board to evaluate further, after which these proposals are sent to the Ministry of Social Affairs. The Ministry in turn forwards them to the Government for approval, usually once a year. In 2005, however, due to pressure from providers, the Ministry of Social Affairs introduced the Committee for Health Policy Assessment of the List of Health Services in order to build greater consensus among stakeholders and to start negotiations before final decision-making and price-setting take place. The Committee consisted of representatives of the Ministry of Social Affairs, the EHIF, the Estonian Hospital Association, the University of Tartu and the EMA. From 2007, the Committee ceased to exist, as it was not assembled due to a change in Government and Minister of Social Affairs.

The 2002 Health Insurance Act sets out four criteria for including/excluding services from the benefits package: (1) medical efficacy, (2) cost–effectiveness, (3) appropriateness and compliance with national health policy, and (4) the availability of financial resources. The criteria have not been weighted clearly, but in practice, availability of financial resources has been the most important factor.

An application for the inclusion of a new service or a change in the price of an existing service must be supported by documentation for each of the four criteria from specialists' associations or providers making the application. Applications are assessed by medical specialists, health economists, ministry officials and EHIF personnel, with each party submitting a written opinion to the EHIF, which administers the process. The application is also supposed to include detailed financial information about the costs used to calculate prices (based on criteria set out by a Ministry of Social Affairs ruling specifying the data required for each of the four criteria). If no cost data are available or the price appears to be incorrectly calculated by the applicant, a final price will only be agreed after negotiation with the applicant and/or professionals in the relevant specialty. The price should cover all necessary expenses relating to the provision of a service, with the exception of research and specialist training in residency programmes, which are covered by the state budget.

Based on the application, the supporting documentation and the price, the EHIF Supervisory Board makes a recommendation to the Ministry of Social Affairs, and the Ministry in turn makes a recommendation to the Government. Any recommendations will be discussed during the year and processed at the same time as the health care budget for the following year is decided. Annually, over 100 applications are processed under these new regulations, for the inclusion of new services and for price increases for services already included in the benefits package. Prices for services that were already included in the price list before the new regulations took effect in 2002 were accepted without any assessment.

In addition to changes in the benefits package, explicit rationing can take place in other ways, particularly at the EHIF level. For example, contracts between the EHIF and providers include additional separate agreements about the volume and price of some services to be provided, for example for cochlear implantation. The use of high-cost interventions is also supervised through the contracting process, and in some cases specific limitations may be noted in the price list or other relevant documents. The EHIF has introduced health needs assessments in allocating resources to the four regional branches and negotiating contracts, which allow rationing among different types of care and benefits, such as primary versus secondary care, cash versus in-kind benefits, and so on. (see Section 3.4 *Pooling of funds* for further details of this process). The

overuse of services such as electric physiotherapy in rehabilitation, common in the former Soviet Union, was addressed through incentives incorporated into provider payment mechanisms.

Some services, such as IVF and abortion, have a statutory cost-sharing requirement that has been approved by the Government as a fixed proportion of the service price (co-insurance) (see Table 3.10, later). Cost-sharing rules apply to all EHIF-contracted providers, regardless of legal status. The Health Insurance Act notes that co-insurance rates cannot exceed 50% of the listed price of a service and have to be equal for all insured individuals. It sets out the following criteria for considering co-insurance for non-pharmaceutical services:

- the goal of the service can be achieved by alternative, cheaper methods that do not involve a significantly greater risk or have other significant adverse effects on the patient;
- the service aims more at improving quality of life than treating or alleviating a disease;
- patients are generally prepared to pay for the service themselves, and the decision of an insured person to enter into a contract for the provision of the service depends primarily on the assumption that the EHIF is obliged to pay for the service, or on the amount that the patient assumes the EHIF must pay.

Nevertheless, implicit rationing continues to take place at the provider level. The introduction of clinical guidelines at the end of the 1990s has facilitated this at the level of the individual doctor. Waiting lists are also used to ration health care. In 2001, a Decree of the Ministry of Social Affairs introduced waiting time targets for different types of treatment. In the following year, decisions about waiting time targets were delegated to the EHIF Supervisory Board. Developing different methods to measure waiting times and initiatives to reduce waiting times and increase access to treatment is a growing area for consideration (see Chapter 6 *Provision of services* for further information about clinical guidelines and waiting time targets by sector).

Since the mid-1990s the EHIF has funded prevention programmes for child dental health, first on a voluntary basis for those providers who were interested in participating, and then later through a national programme fully funded by the EHIF. This programme includes oral hygiene education in schools, individual dental consultations, fluoride therapy and the application of protective substances, if required. In 2002, new rules for the reimbursement of dental care were included in the revised Health Insurance Act with a view to establishing clear and transparent entitlements for children and adults. The Act now guarantees free dental care for children and adolescents up to 19 years

old, including preventive and curative services. Adult dental care must be paid for out of pocket, but is subject to partial reimbursement from the EHIF. The reimbursement rate is higher for some groups. Nevertheless, the EHIF covers the costs of adult emergency dental care, such as abscess incision and excision of teeth or root treatment in case of peritonitis or abscesses. However, the costs of adult emergency dental care as a share of total dental care services budget are marginal (less than 4% in 2006), which is a result of strict control of the adequacy of indications by the EHIF.

The Act made guaranteeing free dental care for children a priority. In debates leading up to the Act, four options for reimbursing adult dental care were considered: (1) almost free dental care for all insured individuals, with small regulated co-payments; (2) tendering for a limited number of dentists per geographical area to be funded exclusively through EHIF contracts, ensuring access for low-income groups; (3) free choice of provider, accompanied by OOP payments and, later, capped reimbursement by the EHIF; and (4) no public funding of adult dental care. Eventually, the third option was chosen: the first was considered unaffordable for the public purse, while the other two were not politically acceptable. Prior to 2002, dental prices were regulated but patient co-payments were not, so about half of all dental care was paid for by patients, including children. Currently, the Government regulates the price of dental care for children but not for adults. There is no official body responsible for monitoring the prices charged for adult dental care.

Coverage abroad

Treatment abroad has become a much debated topic since Estonia entered the EU in May 2004. According to EC Regulation EEC No. 1408/71, the EHIF is obliged to cover the treatments and pharmaceutical expenditure (42% of EU-related expenditure in 2007) of nationals from other EU Member States if they need treatment during their stay in Estonia. The EHIF can request the reimbursement of these costs from their respective home countries. The EHIF is also obliged to cover Estonian insured individuals who need treatment when temporarily abroad (using the EHIC) and treatment after receiving prior authorization through the EU-standardized E112 form (58% of EU-related expenditure in 2007) (see Table 3.6).

The rights of Estonian insured people to treatment abroad paid for through public funds, emanating from EC Regulation EEC No. 1408/71, are implemented in the Health Insurance Act. This procedure was in place in anticipation of EU accession. As a general rule, non-urgent treatment received abroad will only be reimbursed if the insured Estonian resident has obtained prior authorization from the EHIF. The (cumulative) conditions for granting authorization have

Table 3.6 Expenditures related to EU and treatment abroad in thousand EEK, 2004–2007

	2004 (May–Dec)	2005	2006	2007 (Jan–Sept)
EU-related costs	1 856	15 417	21 097	15 795
Health care and pharmaceuticals reimbursed to patients from abroad	1 693	4 093	5 408	6 702
Reimbursement of care abroad (EHIC and E112)	163	11 324	15 689	9 093
Reimbursement of treatment abroad prior authorization procedure (including non-EU Member States)	1 554	13 094	6 455	5 676

Source: EHIF 2008 (forthcoming)
Notes: EU: European Union; EHIC: European Health Insurance Card

been established by the Health Insurance Act as follows: (1) the care sought is not available in Estonia; (2) the service is medically justifiable; and (3) it is of proven medical efficacy, with a probability of success of at least 50% (Health Insurance Act of 2002, see Section 10.2 *Principal legislation*). As the Health Insurance Act does not foresee any reimbursement of transport costs, all costs related to transport abroad and for returning to Estonia have to be covered by the patient.

The legal regulations are supplemented by a procedure for administering applications at the EHIF. The procedure has evolved over the years, giving more responsibility to the EHIF in the administration of the process and in communication with health care providers, lightening the burden of bureaucracy for the patient (Jesse and Kruuda 2006).

From 2001, the main steps in the procedure for applying for prior authorization are as follows.

- The insured person submits an application for prior authorization for treatment abroad to the EHIF, indicating her/his own contact details as well as the name and contact details of the relevant doctor carrying out treatment in Estonia.
- The EHIF contacts the doctor, asking for the case history of the illness and the necessity for treatment abroad.
- The medical necessity for treatment abroad is evaluated by a specialist panel/committee of this specific specialty, based on the medical documentation provided. The panel may also ask to see the patient.

- After the specialist panel has given its opinion on the necessity of the treatment, the EHIF contacts health care providers abroad, asking for an assessment of treatment capacities, a time scale and also for a price estimate in Euro.
- A letter of guarantee for the estimated cost is issued to the health care provider.
- The provider is paid after treatment according to an invoice sent to the EHIF, and after a short case history with a description of the treatment provided and recommendations for follow-up have been received by the Estonian doctor providing the treatment.

In some cases, the procedure has also been used for a foreign consultant or a doctor to be invited to Estonia to provide the necessary treatment, instead of the patient having to travel. Furthermore, the general rule of territoriality does not apply to health services that are reimbursed by cash benefits in Estonia. Since 2003, adult dental care has been in this category of reimbursement. The patient pays the full price of the service directly to the provider and later receives reimbursement from the EHIF, up to a predefined ceiling. For its part, the EHIF is obliged to reimburse these services irrespective of the location of service provision, a regulation which is directly influenced by the Kohll/Decker ruling of the European Court of Justice (Jesse and Kruuda 2006). The target time for administering authorization applications set by the EHIF is one month. During the period from 2002 to June 2005, 41% of decisions had been made within one month. A total of 14% of decisions had taken less than two weeks (some even within a few days), and overall 63% of cases had been decided within two months (Jesse and Kruuda 2006).

The countries and providers receiving Estonian patients have mostly been selected by Estonian providers on a case-by-case basis, according to existing professional contacts. As might be expected, due to geographical proximity and linguistic considerations, as well as close contacts between health care professionals in the two countries, Finland has received the highest share of Estonian patients (46% of the total authorized cases from 2004 to December 2007), followed by Germany (12%), Sweden (10%) and Russia (10%) (Jesse and Kruuda 2006).

The number of people receiving treatment abroad under this prior authorization procedure has been quite low over the years. However, the number of applications, as well as authorizations, roughly doubled when Estonia became an EU Member State in May 2004. This figure is expected to increase further (see Table 3.7), and the share of applications granted is relatively high (88% in 2007 and 76% in 2006).

Table 3.7 Number of applications granted for treatment abroad, 1998–2007

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 (Jan–Nov)
Number of patients	12	18	20	13	19	16	27	54	59	73

Sources: Jesse and Kruuda 2006; EHIF 2008 (forthcoming)

3.3 Revenue collection/sources of funds

Compulsory sources of financing

Most health care resources are channelled through the EHIF. In 2006, health insurance, state budgets, municipal budgets and private sources of funding accounted for 62.5%, 9.4%, 1.8% and 25.6% of total health care financing, respectively (see Table 3.1, earlier). External sources contributed 0.6% to health care funding in 2006. The following subsections discuss each of these complementary sources of financing in turn.

Estonian Health Insurance Fund

The main source of health insurance revenues is an SHI contribution paid by salaried workers and self-employed people. Health insurance contributions, related to the active workforce, cover about half the population (see Table 3.3). The health expenses of non-contributing individuals (46% of the insured population in 2006) are implicitly subsidized by the other categories, showing a strong element of solidarity within the system. These non-contributing groups (including children, pensioners, those receiving a disability pension and students) are eligible for the same benefits package as everyone else in the insurance pool, without any contribution by either themselves or the State. The State officially makes contributions for only a small proportion of the covered population (approximately 3%), including individuals on parental leave with children under three years, individuals registered as unemployed (eligible for up to nine months' coverage) and caregivers of disabled people. The State's contribution for these groups is defined annually when the state budget is approved and depends upon the number of eligible individuals. Voluntary members pay a contribution of 13% of the national average salary of the previous year, as published by Statistics Estonia. In 2007 the contribution amounted to approximately €78 per month.

In the first year after it was introduced in 1999, the State's contribution was fixed at 13% of the national minimum wage – an amount agreed to by employer associations and trade unions and approved by the Government – but the law changed in the following year, replacing the national minimum wage as the basis for the state contribution with an arbitrary fixed amount to be decided every year. In practice, this has meant that the state contribution per person has remained at the level it was in 1999. The current plan is to move back to that principle and in 2009 the State's contribution is to be calculated based on the national minimum wage.

Employees and self-employed people make contributions to the EHIF via an earmarked payroll tax collected by the Estonian Tax and Customs Board. This tax is known as the social tax and covers both health and pension contributions (equal to 13% and 20%, respectively, of employee wages and of self-employed individuals' earnings). In practice, employers actually make contributions on behalf of employees, so employees do not contribute directly to health insurance. The Government had originally intended health contributions to be shared between employers and employees on the basis of a 10% and 3% split, but the plan was never implemented. A minimum social tax contribution for employees and self-employed people is specified by the Government based on the contribution rate for those covered by the State. Previously, there was a ceiling on the social tax contribution for self-employed people, but it has been abolished. The Estonian Tax and Customs Board transfers the health part of the social tax to the EHIF.

Relying solely on wage-based contributions while the population is ageing and the working-age population share is decreasing may create some distortions and undermine the financial fairness and sustainability of the system in the longer term (Võrk et al. 2005). The fact that everyone aged 65 years and older is exempted from contribution regardless of their actual income may also not be fair. This is fundamentally important, and applies to issues other than health care insurance, because the method used to raise revenue affects a system's political sustainability. In the long term, the perception that a small category of people pays for everyone else can only weaken support for the public system (Couffinhal and Habicht 2005).

Other agencies pool public revenue, in particular the Ministry of Social Affairs and municipalities, but they play a much smaller role than the EHIF, which was responsible for 85% of public expenditure on health in 2006. The share of state and municipal budget financing for health care has been relatively stable during recent years (10.9% in 1999 and 11.2% in 2006).

State budget

The Ministry of Social Affairs administered 94% of the state budget funds allocated to the health system in 2004. In 2006 most of the state budget was allocated to ambulance services (23.3%), treatment for uninsured people (12.6%), medical devices and medicines (13.6%) and health promotion and population health through public health programmes (11.1%) (see Table 3.8).

Table 3.8 State budget allocations for health care by type of service (% of total) in 1999 and 2006

Type of service	1999	2006
Health services	49.9	54.5
Emergency health services for the uninsured	14.6	12.6
Ambulance services	30.3	23.3
Pharmaceuticals and health aids	9.9	13.6
Capital investment	18.6	5.6
Prevention programmes	6.6	11.1
Administration	15.0	15.2

Source: Ministry of Social Affairs 1999–2006

For the uninsured, the state budget only funds emergency care. Originally, counties or municipalities had been responsible for funding emergency medical care and organizing other types of care for the uninsured population. In the absence of general guidelines from the Ministry of Social Affairs, and due to large differences in the sizes of municipal populations, the care available for uninsured people was subject to considerable variation across the country; municipalities defined the scope of emergency medical care differently and relatively broadly. In some areas, county governments had not devolved this responsibility to local governments. Since 2003 the Ministry has required the EHIF to check the validity of reimbursement claims for emergency medical care for the uninsured population, with the aim of ensuring equal access to emergency medical care across the country, although the State continues to fund this care. The Ministry considered the EHIF to be administratively more efficient in checking the validity of reimbursement claims from providers than municipalities or county governments would be. Most funds are channelled to hospitals, but a small share of emergency services is delivered to uninsured people in primary care (since 2003 the whole population has been enrolled with a family physician). In addition, health care providers that treat uninsured people might get some funds reimbursed by local municipalities, to varying degrees depending on the municipality.

The administration of ambulance services is carried out by the HCB, a specialized agency of the Ministry of Social Affairs that deals with health care

providers. A costing model is used that is based on the number of nurses and physicians per ambulance team, but the final amounts are decided through budget negotiations. The yearly budget is pooled and allocated to different providers according to the number of ambulances and teams. Some additional payments (from a supplementary public budget) are transferred, and the overall payment system is not related to actual performance.

The state budget also funds some pharmaceuticals and health aids. Although the EHIF reimburses most pharmaceuticals, some medicines (such as for TB and HIV treatment) and vaccines are purchased centrally through public tenders. This helps to keep costs down but also secures equal access to these treatments for insured and uninsured people (Couffinhal and Habicht 2005). Over recent years, state funding has been increasing (see Table 3.8) due to a mounting need to cover HIV antiretroviral treatment costs.

Furthermore, the state budget funds large-scale health promotion and disease prevention activities (see Section 6.1 *Public health*). In recent years, the state funding share of public health programmes has been increasing (from 6.6% in 1999 to 11.1% in 2006, which in absolute terms means a 4-fold increase). This has been related to revision of ongoing public health programmes such as HIV and drug abuse strategies and launching new schemes, such as a cardiovascular diseases prevention strategy. Additional funds have been allocated to public health since 2001, collected through a tax on gambling. In addition, other ministries fund some specific activities within their fields, for example the Ministry of Justice is financing HIV prevention activities in prisons.

Finally, until 2003 capital costs were funded from the state budget but have since been included in health service prices and are mainly financed through the EHIF. The state budget retains some limited grants to fund investments in specific hospitals, but these are allocated unsystematically. The financing of hospital capital costs is increasing due to additional funding through EU structural funds. In 2008, the capital costs financing scheme changed again, as these are now directly financed from the state budget. This decision was made to relieve the financial burden on health insurance funds which should enable them to increase access to care and to reimburse higher service prices. However, in order to allocate capital costs to health service prices, the EHIF will remain the primary financing institution and has its capital cost expenditure reimbursed retrospectively.

Local municipalities have no defined responsibility for covering health care expenditure and, therefore, financing practices vary widely. In 2006, the share of health expenditure from the total municipal budget varied from 0% to 11% (Statistics Estonia 2006). Municipalities mainly cover health expenditures of uninsured people (some extra care in addition to central government-covered

emergency care) and provide monetary endowments for people facing high OOP health care expenditure or travel costs incurred while accessing necessary health care services. In addition, local municipalities finance selected health promotion activities. These costs may be underestimated in the country's National Health Accounts, as in many cases health promotion activities at the local level are intersectoral and therefore may not be proportionally reflected in the health sector budget. In some cases, municipalities cover some costs for family physician services within their region, but in-kind contributions are also common, for example those incurred for office space, to set up practices (Couffinhal and Habicht 2005).

Various actors – including providers, the EHIF and civil servants in the Ministry of Social Affairs – have called for an increase in the share of health financing that comes from general tax revenue, particularly for capital investment, public health programmes and the provision of primary care services to uninsured individuals. For the first time, a ruling coalition set the target of ensuring primary care access for uninsured population groups. This is intended to come into effect in 2009, but no financial mechanisms have yet been agreed.

Voluntary health insurance

Private sources of funding health care consist of formal and informal OOP payments, voluntary health insurance (VHI) and some other expenditure. In recent years the share of private funding has increased as a proportion of total expenditure on health care, from 19.6% in 1999 to 25.6% in 2006. The majority of private financing (93% in 2006) is made up of OOP payments. VHI mainly consists of medical travel insurance.

Prior to 2002, a commercial market for VHI had not really established itself, largely due to the comprehensive range of benefits covered by the EHIF and the absence of substantial waiting times for treatment. Furthermore, people are not permitted to opt out of the EHIF, and VHI policy-holders do not benefit from tax subsidies. In fact, supplementary VHI offered to employees by employers – with the exception of insurance related to international business travel – is subject to a 33% tax on benefits in kind. The VHI that was available at that time mainly consisted of medical travel insurance; some foreign insurance companies also provided supplementary VHI for their employees to enable them to obtain faster access to specialist services.

At the end of 2002, the EHIF began to offer voluntary coverage for those not otherwise eligible for EHIF coverage (for example, the non-working spouses of EHIF-insured individuals). At the end of 2006 there were only 232 people covered by voluntary agreement (see earlier for details of the voluntary coverage

provided by the EHIF). At the same time commercial insurers entered the market with the aim of providing an alternative to VHI. At the beginning of 2008 there is only one private VHI provider still active in Estonia, with approximately 600 clients. This provider contracts health service providers and uses the EHIF health service list as a basis for payment. However, the health service prices used are 20% higher, with this guaranteeing faster access to care. The VHI has contracts with most acute care hospitals and about half of the country's family physicians. The range of cover provided by this commercial insurer is significantly lower than the voluntary coverage provided by the EHIF. First, it is available only to people up to 65 years and the packages are not designed to fit children's needs since all children (as residents) are already covered by health insurance. Second, five different benefits packages offer a range of health and dental cover up to a specified maximum level of reimbursement (see Table 3.9).

Table 3.9 Benefit packages offered by commercial VHI, 2008

Package	Benefits covered	Maximum reimbursement
Primary	Primary care	€1000 (EEK 15 000)
General	The above, plus ambulatory specialist care	€2500 (EEK 40 000)
Hospital	All of the above, plus inpatient care	€4500 (EEK 70 000)
Extra	All of the above, plus corrective lenses and medical devices	€10 250 (EEK 160 000)
Dental	Dental care	€250 (EEK 4 000)

Source: Authors' own compilation
Note: VHI: Voluntary health insurance

A person applying for VHI has to undergo a medical examination and is not eligible, for example, if s/he is HIV-positive. In 2008 the monthly primary care package premium for a 45-year-old male and female was €29 and €30, respectively; for an extra package (see Table 3.9), this amounts to €123 and €145, respectively. By comparison, the EHIF's voluntary coverage costs €78 per month, calculated using 13% of an average monthly salary in 2006. Benefits packages offered by commercial VHI providers are not subject to any regulation. The contracts are accompanied by waiting periods (during which the insured cannot make any claims), ranging from up to one month for most contracts (with the exception of accidents) to five months for dental care and nine months for childbirth.

Since 2007, the British United Provident Association's (BUPA) products, which include health insurance, has been available on the Estonian market. However, the number of clients has been rather marginal during the first months of BUPA's operation in Estonia (only a couple of assigned contracts have been entered into) and it is therefore difficult to assess the scheme's future potential.

The most important advantage of BUPA products compared to the VHI system described earlier is the level of international coverage, which is more important for frequent travellers.

The potential market for VHI in the future mainly lies in covering co-payments for pharmaceuticals or dental care costs (that is, complementary VHI), or ensuring faster access to care or better nonmedical care standards (supplementary VHI). The increasing incomes of the Estonian population and rising expectations about the health system support VHI development in the long term. As a result of the mandatory health insurance, without the possibility of opting out and with the decreasing share of uninsured individuals, the role of substitutive VHI is rather small and targets primarily non-Estonian nationals.

The expansion of VHI has been under more serious discussion in recent years as VHI is seen as a potential means to increase health sector financing. The enhancement of VHI is to be a priority area for the Government in the coming years, with the aim of promoting healthy behaviour and containing treatment costs. The most widely discussed measure of increasing the role of VHI is to introduce tax subsidies for VHI premiums, which would make VHI more attractive for individual clients but also for employers to cover their employees. The second option under discussion has been to introduce medical savings accounts by allowing tax-payers to collect a share of the health insurance tax (2% of 13%) into an individual savings account. Both options are still being discussed and lack clear conceptualization at the time of writing.

Out-of-pocket payments

OOP payments consist of statutory cost sharing for EHIF benefits (see Table 3.10), direct payments to providers of services outside the EHIF benefits package or from non-EHIF providers, and informal payments. Since the mid-1990s OOP payments have increased steadily as a proportion of total expenditure on health care, largely due to the growth of the private health sector. In 2006, OOP payments accounted for 23.8%, compared to 19.7% in 2000.

In 1995 a fee of €0.30 (EEK 5) was introduced for initial outpatient visits to public hospitals and health centres. However, due to political pressure, large groups such as pensioners, disabled people and children were exempted from the fee a few months later. Independent specialists were allowed to set their own fees, without any regulation, even if they were contracted and reimbursed by the health insurance funds. As the share of private providers increased during the 1990s, the share of OOP payments also grew. Many doctors established their own private practices, particularly in dentistry and other ambulatory specialties. Following claims of underfunding by providers since 2002, new legislation gave them the right to introduce capped fees for specific benefits through a fixed

Table 3.10 Cost sharing by different types of care, selected years

		1995	2001/2002	2007
Primary care		Co-payment for visits (€0.32). Groups such as retired individuals, disabled people and children exempted	Co-payment for visits (€0.32). Groups such as retired individuals, disabled people and children exempted	- No co-payment for office visits - Home visit fee (€3.2). Children under 2 years and pregnant women from week 12 exempted
Outpatient specialist care	Outpatient specialists (contracted by health insurance – HI (distinction important for 2007)	Co-payment for visits (€0.32) if public hospital. Groups such as retired individuals, disabled people and children exempted. If hospital status is a private entity, then patient charged according to self-established price list	In addition to co-payment established by HI rules, some providers established additional fees	Co-payment of up to €3.2. Children under 2 years and pregnant women from week 12 exempted
	Outpatient specialists (not contracted by HI)	Patient charged according to provider-established price list	All patients charged according to provider-established price list	All patients charged according to provider-established price list, but only up to "reasonable" costs
	Dental care	Partially covered by HI, but additional charges applied by providers with private entity status	Partially covered by HI, but additional fees established and charged by providers with private entity status	- No co-payment for child dental care covered by HI - Adult dental care NOT covered by HI (charges apply)
Inpatient care		- No co-payment for hospital stays - Co-payment established by providers for "above standard" accommodation - Co-insurance for few specific services (such as voluntary termination of pregnancy)	- No co-payment for hospital stays - Co-payment established by providers for "above standard" accommodation - Co-insurance for specific services (such as IVF, rehabilitation, voluntary termination of pregnancy) set out by HI	- Co-payment of up to €1.6 per day, for up to 10 days per episode of illness. Children, pregnant women and patients in intensive care units exempted - Co-payment established by providers for "above standard" accommodation - Co-insurance for specific services (such as IVF, rehabilitation, voluntary termination of pregnancy) set out by HI
Medicines (only outpatient prescription medicines (as inpatient medicines are covered by HI)		- Prescription medicines for chronic and serious diseases (by condition and for certain population groups such as disabled people, retired individuals and children) – co-payment of €0.32, plus co-insurance at 0% or 10% (in May 1995 co-payment was increased to €0.64 and co-insurance rules remained) - Prescription medicines – co-payment of €1.91 per prescription, plus co-insurance at 50%, with no upper ceiling (until May 1995, when co-payment increased to €2.56 and medicines where not reimbursed by HI more than €12)	- Prescription medicines for chronic diseases (by condition and for certain population groups such as disabled people or retired individuals) – co-payment of €1.30, plus co-insurance at 0% or 10% - General prescription medicines – co-payment of €3.20 per prescription, plus co-insurance at 50%, where HI will not reimburse more than €12 per prescription	- Prescription medicines for chronic diseases – co-payment of €1.30, plus co-insurance at 0% or 25% of the drug price (or 10% for those aged 4–16, receiving disability or old-age pensions, or older than 63 years) - Prescription medicines for those younger than 4 years, only co-payment of €1.3 - General prescription medicines – co-payment of €3.20 per prescription, plus co-insurance of at least 50% of the drug price, where HI will not reimburse more than €12 per prescription - Annual spending on outpatient prescription medicines eligible for additional reimbursement, such as: 50% (from yearly expenditures between €383 and €639); 75% (€639 to €1278); 0% (above €1278)

Source: Adapted from Habicht et al. 2006
Notes: HI: Health insurance; IVF: In vitro fertilization

payment per service (a co-payment). The Health Insurance Act sets the upper limit for these co-payments and regulates the annual revision of co-payment maximum limits by means of adjustment to the inflation level. However, this adjustment has not taken place since, and the co-payment maximum limits are still at the 2002 price level.

The cost-sharing requirements for outpatient care are as follows: there are no co-payments for visits to a family doctor, although family doctors can charge a maximum fee of €3.20 (EEK 50) for home visits, which are common in Estonia. EHIF-contracted providers of ambulatory specialist care can charge a maximum fee of €3.20 (EEK 50) but there is no fee if the patient has been referred within the same institution or to another doctor in the same specialty. As the revised Health Insurance Act of 2002 did not exempt any group or type of service from fees for ambulatory specialist care, providers were quick to introduce fees for a wide range of services, including visits to accident and emergency departments, which led to public dissatisfaction. In October 2003, the newly elected Government put forward amendments to exempt children, pregnant women and emergency care from such payments. From August 2004, children under two years old and pregnant women from the 12th week of pregnancy are exempt from co-payments for primary care home visits and specialist ambulatory visits.

Hospitals can charge a maximum fee of €1.60 (EEK 25) per day up to a maximum of 10 days per episode of illness. Exemptions are made for children, hospitalizations related to pregnancy and delivery, and for patients in intensive care. Hospitals are also allowed to charge fees for above-standard accommodation for inpatient stays. However, all patients must be offered standard accommodation and, if none is available, they cannot be charged extra for the use of above-standard accommodation. These conditions apply to providers who have contracts with the EHIF. In other cases, providers must agree on a price with the patient. These prices should be "reasonable" but are not subject to regulation in the form of price caps.

Outpatient prescription pharmaceuticals are subject to a co-payment of €3.20 (EEK 50) per prescription, plus some of the price of the pharmaceutical. The general reimbursement rate is 50% of the pharmaceutical price (minus the co-payment), up to a maximum reimbursement of €12.00 (EEK 200) per prescription. A government regulation lists pharmaceuticals for chronic illnesses that are subject to a lower co-payment of €1.30 (EEK 20) and can be reimbursed at a rate of 75% or 100%. A reimbursement rate of 90% is applied to pharmaceuticals in the 75% category when these are prescribed to people aged between 4 and 16 years, those receiving disability or old-age pensions, or individuals over 63 years old. However, if the pharmaceuticals listed in these higher reimbursement categories are used for diseases other than those noted

in the regulation, the general 50% reimbursement rate applies. From August 2004, total (100%) reimbursement of pharmaceuticals was reintroduced for children younger than four years old.

The EHIF conducts an annual population satisfaction survey, which contains a section of questions regarding insured people's awareness about their rights and obligations. There are questions about gatekeeping, co-payments and rights to various benefits, and the EHIF has been using the results to plan more effective awareness campaigns for insured people. Population awareness about different aspects of health insurance has remained similar since 2004. This awareness has been low in some areas, such as co-payments for primary care: for example, in the 2007 survey, only 30% of the respondents knew that family physicians are not allowed to take additional co-payments (Faktum and Ariko Ltd 2007).

The structure of OOP expenditure varies significantly across income quintiles. The poorest quintile's OOP payments were almost exclusively spent on medicines (86%), while the richer population quintile(s) spent more on outpatient services, which also includes dental care (see Table 3.11). A combination of factors could explain these findings, namely that (1) the higher income groups used more private services and outpatient (mostly dental) care, and (2) the low-income groups abstained from necessary outpatient health services (such as dental care) or could not obtain the whole course of treatment. Between 2000 and 2006 pharmaceutical expenditure as a share of household medical expenditure in both lower and higher income quintiles has increased.

Table 3.11 OOP expenditure by type of service as share (%) of total OOP expenditure, by expenditure quintiles, 2006

Expenditure quintiles	Supplies	Medicines	Inpatient care	Outpatient care
I (poor)	7	86	2	5
II	11	71	1	16
III	15	59	1	25
IV	22	44	1	33
V (rich)	21	37	6	37
Average	17	52	3	28

Source: Võrk 2008

The system of cost sharing, which is in place since the 2002 Health Insurance Act came into force, is the result of a political compromise with providers, many of whom had long complained that the health system was underfunded. Much of the public debate about cost sharing revolved around arguments about raising revenue to increase professionals' salaries. Arguments were also made for introducing fees to counteract "unnecessary" use of health services. For

example, the Association of Family Doctors argued strongly in favour of a co-payment for office visits to reduce the number of what they considered to be unnecessary visits. However, the Government was able to uphold the principle of free access to primary care outlined in the Health Insurance Act, introducing co-payments only for home visits. The introduction of a fee per inpatient day was intended to counteract some of the incentives created by reimbursing hospitals on a per diem basis – for example, to constrain providers' incentives to keep people in hospital unnecessarily over the weekend – and to increase their incentives to shorten lengths of stay.

Neither the Ministry of Social Affairs nor the EHIF collects national data on the actual amounts charged by providers. However, it seems that most providers have introduced fees for home visits, with family doctors in larger towns choosing to charge higher fees than family doctors in smaller towns and rural areas. A survey commissioned by the EHIF found that a fee of €1.60 (EEK 25) would present a financial barrier to visiting the family doctor for 38% of the insured population. The survey also found that a home visit fee of €3.20 (EEK 50) would present a financial barrier for 51% of insured people, and a fee of €1.60 (EEK 25) for 22%. However, there has not yet been any formal analysis of the impact of cost sharing on health service utilization. Data from the most recent annual population satisfaction survey show that patients regarded fee levels, together with co-payments for pharmaceuticals, as the second most significant cause of problems they encountered when seeking ambulatory specialist care.

Some of the increase in private expenditure in Estonia is due to "queue jumping". As a result of the existence of waiting times for treatment, some patients choose to obtain treatment on a private basis, which means that they have to pay for the full cost of this treatment. Since 1999, waiting times for ambulatory visits have become longer in some regions and for some specialties (for example, gynaecology in Tallinn). Waiting times for elective surgery in larger hospitals have also increased due to stricter contracting and reimbursement processes; in three consecutive years, the EHIF refused to reimburse these hospitals for services provided above the volume specified in the contract.

Recently, the Government has established rules for queue jumping in order to prevent private patients from gaining faster access to treatment: such "queue jumping" is only permitted when the waiting list is caused by lack of financial resources – that is, the provider has reached the volume of services specified in the EHIF contract and cannot be justified on grounds of lack of provider capacity – and neither is it permitted if it might delay the treatment of a person whose care would be funded by the EHIF.

Informal payments have never been common in Estonia and continue to be relatively rare. In 1998 a representative survey commissioned by the EHIF found that 1% of those it covered had paid the doctor extra in cash. A 2002 survey financed by the OECD found that less than 1% of health service users had made an unofficial payment, and then mainly on the patient's own initiative. The mean value of the payments was €122 (EEK 1903) and the median value was €16 (EEK 250). People more likely to make unofficial payments were those who spoke Russian as their first language and those who wanted to bypass the family doctor gatekeeping system. In all, 49% of the respondents considered making an unofficial payment to a doctor to be corruption (12% had no opinion on it), while 40% were willing to report a doctor demanding an unofficial payment for corruption (10% had no opinion) (CIET International 2002). In a more recent study conducted by the Estonian Institute of Market Research in 2004, 3.4% of respondents reported that health care personnel had asked for some kind of additional payment (the only higher frequency, at 3.6%, was reported for traffic police officers) (Josing 2004). Overall, although some evidence indicates that informal payments do exist in the health sector, they do not appear to be widespread or significant in magnitude. This may be due to the introduction of formal co-payments in 2002 or to the generally low level of corruption and informal payment practices.

External sources of funds

External funding is not significant. In 1998 it accounted for 1% of total health care expenditure, but by 2001 it had declined to almost nothing. However, external funding has been increasing during recent years, mainly due to investments in hospital infrastructure from EU structural funds, as well as from other sources (see later in this section). In general, external funding has been used to invest in human resources and technology, rather than to cover operating expenses. For example, bilateral programmes have provided medical equipment for hospitals. Some programmes have focused on clinical issues, organizational development (including health information systems and quality assurance) and management training.

The World Bank has been a major source of external funding in the past. Its first loan to Estonia in 1992 included a health care component of US$ 3 million, which was used to buy essential pharmaceuticals and high-technology hospital equipment. A loan of US$ 4.5 million from the Japanese Import-Export Bank was also used for pharmaceuticals and health technology. A second loan from the World Bank was received in 1995 to support health care reforms. A total sum of US$ 18 million was mainly invested in new buildings for the University of Tartu Faculty of Medicine and was supplemented by bilateral and multilateral donor-financed development programmes and state budget resources, within

the framework of the overall World Bank Estonia Health Project. In 2000, new negotiations began for a third World Bank loan to support hospital and long-term care reforms and the introduction of a new system for capital investment. However, the negotiations were terminated due to a change of Government.

Following the outbreak of HIV/AIDS among injecting drug users, Estonia applied for financial assistance from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). A grant of US$ 10 million was received for the period 2003–2007 to strengthen preventive and educational work among at-risk groups and young people, as well as to cover the cost of pharmaceuticals for HIV-positive individuals. This grant can be seen as an exception to the general policy of using external funding for investment rather than operating expenses.

Due to the accession of Estonia to the EU, new funds became available. For the period 2004–2006 Estonia received €24.8 million from the European Regional Development Fund (ERDF) to support the renovation of the Estonian hospital network. However, the preparatory process was delayed and therefore the grant period was extended to 2008. Additional grants from the ERDF were received for the period 2007–2013, including €110.2 million to optimize the acute care hospital network and €27.5 million to develop nursing care facilities. The main challenge of implementing the ERDF support is the long-term perspective of the investments, as opposed to short-term national development plans, which complicates the decision-making process. Other areas that receive support from EU structural funds are the capacity building of health promotion specialists at local level and E-health activities.

A second important external source of financing is the European Economic Area (EEA) and related Norwegian financial mechanisms, which have health care as one of their priorities. During the period 2007–2009 Estonia is receiving grants for the training of health protection specialists, for the establishment of a bio-safety level 3 laboratory, for the renovation of Estonia's main communicable disease treatment clinic and for capacity building of disease surveillance and health monitoring.

3.4 Pooling of funds

The schematic overview of the organization of health financing arrangements in Estonia is provided in Fig. 3.1. As mentioned earlier, the core purchaser of health care services is the EHIF, which purchases most of the care for insured people (95% of the total population), with the exception of ambulance services. Ambulance services are financed directly from the state budget and administered

by the HCB which is an agency of the Ministry of Social Affairs. Emergency care costs for the uninsured population are covered by the state budget, but the administrative tasks are delegated to the EHIF for efficiency reasons and because the same payment methods and tariffs are used for uninsured individuals as for insured people.

The EHIF funds are collected and pooled centrally to balance regional disparities in income. The main change that has taken place in recent years concerns EHIF budget allocations. Before 2001 the EHIF budget was approved by Parliament at the same time as it approved the state budget for health. In order to allow flexibility, the budget allocation was not detailed, so while Parliament approved the overall budget, allocations to different sectors were made at the discretion of the EHIF. Since 2001, when the EHIF achieved autonomous status, its budget has been approved by its Supervisory Board, which is comprised of representatives from the State, employers and employees. The new system involves a much more detailed and transparent budget approval process; the budget is now accompanied by 40 pages of explanations, rather than the maximum 3-page annex previously appended to the state budget. Before the annual budgeting starts, the EHIF Supervisory Board approves the 4-year EHIF revenue and expenditure planning. The EHIF budget has always been determined by the amount of revenue generated by the part of the social tax that is earmarked for health, collected by the Estonian Tax and Customs Board and transferred to the EHIF.

The Estonian Health Insurance Fund Act makes the EHIF fully liable for its obligations, prohibiting it from declaring bankruptcy. There are two exceptions. First, if health insurance tax revenues are lower than budgeted, the State becomes responsible for the EHIF's obligations. Second, if the Government or the Minister of Social Affairs establish prices or rates in such a way that prevents the EHIF from meeting its contractual obligations or paying health insurance benefits, the State again becomes responsible. This bounded liability creates an opportunity for providers to gain extra financing. If they pressure health service prices upwards, the State has to take over the EHIF's obligations if the budget is insufficient. This occurred in 2004, although higher-than-expected revenues meant that the State did not have to step in. However, this creates a clear incentive to exert such pressure on the EHIF budget (Habicht 2008, forthcoming).

The EHIF budget must balance in terms of its revenue and expenditure each financial year, which is common fiscal policy in Estonia. Because the EHIF's budget depends on the national budget, the EHIF budget cannot be approved by the Supervisory Board before the national budget has been approved. Until this happens, monthly expenditures may be up to one twelfth of that of the preceding fiscal year.

The EHIF has three reserves to ensure solvency. The cash reserve (liquidity portfolio), ensures daily cash flows are managed smoothly. Administered by the State Fund, it consists of instruments such as local deposits and commercial paper. The second reserve, the legal reserve, decreases risk from macroeconomic changes. Set at 6% of the EHIF's yearly budget, the legal reserve is created by transferring at least 2% of the budget to the reserve every year since the EHIF's inception. The legal reserve requirement was 8% until 2004, but it was decreased to cover increased tariffs from the new health professionals' wage agreement. The legal reserve may be used only after a government order has been issued on the recommendation of the Minister of Social Affairs and after consulting the Supervisory Board. The Minister of Finance ensures the preservation, liquidity and returns of the funds, which are invested mostly in bonds of highly rated European issuers. The third reserve, the risk reserve, minimizes risks arising from health insurance obligations. Set at 2% of the budget, the risk reserve can be used upon the decision of the Supervisory Board.

Table 3.12 shows how the EHIF budget is allocated in 2001 and 2008. Some of the budget is allocated on the basis of open-ended legislative obligations – for example, reimbursement of outpatient prescription pharmaceuticals, and payment for sick leave and maternity benefits. The rest is allocated according to priorities determined by the EHIF. The most rapidly increasing categories of health services expenditure have been long-term care and primary care. Temporary sickness benefits have also increased significantly due to increasing salaries and employment.

Funds from the EHIF are allocated to its four regional branches on a per capita basis according to the number of insured people in each region. Regional branch budgets are approved by the EHIF Management Board. The capitated allocation for primary care is adjusted for regional differences in age structure. The capitated allocation for other health services is not adjusted. Adjusting the capitation for other risk factors has been considered twice – in 1994 and 1998 – but in both cases it was concluded that simple capitation was more equitable than capitation adjusted on the basis of utilization (a proxy for risk), which would have resulted in a greater allocation of resources to urban areas, where people use health services more often but enjoy better health status. The regional branches have some flexibility in allocating funds between specialist care, long-term care and dental care. The planning of provider contracts takes place at regional level, by the regional branches of the EHIF.

A total of 98% of the EHIF health care services funds are allocated to the regional branches. The rest remain centrally managed for a few expensive or infrequent procedures for which regional allocation would not be feasible. These include bone marrow transplants, peritoneal dialysis, some areas of oncology, and haematological treatment. Pharmaceutical and temporary sick

Table 3.12 Breakdown of the EHIF budget by category, 2001 and 2008

Category	2001	2008	Increase 2008/2001 (%)	% of total in 2008
Health services in total	2 823 684	8 747 631	210	65.3
Prevention	44 628	119 000	167	0.9
Primary care	335 824	1 086 608	224	8.1
Specialist care	2 170 073	6 745 662	211	50.3
Long-term care	48 001	238 599	397	1.8
Dental care	225 158	557 762	148	4.2
Health promotion	12 958	14 000	8	0.1
Pharmaceuticals	666 123	1 330 500	100	9.9
Temporary incapacity to work benefits	744 831	2 511 874	237	18.7
Other benefits related to international agreements	6 621	26 565	301	0.2
Health insurance benefits in total	**4 254 217**	**12 630 570**	**197**	**94.2**
Administration costs	79 319	114 814	45	0.9
Assignments to the reserves	230 761	657 675	185	4.9

Source: EHIF 2008 (forthcoming)
Note: EHIF: Estonian Health Insurance Fund

leave benefits (open-ended obligations for the EHIF) are administered centrally. The allocation of funds during the contracting process is further specified in Section 3.5 *Purchasing and purchaser–provider relations*.

In terms of the state budget, budgetary ceilings for each ministry are set by the Ministry of Finance, based on legislative obligations and government priorities. The state budget share for the health sector is prepared by the Ministry of Social Affairs, which receives budget proposals from organizations funded fully or partially through the state budget. As the Ministry is responsible for health, social security and employment, there is competition for funds from each sector. The Ministry of Social Affairs administers approximately 94% of the state budget allocation for health care. As mentioned earlier, the Ministry of Defence pays for primary care for military personnel and the Ministry of Justice pays for health care for prisoners. Allocations from the state budget have been stable in recent years.

Prior to the year 2000, capital investments were the responsibility of hospital owners – usually the State or the municipalities. However, as capital funding competed with other claims on state and municipal budget spending, it was not easy to access these resources. Also, the allocations made in consecutive budgets were not sufficient, causing delays in investment projects. Due to the

problems of accessing budget resources, growing numbers of providers started to take out bank loans to finance renovations, repaying them with income from the EHIF. This resulted in a loss of central control over capital investment.

The problem of not having a systematic approach to capital investment was acknowledged by the Government, and in 2000–2001 a new system for capital investment was established. Its main principles were that: investments should be the responsibility of the autonomous institutional providers; the EHIF price list should cover capital costs; a capital charge should balance the providers' different starting positions; and capital investment decisions in public hospitals need to come under central control. Due to a change of Government the new system was not completely implemented. The only step taken, in July 2003, was to transfer responsibility for capital investment to providers by stipulating that the EHIF price list was to cover all the costs of providing health services, including the capital costs. The capital costs in health service prices include the facilities' amortization costs based on the market price of buildings and a 36-year amortization period. Starting from 2008 the capital costs will be funded through the state budget, not as direct grants to service providers, but through the EHIF. Thus, the capital costs still remain as a part of health service prices. Additional funding for capital investments is received from EU structural funds (also see Section 3.3 *Revenue collection/sources of funds*, Subsection *External sources of funds*) and non-recurring grants from the state budget for selected Hospital Master Plan hospitals.

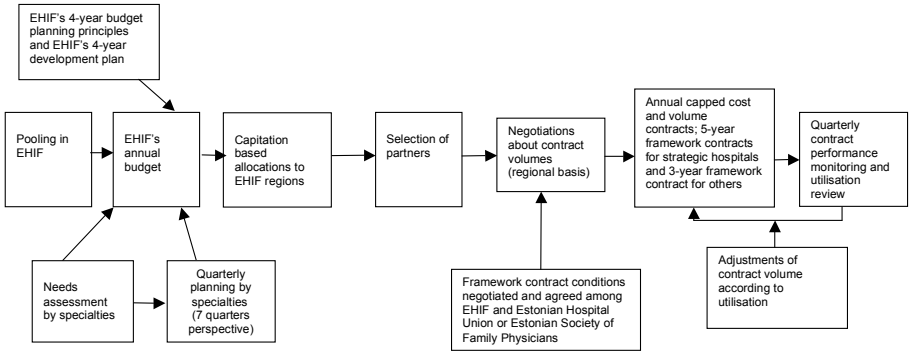
3.5 Purchasing and purchaser–provider relations

The main purchaser of health services is the EHIF. The EHIF's contracting process is depicted in Fig. 3.6. At the beginning of each year the EHIF negotiates capped cost and volume contracts with hospitals. At the beginning of 1990s the contract content was rather unsophisticated and only the capped total costs were agreed. Currently, the contracts include agreements on service quality and access as well as a detailed cost- and volume-based financial component (see later in this section). The contracts are concluded for five years with Hospital Master Plan 2015 hospitals and for three years with other hospitals. However, the financial components of the contracts are negotiated yearly.

The preparatory process for contracting starts with a needs assessment process. Since 2001 the EHIF has gradually introduced needs assessment as an input for purchasing decisions. At the time of writing, these decisions are based mainly on historical data analysis regarding health care services utilization and

existing waiting times, but there are further plans to use more sophisticated methods. During the needs assessment process, the number of cases is assessed, according to specialty. From 2003, the EHIF has negotiated with medical specialist associations about their assessment of population needs in terms of their specialty, to obtain detailed input from specialists and involve them in the planning process. The results of these negotiations are taken into account in the EHIF budgeting and contracting processes and benefits package updates. The aim is to broaden the role of the medical profession in long-term direction-setting for purchasing decisions. The information received from the needs assessment process is taken into account while keeping in mind the EHIF's priorities, as stated in the development plan and general health policy objectives.

Fig. 3.6 Contracting process of the EHIF



Source: Own compilation

The next step in the contracting process is selection of providers. Contracts are made only with providers licensed to work in Estonia by the HCB. The EHIF practises selective contracting (that is, choosing not to contract with certain providers). Selective contracting is intended to introduce managed competition into health care provision and to motivate service quality improvement. Furthermore, it aims to improve services for delivery in areas that providers perceive as less attractive. Nevertheless, the EHIF is required to contract with all Hospital Master Plan hospitals (19 acute care hospitals in Estonia), which all have a historically determined guaranteed contract volume. The main exception is (private) dental care providers, which do not systematically contract with the EHIF. In addition, approximately 20% of care is purchased using selective contracting, for which selection criteria such as proximity of service provision to patients, share of provision of services in day care and previous experience, are approved by the Supervisory Board.

The EHIF announces public tenders and all providers can submit their bids. These bids are evaluated according to strict criteria that leave only little room for negotiations between EHIF and providers. This resulted in cases where providers did not take great interest in the EHIF's tenders (e.g. child dental care). To solve this, the EHIF had to negotiate with providers' associations on how to assure access to care in certain areas.

The basis for the content of the contracts is set by Health Insurance Act and EHIF's Supervisory Board endorses the basic principles for contracting. The EHIF negotiates the standard contract conditions with providers representing associations such as the Society of Family Physicians and the Hospital Association. This ensures that once the EHIF and the provider associations agree on the contract terms, they are universal, that is, they apply to all providers. Previously, contract conditions were negotiated with individual providers, which made the yearly contract negotiation process more complicated. This also led to a situation in which different providers had negotiated different conditions. Since contract conditions are negotiated with providers associations, the Hospital Association has increased its membership to virtually all hospitals. However, due to discord in the Hospital Association, which emanates from hospitals having opposing interests, it is sometimes difficult to reach a common agreement. In addition to the standard contract conditions, there are financial appendices that are agreed by each provider individually.

The EHIF's contracts with service providers are particularly comprehensive and strictly enforced by the EHIF itself. Stipulations of the contracts include the conditions for access to care, quality of care, reimbursement conditions, reporting requirements and the liabilities of the parties in case of a violation of the conditions. In terms of access to care, the provider is obliged to ensure access to services for the whole contracting period. There are also agreed maximum limits for waiting times within the contracts: emergency care should be provided immediately, outpatient specialist care within four weeks and inpatient care within six months. The waiting times are closely monitored by the EHIF, which will take preventive action, for example proposing changes in the financial appendices, in order to guarantee access to health care.

Once providers are selected and standard contract conditions are agreed with providers' associations, further negotiations with selected providers in specialist care continue to determine the volume of services as well as the average case prices by specialty. This only applies to specialist care, as for primary care the contract volume is not subject to negotiation. These negotiations do not determine the actual payment method but constitute a planning element aimed at containing costs for each case. In terms of coverage, the agreement on the number of cases is more important. This supports the implementation of the EHIF objective of ensuring health care access at least at the previous year's

level. As a result of these negotiations, contract volumes are agreed with each provider.

As mentioned earlier, the financial appendices of the contracts are agreed with each provider separately. These financial appendices are capped separately for each quarter of a year and costs and volumes are decided based on different specialties for inpatient and outpatient care. This partitioning enables the EHIF to actively monitor and influence the providers' behaviour. However, there is also a degree of financial flexibility included in the contracts. First, providers are allowed to reallocate up to 5% of the contract sum to different specialities. Second, there is a financial reserve included in each contract (usually 15% of the total amount) which is not allocated to specialties and can be used during the contracting period under the EHIF's supervision. Until 2006, the EHIF was not obliged to reimburse services provided that exceed the agreed contract volume, but since an amendment of the Health Insurance Act, the EHIF has to cover 30% of "overprovided" services.

The financial implementation of the contracts is monitored quarterly through the Management Information System. Previously, there were cases in which contract volumes of some hospitals were exhausted several months before the end of the contract period. This led to the situation in which some hospitals only provided emergency care and postponed all elective care. As a consequence, the EHIF and providers are now focusing more on adequate contract planning and ex ante quarterly monitoring, to avoid these situations in the future.

Although the EHIF is the main purchaser of health care, the HCB is responsible for purchasing ambulance services, following a different purchasing process. The financing of ambulance services is based on the number of nurses and physicians per ambulance team, as described earlier, but the final amounts are decided through (state) budget negotiations. The yearly budget is then pooled and allocated to the different providers. The content of the contract includes the rights and obligations of the parties concerned, the expected service standards as well as the financial reporting requirements.

The main purchaser of public health services is the National Institute for Health Development (NIHD), which is responsible for the implementation of all national public health programmes and strategies. However, the planning and coordination of the programmes is exercised by the Ministry. The public health programmes and strategies have 4-year activity plans agreed by Government or by the Minister with expected budget-lines, performance indicators and measures to tackle particular public health issues. Most of the activity plans are inter-ministerial and bunch up activities of related ministries (e.g. CVD Strategy also covers activities of the Ministry of Culture, the Ministry of Agriculture and the Ministry of Education and Research). These activity plans are the basis

for the yearly state budget negotiations, where the programme budget increase has to be explicitly reasoned.

After the next year budget is fixed in the state budget, the annual activity plan is composed for each programme by the NIHD. The NIHD is not executing all activities by itself but also outsources services to NGOs (e.g. needle exchange and low-threshold services), health care service providers or private companies (e.g. public social campaigns). The NIHD, as all public entities, must follow the law of public tenders and therefore all contracts with amount over EEK 70 000 (€4475) should follow strict contracting procedures. The public health service providers range is very limited. Some services (e.g. methadone substitution treatment) are allowed to provide only by licensed health care services providers. However, the health care service providers are not very interested in providing these services due to the low service prices and difficult target groups, which results in practically no provider competition. This makes the service quality enhancement very difficult for the NIHD and one of the key questions is how to foster provider's competition by making the market more attractive for new providers.

3.6 Payment mechanisms

Paying for health services

The actual payment methods, service prices and benefits package are all included and regulated in a single government-approved health service list, that is, they are not determined during the contract negotiation process. The management of the price list has remained the responsibility of the EHIF, even though the formal coordination mechanisms have changed (see later in this section). All providers are paid the same prices and there is no adjustment for hospital characteristics, such as teaching status. In addition, EHIF-contracted providers can charge patients for specialist ambulatory visits, a limited number of inpatient days and above-standard inpatient accommodation. Providers who do not have contracts with the EHIF are free to charge patients "reasonable" fees up to a defined maximum (Law of Obligations Act of 2001, which entered into force in 2002 – see Section 10.2 *Principal legislation*).

Adapted from the German health system, the price list was established at the beginning of the 1990s by the Health Care Services and Investigations Price Committee of the Ministry of Social Affairs; the Committee included representatives from the EMA, the sickness funds and, more recently, the

Hospital Association. The original aim of the price list was to pay providers based on a per diem payment for inpatient stays, and according to a fee per ambulatory visit and per procedure for certain expensive services. The payments were adapted to the Estonian system, based on the best available cost data for outpatient visits and some other procedures, and extended to other services on a proportional basis. However, by 1994 it was clear that the German point-based system was not applicable to the Estonian system due to significant differences in costs and procedures. This then led to further developments, including the addition of other services to the price list, the use of different payment methods for hospitals (per diem, per visit and per procedure) and the definition of clear prices for each service.

In 2001 the Committee was disbanded and the rules for inclusion and exclusion of services from the price list are defined in legislation. Since 2002, efforts have been made to assess services on the basis of medical efficacy, cost–effectiveness and average costs. Prior to 2001 the price list was approved by a Decree of the Minister of Social Affairs. Since then, it has been approved by the Government in order to increase public accountability and to make it less vulnerable to provider influence, as it had been when changes to it could be made purely on the basis of decisions by the Minister of Social Affairs. The list of services and prices is updated at least once a year.

The price list contains more than 2000 different items in total, including the whole range of different payment methods. For outpatient specialist care this includes mainly fee-for-service, per diem and diagnosis-related group (DRG)-based payment methods. The main method in outpatient care is fee-for-service (laboratory tests, radiology etc.) payment, whereas for inpatient care, a mix of fee-for-service, per diem and DRG-related payment methods is used (see Table 3.13).

Table 3.13 Price list expenditures for different types of care, 2005

Payment method	Outpatient care (% of total)	Inpatient care (% of total)
Fee-for-service	83	24
Complex prices	10	10
Per diem	0	31
DRG	6	35

Source: EHIF 2007
Note: DRG: Diagnosis-related group(s)

Fee-for-service payment involves per diem and individual units. The per diem unit includes the costs of basic examination, diagnosis and treatment planning, nursing, meals, simple medical procedures, laboratory tests and

pharmaceuticals. It varies according to specialty and length of stay. If an admission lasts for longer than the set duration, additional days are reimbursed at a lower rate (the price of a long-term bed-day). This has encouraged a reduction in the average length of stay (ALOS), which fell from 11.4 days in 1994 to 6.0 days in 2005 (for acute beds). However, during recent years the reduction of the ALOS has been slowing down. On the contrary, according to the EHIF's 2007 biannual report, the ALOS in term so EHIF reimbursed acute care has increased from 6.3 days (in the first half of 2006) to 6.4 days (in the first half of 2007) (EHIF 2007). However, the ALOS is expected to fall again in 2008 due to the reduction of the set lengths of stay for which the higher per diem rate applies. Additional procedures, including operations and laboratory tests, are paid per individual item.

During the late 1990s, there was a move away from a detailed fee-for-service payment system to a case-based payment system, in order to tackle some of the perverse incentives created by the former system, particularly overtreatment, but also undertreatment and patient selection. Complex prices were introduced in 1998 for several well-defined surgical diagnoses, such as appendectomies, hip and knee replacements and normal deliveries.

The EHIF decided to introduce a DRG-based payment system for inpatient services in 2001, and in 2004 a new era in provider payment began with the introduction of that system. Due to the former fee-for-service payment system and well-developed electronic data transmission systems, Estonia already had a relatively transparent overview of hospitals' output. Therefore, the main motivation was rather financial, bearing in mind the particularly strict financial constraints of the EHIF budget. The consequences of the stringent expense limits were particularly serious after the Russian economic crisis took hold of the Estonian economy in 1999, driving the reserves of the EHIF to zero. During the years that followed, the revenues of the EHIF budget slowly increased, while pharmaceutical expenditure increased rapidly, resulting in serious cost pressure on the EHIF. Therefore, the DRG system was mainly seen as a tool to increase productivity and efficiency. Another motivation for introducing a case-based payment system was that the previously employed fee-for-service and per diem payment systems had led to inflation in the average cost per case: inflation reached approximately 30% between January 2000 and September 2002, whereas the official price increase was only 13%.

In 2001 the EHIF began work on adapting the Nordic DRG system (NordDRG) by identifying areas of variation in activity between Estonian and Scandinavian hospitals, calculating prices for reimbursement in Estonia and providing hospitals with feedback on their activity by NordDRG group. The use of a DRG system has been facilitated by the high level of detailed diagnostic data available to the EHIF through the invoicing system in place. In 2003 all

primary classifications were implemented, and from 2004 the NordDRG system was implemented as a payment method. In terms of reimbursement, the DRG system is used in combination with other payment methods already in place, so the price of a case will be calculated based on the price list and NordDRG groups and reimbursed proportionally. The proportion of DRG payment for each case was initially set at a low 10%, to minimize any financial risk of the new system. In 2005 it was raised to 50% and has been at that level since. The DRG outliers system (rules to detect cases that will not come under the DRG-based reimbursement system) can be divided into two types. Firstly, cases with certain characteristics are treated as DRG outliers and are reimbursed fully through fee-for-service payment. Secondly, cases that are too low or high cost are reimbursed through fee-for-service payment. All inpatient care cases, as well as outpatient care cases involving surgical procedures, come under DRGs. However, some types of care, such as psychiatrics, rehabilitation, long-term care and follow-up cases are not reimbursed using DRGs. There are some exemptions according to the principal diagnosis (e.g. chemotherapy) and referred cases (for example, the higher level hospital is reimbursed according to DRGs and the lower level hospital is reimbursed through fee-for-service payment).

The EHIF's strategy is to eventually increase the DRG share, without a specified numeric target for this. Full implementation will come at a later stage, specifically when the existing fee-for-service lists have been replaced by alternative classifications of health care services, as otherwise the detailed information on provider activities will be lost. How best to balance the new payment mechanism with existing mechanisms remains a major challenge for the years ahead.

In principle, health service prices should cover all costs related to providing services except those related to scientific and teaching activities, which are funded separately. All prices approved are maximum prices and providers and the EHIF can agree on lower prices for the contracts. Revision of service prices and payment methods can be initiated by provider or specialist associations or by the EHIF. Each service should be evaluated in terms of four criteria: medical efficacy (evaluated by a relevant medical specialist association), cost–effectiveness (evaluated by a health economist), appropriateness and compliance with national health policy (evaluated by the Ministry of Social Affairs), and the availability of financial resources (evaluated by EHIF). The process of updating the service list is usually carried out annually.

In 2003 the EHIF started the health services pricing project. The need for a comprehensive modification of the list of health care services was emphasized in connection with the increased salary demands of the EMA in 2003. It turned out that the salary component amount in individual health care service prices was not clear. In July 2003, the Chairman of the Management Board of the Hospitals

Association and Chairman of the Supervisory Board of the EHIF agreed that the hospitals would be involved in the development of new pricing models for medical services and would supply the EHIF with the necessary information concerning the service provision expenses of the hospitals.

The goal of the project was to make the pricing of health care services by the EHIF transparent and justified. The project involved representatives of all major medical professions and medical specialties in order to reach an agreement on shared pricing principles, price components and costs. It is also expected that the new pricing methodology will enable a transparent discussion in the case of different inputs. Another underlying goal was to provide an incentive for the providers to make their cost-accounting systems more efficient and increase their interest in issues involved in internal cost management.

It was agreed that health service pricing will be conducted according to activity-based costing (ABC) methodology. ABC accounting relies on the assumption that resources (such as staff, premises, equipment and materials) are used in the course of certain activities and through accurate description of all necessary activities; the associated consumption of resources can therefore be calculated.

First, the EHIF developed principles to be used in the compilation of the ABC-based health services pricing model. Next, representatives of medical professions described the services provided in their respective fields in relation to the resources required and the unit costs of the resources. This was then used as a basis for calculating a price for each health service. As the representatives of the professions tend to describe an "ideal" and not the "actual" situation, the service costs as described by the professions were verified on the basis of the actual cost and service volume data submitted by the hospitals. This helped to identify areas in which the representatives of professions had "overdescribed" their services. Based on the new ABC prices, predictions of financial impact on the health insurance budget were drawn up, after which it turned out that the additional expenses exceeded the budget resources. The decision concerning the range of medical services for which the prices established in the "pricing model" would be used without reduction was made by a Committee for Medical Policy Assessment of the List of Health Services, including a range of representatives from all interested parties (medical institutions, doctors, Ministry of Social Affairs, EHIF). The pricing model is developed continuously (for example, in 2008 the priority is to develop radiology services pricing) and the plan is to gradually reduce the differences between the pricing model and the actual prices.

From July 2003, capital costs have been included in the prices paid to providers by the EHIF, in order to ensure geographical consistency and fairness in infrastructure development. Capital costs have been added to the price list

for ambulatory specialist visits, operations, provider per diems and complex prices. They have also been added to primary and long-term care prices. The mark-up has been calculated according to providers' optimal capacity per bed (which includes a standard number of square metres per bed that will produce an optimal occupancy rate). Capital cost funds are now allocated on the basis of activity, and there is no clear link to capital investment needs. Since 2008, capital cost expenditure is covered from the state budget as an earmarked allocation to the EHIF's budget and will still be allocated, through the service prices, to providers (see Section 3.3 *Revenue collection/sources of funds*, Subsection *External sources of funding*).

In primary care, family doctors and nurses contracted by the EHIF are paid via a combination of capitation payments and other remuneration types that together make up the budget for each practice (see Table 3.14). Practices receive monthly prepayments, which are recalculated twice a year to reflect changes in the patient list (as patients can change family physicians).

Table 3.14 Structure of the average family physicians' budget by type of remuneration, 2006

Payment type	2006 (% of total)
Capitation	73
Fees for services	15
Basic allowance	10
Other	2

Source: EHIF 2006

The capitation payment for family physicians is adjusted according to the age of the patients, using three groups (under 2 years, 2–69 years and over 70 years). If a family physician's practice list has fewer than 1200 people (the size of the minimum practice), s/he still receives capitation payments for 1200 people to cover the fixed costs. Capitation payments have evolved over time. At the system's conception in 1998 the capitation rates were equal for all age groups, but adjustments for age were introduced in 1999. In 2003 the EHIF introduced a family physician cost model, and this increased the difference in capitation across age groups, as the capitation rate of children under two years old rose by more than 50%. This increase reflects the much higher consultation rate of young children compared with the general population (family physicians are responsible for following up children's consultations) (see the evolution of family physicians' payments in Table 3.15).

Family physicians can receive separate additional fee-for-service payments up to a maximum of 27% of the total amount received in the form of capitation

Table 3.15 Payment of family doctors in EEK and Euro, 1999–2008 (selected years)

	1999		2003		2008	
Cost category	**EEK**	**€**	**EEK**	**€**	**EEK**	**€**
Capitation per person per month						
0–2 years	20.00	1.28	27.55	1.76	107.00	6.84
2–69 years	16.00	1.02	21.05	1.35	44.40	2.84
Older than 70 years	18.00	1.15	24.60	1.57	53.80	3.44
Fee-for-service (maximum % of the capitation sum)	18.00	n/a	18.40	n/a	27.00	n/a
Basic monthly allowance	5 000.00	319.60	5 290.00	338.10	11 955.00	763.90
Additional monthly payments						
Working 20–40 km from a county hospital	700.00	44.70	700.00	44.70	1 400.00	89.46
Working more than 40 km from a county hospital	1 400.00	89.50	1 400.00	89.50	4 018.00	256.74
Family doctor training	1 000.00	63.90	1 000.00	63.90	n/a	n/a
Quality bonus	n/a	n/a	n/a	n/a	4 000.00	255.59

Source: EHIF 2008 (forthcoming)
Note: n/a: Not available

payment. Previously, this fund was limited to 18% of capitation payment but due to the increasing qualification of the physicians this share has been increasing. The EHIF and the Estonian Society of Family Doctors agree on the procedures to be reimbursed by fee-for-service payment, and this list is then approved by ministerial decree. The procedure list has been expanded over time (to include more services, such as laboratory tests and ultrasound tests), as family physicians were becoming more experienced in providing these types of care. The objective is to create an incentive for providers to manage and provide more services at primary care level. In 2008 there will probably be a further increase to 32% of additional funds for physicians who engage in a "quality bonus" system (see later in this section). This aims to give an additional financial incentive to use this system.

Practices also receive a basic monthly allowance to cover accommodation and transportation costs. During the early stages of the reform (the late 1990s), this allowance was aimed at supporting the family medicine reform and helping family physicians to establish their private practices. Since the reform was completed, the monthly allowance has been maintained and now covers fixed costs. Additional and more marginal payments are made to compensate family

physicians who are working more than a specified distance from the nearest hospital. There were additional payments to reward physicians with a diploma in family medicine but since 2007 this type of payment was repealed as the justification for it has been eliminated: since 2003, having a diploma in family medicine is a precondition to entering into a contract with the EHIF.

In January 2006 a new payment policy for family physicians based on performance indicators was launched. The main purpose of this initiative is to increase the quality and effectiveness of preventive services, as well as better monitoring of chronic diseases. It is a joint initiative of the EHIF and the Estonian Society of Family Doctors, the direct result of three years of discussions over opportunities and principles to increase family doctors' revenue (Koppel and Aaviksoo 2007c). Family physicians are free to choose whether they participate in the quality bonus system or not. The first year (2007) has been encouraging, as more than 60% of family physicians participated. Priority areas are vaccinations, measurement of blood lipids and glucose levels, mammography (for 45–59-year-old women), diabetes (type II) mellitus diabetes and high blood pressure patients. Family doctors also have to perform certain simple surgical procedures and monitor normal pregnancies. Furthermore, family physicians have to provide electronic reports to the EHIF once a year regarding the achievement of performance indicators. These reports include information on the subset of target group patients in the list and the services provided to them. The EHIF will then check the reports against its database of reimbursement claims that is generated on a monthly basis. Family physicians are expected to receive up to €255 (EEK 4000) per month on top of their usual per capita payment for meeting the performance indicators.

A family doctor's income depends not only on the size of her/his practice list but also on performance, so that any money spent on unnecessary analyses and procedures will diminish her/his income. In general terms, the payment system for family doctors is designed to provide them with incentives to take more responsibility for diagnostic services and treatment, to provide continuity of care and to compensate them for the financial risks of caring for older people and working in more remote areas.

Paying health care personnel

During the Soviet era, health care professionals were similar to civil servants, working as salaried employees in hospitals owned by the State or municipalities. Salary levels were determined centrally. Since the early 1990s the situation of health care professionals has changed considerably, mainly because health care legislation allowed individual providers to work privately for the first time and gave institutional providers more autonomy under a different legal

status. Greater autonomy has included the freedom to set salaries, so although many institutions are still controlled by the State or municipalities, the level of salaries is established through individual negotiations between employers and employees.

Health care professionals' salaries are determined by the minimum amount of cases contracted from the provider by the EHIF. On average, salaries account for approximately 60% of total hospital costs. All health care professionals and providers now hold individual contracts with hospitals or health centres, although these are sometimes based on general salary agreements for specific groups. The EMA and the Estonian Nurses Union negotiate the levels of minimum hourly wage/salary for their respective professions with the Hospital Association. The Ministry of Social Affairs and the EHIF are sometimes also involved in these negotiations.

Health care professionals who provide outpatient and inpatient care in hospitals are usually salaried employees. Due to the hospital mergers that have taken place in the last few years, it is assumed that some professionals from narrow specialties have been able to negotiate increased salary levels. Other health care professionals, including pharmacists, have regular or contract salaries that depend only on the budget of the provider or pharmacy.

Although health care providers are private entities, the Ministry of Social Affairs monitors their financial status and overall salary levels through statistical accounts and an annual salary survey. There are doubts, however, about providers' incentives to pass all data on to the Ministry. Moreover, the data mainly reflect average base salaries (see Table 3.16).

Table 3.16 Average hourly and monthly wages of health personnel (in Euro), 2002 and 2007

	2002		2007		Increase of monthly salary 2007/2002 (%)
	Average hourly wages	Average monthly wages	Average hourly wages	Average monthly wages	
Doctors	3.88	654.79	6.31	1293.67	97.57
Nurses and midwives	1.85	310.54	3.09	586.48	88.86
Carers	1.11	190.49	1.79	350.19	83.83

Source: Ministry of Social Affairs 2007

4 Regulation and planning

In Estonia, regulation and planning of health services is carried out not only by the Ministry of Social Affairs and the EHIF, but also by other public agencies. The State and local municipalities exert an influence on the regulation and planning process of hospitals through participation in Supervisory Boards, and patients are represented in working groups and commissions of the Ministry of Social Affairs, as well as holding positions on the EHIF Supervisory Board. In general, the governance of the health system is based on regulation and contractual relations rather than subordinate relationships.

4.1 Regulation

Article 28 of the Constitution of the Estonian Republic states the people's right to health protection and social security. The constitutional right is further defined in other health-related laws and regulations. At national level, the Ministry of Social Affairs is responsible for health, social and labour policy. The health system in Estonia mainly consists of public regulatory bodies (including the EHIF) and private providers of health services. The provision of health services in Estonia is predominantly contract based and controlled by health regulations, the Commercial Code and public regulations. The framework of the Estonian health system is set out in four major pieces of legislation: the Health Insurance Act (original in 1992), the Health Services Organization Act (original in 1994), the Public Health Act (1995) and Law of Obligations Act (2001). There have been no significant macro-level changes since these.

Regulation and supervision of the health system is the responsibility of the Ministry of Social Affairs. The health acts (laws) are enforced with the support of governmental and ministerial regulations. The Ministry of Social Affairs

also develops broader health programmes (strategic plans) which have to be developed according to the Ministry of Finance's guidelines and need approval from the Government in order to receive financing from the state budget (Ministry of Finance 2006; Government of the Republic of Estonia 2005). Some of the best examples of such newly developed plans in the health sector include the National HIV/AIDS Strategy 2006–2015 and the National Strategy for Prevention of Cardiovascular Diseases 2005–2020. They are approved by the Government, which illustrates that the responsibility for management and financing is held at the highest level.

In the field of public health, the Government develops and approves health promotion and disease prevention programmes. Over the course of recent years a national public health policy document has been developed, which is expected to result in the adoption of the National Health Strategy 2008–2020 in 2008. It follows the Health for All principles and sets out the basis for all programmes and activities that aim to improve the public health situation in Estonia. Under the leadership of the Ministry of Social Affairs there have been several policy documents prepared by different international and national expert groups since the mid-1990s. The Estonian Hospital Master Plan, for example, draws up a list of hospitals that serve the public interest and are therefore eligible for state aid. In addition, the Estonian Nursing Care Plan 2015 and the new Primary Health Care Development Plan are important policy documents developing infrastructure in nursing care facilities and primary care and are used as a basis for allocating EU funds.

State level

In general, health system regulation and stewardship is the shared responsibility of five ministries, as listed here.

- The Ministry of Social Affairs is responsible for overall health system stewardship regarding policy development, regulation and supervision of health care and public health services. It also regulates and funds ambulance services and emergency care services provided to uninsured individuals.
- The Ministry of Justice and Ministry of Interior have joint responsibility for health services provided in prisons and other custodial settings.
- The Ministry of Defence organizes and pays for primary care for military personnel.
- The Ministry of Finance is responsible for the state budget, as well as for supervision and management of health-related expenditure.

Some other ministries (Ministry of Agriculture and Ministry of Environment) have minor roles in the implementation of certain parts of public health programmes.

At the meso level, the organization of certain health services is still carried out by Estonia's counties. Therefore, county governments are responsible for the organization and supervision of PHC settings. Local municipalities in Estonia do not have formal responsibilities in health care. They are, however, involved in the management of health services through ownership of hospitals, PHC facilities and family doctor practices (the latter has only been allowed since 2008). Their role in the financing of health services has decreased, as visible in National Health Accounts indicators, but it may increase again in the event that co-financing of nursing care between the State and local governments is approved.

Health legislation

All relevant health legislation since regaining independence is described later and an overview of health legislation is provided schematically in Table 4.1.

1991–1999

During the early part of this period, legislation regulating specific fields of health care was adopted by Parliament. Towards the end of this period, key existing legislation was revised, partly to address its deficiencies, partly to enhance further policy goals such as efficiency, and partly due to EU accession requirements and changes to the legal system. In some cases it was easier to draft new laws rather than to amend existing ones, due to the extent of incremental changes needed as well as to account for changes to the legal system. This period saw the introduction of all-important health system organization acts, but also more specific acts, such as the Mental Health Act and the Artificial Insemination and Embryo Protection Act.

2000–2003

The Estonian Health Insurance Fund Act (2000) established the EHIF as a public independent body managed by a Supervisory Board consisting of state, employer and employee representatives. It is intended to strengthen the purchasing power, organizational efficiency and public accountability of the health insurance system. This Act and the corresponding government-approved EHIF statute set out the detailed regulation of EHIF functions and lines of accountability.

The Health Services Organization Act (2001) sets out specific organizational changes including recentralizing planning functions at national level; establishing

Table 4.1 Overview of key health legislation, 1991–2005

Legislative act	Preparation period	Approval by Parliament	Implementation	Current status
Health Insurance Act	1989–1991	June 1991	April 1992	Amended 1994 and 1998; replaced by 2002 Health Insurance Act
Health Services Organization Act	1993–1994	March 1994	April 1994	Replaced by 2002 Health Services Organization Act
Public Health Act	1993–1995	June 1995	July 1995	In force; multiple later amendments due to EU accession
Medicinal Products Act	1993–1995	December 1995	1996	Replaced by 2004 Medicinal Products Act
Psychiatric Care Act	n/a	February 1997	March 1997	In force, with later amendments
Protection of the Embryo and Artificial Fertilization Act	n/a	June 1997	July 1997	In force, with later amendments
Termination of Pregnancy and Sterilization Act	n/a	November 1998	1999	In force
Occupational Health and Safety Act	n/a	June 1999	July 1999	In force, with later amendments
Estonian Health Insurance Fund Act	1999–2000	June 2000	January 2001 (partly implemented in October 2000)	In force, with later amendments
Tobacco Act	Mid-1990s, presented to Parliament in October 1999	June 2000	January 2001	In force; revised draft law presented to Parliament in 2004
Health Services Organization Act	1999–2001	May 2001	January 2002	In force; replaced 1994 Health Services Organization Act
Law of Obligations	n/a	September 2001	July 2002	In force
Health Insurance Act	1999–2001	June 2002	October 2002	In force: replaced 1992 Health Insurance Act
Communicable Diseases Prevention and Control Act	1997–2002	February 2003	November 2003	In force
Medicinal Products Act	2002–2004	December 2004	March 2005	In force; replaced 1995 Medicinal Products Act
Blood Services Act	2003–2005	February 2005	May 2005	In force
WHO Constitution with all its amendments	2004	January 2005	February 2005	In force
WHO Framework Convention On Tobacco Control	n/a	May 2005	June 2005	In force

Source: Adapted from Jesse et al. 2004
Notes: EU: European Union; n/a: Not available

a new licensing system for doctors and institutional providers; defining the legal status of providers as private entities; and explicitly defining the financing responsibilities of different sources of funding. For example, responsibility for paying for emergency medical care for the uninsured population lies with the state budget administered by the Ministry of Social Affairs, while the Ministry of Justice is responsible for funding health services for prisoners and forensic expertise, including forensic medicine. No specific funding responsibilities were allocated to the municipalities.

The Law of Obligations Act (2001) was prepared by the Ministry of Justice and aims to regulate all contractual relations in the various sectors, including those between insurers and the insured population in terms of private health insurance, and between patient and health care provider in health service provision. The section on health service provision contracts and agreements regulates the relationship between patient and provider, establishing requirements for patient information and informed consent prior to treatment, as well as privacy and provider accountability in terms of malpractice. The Law also establishes that if health services are not paid for by a third party or by compulsory health insurance, the patient must pay the "established, agreed or usual fee or, in the absence of such, a reasonable fee". This section of the Law is currently the only existing general regulation of patients' rights, supplementing the rights established in specific legislation mentioned elsewhere. However, as the Law was based on German legislation, and as the Ministry of Social Affairs was not involved in its preparation, some parts of it remain unclear. The section on health insurance sets out minimum requirements for qualification periods in different types of health insurance, conditions for changing premiums, and so on. However, not much effort was made to adapt the regulation to the current Estonian situation, so some parts of it are not directly relevant – for example, the regulation of health insurance continuation upon retirement and of health insurance for children is superfluous, as both pensioners and children are statutorily covered by the EHIF.

The Health Insurance Act (2002) was intended to establish clearer regulation of all aspects of the health insurance system, including validity periods, benefits, reimbursement lists and levels for health services and pharmaceuticals, maximum levels of cost sharing for insured people and contractual relationships between the EHIF and service providers.

The Communicable Diseases Prevention and Control Act (2003) was passed in 2003 after five years of preparation. It regulates the organization of the prevention and control of communicable diseases, as well as treatment of people with communicable diseases, setting out the obligations of the State and local governments, legal persons and individuals, including health care providers. The Act covers the full range of routine communicable disease

control, from immunization to hospital infection control, from laboratory licensing to compulsory treatment for serious communicable diseases. In the case of the latter, the Act sets out conditions for treatment based on a court ruling if a person will not give consent. The Act defines serious diseases as plague, cholera, yellow fever, viral haemorrhagic diseases and TB. In the case of hospital infections, the Act defines requirements for health care providers to monitor and prevent hospital infections as well as inform the relevant authorities in case of infection.

2004–2008

This period has not seen much legislative activity, as most of the organizational changes took place in the previous four years. However, because the (original) 1995 Medicinal Products Act, which regulates all aspects of the pharmaceutical market, was outdated, a reviewed/updated Medicinal Products Act was approved by Parliament in December 2004 after long discussions. In addition, a new Blood Act was approved in 2005, which regulates the preparation and safety requirements for blood products. Currently, there is no political intention to significantly change the current system nor any plan for major reforms. Although the Public Health Act is outdated, a new National Health Strategy in 2008 has to be adopted first, before changing this Act.

Regulation and governance of third-party payers

The first Health Insurance Act was approved by the *Riigikogu* in 1991 and entered into force in 1992. The Act set out differentiated health insurance tax contribution rates: earmarked payroll tax equal to 13% of wages collected from employers; a rate of 1.6% for farmers; and 5.7% for the self-employed, according to their income from production. In addition, the local governments had a right to increase the tax rate by up to 3% if the working conditions were considered to be posing a threat to health. During 1992–1993 there were 22 independent local sickness funds in Estonia, including 15 in the counties, 6 in cities and a special fund for seamen (the Seamen Sickness Fund). The funds were strictly locally organized, had an independent financial administration and were responsible for the collection of differentiated health insurance taxes. The populations covered by the different regional sickness funds were uneven in size, ranging from 10 000 to 400 000 inhabitants, with most covering 30 000 to 40 000 people. In 1994 the Central Sickness Fund was established on the basis of the ineffective Estonian Health Insurance Association in order to strengthen central functions such as planning, centralized pooling and allocation of revenues. The social insurance tax rate (13% earmarked payroll tax for health insurance and 20% for pension insurance tax) was implemented. The Central

Sickness Fund was governed by the State Health Insurance Council, which consisted of 15 members: 5 representatives of state organizations, 5 members from employers' organizations and 5 representatives of insured individuals' groups. In 1999 the Estonian Tax and Customs Board became solely responsible for the collection of the social tax.

The 2000 Act of the Estonian Health Insurance Fund established the EHIF as the single, legally independent, public organization responsible for the paying and purchasing of health services. The EHIF was initially organized in seven regional and one central departments, but after the last restructuring in 2004, only four of the regional departments and the single central department were left. According to the current organization set-up, each regional department covers 200 000–500 000 insured individuals. This process reflects the trend towards centralizing governing bodies in other public organizations as well (for example, the number of Police Prefectures and County Courts both decreased respectively from 17 to 4 in 2004 and 2006). Today, the regional departments mainly carry out a counselling role for providers in their region, as well as helping citizens to select providers, as since 2006 there is free choice among health providers across Estonia. The EHIF is governed by a 15-member Supervisory Board, with the Minister of Social Affairs as its Chairman. The Supervisory Board elects the Management Board, in charge of the daily management of the EHIF, for a period of five years.

The EHIF has the responsibility of covering the expenses for preventive and curative health services provided to insured individuals. It also finances the purchase of medicinal products and medical devices and provides the benefits for temporary incapacity for work, for example. In the event that certain health services are not available in Estonia, the EHIF purchases and arranges access to cross-border health care services. For occasional care when abroad, the EHIF issues the EHIC and reimburses the services provided to Estonian nationals in other EU Member States (see Section 3.2 *Population coverage and basis for entitlement*).

Private health insurers are obliged to follow the legal ruling of private insurance regulations and are not supervised by health authorities (for more information about VHI, see Section 3.3 *Revenue collection/sources of funds*, Subsection *Voluntary health insurance*).

Regulation and governance of providers

During the 1990s, licensing and supervision of health professionals and providers was a competence of the Ministry of Social Affairs. After implementing the new framework it was evident that there was a need for clearer licensing requirements. The changes were necessary to prepare Estonia for EU accession. They also

harmonized regulations facilitating the free movement of health professionals (Jesse et al. 2004). In 2002 the new Health Services Organization Act came into force, establishing a separate state agency, the HCB, for licensing providers and supervision of the health system. All doctors, dentists, nurses and midwives have to register with the HCB before they are allowed to provide health services. In addition, health service providers have to acquire a licence regardless of availability of an EHIF contract. At county level, the county governor's office is responsible for the supervision and administration of primary care.

Health professionals

At the end of 2001, Estonia had 33 recognized medical and 2 recognized dental specialties, reduced from a previous total of 42. Family medicine was first recognized as a specialty in 1993. Qualifying as a specialist involves a residency programme lasting 3–5 years. One element of health care reform has been to draw up development plans for each specialty that define the content of its residency programme. All previously or internationally obtained qualifications are adapted to fit one of the official specialties when doctors register with the National Registry of Doctors held by the HCB. Professional subspecialization is permitted once a doctor has qualified in one of the main specialties, but it is not formally recognized, and such training is neither regulated administratively nor funded publicly.

Health services providers

During the early 1990s a small number of profit-making health providers were established. Most of these organizations were under the direct control of the Ministry of Social Affairs (all tertiary and some secondary hospitals being lower-level state agencies) or the local municipalities (inpatient secondary care and most outpatient specialized and primary health care). In the absence of legal requirements, some municipalities established hospitals as non-profit-making NGOs, some as joint-stock companies and some as municipal agencies. Consequently, there was variation among hospitals in terms of managerial autonomy and accountability mechanisms. Although hospitals with state or municipal agency status had less managerial freedom than the other hospitals, neither the Ministry of Social Affairs nor the municipalities were directly involved in managing them and the levels of accountability were low.

In 2002 the new Health Services Organization Act came into force, clearly defining all providers as private entities operating under private law, with the public interest represented through public membership of supervisory boards. Family practices can be organized as joint-stock companies or private enterprises, owned by family doctor(s) or local municipalities. Hospital

providers are allowed to organize themselves as (profit-making) joint-stock companies or foundations (non-profit-making). As shown by – among others – Tsolova et al. (2007), these new organization and management forms increased the autonomy of hospital management and resulted in increased cost-efficiency of hospital services provision. In contrast with other health service providers, ambulance services and public health providers can take a different legal form, that is, they can also be provided by NGOs provided that a legal company is established for these purposes.

Statutory mechanisms to ensure that professional staff or provider organizations achieve minimum standards of competence include:

- licensing of (public and/or private) health care facilities and all health service providers except family practices;
- licensing of doctors, dentists, nurses and allied practitioners (e.g. midwives);
- 5-year period licensing renewal for facilities and practitioners (registering of the practitioner is for life);
- licensing of medical equipment and pharmaceuticals – medical equipment manufactured and sold in Estonia should be approved by the SAM, pharmaceuticals should have approval from the SAM and pharmacies should acquire a licence from the SAM;
- certification of safety (radiation, fire, environmental and occupational hazards) – safety certificates for medical devices or other health-related equipment should be approved by the SAM or the HPI, or by other nationally competent authorities;
- voluntary external quality assessments and improvement programmes, which are in line with statutory inspection requirements.

Regulation and governance of the purchasing process

All actors in the Estonian health care market are public or private organizations which operate under public or private law. With regard to purchasers of health care, the main actors are public organizations, such as the EHIF, the HCB and the NIHD, which all purchase different health services (the purchasing roles of the EHIF for health services and the HCB for ambulance care are described in more detail in Section 3.5 *Purchasing and purchaser–provider relations*; the purchasing of public health services by the NIHD is described in Chapter 3 *Financing* and Chapter 6 *Provision of services*). The purchasing process is based on contracts that vary according to the role and scope of services of purchasers and providers. EHIF contracts have evolved over a decade of well-established relationships on equal footing with the service providers. The

HCB acts as a public purchaser of ambulance service providers and ensures sufficient national coverage. The contents of the contracts include the rights and obligations of parties concerned, service standards as well as financial reporting requirements.

Depending on public interest, the contracts between the EHIF and hospital service providers differ in duration. Hospitals that are enlisted in the Estonian Hospital Development Plan 2015 receive a 5-year contract; all others receive 3-year contracts. These contracts do not include the volume and cost of services for all forthcoming years; they only appoint service types for the period of the provision. This mechanism is necessary because the budget of the EHIF is approved yearly, according to state budgeting rules. Most inpatient and outpatient services (approximately 80%) are provided by hospitals, as described earlier. Therefore, only 20% of services are purchased through tenders or negotiations with other service providers. Only under certain specific circumstances can changes in the contract be made.

The purchasing process includes the continuous monitoring of the contract obligations regarding the volume and costs. In addition, an active role by the service provider in self-monitoring the contract obligations is expected as there are restrictions established if providers exceed the costs of contracts. The common rule is that the EHIF has no obligation to reimburse the costs that exceed the budget defined in the contract, especially if the minimum number of cases negotiated in the contract is not achieved in either inpatient or outpatient services (see Section 3.5 *Purchasing and purchaser–provider relations*).

Regulating quality of care

In Estonia, the quality of health care only came under discussion after independence from Soviet rule. Under the centrally planned Semashko system, quality issues were of no great concern to health care providers. Such issues have been raised in Europe partly as a result of the increasing role of the patient and well-developed patients' rights (Kaarna et al. 2005). As a result, quality issues have been added to the curricula in medical professional education and various developments in health systems have taken place. Since 1995, several health care quality policy documents have been drawn up in collaboration with international experts and bodies (such as the World Bank and the Dutch Institute for Healthcare Improvement). However, it was not until 2002 that the new Health Services Organization Act was embedded into legislation and formalized the requirements of quality assurance for health services providers. According to these regulations, all providers are obliged to have a Quality Handbook, which is the basis for their internal quality assurance system.

Table 4.2 History of quality development in the Estonian health care system since the early 1990s

Activity	Date	Impetus or rationale
Establishment of central instructions for clinical practice and diagnostics; periodical certification of physicians and nurses at national level; assessment of quality of health services (e.g. mortality, occurrence of post-surgical complications and mortality, differences between referral and final diagnoses, and differences between clinical diagnoses and autopsy findings)	Up to the 1990s	Ensuring the quality of medical procedures, but mainly concentrating on inputs
Establishment of health insurance system	1992 onwards	Change of the financing principles of the health care system; introduction of a needs-based planning and contracting system; and introduction of performance-related payment methods. This has promoted the development of quality enhancement tools such as clinical guidelines, audits and system of trustee doctors
Reforming providers' network	1992 onwards	Purchaser–provider split, providers operating in various legal forms (no longer under strict state supervision), licensed by the Ministry of Health. The restructuring, resulting in the reduction of excessive capacity, has made available resources to implement quality improvement at the provider level
Implementing quality control mechanisms for pharmaceuticals and medical technology	1993 onwards	Implementing quality standards and ensuring safety of pharmaceuticals through compulsory registration
Implementation of Estonian Health Care Project	1995–1998	Development of a quality policy document for Estonian health care
Setting out the various legislative acts to protect patients' rights	Since 1995	Legislative regulation of patients' rights in the following fields: clinical trials, psychiatry, reproductive health and in vitro fertilization, transplantation, infectious diseases, and regulation of the patient–provider relationship
Adoption of Health Services Organization Act	2001	Establishment of unified requirements for structural quality for premises and equipment and for providers of health services; introduction of requirements for the registration of health care professionals and licensing of health care providers (under Health Care Board from 2002). The system of providers was expected to be aligned with new requirements within three years, to ensure unified quality standards

Source: Adapted from Põlluste et al. 2006

Although there is no single quality assurance policy framework adopted in Estonia, there have been several developments in this field (see Table 4.2). While health professionals are not required to pass the official accreditation process, they are required to register in the HCB National Registry before they are allowed to provide health services. Registered health care providers have to fulfil the official requirements (for example, minimum standards for hospitals) and have their licence renewed by the HCB every five years. After registration, all health professionals and providers are under the supervision of the HCB. The requirements are set out by the regulations of the Ministry of Social Affairs (regulations on quality and accessibility of health services, requirements for family practices) and controlled by the state agencies. For example, the EHIF regularly monitors waiting times and carries out audits of service provision and clinical practice.

As well as incorporating quality assurance into the legal framework for the provision of health services, quality projects are also carried out. Since the EHIF has supported the development of clinical guidelines in the 1990s, representatives of the EHIF and medical specialists agreed that the EHIF will act as the coordinator of the development clinical guidelines. In 2003, therefore, the EHIF set up the Clinical Guidelines Advisory Board, the main role and responsibility of which is to promote the development and approval of clinical guidelines. At the time of writing there are 26 officially approved clinical guidelines (and another 10 in the pipeline), and over 50 more have been prepared by medical specialties (but not approved by the EHIF). An important difference between officially approved and non-approved guidelines includes the agreed costs of medical treatment and diagnostics, which EHIF covers. As EHIF is a member of the Guidelines International Network, Estonian health professionals have access to most internationally developed clinical guidelines.

Moreover, in 2006 a new system of quality bonuses for family doctors was introduced by the EHIF to promote a more active role for family doctors and nurses in health status monitoring and management of chronic diseases. The new system replaces the former promotion system which reimbursed family doctors for the costs of specializations and diplomas. In addition, some international quality assurance projects are also carried out in Estonia, for example hospitals are participating in the WHO-promoted PATH (Performance Assessment Tool for Hospitals) project network (Groene and Habicht 2005; Koppel and Aaviksoo 2007b).

4.2 Planning and health information management

At the beginning of the 1990s, planning and management of primary and secondary care was decentralized to the municipalities. Since 1992, the sickness funds also started to reimburse service providers based on price–volume contracts, a practice that has been continuously developed since the mid-1990s. However, planning at municipality and county levels did not function as efficiently as originally envisaged, largely due to the small population size of most municipalities. Therefore, national health planning was reactivated at the end of the 1990s.

In 2000 the Ministry of Social Affairs published the Hospital Master Plan 2015, which was prepared with help of a Swedish consultancy. It aimed to make projections about the required future hospital capacity of Estonia (Hellers et al. 2000). The Plan showed the need to reduce the number of acute inpatient beds by two thirds and to concentrate acute inpatient care in 15 larger hospitals. Further advice was to decrease the total number of hospitals, through mergers and other types of restructuring, by three quarters (from 68 to 13) by 2015. In spite of negative publicity, the Ministry of Social Affairs has used this as a basis for further discussions with local politicians and provider associations. For example, it enabled the Ministry of Social Affairs and Tallinn Municipality to restructure previously separate smaller secondary and tertiary hospitals and polyclinics in Tallinn into four hospital management networks.

The specialist associations were also asked to evaluate the Plan, and to develop separate plans for their own specialties. After many consultations and some compromises, a milder version of the original plan, the Hospital Network Development Plan (HNDP), was approved by the Government in April 2003 (Government of the Republic of Estonia 2003). The HNDP envisaged 19 hospitals (rather than 13) being eligible for long-term contracts with the EHIF and state investment. A total of 14 small county-level hospitals received assurances that they would not face reorganization into ambulatory centres or nursing homes in the near future. The HNDP, together with the specialist association assessments and development plans, were taken into account in developing criteria for hospital licensing and for regulating the types of services that hospitals at different levels are allowed to provide.

The HNDP did not fully cover the planning of nursing care and rehabilitation services planning, and separate plans for these areas were developed. According to the Estonian Nursing Care Master Plan 2015 there is need for over 2100 nursing care beds. Further outpatient services, such as home and day nursing units, should be implemented. In 2003 the EHIF service list also included home nursing services and home nursing is licensed as a separate service by the HCB.

The Plan has also advised the creation of other development policy documents at national and local levels. For example, County Nursing Care Plans are created in every county, but bigger municipalities have also developed their own health care development plans. For example, Tallinn, the capital city, has had its own plan since 2007, which covers areas from public health to hospital services.

The trend towards recentralizing some planning and regulatory functions was prompted partly by the experience of the 1990s, which showed that decentralized planning did not result in balanced development or efficient and accessible provision of health services, although in many cases progress was made in trying to be more responsive to patient needs. In addition, in the context of declining resources for health care at the end of the 1990s, the EHIF was forced to use the contracting process to prioritize health services and providers. Sometimes it recommended service closures. This led to questioning of the EHIF's legitimacy in making such decisions and played a part in the return to national-level planning and shared accountability between the EHIF and the Ministry of Social Affairs in 2001.

Planning of human resources has been a relatively neglected area. In the early 1990s, the number of medical admissions decreased in an attempt to address the Soviet "overproduction" of medical doctors. Since the mid-1990s, the Ministry of Social Affairs has attempted more long-term analysis of admission rates for medical and nursing training. At the time of writing, this is a hot topic, and recent workforce plans have been drawn up that take into account predictions for professional mobility, ageing of the workforce and – the largest negative factor – qualified health professionals that work outside the health care sector (also see Section 5.2 *Human resources*).

Responsibility for primary care planning is shared by the Ministry of Social Affairs at the national and county levels. The Ministry regulates the overall number of family doctors per county based on population numbers and geographical density. The county governor plans the division of geographical areas within the county and is responsible for adequate access to family practices within the regions. Since 2000, the general long-term planning of specialist care has been carried out by the Ministry of Social Affairs. The EHIF translates the Ministry plans into shorter-term contracting policy. Its priority-setting and planning focuses on the volume of health services, giving priority to improving the accessibility of ambulatory care (in terms of time and geography) and reducing inpatient waiting times to acceptable levels. Staffing levels for ambulance service teams are planned by the HCB. The main challenges are keeping the current number of ambulance teams and medical standards at a high level to ensure quick and high-quality ambulance services for residents of Estonia.

Health technology assessment

Estonia has no systematic programme for health technology assessment (HTA), mainly due to a lack of interest by policy-makers and a lack of trained human resources. The main activities in this field are assessing new services to be added to the benefits package, evaluating the need for high-cost technologies and ensuring the safety of medical equipment. These activities are carried out at national level and there is no evidence on the use of HTA at the organizational level. However, hospitals conduct some cost-analysis studies if high-cost technologies are purchased (such as magnetic resonance imaging (MRI) or computerized tomography (CT) scanners).

In 1995, the Committee on Medical Technology was established to coordinate activities and advise on the procurement and use of high-technology medical equipment. It consisted of representatives of the Ministry of Social Affairs, the EHIF (then the Central Sickness Fund), the EMA and the Hospital Association. To be accepted for health insurance financing, all purchases of equipment costing over a certain limit were subject to approval by the Committee. In practice, equipment was also purchased without approval. There was no practical way of enforcing a payment refusal by the health insurance system.

In 1999, the Medical Devices Department of the SAM had been set up to deal with medical devices entering the Estonian market. The new Medicinal Products Act came into force at the end of 2004 and regulates manufacturing, marketing and advertising of medical devices. It also provides the framework for market supervision and regulates liability of market actors. Therefore, the SAM does not assess services and introduce regulations, but assures quality control of medical devices rather than engaging in HTA activities.

The Committee on Medical Technology was restructured in 2003, and was renamed the Committee of Assessment of Hospital Functional Development Plan (Decree of Ministry of Social Affairs 2003). As a result, the objectives of the Committee have become narrower in scope. The members of the Committee are representatives of the Ministry of Social Affairs, the EHIF, the HCB, the HPI and the medical specialists. The Committee is now responsible for regulating medical technology as well as high-cost equipment, according to the needs approved in the HNDP. Applications for technology tenders are assessed according to several criteria, such as the need for the equipment, the actual patient pool, and projected sustainability. At the end of 2002, new rules were introduced on how new procedures, treatment methods, etc., should be introduced into the EHIF benefits package. The assessment of new services is carried out by means of health economic evaluation and considering the perspectives of society and patients, as well as cost-efficiency criteria. Adapting technology assessments and evidence from other countries also presents a

challenge to the scientific community and civil servants in Estonia. Methods for adapting and applying evidence-based research still need to be developed.

Information systems

Information regarding main activities and service data are gathered by the EHIF, but in parallel, the Ministry of Social Affairs also monitors health services provision on a yearly basis. Data are analysed by these organizations and used for internal decision- and policy-making. In addition, data on waiting times are monitored routinely by the EHIF. The Ministry of Social Affairs and the EHIF carry out annual population satisfaction surveys, which are accessible to the public. The EHIF uses health services activity data for the planning and purchasing of health services, as well as regularly monitoring waiting times for contracted health providers and taking a proactive role in possible contract changes, if there is a need for resources to decrease waiting times.

All health care providers must provide annual data reports according to national standards. Data about communicable diseases are gathered by the HPI, responsible for monitoring and surveillance of communicable diseases and other health risk factors. There are also different databases for registering data of birth and abortions, cancer incidence, strokes and heart failures. Adverse events of medicines must be reported to the SAM. Providers are required to report changes in medical staff to the HCB at least once a month.

The Personal Data Protection Act regulates personal health data collection and management in health care organizations. The regulations are strict and all health information systems are expected to achieve the highest security level. The supervision of these regulations is carried out by the Estonian Data Protection Inspectorate. Estonia is close to announcing the implementation of an E-health system, which covers the whole population and all health providers. The main idea is to create a central database and implement health information algorithms, which allow different members to collect, monitor and use personal health data for the purposes of diagnosis and treatment. The data can then be used for national statistics on morbidity and mortality, as well as health systems performance assessment. The Personal Data Protection Act stipulates a person's right to demand the termination of personal data processing as well as rectification, blocking and deleting of personal data.

Research and development

National research funds have been allocated to individual scientists and research groups in Estonian universities through the Ministry of Education and Research using baseline and targeted funding, but also in the form of grants from the Estonian Science Foundation. Only one university in Estonia provides medical

education and research on health topics. National health policy research is also conducted at the NIHD's Department for Research and Development, which is also responsible for developing and conducting health surveys (such as the Health Behaviour Survey), as well as monitoring and planning national public health programmes. Estonian health researchers have good connections to various international research networks, through which they participate in the development of health research ranging from public health to medical genetics. Estonian health specialists have participated in evaluating health systems and counselling governments in former Soviet Union countries to assist the development of their respective health systems.

5 Physical and human resources

5.1 Physical resources

All hospitals operate under private law as joint-stock companies or non-profit-making foundations and must be licensed by the HCB. A licence is required for the provision of emergency medical care, the provision of specialized medical care and the independent provision of nursing care. The HCB issues licences – valid for five years – on the basis of minimum standards for hospitals.

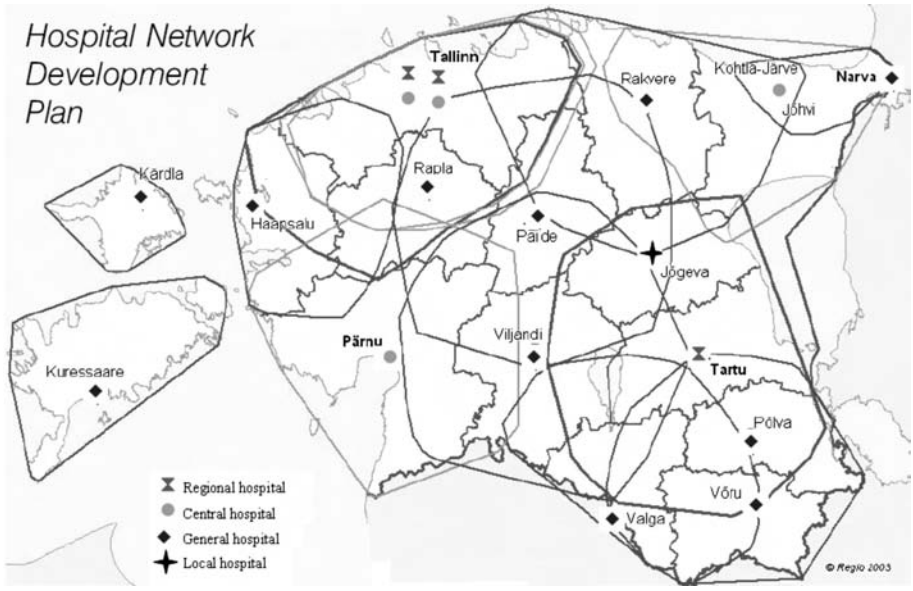
Infrastructure

In 2000, the Hospital Master Plan 2015, commissioned by the Ministry of Social Affairs, made projections about future hospital capacity. The Plan noted that Estonia's geographically decentralized hospital system resulted in excess capacity. In 1991, Estonia had approximately 120 hospitals with approximately 18 000 beds. Since then, the number of hospitals and the number of beds have fallen dramatically. By 1995 there were 83 hospitals with approximately 12 000 beds, and by 2001 there were only 67 hospitals with approximately 9100 beds. In 2002 many hospitals were merged and by the beginning of 2003 the number of hospitals had fallen to no more than 50. The Hospital Master Plan 2015 recommends that the number of acute hospitals and beds be further reduced to 13 acute hospitals and 2 acute beds per 1000 population; however, these recommendations have not been put into practice. The Hospital Master Plan 2015 was reassessed in 2003 and an update – the Hospital Network Development Plan (HNDP) – was approved.

Hospitals are divided pursuant to the Health Services Organization Act into regional hospitals, central hospitals, general hospitals, special hospitals,

rehabilitation care hospitals and nursing care hospitals. An amendment of the Act was adopted in 2004, adding another type of hospital to this list, the local hospital (Ministry of Social Affairs 2006). Regional, central, general and local hospitals are active treatment hospitals providing treatment for acute diseases requiring active medical intervention. There is a hierarchy of hospitals where care hospitals are at the lowest level and regional hospitals at the highest. The higher in the hierarchy the hospital, the more varied and specific services it provides. Each active treatment hospital covers a certain area or region (see Fig. 5.1). The location has been chosen so that active treatment is available to everyone at a distance of 70 km or 60 minutes' drive; the Government approved the HNDP based on this principle. In order to ensure equal availability of specialist medical services, the HNDP foresees 19 active treatment hospitals. This list of HNDP hospitals includes 12 general and local hospitals, 4 central hospitals and 3 regional hospitals.

Fig. 5.1 Overview of areas served by Hospital Network Development Plan hospitals



Source: **Bakler 2003**

From 2004 the number of nursing care hospitals started to rise again (from 18 to 20), along with local hospitals (from 5 to 6) and special hospitals (from 6 to 7). At the end of 2006 there were 55 hospitals in Estonia: 20 nursing care hospitals, 12 general hospitals, 7 special hospitals, 6 local hospitals, 4 central hospitals, 3 rehabilitation care hospitals and 3 regional hospitals. These hospitals

were providing inpatient medical care across Estonia, with a total of 7588 beds. In the period 2000–2006 the number of hospital beds decreased by 20%, from 9828 beds to 7588 beds, and the structure of beds by specialty has changed significantly (see Table 5.1). In 2006, acute care beds made up 69.7% of the total number of inpatient hospital beds. Of all hospital beds, the share of nursing care beds has increased, and the percentage of psychiatric beds has decreased. In the observed period, beds for TB constituted 3.2–3.6% of the total number of beds. In the period 2001–2006 inpatient care utilization has decreased, while ambulatory care utilization has increased by 5.4% (see Table 5.1). Two of the three regional hospitals (secondary and tertiary care) serve an area with approximately 500 000 people. One of them – Tartu University Hospital – covers all specialized services for the southern part of Estonia. However, the North Estonia Medical Centre in Tallinn does not cover all specialties, as they are historically covered by two central hospitals in the city. The North Estonia Medical Centre and University of Tartu Clinic are the largest hospitals in Estonia. The third regional hospital, the Tallinn Paediatric Hospital, provides medical services at the highest level to children living in north and west Estonia. Children in south Estonia receive the highest available level of medical care at the Tartu University Hospital's Paediatric Clinic.

The four central hospitals provide some tertiary, but mainly secondary care. Each serve an area with a population of approximately 200 000. Two of them are located in Tallinn: West Tallinn Central Hospital and East Tallinn Central Hospital. They provide specialist services mostly to the residents of Tallinn and Harju County. The area covered by the Pärnu Hospital (located in Pärnu) is mostly Pärnu County, and the service area of the Ida-Viru Central Hospital is Ida-Viru County. People living in south Estonia obtain specialist medical care at central hospital level, in the Tartu University Hospital, which also provides regional hospital services to the residents of this region.

Local and general hospitals are active treatment hospitals closest to where people live. These are small hospitals, mostly with 50 to 200 beds, which provide treatment for common conditions. There is at least one local or general hospital in each Estonian county. The exceptions are Tartu, Pärnu and Harju County where, according the HNDP, there will be no separate general hospital, but these services will instead be provided by a central or regional hospital. A local hospital is necessary in centres that are situated at a distance of more than 70 km from a general, central or regional hospital or in county centres.

Most hospitals are owned by local governments, although regional hospitals were originally founded by the State. In addition to the above-mentioned active treatment hospitals, there are seven specialized hospitals in Estonia. These are small (mainly private) hospitals, mostly with 20–30 beds, providing medical services in one or two fields. There are specialized hospitals in Estonia that

provide inpatient services in orthopaedics, vascular surgery, plastic surgery, psychiatry, obstetrics, gynaecology and otorhinolaryngology or the diseases of the ear, nose and throat.

Rehabilitation is an important part of active treatment, aimed at the restoration of impaired functions, preservation of restored functions or adjustment to a disability. Rehabilitation centres are located in regional and central hospitals. Inpatient rehabilitation services are also provided in some general hospitals.

Table 5.1 Hospital indicators, 1993–2006 (selected years)

Structure of hospital beds by specialty (%) 2000–2006[1]									
	1993	**1998**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Acute care beds	n/a	n/a	77.3	76.5	74.2	74.2	73.2	69.7	69.7
Psychiatric beds	n/a	n/a	11.0	10.2	10.7	9.9	9.0	9.8	9.8
Beds for TB	n/a	n/a	3.2	3.4	3.5	3.7	3.8	3.7	3.6
Nursing care beds	n/a	n/a	8.4	9.8	11.6	12.2	13.9	16.8	17.0
General indicators of hospital beds 1993–2006[1]									
Number of hospital beds	14 377	10 509	n/a	n/a	n/a	8 017	n/a	n/a	7 588
- Rate per 1000 population	9.73	7.62	n/a	n/a	n/a	5.93	n/a	n/a	5.65
Acute care beds	11 281	8 098	n/a	n/a	n/a	5 950	n/a	n/a	5 287
- Rate per 1000 population	7.55	5.84	n/a	n/a	n/a	4.40	n/a	n/a	3.94
Psychiatric beds	2 107	1 235	n/a	n/a	n/a	793	n/a	n/a	743
- Rate per 1000 population	1.41	0.89	n/a	n/a	n/a	0.59	n/a	n/a	0.55
Hospital admissions per 1000 population	192.1	204.1	n/a	n/a	n/a	192.5	n/a	n/a	188.3
ALOS	15.4	10.3	n/a	n/a	n/a	8.2	n/a	n/a	7.8
Bed turnover	19.9	26.8	n/a	n/a	n/a	31.3	n/a	n/a	34.6
Bed occupancy rate (%)	74.2	74.6	n/a	n/a	n/a	70.1	n/a	n/a	74.1
Number of treatment cases per 1000 insured individuals in specialist care[2]									
Ambulatory care	n/a	n/a	n/a	1 897	1 879	1 844	1 845	1 917	2 000
Day care	n/a	n/a	n/a	n/a	n/a	n/a	26	30	35
Inpatient care	n/a	n/a	n/a	210	200	202	197	190	195

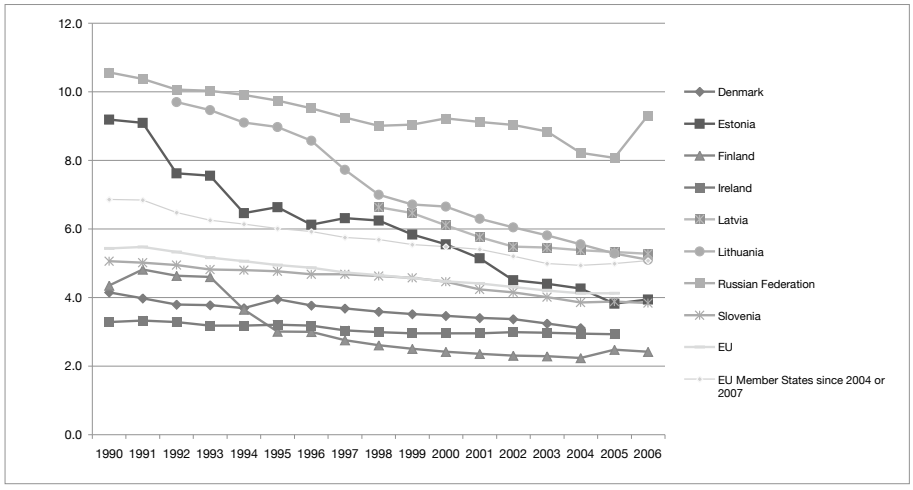
Sources: Ministry of Social Affairs[1] 2006; EHIF[2] 2007
Notes: n/a: Not available; TB: Tuberculosis; ALOS: Average length of stay

In addition, there are four specialized rehabilitation hospitals in Estonia. In a nursing care hospital, people with a permanent disease or disability who need a caregiver's services on a daily basis can obtain long-term care and treatment for their condition. There are 20 nursing care hospitals in Estonia that are situated in county centres and major towns. The number of beds in these hospitals should significantly increase in the future to offset the increased demand due to the ageing of the Estonian population.

In 2006, 252 930 patients were hospitalized, a number that has remained relatively stable since 2003. The total bed occupancy rate for all hospitals has not changed significantly between 2003 and 2006, averaging between 72% and 73%. In 2006, bed turnover has increased by 4% compared to 2005. In 2006 the ALOS was a little under eight days (see Table 5.1).

Fig. 5.2 shows that there has been a continuous decline in the number of acute beds in Estonia throughout the 1990s, departing from the Russian level and mirroring the strong trend in the other Baltic states and the more gradual decline in the EU. The number of acute hospital beds per 1000 inhabitants in Estonia is roughly in line with the EU average but well below the EU12 average and lower than that of the other Baltic states.

Fig. 5.2 Beds in acute hospital per 1000 population, Estonia and selected countries, 1990–2006 (or latest available year)



Source: WHO Regional Office for Europe 2007
Note: EU: European Union

Capital stock and investments

Amortization costs for the renovation of hospital infrastructure are funded by the Government budget through EHIF service charges and capital investments from the EU structural funds. Capital investment has been a problematic area for Estonia. Prior to 2000, financing of capital costs was the responsibility of hospital owners – usually the State or the municipalities. Since 2003, capital costs have been included in the prices paid to providers by the EHIF. However, funds for capital costs are now allocated on the basis of activity, without a clear link to capital investment needs (Tsolova et al. 2007). While medicine in general has undergone significant changes since the early 1990s, Estonian hospital buildings are not keeping up with these changes. Most hospitals were built over 25 years ago when social and medical services were organized in a different way and building standards were low. The large hospitals in county centres that were built during the Soviet era are no longer in keeping with modern standards and actual needs. Most hospital buildings are technically outdated or even unsuitable to provide hospital services and the medical insurance budget cannot cover all the investment necessary for the hospital network.

In the opinion of the Ministry of Social Affairs the required investment is approximately €880 million (EEK 13 billion). The EU and the Estonian Government have set common goals, based on the Hospital Master Plan, which they wish to achieve with the help of EU structural funds. The goals and appropriate measures are included in the National Development Plan for the Implementation of EU Structural Funds. The EU supported the renovation of Estonian hospital buildings through the ERDF with a total of approximately €25 million (EEK 389 million) between 2004 and 2006. For the period 2007–2013 approximately €140 million (EEK 2.2 billion) has been planned as hospital investment. The investment need of every hospital is planned in the Functional Development Plan of the hospital. Central and regional hospitals need investment to optimize the existing infrastructure and centralize inpatient specialized medical care into one centre of activity. General and local hospitals need investment to renovate existing buildings to enable structural and functional reorganization. Nursing hospitals need investment to develop the necessary infrastructure.

Medical equipment, devices and aids

EC Directives relating to medical devices were transposed into national law in December 2004, with the introduction of the Medicinal Products Act. The Competent Authority for medical devices in Estonia is the SAM. Medical devices are defined as any instrument, apparatus or appliance, including the software necessary for its proper application, or material or other product used on humans, whether used alone or in a combination, which does not achieve

its principal intended action in or on the human body by pharmacological, immunological or metabolic means, intended by the manufacturer to be used for human beings for the purpose of:

- diagnosis, prevention, monitoring, treatment or alleviation of disease;
- diagnosis, monitoring, treatment, alleviation of or compensation for an injury or handicap;
- investigation or modification of the anatomy or of a physiological process or replacement of a body part;
- birth control.

A medical accessory is a device which, whilst not being a medical device if used alone, is intended specifically by its manufacturer to support the purpose or function of a medical device.

Medical aids for certain diseases are included in the benefits package, but they are subject to a reimbursement rate of 90% and an annual ceiling on the maximum reimbursement. Estonia has no systematic HTA programme (see Section 4.2 *Planning and health information management*, Subsection *Health technology assessment*). The main activities in this field are assessing new services to be added to the benefits package and evaluating the need for high-cost technologies. In 1999 the Medical Devices Department of the SAM was set up to deal with medical devices entering the Estonian market, assuring quality control of those medical devices. However, it does not assess services and introduce regulations for medical devices so much as register products and assess their conformity to the requirements. There is no standard procedure for purchasing medical equipment and no database of the pricy equipment has been set up. Due to growing pressure from providers' management boards and increased competition among providers, there are strong incentives to introduce high-cost technology, but there is no assessment of value for money. Hospitals themselves decide on the need to obtain medical devices. Over recent years, hospitals have invested in expensive apparatus and information technology (IT) developments. It is also possible to apply for funding from the ERDF structural funds for purchasing medical equipment.

Information technology

Eurostat data (Eurostat 2007b) shows that Internet access is relatively high in Estonia (53% of households), at a level that is roughly equivalent to the EU27 average (54%) and higher than the EU12 average. Estonia has taken remarkable steps during its transition to an IT-based society, and the country has a well-developed communication network and good accessibility to Internet. In the public sector there are many examples of the use of IT solutions. Examples

are a service-based approach to information systems, secure environments for data exchange and the establishment of a citizen internet portal (www.eesti.ee), where citizens, businesses and officials can communicate with the state authorities and access their services. In the private sector, IT solutions are most evident in the fields of Internet banking and mobile telephone applications. Approximately 80% of Estonia's population hold an ID card that enables both their authentication in the country's electronic environment and a digital signature. Legislation has been put into force that awards equal authority to both digital and handwritten signatures and imposes upon public sector institutions the obligation to accept digitally signed documents. More information on this can be found in Section 2.5 *Patient empowerment*, Subsection *Patient information* and Section 4.2 *Planning and health information management*, Subsection *Information systems*.

From an IT perspective, the Estonian health care landscape is quite diverse. Most providers of health care services have already deployed an information system or use IT solutions developed by other providers, such as the health care image database created by the Tartu University Hospital, or the E-services of the EHIF. However, these information systems implemented by health care providers are not mutually compatible and cannot exchange information. To combat these IT problems, the Ministry of Social Affairs received funding from the EU Structural Funds in 2005 for the development of four E-health projects: Electronic Health Records (EHR), Digital Images, Digital Registration and Digital Prescription. Of the total costs of these E-health projects (approximately €2.2 million), 75% is funded by the EU and 25% by the Estonian State. The implementation of these four projects should create a unified national health information system that will be linked with other public information systems and registers while using the existing public IT solutions.

The IT system for EHR is a unique health information system that encompasses the whole country and connects the existing IT systems of health care providers. The EHR database will include the most important personal data, medical records, visits and other health-related patient information. With the help of EHR, medical doctors will be able to exchange documents that are produced in the course of the treatment and allow them to make enquiries to obtain time-critical (information that is needed promptly for the treatment of the patient) and general information about the patient. The information system stores the medical history of the patient and enables the doctors who are treating the patient to access this specific information. Data provided in the EHR can only be used for the treatment of patients and to check the patient's medical condition(s), assess medical quality and for national statistical purposes. The partners in the information system are medical establishments or other legal persons who

have entered into the accession contract with the eHealth Foundation and have the right to use EHR data and exchange medical information through the EHR system. EHR will offer the partners authorized access to the individuals' health data and create the opportunity for digital forwarding of medical documents between health care establishments. People can access their health data by using their electronic ID cards at all times and from all computers with Internet access, through the patient's portal.

Three large medical centres in Estonia – Tartu University Hospital, North Estonia Mediacl Centre and East Tallinn Central Hospital – have put a great deal of effort into developing the Digital Images project and are already using an archive of results of digital medical tests. The objective of the Digital Images project is to create a technical platform that enables all Estonian health care providers, including family physicians, to join a uniform information system and image database, including the transmission of large volumes of medical research results. The unified image database will have an interface to the EHR which will make it possible to monitor health condition changes over several years and involve foreign experts in order to provide an opinion on complex cases.

One of the largest problems of health care in Estonia at the time of writing is long waiting times for patients (up to several months) and the need for patients seeking appointments with a specialist doctor to call or visit all medical establishments. In the Digital Registration project, a centrally administered registration system is developed that will be interfaced with the existing information systems used for patient registration in medical establishments. Using an online web portal, patients and family physicians are able to find, book, change and cancel appointments with all medical doctors in Estonia. The Digital Registration will operate in parallel with – that is, not replace – the current patient registration system in which patients can make appointments either by phone or in person.

The Digital Prescription project is coordinated by the EHIF. Approximately 8 million prescriptions are issued in Estonia every year that will now be "digitalized". In the course of the project, a central system will be developed that will store the incoming prescriptions and issue, on the basis of a request, the prescriptions for the specific patient to pharmacies' information systems. The system will free the patient from the need to have the prescription at hand and from the risk of losing it. When the system is implemented the HCB, the SAM, the EHIF and the Ministry of Social Affairs will be able to obtain rapid and accurate reporting on prescribing and the information system of the prescription issuer will receive automatic confirmation from the EHIF information system regarding the applicable pharmaceutical subsidy (if any).

In the framework of the health information projects a legal space is being developed that will determine the rights and obligations of system users and, based on the expert opinions of biological and medical ethics authorities, will resolve the ethical issues related to these projects. The system is scheduled for launch in August 2008 when the conceptual phase of the E-health system will be completed. The management of the EHR, Digital Registration and Digital Images projects has been entrusted with the Estonian eHealth Foundation, established in 2005 by the Ministry of Social Affairs.

5.2 Human resources

The vast majority of physicians and dentists working in Estonia are graduates from the Faculty of Medicine, University of Tartu. Until the mid-1970s, six years of studies were required to become a medical doctor authorized to practise medicine. Since 1970, postgraduate training has gradually been given more emphasis. At first, one year of general medical postgraduate training (internship) was introduced, which could be followed by up to one year of specialized medical training. In the period 1991–1996 general postgraduate medical training was extended to two years, and only a few doctors received specialized training. Most of the practising physicians regularly took part in continuous medical education short courses. Practical experience, however, was gained while working and not through systematic training. This situation was felt to be highly unsatisfactory and in 1995 obligatory postgraduate medical training (residency) was introduced by law in order to become a medical specialist. This supported further professional development and increased the quality of graduated doctors.

Trends in health care personnel

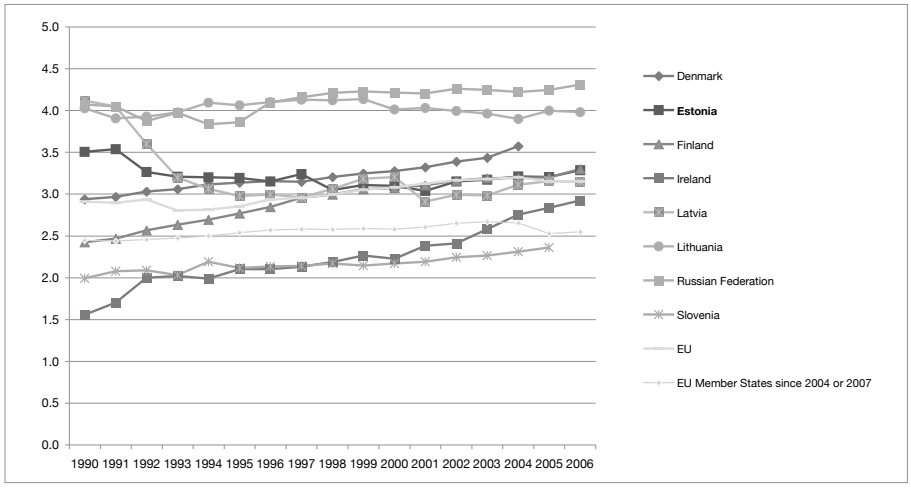
When health care reforms began to take place in the early 1990s, it was assumed that there was an oversupply of doctors, particularly in certain specialties. At the same time, there was – and still is – a shortage of nursing personnel and an uneven distribution of specialist services across the country. Between 1991 and 2000 the number of doctors fell by 24%, from 5500 to 4190, and the number of nurses by 14%, from 9900 to 8500 (Ministry of Social Affairs 2003). Although the number of doctors and nurses continued to decrease after 1998, the ratio per 1000 inhabitants has remained more or less stable – just over 3.0 and 6.5 per 1000 population, respectively – due to a parallel fall in the size of the population. In the period 2000–2006 the number of health care professionals has been slightly increasing (see Table 5.2).

Table 5.2 Health care personnel in Estonia per 1000 population, 1998–2006

	Crude rate per 1000 population								
	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Physicians	3.06	3.11	3.10	3.04	3.15	3.17	3.20	3.19	3.27
- surgical specialties	0.87	0.85	0.83	0.85	0.91	0.91	0.92	0.92	0.92
- therapeutic specialties	1.27	1.27	1.28	1.32	1.42	1.50	1.48	1.51	1.54
- psychiatry	0.11	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13
- clinical-consultation specialties	0.27	0.28	0.26	0.26	0.26	0.27	0.27	0.26	0.26
- Doctors without specialisation and family doctors (FP) in health care institutions	0.75	0.87	0.92	0.89	0.95	0.95	1.00	1.00	1.05
2. Dentists	0.74	0.76	0.76	0.82	0.79	0.83	0.87	0.89	0.89
3. Nurses and midwives	6.49	6.41	6.23	6.17	6.43	6.52	6.44	6.58	6.56
- nurses	6.10	6.00	5.86	5.84	6.12	6.23	6.14	6.26	6.23
- midwives	0.39	0.40	0.37	0.33	0.31	0.30	0.30	0.32	0.33
4. Pharmacists	0.47	0.52	0.60	0.59	0.56	0.57	0.63	0.63	0.65
5. Pharmacists' assistants	n/a	n/a	n/a	n/a	n/a	0.41	0.44	0.44	0.43
6. Caring professionals	0.50	0.42	0.63	0.64	0.50	0.62	0.56	0.51	0.64

Source: Ministry of Social Affairs 2006
Note: GP: General practitioner

Fig. 5.3 Number of physicians per 1000 population in Estonia and selected countries, 1990–2006 (or latest available year)

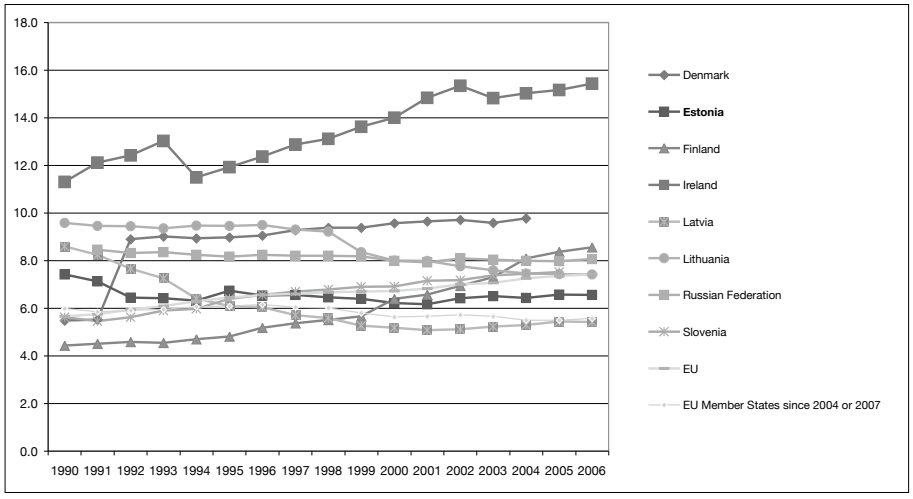


Source: WHO Regional Office for Europe 2007
Note: EU: European Union

Compared to its neighbouring countries, Finland and Latvia, Estonia has a similar number of physicians per 1000 population, which is roughly in line with the EU average, and slightly higher than Ireland (a country often used as an economic and social model by Estonian policy-makers). Whereas Estonia (and Latvia) show an initial decline after the end of the Soviet era, the Russian Federation and Lithuania still maintain the high levels similar to those in 1990 (see Fig. 5.3).

The number of nurses per 1000 population in Estonia (6.55 in 2006) is below the EU27 average (7.42 in the same year), but higher than the EU12 average (5.57 in 2006) (see Fig. 5.4). Overall it mirrors the observed trend for physicians, as compared to other former Soviet Union countries.

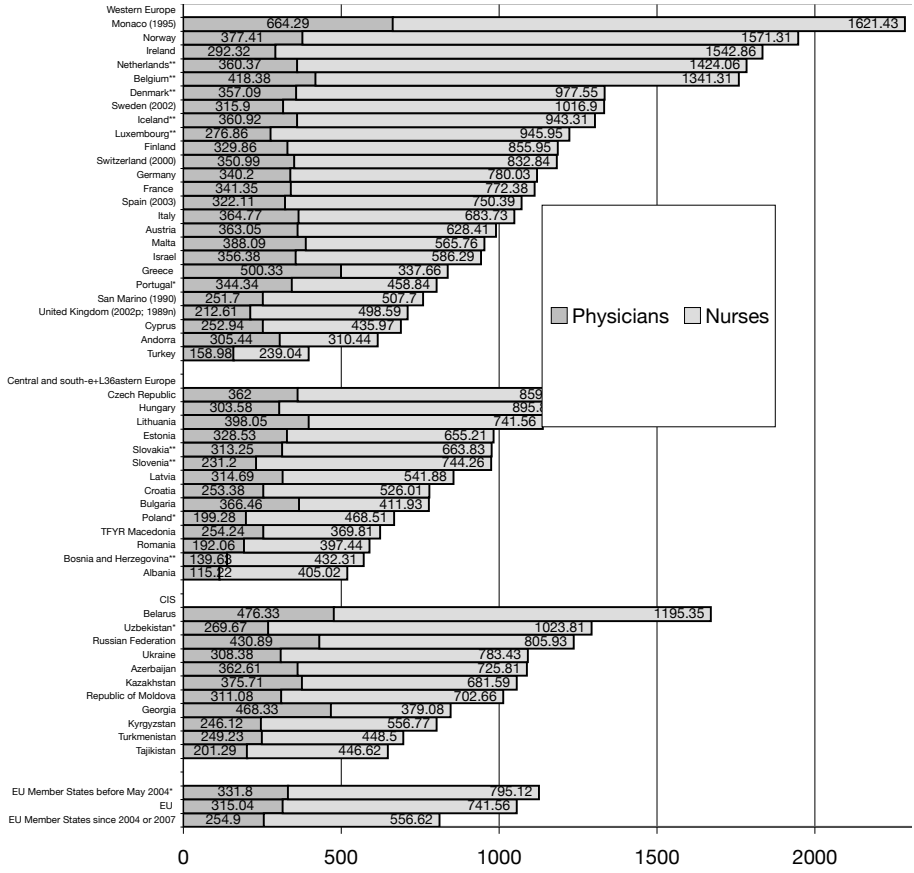
Fig. 5.4 Number of nurses per 1000 population in Estonia and selected countries, 1990–2006 (or latest available year)



Source: WHO Regional Office for Europe 2007
Note: EU: European Union

The ratio of physicians to nurses in the WHO European Region is demonstrated in Fig. 5.5 (here depicted per 100 000 population). It confirms the picture of Estonia being in line with the EU average with regard to number of physicians per 1000 population, as described earlier, but shows that the country is lagging somewhat with regard to the number of nurses per 1000 population, resulting in an average below that of the EU in terms of ratio of physicians to nurses. However, for both physicians and nurses, Estonia is above the EU12 average per 1000 population and is a front-runner among central and south-eastern European countries.

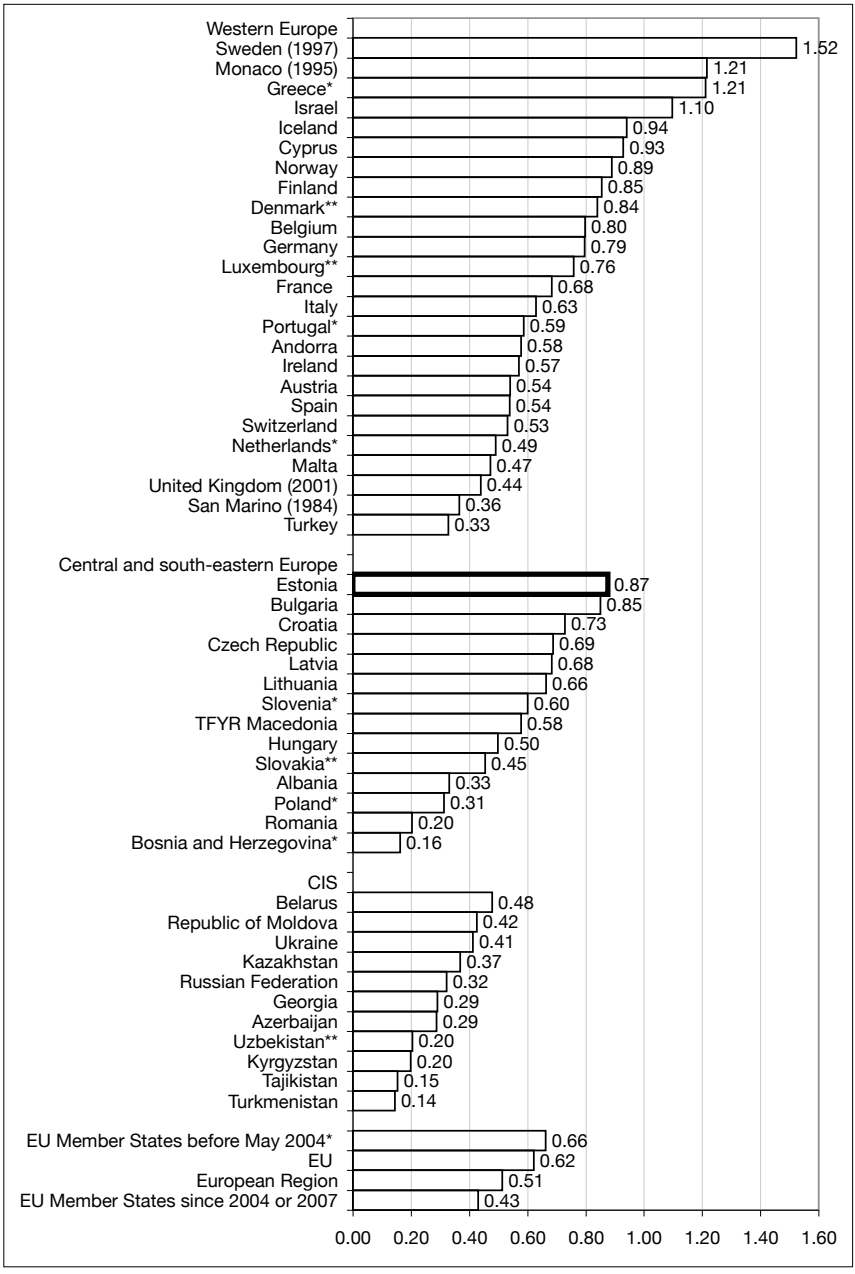
Fig. 5.5 Number of physicians and nurses per 100 000 population in the WHO European Region, 2006 (or latest available year)



Source: WHO Regional Office for Europe 2007
Notes: *Figure for 2005, **Figure for 2004; EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia; p: physicians; n: nurses

The decline in the (absolute) number of doctors can be attributed to several factors. First, the size of the population decreased by 7% during the first 10 years of independence, mainly due to re-emigration to the former Soviet Union. Second, there have been large numbers of medical graduates and young doctors leaving clinical medicine to work in better-paid positions in new health-related fields, for example in health administration, in pharmaceutical companies or even outside the health sector. There were a few years in the early and mid-1990s when fewer than 40% of medical graduates continued in medicine. Third, the official government policy to reduce the number of admissions to the Faculty

Fig. 5.6 Number of dentists per 1000 population in the WHO European Region, 2006 (or latest available year)



Source: **WHO Regional Office for Europe 2007**
Notes: *** Figure for 2005, ** Figure for 2004; EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia**

of Medicine was widely supported by doctors themselves, as it was assumed that there was an oversupply of doctors. The Ministry of Education reduced the number of students admitted from 200 per year in the 1980s to 70 in 1995. Since 2004 it has increased the admission level to 140 per year. The Ministry of Social Affairs considers 3 doctors and 8 nurses per 1000 population to be the optimal rate for the next 10–15 years (projected until 2020) and is planning to continue to fund the admission of 130–140 new medical students and 125 new medical residents annually.

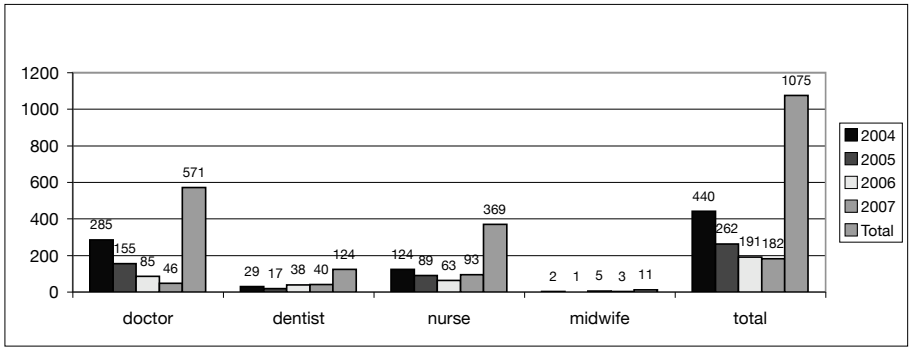
The number of doctors and nurses remains a major area of concern. At present, there are approximately two qualified nurses employed per doctor. The present ratio of nurses to doctors is considered to be too low, and the officially declared aim is to raise the ratio to 4:1. If the aim is 8.0 nurses per 1000 residents by 2015, by which time the annual intake of nurses should be 600. However, the lack of financial and human resources may compromise this goal. To keep the existing level at the time of writing, 300 to 320 nurses should graduate annually. Therefore, it is necessary to decrease the number of nurses dropping out of school or their professional work by means of other political instruments, including higher salaries and improved working conditions.

The number of registered health care workers is (still) higher than actual employment levels in the Estonian health care sector: of the qualified and registered physicians and nurses, 14% and 21%, respectively, do not actually work in the health care sector, but rather in the pharmaceutical industry (physicians) or the cosmetic industry (nurses), for example. Between 2004 and 2006, doctors and nurses working outside the health care sector posed a larger problem for the sustainability of the Estonian system than professional migration of health workers (4% of doctors and 2% of nurses) (Health Care Board 2008; Ministry of Social Affairs 2008a).

The number of dentists per 1000 population active in Estonia (0.87 in 2006) is above the EU15 and EU27 averages and the highest among central and south-eastern European countries (see Fig. 5.6).

Estonia only began to collect migration statistics in May 2004. The HCB has information about the number of doctors, nurses and other health care professionals who wish to take up and pursue a profession in another Member State, as expressed in the numbers of certificates (of conformity of study) issued, required for working abroad (see Fig. 5.7). According to EC Directive 2005/36 the issued certificates enable health care workers to start a recognition procedure in another Member State. However, these data might be misleading and provide only a partial picture of the situation because the HCB does not have exact feedback on whether health care professionals have actually migrated to another Member State (Health Care Board 2008).

Fig. 5.7 Number of certificates issued to health care workers to work abroad, 2004–2007



Source: **Health Care Board 2008**

Since EU accession, the HCB has issued 1075 certificates between 2004 and 2007 to health care workers, enabling them to initiate the mutual recognition of their professional qualifications and to start applying for a position in another Member State. The certificate is valid for three months after the date of issue. A total of 52% of doctors and 56% of nurses who have obtained a certificate continue to work in Estonia, and some doctors who have migrated to Finland only work there at weekends and provide health care services in Estonia during the working week.

The number of health care workers that have actually migrated is approximately 3.3% of the total number of health care workers who are working in the health care sector. When analysing the movement of human resources in the health care sector over the period 2004–2007, it becomes clear that after EU accession the desire to emigrate was greater among doctors than among nurses, and that the desire to work abroad has been steadily decreasing. Furthermore, younger health care workers in the age group 20–29 had the greatest desire to move abroad, followed by workers aged 30–39 years old (Health Care Board 2008). This may be linked with the fact that people from younger age groups are less likely to have a family, which could curtail the desire to emigrate (Kallaste, Võrk & Priinits 2004). Furthermore, some health care workers over 30 years old move abroad for professional development reasons. When analysing the destination countries, it is evident that the five most popular places are Finland, the United Kingdom, Sweden, Germany and Norway. Similarly, analysing the specialty of the professional requesting a certificate, approximately 63% are doctors without specialization, followed by family physicians, gynaecologists and anaesthesiologists (Health Care Board 2008).

The combined effect of the three factors (dropping out of the health care sector, migration and retirement) will inevitably reduce the numbers of doctors and nurses in Estonia in the near future, since as a result the growth in numbers of new health care workers has been below the replacement level. In 2006 only 90 new medical doctors graduated from medical education, while the total numbers of those who wanted to work abroad or outside the health care sector were 85 and 603, respectively. The fact that an average doctor's education takes approximately 10 years to acquire makes it virtually impossible to respond to short-term health personnel shortages, as higher admission levels will as a result have a delayed impact of approximately 10 years.

A similar trend is visible among nurses. In 2006, 175 new nurses joined the health care sector, while the nurses with a desire to work abroad and work outside the health care sector amounted to 63 and 1725, respectively.

According to HCB data, 79% of 65-year-old doctors and 59% of nurses continue to work. This helps to mitigate the negative effect of the decreasing number of health care workers caused by ageing, insufficient graduates and migration (Health Care Board 2008). The Ministry of Social Affairs funds increasing the numbers of doctors and nurses through training programmes.

Planning of health care personnel

An Advisory Committee on the training of health professionals was established in 2002 by the Ministry of Social Affairs to improve Human Resources for Health (HRH) planning and collaboration. The Committee comprises 20 stakeholders, including the Ministry of Social Affairs, the Ministry of Education and Research, training institutions, professional associations and advisors from the professional commissions for medical specialists and specialized dentists. The advisory committee makes proposals regarding how many health care workers are allowed to train annually (Ministry of Social Affairs 2008a). As shown before, the main challenge is that quotas for publicly funded admissions are not enough to cover the (future) need. It is for this reason that the University of Tartu also admits additional medical students who pay for their own education. The Ministry of Social Affairs devised a new health workforce planning model in 2005 to determine the annual intake into training. It takes into account the age profile of doctors and nurses, migration, the existing network of hospitals and the projected capacity of health care services in 2015.

The starting points for HRH planning are (Ministry of Social Affairs 2008b):

- the health care workforce planning model;
- training facilities of the education institutions;

- admission competition data from the previous year (for example, were there enough applicants?);
- recommendations to the Ministry of Education and Research from the Advisory Committee on the training of health professionals – this ministry then sets the admission quotas for publicly funded undergraduate and postgraduate medical training in educational institutions;
- employers' needs.

To improve the planning of human resources and ensure the stable provision of health care services, the Ministry of Social Affairs, together with University of Tartu and the EMA, signed a document of consensus in 2006. The document serves as an agreement on how many new extra doctors will be funded for the period 2006–2010. In the process of drafting the consensus document, the health care workforce planning model developed by the Ministry of Social Affairs and current migration levels of health care workers were taken into consideration.

While planning to fund additional training for health care professionals, it is important to note that an increase in capacity is impeded not only by the lack of financial resources but also by the capacity of the educational institutions (teaching facilities, instruments and staff) as well as by the shortage of candidates for admission. Based on the calculation of the Ministry of Education and Research the number of secondary-school (high-school) graduates will decrease by 60% in the coming years, which could reduce admissions to health professional training. Yet the university and colleges do not wish to accept less able candidates, because this would still not guarantee a sufficient number of graduates, and might impair the quality of services.

Training of health care personnel

The University of Tartu Faculty of Medicine is the only public academic medical training institution in Estonia. It is responsible for undergraduate training in medicine, pharmacy and dentistry, postgraduate specialization, as well as Master's- and Doctoral-level training for all areas including nursing and public health. Admission quotas for publicly funded undergraduate or postgraduate medical training positions are set by the Ministry of Education, based on proposals put forward by the Faculty of Medicine and agreed to by the Ministry of Social Affairs and the professional associations. However, the University of Tartu and the Faculty of Medicine can admit additional students for medical training who pay for their own education. These students have the right to continue their training in publicly funded positions if such positions become available during the course of their studies. The University of Tartu

has used this option for up to 10% of the total number of admitted students and has also admitted up to 20 students from abroad (mainly Finland).

In Estonia, postgraduate medical training is entirely financed by the State, that is, costs are covered from the state budget through the budget of the Ministry of Social Affairs. The number of state-funded residency programme places is formalized by a contract between the University and the Ministry of Social Affairs. Residency programmes must be organized by the University. The theoretical part of a residency programme must be conducted at the University and the practical training at teaching hospitals. A residency teaching hospital enters into an employment contract with a resident physician for a specified term corresponding to the duration of the practical training conducted at the residency teaching hospital (Universities Act of 1995, 2004 amendment, see Section 10.2 *Principal legislation*).

Since 1997, medical and dental training has been carried out in line with the minimum standards set out in the relevant EC Directives. Both types of training programme were evaluated and approved by the EC in 2002. The standard length of medical training is six years and the length of dentistry training is five years. After completing medical training, the graduate has the right to continue her/his studies for a Doctorate, according to the procedure established by the council of the university (Universities Act of 1995, 2004 amendment, see Section 10.2 *Principal legislation*).

Medical or dental training is followed by a residency of three to five years in a specialty of medicine under the conditions of (and according to) the procedure established by the University of Tartu Act. In Estonia there are 33 medical specialties and 2 dental specialties. Since 1995, postgraduate medical training has been brought in line with EU requirements. The postgraduate medical training takes place under the supervision of the University of Tartu Faculty of Medicine. The final examination after residency training is conducted in front of a committee, the members of which are the current professionals of the specialty. If s/he passes the exam, the resident is granted the title of a medical specialist in the studied field.

Since 1997 pharmacist training has been harmonized with EC Directives. The standard training period amounts to five years, four and a half years of theoretical and practical instruction and six months of professional traineeship. Pharmacist training is conducted at a university, whereas practical instruction in pharmacist training may be given outside the university, but under the supervision of the university. Professional traineeships must be conducted in a pharmacy open to the public or in a hospital under the supervision of the pharmaceutical department of that hospital. Pharmacist training is completed by taking the final examination or by defending the final thesis, after which

a diploma and a Master's Degree are awarded. A person who has completed her/his pharmacist training has the right to provide services as regulated under the procedure established by the Medicinal Products Act and is entitled to continue her/his studies with a Doctoral study (Universities Act of 1995, 2004 amendment, see Section 10.2 *Principal legislation*).

Estonia has two public nursing colleges (Tallinn and Tartu Health Colleges) at which basic training for nurses and midwives are provided. Since 2002 all curricula have been revised and approved by the Ministry of Education and Research and are now considered to be professional higher education. Specialized nursing education is provided only in the Tartu Health College. Since 1996 nursing and midwifery training has been harmonized with EU requirements. The standard duration of nursing and midwifery training is 3.5 and 4.5 years, respectively. The training comprises theoretical and practical instruction and is conducted at an institution of professional higher education, whereas clinical instruction may be given outside the institution of professional higher education, under its supervision. In their theoretical instruction, students must acquire the knowledge, understanding and professional skills needed to plan, provide and assess nursing care. As part of their clinical instruction, students have to participate in the activities of the institutions concerned in so far as those activities contribute to their training, enabling them to learn to undertake the responsibilities inherent in nursing and midwifery care. An educational institution awards a diploma to individuals who have completed nursing or midwifery training. After completing such training the student has the right to continue her/his studies to obtain a Master's Degree under the conditions and according to the procedure established by the council of the educational institution (Universities Act of 1995, 2004 amendment, see Section 10.2 *Principal legislation*).

Since 2001, the nursing profession is incorporated in Estonian legislation. Previously, Estonia did not have any regulations for nursing activities. Until 2006, Estonia had 16 different nursing specialties with very different training periods varying from 2 to 8 months. From 2006 the Ministry of Social Affairs reduced the number of nurses' specialties and created new study programmes and admission requirements. The field now includes four nursing specialties, which include PHC nursing, clinical nursing, intensive care nursing and mental health nursing (Universities Act of 1995, 2004 amendment, see Section 10.2 *Principal legislation*).

The University of Tartu Faculty of Medicine also offers a Master's Degree programme for public health (Master of Science in Health Sciences), with the following specialties: health management and health promotion, occupational health, and environmental health. Admission to the programme is determined on the basis of educational level, for example people who have a Bachelor's

Degree or equivalent level of education in medicine, biology, health sciences, social sciences or economics are eligible. Furthermore, it is possible to receive training as an occupational therapist, a health promotion specialist or a specialist in health protection at the Health Colleges.

While planning of health care workers for the health care sector has improved in recent years, Estonia does not have enough health economists, public health specialists and health informatics specialists and there is a lack of a clear concept of how many public health specialists are needed. However, first steps are being taken to improve planning of public health specialists and since 2008 this has become the task of the Advisory Committee on the training of health professionals.

Registration/licensing

Since 2002, the competent medical licensing authority in Estonia is the HCB. The HCB is a governmental agency operating under the auspices of the Ministry of Social Affairs. The HCB registers all health care professionals (physicians, dentists, midwives and nurses) and pharmacists; recognizes the qualifications of doctors, dentists, nurses, midwives and pharmacists; issues registration certificates; and issues or revokes the licences of health care providers. The HCB also issues the appropriate certificates to Estonian health care professionals who wish to work in other EU Member States.

The HCB registration procedure is regulated under the Health Services Organization Act, the Medicinal Products Act and regulations of the Minister of Social Affairs. In order to provide health care services and pharmacy services in Estonia, it is compulsory to be registered. Registration is a one-off process and there is an applicant fee of €64 (EEK 1000). In order to accomplish registration, a health care professional seeking work in Estonia must submit a completed registration form to the HCB. In addition to the registration form, every applicant must submit all diplomas/certificates attesting to their qualifications in the relevant health profession and a valid certificate confirming their right to practise the profession in the Member State of origin. The HCB verifies the authenticity of information submitted in the documents, certifies qualifications and makes a registration decision within one month of the submission of the documents. For EU Member States nationals, the registration conditions for health workers are same as for Estonian nationals (Health Services Organization Act of 2001 and Medicinal Products Act of 2004, see Section 10.2 *Principal legislation*).

Non-EU nationals have to wait for registration for approximately two months from submission of the relevant documents. In order to assess the suitability of qualifications of individuals who have acquired qualifications outside the EU

Member States, the HCB may require the applicant to take aptitude tests or to complete probation periods. When a person passes the registration procedure and is employed by an Estonian health care provider, the opportunities for professional development and career development, along with wage conditions, are the same as those for Estonian doctors and nurses. In addition, there are no differences in access to training opportunities. The accreditation of health care workers is voluntary in Estonia since 2001, but in order to increase professional experience health care professionals must undergo additional training related to their profession of at least 60 hours each year. Top managers and health care professionals working as heads of structural units must regularly undergo management training of at least 40 hours per year in addition to professional training. The growth of professional experience of the health care workers is the responsibility of the employer (Health Services Organization Act of 2001, see Section 10.2 *Principal legislation*).

Doctors' and nurses' career paths

After completion of a medical degree, physicians have the following career path opportunities:

- work as a doctor without specialization, but not as an independent provider, that is, under the supervision of a specialist;
- continue her/his studies in postgraduate medical training;
- continue her/his studies for a Doctorate, according to the procedure established by the council of the university;
- work as a civil servant in the field of health care management (in the Ministry of Social Affairs, the EHIF or in the pharmaceutical sector).

After completion of a medical degree, nurses and midwives have the following career path opportunities:

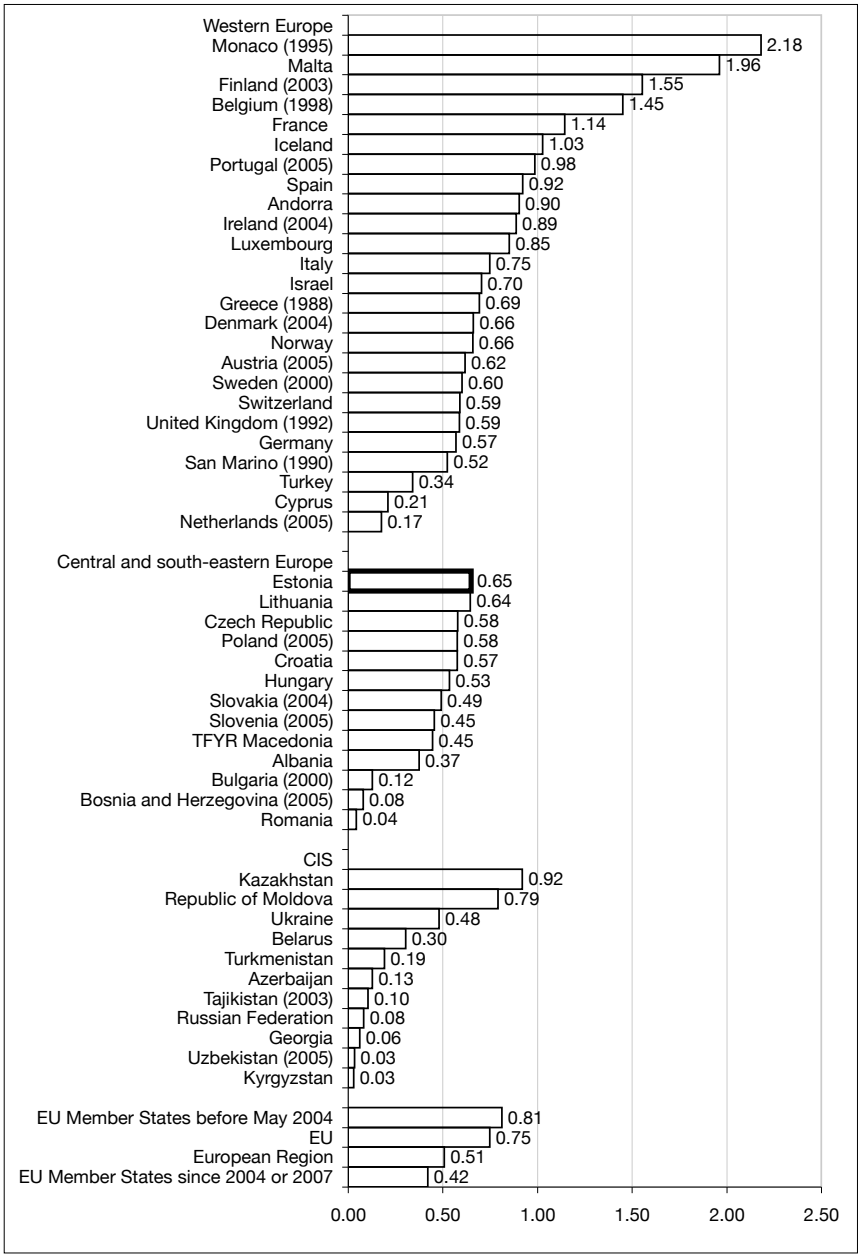
- work as a nurse or midwife together with a health care provider;
- continue her/his training in a Master's programme;
- work as a civil servant in the field of health care management (in the Ministry of Social Affairs) or in the pharmaceutical sector.

Hospitals managements have considerable autonomy in making decisions about promotions of health care workers or Heads of Units.

Pharmacists

In 2006 there were 562 pharmacies in Estonia and 876 pharmacists and 580 assistant pharmacists working in these pharmacies (SAM 2007). Estonia's number of pharmacists per 1000 population (0.65) in 2006 lies between the

Fig. 5.8 Number of pharmacists per 1000 population in Estonia and the WHO European Region, 2006 (or latest available year)



Source: **WHO Regional Office for Europe 2007**
Notes: **EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia; Countries for which data were not available have not been included**

EU15 average (0.81) and the EU12 average (0.42) and is the highest among central and south-eastern European countries (see Fig. 5.8).

The activities of pharmacies are regulated by the Medicinal Products Act and by governmental and ministerial regulations. Most of the community pharmacies are privately owned; only two pharmacies are currently under public ownership. As the owner of a pharmacy is a legal entity, there are no valid restrictions regarding the number of pharmacies owned. Approximately 80% of pharmacies are part of Estonia's four or five pharmacy chains and the pharmacies of each chain operate under the same legal entity. A wholesaler cannot act as a pharmacy but its subsidiary company can. For example, a wholesaler cannot be a pharmacy licence holder, but can own pharmacy shares and open other subsidiary companies that are active in the pharmacy field and which hold pharmacy licences. In Estonia pharmacy licences are issued to pharmacy owners, not to pharmacists personally. Therefore, it is virtually impossible to know who the shareholders are (shareholders can also be registered abroad). In reality, over 80% of pharmacies are under the influence of wholesale companies such as Magnum Medical Ltd and Tamro Eesti. The vertical integration of wholesalers and pharmacies is common practice, even though this is not directly permitted according to Estonian legislation.

Before 2006, the opening of new pharmacies was not based on geo-demographic criteria. As of January 2006 a restriction came into effect stipulating that no new licences could be issued to pharmacies and branch pharmacies in urban areas. Furthermore, pharmacies cannot change their location where fewer than 3000 inhabitants are served per pharmacy unit. The restriction does not apply if the new location is within 500 metres of the old location (Medicinal Products Act of 2004, see Section 10.2 *Principal legislation*). In rural areas, a new pharmacy or branch pharmacy may not be opened within 1 km to an existing pharmacy unit. If the number of inhabitants increases or if the local government has submitted a well-founded written justification request to the SAM for the opening of a new pharmacy unit, it will be announced on the web site of the SAM. If more than one application is submitted, a person applying to open a retail pharmacy is favoured. In the event that more than one application for opening a retail pharmacy is submitted, lots are drawn by the applicants. The results of the drawing of lots are announced on the home page of the Agency of Medicines within three working days. The person who has been granted the right to open a pharmacy unit must apply for a licence within 180 days (Medicinal Products Act of 2004, see Section 10.2 *Principal legislation*).

Pharmaceutical organizations in Estonia are organized on a voluntary basis. There is no obligation to be a member of one of the following major organizations:

- the Estonian Pharmacists Association, which covers approximately 350 community pharmacists (44% of all community pharmacists in 2006);
- the mainly business-oriented Estonian Pharmacies Association, which represents the pharmacies operated by Apotheka, a pharmacy chain of the wholesaler Magnum Medical AS;
- the Society of Hospital Pharmacists, which unites pharmacists and pharmacist assistants working in hospital pharmacies (with over 100 members).

In addition, there are a couple of small specialized organizations: the Estonian Academic Pharmaceutical Association (academic pharmacists) and the Union of Pharmacists Assistants (Pudersell et al. 2007).

6 Provision of services

6.1 Public health

During the transition period, as with the health sector in general, the public health system in Estonia underwent a significant transformation. In the Soviet era, the public health system was centralized and public health services were provided under a unified institutional structure, the so-called SANEPID system. The main emphasis of public health service was on enforcement and control. The reforms of the public health system began with the introduction of the Public Health Act in 1995. This Act forms the basis of the current framework for the financing and provision of public health services and emphasizes the significance of networks with intersectoral and interdisciplinary approaches. Since 2000 the role of public health has increased due to the process of joining the EU, particularly in the areas of health protection and occupational health. In order to comply with EU requirements, Estonia undertook reforms in the public health sector in terms of organization and legal competence, adequate and relevant skills, and appropriate policies and procedures.

Following a period of reform of the institutional structure of public health governance in Estonia, there are currently a variety of institutions responsible for public health. The main actors involved in public health at national level are the Ministry of Social Affairs (its DPH), the HPI, the NIHD, the EHIF, the Labour Inspectorate, the Environmental Inspectorate, the HCB and the Ministry of the Environment. At the county level, public health activities are coordinated by a health promotion specialist dealing with health issues and public health programmes in county governments, the county office of the HPI and the county office of the Labour Inspectorate. These agencies are expected to implement the guidelines and programmes set up by their parent agencies at the national level and to ensure that other institutions follow public health regulations.

At municipal level the local municipalities control whether health protection legislation is adhered to and implemented in their territory and coordinate activities concerning health promotion and prevention of diseases.

Although the legal framework regarding tasks and responsibilities of different institutions is defined by law, the definition of tasks and responsibilities is not entirely clear. Therefore, the relationship between the different institutions at different levels is an area in need of attention and clarification. Better collaboration is required in terms of sharing and harmonizing information at all institutional levels, as well as empowerment of the municipalities. Furthermore, their role in implementing public health services, including health promotion and disease prevention, should be expanded. A systematic approach to improve the public health function is lacking. There are many vertical activities and responsibilities, but the horizontal linkage and coordination is relatively weak. However, this is recognized in the new national health strategy 2008–2020, which sets out the basis for further improvement of public health. In addition, investment is needed in infrastructure, information systems and human resource development to create better vertical and horizontal linkages between health care, public health and social sectors and support service models. This should enable the delivery of integrated services, which should improve health system efficiency and effectiveness.

Control of communicable diseases

Surveillance and control of communicable diseases in Estonia are undertaken by the HPI and regulated by the Public Health Act (1995, last amendment 2007), the Communicable Diseases Prevention and Control Act and other regulations of the Government and Ministry of Social Affairs. Since May 2005, the systems comply with EC Directives and regulations. The reporting system for communicable diseases is mandatory for family physicians, medical consultants and laboratories engaged in microbiological, virological, parasitological and serological testing. The system requires the reporting of 62 notifiable communicable diseases and 88 etiological agents to the local County Department of the Health Protection Regional Service. The system is largely paper based (with standard forms); telephone and e-mail reporting is carried out in the case of indications of serious infectious diseases or suspicion thereof. Reports are gathered at the local County Departments of Health Protection Regional Services, aggregated and then sent to the Regional Service. Finally, the data are aggregated nationally at the HPI Central Authority. Although the system of communicable disease surveillance in Estonia is comprehensive and functions well, further development is needed regarding improvement of the electronic register for communicable diseases.

Estonia has a countrywide reporting system for communicable disease outbreaks. The reporting of any communicable disease outbreak is mandatory. The system covers family, general and international communicable diseases outbreaks and collects individual data on each human case within the outbreak. Epidemiological case investigation protocols are prepared by the HPI (or Veterinary and Food Board, VFB) for the immediate investigation of communicable disease outbreak (including foodborne disease with the VFB) and an obligatory outbreak investigation report is prepared. The Ministry of the Environment prepares proposals for risk analyses of certain emergency and accident situations and an action plan for emergencies is under development within the Ministry (including radiation, for example). A toxicological information centre is under development in the Chemicals Notification Centre, which already maintains a database in which information on first aid and therapy for each particular case can be found (if the chemical/good/product is in the database).

County Departments of Health Protection Regional Service are responsible for the detection and investigation of outbreaks of communicable diseases. Each department contains a designated outbreak investigation team, including epidemiologists and environmental health specialists. Investigation procedures include epidemiological investigation, laboratory diagnostics and, if suitable, legal action. In the case of a foodborne disease outbreak, the HPI investigation team collaborates with food safety specialists of the VFB local service according to the approved bilateral foodborne disease investigation guidelines. The VFB and the HPI share zoonosis monitoring data on a monthly basis at the local level, but if the need arises, there is daily or immediate contact and a system for dealing with such acute outbreaks.

Air, water and food quality

Air pollution monitoring takes place according to the Ambient Air Protection Act, which, together with specific regulations, covers all requirements set out in the relevant EC Directives. The main purpose of the Act is to maintain the quality of ambient air in regions with high air quality and to improve it in areas where air quality does not meet the requirements.

Water supply, use, quality and sanitation are regulated by the Public Health Act, the Water Act and the Public Water Supply and Sewerage Act. Water supervision is divided between the Ministry of the Environment (through the Environmental Inspectorate) and the Ministry of Social Affairs (through the HPI). The Ministry of the Environment is responsible for assuring and preserving the quality of both ground water and surface water. Responsibility for protecting the health of the population and coordinating activities in this

area falls under the HPI. In 2002 approximately 40% the population drank water of poor quality due to high iron levels. As both food safety and environmental health issues are important parts of the EU's *acquis communautaire*, Estonia's accession to and membership of the EU has brought about considerable investment in these areas, to the detriment of other areas affecting public health (see Section 1.4 *Health status*).

Activity related to food safety is regulated by the national Food Act. All necessary resources, such as data, investigations and evaluations are provided for risk assessment via different monitoring programmes and laboratory analyses. Monitoring programmes take place on a regular basis. Laboratory testing is only carried out by authorized official laboratories. Non-health sectors take the lead in areas such as food safety and environmental hazards. The Ministry of Agriculture, together with its VFB, is the leading institution for all major legislation and national programmes concerning food, including alcohol. Since 2007, the responsibility for food safety surveillance has shifted from the Ministry of Social Affairs to the Ministry of Agriculture. Although the activities and responsibilities of different institutions and authorities are regulated by law, progress can still be made in intersectoral cooperation.

Occupational health and injury prevention

In 1999 the Occupational Health and Safety Act came into force. According to this Act, all employers have an obligation to ensure the safety of the working environment. The first draft of the new occupational health development plan for 2008–2012 was worked out by a working group of occupational health specialists in 2006, and is expected to be completed by the end of 2008. The plan highlights the quality and development of occupational health services, identifies problems in occupational health and presents possible solutions. In addition, on the basis of experience with unemployment insurance, which was introduced without increasing the employers' tax burden, establishing occupational accident and disease insurance has been under discussion.

Occupational health is assessed and analysed through collection of health statistics on occupational conditions, work-related health conditions and occupational health. Employers are responsible for assessing their occupational hazards and, based on this risk assessment, assuring their employees medical checks-ups. The Labour Inspectorate is responsible for supervising employers' compliance with existing health and safety regulations. Although the system of occupational health legislation, regulation and operating practices is relatively well established, there remain weak spots in this area. In particular, there is insufficient registration of work-related accidents, mainly because of a lack of capacity in the system. Occupational and workplace health is an area in which

significant opportunity exists, for example improving health promotion and disease prevention outside the health care setting, long with clarification of the employers' responsibilities in terms of assessing and providing workplace safety.

Health promotion

Activities in the area of disease prevention and health promotion have been a central concern in Estonia in recent years and significant progress has been made in the development of strategies delivered at both population and individual levels. In 1995, systematic health promotion activities were launched when a system for financing of national and community-based health promotion projects was established by the Ministry of Social Affairs. At the beginning, health promotion activities were mainly financed from the budget of the EHIF, which is quite unique in international practice. This guaranteed stable financing for health promotion during the 1990s, when there was a lack of sufficient financing from the state budget and the municipalities' role in health promotion activities was not clear. However, parallel funding of health promotion activities by EHIF and the State has been applied continuously over the years. Health promotion activities funded by the EHIF were mainly targeted at noncommunicable disease risk factors. During the period 1995–2004, 3500 project applications were proposed and over 1822 applications received funding from the EHIF. Since 2005 the system has changed due to the need to harmonize legislation with EC Directives (related to public tenders) and the demand-driven system was changed into a top-down planning system, which allows increasing equity in activities within different population groups (such as equal distribution of Estonian- and Russian-language activity, and activities in all counties). During 1995–1998 the Ministry of Social Affairs initiated several national programmes. At state level, different public health programmes were approved by the Government and funded from the state budget. Once national programmes were launched, the share of EHIF funding in those public health areas decreased proportionally.

Over the years, national health programmes have been broadened into national health strategies with improved quality and accountability. New strategies usually emerge when there is a clear commitment from the Government, as this guarantees funding. These public health strategies have 4-year activity plans agreed by the Government with expected budget lines, performance indicators and measures to tackle particular public health issues. Currently, there are strategies to address five key public health challenges: the National Strategy for the Prevention of Cardiovascular Diseases 2005–2020, the National HIV/AIDS Prevention Strategy 2006–2015, the National Cancer Prevention Strategy 2007–2015, the National Tuberculosis Control Programme 2008–2012

and the National Strategy on the Prevention of Drug Dependence 2012. The National Public Health Research and Development Programme 1999–2009 is a sixth programme that has been approved and funded by the Government as an additional tool to support public health research. All these strategies are supervised by the Ministry of Social Affairs (DPH). National strategies are designed to work closely with local institutions and people, mainly through county governors' offices. Partner ministries are also involved in planning and implementing activities through participation in programme committees. However, their position has sometimes been weak, as political responsibility usually lies solely with the Minister of Social Affairs. Existing national public health strategies need sustainable financing and institutional capacity in order to expand. In particular, local communities should be engaged, civil society organizations strengthened and human resource capacity developed to improve the effectiveness of public health strategies (Atun et al. 2005).

Since 2005, health promotion projects funded by the EHIF are part of the national health strategies, with clear objectives and indicators and a monitoring system to measure the outcome of the strategy. Currently, projects financed by the EHIF involve campaigns and actions that support health promoting activities in various settings, such as preschools, schools, hospitals, general practitioners, workplaces and local municipalities. Examples of this support include information through media, further training, promotion materials, supervision, counselling and conferences. One third of the health promotion budget of the EHIF is invested in community development, mainly for injury prevention (connected with alcohol abuse).

Disease prevention

Apart from the national public health strategies funded directly from the state budget, part of the EHIF budget is dedicated to national disease prevention activities. Most of these are either part of PHC or specialized medical care. Disease prevention projects cover preventive services such as youth health counselling; early detection of cervical and breast cancer (see later in this section) and osteoporosis; screening for phenylketonuria, hypothyreosis and hearing of neonates; prevention of heart disease; prenatal diagnosis of hereditary diseases; and school health services. However, these projects do not cover uninsured people.

Before the funding of a disease prevention project is agreed, an analysis of the evidence base and of cost–effectiveness is carried out with the cooperation of medical associations. There must be a definable relevant intervention with respect to the particular disease before the prevention project will be started. Some of the child check-ups are part of the family doctor bonus system, which

includes criteria for vaccination coverage and health check-ups in certain age groups (1 month, 3 months, 12 months, 2 years and 7 years). The objective of the family doctor bonus system is to motivate PHC providers to address prevention issues (also see Section 6.2 *Primary care*).

Screening of breast and cervical cancer is financed by the EHIF and coordinated by the Cancer Screening Foundation. It includes all women aged 50–65 years (since 2002) and for cervical cancer all women aged 35–59 years (since 2003). Other screening activities are carried out within the health care system. An evaluation study of breast cancer screening has shown positive effects on public health. From 2002 to 2006, the project has achieved a relatively high level of coverage in the target population (55% in 2006). This coverage share shows an increasing trend and the percentage of early detection of breast cancer is high (76%). According to European Guidelines on Breast Cancer Screening and Diagnosis, screening should find more than 5 cases of breast cancer per 1000 women that participate in the screening. The results of breast cancer screening in Estonia comply with these targets; however, there is no clear indication as to whether the cancers that are detected through screening are in addition to the cases detected annually (approximately 550 cases per year) or those cancers which were detected before the screening programme were put in place (Aaviksoo, Lai & Vaask 2007).

The national immunization programme is defined by the Minister of Social Affairs, implemented by the HPI and financed by the EHIF and the HPI – the EHIF pays doctors for vaccination, while the HPI buys the vaccines. Immunization is the responsibility of family doctors, although school doctors are also allowed to provide this service, which is illustrated by the fact that most immunizations provided to the school-age population are carried out by school doctors. There has been some debate about the division of public health tasks between family and school doctors, but so far, the shift of immunization responsibilities from school to family doctors has not negatively affected levels of immunization. The vaccination coverage in Estonia is rather good, as in all relevant immunization categories coverage of children is over 95%. The vaccination of infants against Haemophilus influenzae type B was officially started in 2003 and the coverage has since then increased from 27% to 88% (2006) (WHO Regional Office for Europe 2007) (See also Section 1.4 *Health status*).

Private sector and nongovernmental organizations in public health

The public health service providers' range is very limited. The NIHD, responsible for the implementation of all national public health strategies, does not carry out all activities by itself, but rather outsources some services to NGOs, health care service providers or private companies. Although the

private sector is involved in the provision of public health activities (such as HIV prevention), investments are related to rather specific public health topics. Private companies see this as prestigious, rather than as an obligation. At the time of writing there are no guidelines on how to deal with private companies, which can raise ethical questions in terms of cooperation with, for example, the pharmaceutical, tobacco and alcohol industry. Therefore, elaborating ethical guidelines on how to cooperate with the private sector in the area of public health would be a useful step.

The NIHD has had five years' experience in cooperation with NGOs in purchasing public health services (such as needle exchange programmes, illegal drugs, alcohol and smoking prevention, sexual health, youth counselling, etc.). The role of NGOs has generally been a positive one in the improvement of public health activities. However, due to the limited number of actors involved, there is practically no competition in providing public health services. At the time of writing most of these NGOs are not very efficient due to a lack of human and financial resources, which demonstrates a need to increase the number of NGOs involved in the provision of public health services. In addition, there is no clear quality control system, in terms of services provided by NGOs. A financing mechanism for purchasing public health services, and guidelines for assuring the quality of those services, are also needed.

Although progress has been made in recent years in all areas of public health, significant gaps remain. Evaluation of public health services in Estonia has highlighted several weaknesses in the stewardship and oversight of public health. One of the key problems in public health, as in many other areas of health care, is the lack of human resources. The lack of systematically delivered basic and continuous education of public health specialists is hampering the development of a more effective public health system. The legal framework for public health, the Public Health Act, has many loopholes and there is room to better define and improve the stability of the financial structure and services delivery. While there are many activities in the area of public health, they are not clearly brought together within an overall framework, defining responsibilities and setting goals. There is also a need for a more coherent system of financing at the state and local levels to ensure sustainability.

6.2 Primary care

Prior to independence, the Estonian health system was based on the Soviet Semashko model, characterized by a large network of secondary care institutions and a fragmented PHC level, with a tripartite system of adult, children and

women's polyclinics and specialized dispensaries. The family medicine specialty did not exist. Polyclinics were staffed by internists, paediatricians, gynaecologists and subspecialists. Primary care doctors acted as referral points to specialists rather than as gatekeepers. The citizens had direct and free access to emergency and specialist services in dispensaries and hospitals. All hospitals and PHC units were publicly owned and health personnel were salaried public employees. Doctors who worked at the PHC level had low status and pay compared to specialists. The system had a curative focus with excessive secondary care structures to be financially sustainable (Atun et al. 2006).

Reform of primary care in the 1990s

Reform of primary care began in 1991, with the aim of developing a family medicine-centred PHC system and establishing family medicine as a medical specialty. In 1992, re-specialization courses for family practitioners started at the University of Tartu. A 3-year residency programme for new graduates and in-service training for specialists working in PHC were introduced. In 1993, family medicine was designated and recognized as a medical specialty, and a new 3-year postgraduate training programme in family medicine was set up. Since 2003, only one 3-year residency programme is used for the training of family doctors. Also, some specialists already involved in ambulatory care – mainly internists, paediatricians and gynaecologist working in polyclinics – were retrained as family doctors. However, due to the absence of incentives for doctors to practise family medicine, this option was only taken up by a few (see Section 5.2 *Human resources* for further details about training).

In 1997, changes in health service regulations required people to register with a particular family doctor (composing practice lists). The same year, family doctors were contracted by the EHIF to provide PHC services. Until 1998 the services were provided in polyclinics and ambulatory facilities owned by the municipalities and funded through the EHIF contracts, based on a fee-for-service system. In 1998, reforms introduced a new legal status for family doctors (as independent contractors) as well as a change in the payment system from a fee-for-service system to a mix of capitation, fee-for-service payment and additional allowances. The new system was intended to support the family doctors' gatekeeping role and ensure continuity of care. Although the need for reform of primary care had been recognized in the late 1980s, before independence, the process of reform did not go as smoothly as anticipated. The reforms were introduced without substantial difficulty in most regions, except Tallinn and the north-eastern part of the country. In Tallinn, the final transformation took place when patients of the few remaining district paediatricians were allocated to family doctors. However, municipalities in the north-eastern region showed no interest in allowing their staff to work as independent contractors, so large

polyclinics employing salaried district doctors without practice lists continued to operate there until 2002.

In 1998, when one third of all specialists working in PHC had achieved the re-specialization requirements, the initially slow process of re-educating professionals as family doctors was accelerated by the EHIF after the introduction of a special fee as a financial incentive for family doctors with diplomas. By the end of 2001, 557 family doctors had a diploma in family medicine, and by 2003, the number of family doctors was approximately 800, sufficient to cover most of the population.

The Health Services Organization Act, which came into force in 2002, established the regulatory framework for primary care and family medicine, whereby primary care is organized as the first level of contact with the health system and provided by independent family doctors practising on the basis of a practice list. Every family doctor has a service area (an area of a local government) determined by the county governor. The Act and subsequent regulations of the Ministry of Social Affairs define the responsibilities of family doctors and the regulations surrounding the practice of the specialty. The Act also establishes family doctors as private practitioners contracted by the EHIF. The Health Services Organization Act set out the legal form for practising as a family doctor. According to this Act, family doctors are private owners and may practise as private entrepreneurs, or found companies to provide PHC. The latter may merge only with other companies providing PHC, and may not be partners or shareholders of companies providing specialized medical care. As a result of a 2007 amendment of the Health Services Organization Act (which entered into force in 2008), the local government can act as a partner and shareholder of a company providing PHC. The range of activity of family doctors is defined by law as providing PHC, nursing care, social services, and teaching and scientific research in health care. Nursing care has been included since January 2008 with the aim of expanding the activities preformed by the PHC team.

Most family doctors with a practice list are contracted by the EHIF. Although family doctors are allowed to work without a contract, there are few reasons for them to operate on a purely private basis because most patients have timely access to EHIF-contracted family doctors, and few patients would be willing or able to pay for primary care. In the period 1998–2002, the proportion of solo practices increased to 87% in 2000, before decreasing to 72% in 2002 (Atun 2004). By 2007 the proportion of solo practices had further decreased to comprise 61% of the total practices (EHIF 2008). The consolidation of family physicians' practices towards the establishment of group practices is in line with other developed countries, where the scope and scale of family medicine

extends beyond gatekeeping, in order to increasingly manage and coordinate patient care (Atun 2004).

The maximum and minimum number of individuals on a practice list is defined by a regulation of the Minister of Social Affairs and cannot exceed 2000, or be less than 1200. Once the limit of 2000 patients is reached, the practice can be divided into two lists by the county governor. However, lists exist with more than 2000 enrollees (mainly due to historical reasons) and less than 1200 (in specific cases, such as some rural areas or on some islands), which are accepted by the EHIF and the county governor. At the time of writing the average practice list comprises approximately 1800 individuals (EHIF 2008). Patients have the right to change their family doctor at any time after submitting a written application to a new family doctor. A written application is also required in the event that a patient wishes to leave the list. In some cases the family doctor can refuse to register a person – first, when the maximum number enrolled exceeds 2000 people; and second, when the place of residence of the patient is not in the service area of the family doctor concerned.

However, a new person may be registered when the list already includes a family member of the applicant, for example when a mother registers a newborn. According to a survey, 72% of family members are registered with the same family doctor (Dive Service Quality Development Ltd 2007). According to the EHIF's 2007 population satisfaction survey, 95% of the population know their family doctor's name. Furthermore, the survey shows that 95% of the population are aware of the right to change their family doctor, although only 11% have changed family doctor in the period 2005–2007, a decrease compared to the period 2003–2005. Most of these changes (40%) were due to people moving to a new area, but 28% were due to dissatisfaction with the previous family doctor (Faktum and Ariko Ltd 2007). A total of 77% of family doctors are situated in urban areas, whereas 23% are in rural areas.

Family doctors in Estonia exercise a partial gatekeeping function and control most access to specialist care. Patients need a family doctor's referral in order to see most specialists and to be admitted as a non-emergency inpatient. However, patients are free to access the following specialists directly, that is, without a family doctor's referral: ophthalmologists, dermato-venereologists, gynaecologists, psychiatrists, dentists, pulmonologists (in case of TB) and all needed specialist care in case of trauma. Although the chronically ill have access to specialists without referral, analysis of the effectiveness of PHC demonstrates strong evidence for a shift from secondary to primary care. Chronic illnesses are increasingly managed in the PHC setting, with an increased number of primary care consultations and reduced referrals and hospital admissions. Furthermore, management of these chronic illnesses has improved in the PHC setting, as evidenced by changing prescribing patterns pointing to increased

uptake of best practices, as well as cost-effective and novel medicines, more sophisticated prescribing patterns and a concomitant decline in medicines with low or questionable therapeutic benefit (Atun et al. 2008).

Initially, there was considerable resistance to the requirement for referrals to specialists, from both specialists and patients. Since the Government introduced regulations concerning specialist visits without family doctor referrals, the situation has changed and specialists have come to understand the role of the family doctor. Patients now have to pay the full price, out of pocket, for any specialist consultation without referral from their family doctor (with the exception of certain specialists mentioned earlier in this section).

Specialist training of family doctors and the EHIF contract significantly broadened the scope of services delivered in PHC settings. Evidence-based guidelines for management of acute and chronic conditions introduced in the late 1990s, commonly encountered in PHC, encouraged family doctors to manage these conditions and reduce referrals to specialists. These changes have had a positive impact on the quality of service delivery (Atun 2004). All family doctors are required to work with at least one family nurse, even though there is a shortage of trained family nurses. Since 2008, in order to motivate compliance with this requirement, the EHIF applies a coefficient of 0.8 when paying the capitation fee to family doctors working without a nurse. Minimum practice standards (in terms of requirements for the rooms, furniture and equipment of the practice premises) are also specified by regulation and monitored by the HCB and, in some cases, by the EHIF and county governments. The scope of services and functions of each category of PHC personnel are specified by regulation

Box 6.1 Tasks of family doctors

- Health promotion and disease prevention through assessment of health risks, physical examination, individual health education, medical counselling, immunization and medical screening tests.
- Diagnosis of diseases and treatment of patients.
- Referral of a patient to active care or nursing care – in cooperation with specialist doctors, nurses, midwives, social workers and local governments.
- Preparation of documents related to certification of provision of health care services and the practice list of the family physician.
- Preparation of reports on health care statistics and economic activities for health care and submission of these to the county governor.
- Organizing appropriate administrative arrangements as specified by law.

(Ministry of Social Affairs 2001). The legally required tasks for family doctors and nurses are defined in Box 6.1 and Box 6.2, respectively.

Regulations specify in detail which services and investigations should be provided by the family physicians according to their contract with the EHIF. These regulations define the services covered by the per capita payment as well as those that are awarded with a fee-for-service payment, that is, beyond the per capita payment. The role of the family nurse has become very important within primary care teams. In the course of time a shift of responsibility from family doctors to nurses has taken place in the handling of, for example, chronically ill patients, pregnant women and healthy neonates, and the demand for qualified family nurses has increased.

Box 6.2 Tasks of family nurses

- Monitoring the physical and mental development of a healthy baby/child; performance of periodic physical examinations.
- Educating parents and family and counselling on hygiene, care, physical activity, disease prevention and diet of a child.
- Counselling patients on family planning and sexual health.
- Monitoring of normal pregnancy, counselling pregnant women on diet and physical exercise, preparation of a future mother and father for delivery, motherhood and fatherhood.
- Monitoring health of the elderly, educating the elderly to cope with their health and age-related problems.
- Ordering and proper discarding of vaccines and keeping records and time schedule for immunization.
- Determining the need for nursing care and preparing a nursing plan, provision of outpatient nursing care and nursing care at patients' homes.
- Managing waste disposal.

As mentioned earlier, most family doctors have a contract with the EHIF. The contents of a basic contract are agreed by the EHIF and the Estonian Association of Family Doctors. Before the start of the calendar year, the EHIF branches enter into contractual agreements with family doctors. The financial part of the contract is revised four times a year based on changes in practice lists.

The model of primary care organized around family medicine is supported by the method by which family doctors are paid: a combination of a basic monthly allowance, a capitation fee per registered patient per month, some

fees for services provided, additional payments based on distance to the nearest hospital and performance-related payment, and so on. The payment system is designed to provide family doctors with incentives to take more responsibility for diagnostic services and treatment, as well as to compensate them for the financial risks associated with caring for older patients and working in remote areas. For detailed information on payment of family doctors, see Section 3.6 *Payment mechanisms*.

Access and quality of primary care are monitored by the Ministry of Social Affairs and the EHIF. Family doctors are required to have at least 20 visiting hours a week, with one evening clinic per week. Furthermore, the practice reception must be open between 08:00 and 18:00 hours every working day and the practice premises of the family doctor must be open for at least eight hours each working day. The independent reception hours of a family nurse must be at least 10 hours per week (Ministry of Social Affairs 2001). Based on the contractual agreement between the family doctors and the EHIF, a patient with an acute condition must be provided with an appointment with a family doctor on the same day, and a patient with a chronic disease within three working days. According to information gathered from providers, in 2007, in cases of acute conditions, 99% of the patients were given an appointment with the family doctor on the same day. In the case of chronic diseases, an average of 99% of patients were given an appointment with the family doctor within the established limit of three working days. Patients in large practice lists (of over 2000 people) have to wait more than three working days to receive an appointment with their family doctor (EHIF 2007). One of the reasons for this problem is shortage of qualified family doctors and family nurses, which impedes the establishment of new family practices and more effective organization of work.

According to the most recent annual population satisfaction survey (Faktum and Ariko Ltd 2007), 75% of those who had visited their family doctor during the last 12 months were able to see their doctor within two days of making an appointment and 41% were given an appointment on the same day. However, the accessibility of family doctors has slightly declined – in 2005, 50% of patients received an appointment with their family doctor on the same day. In 2007, 42% of respondents were "very satisfied" and 50% "satisfied" with the PHC system; in 2006, these indicators were 38% and 55%, respectively.

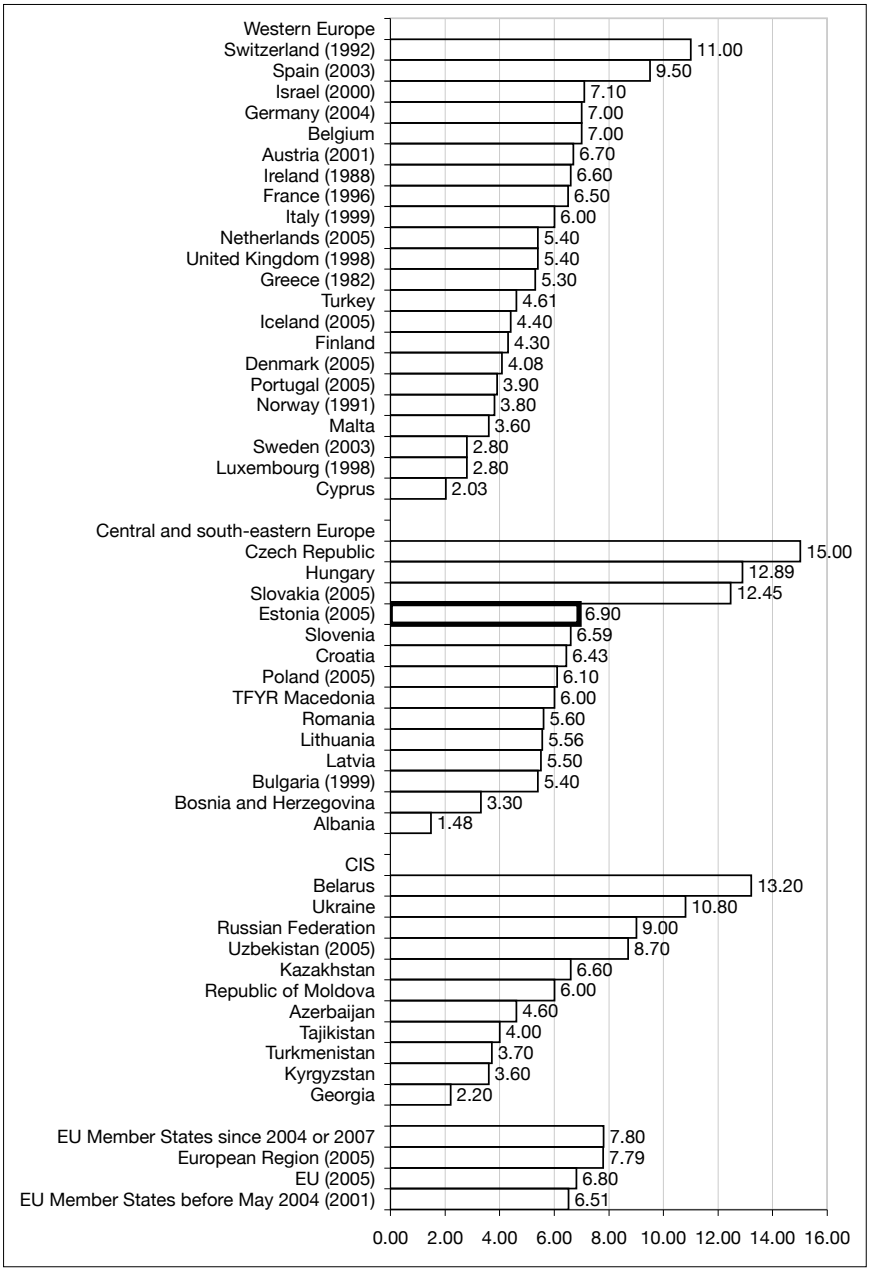
In order to improve access to PHC, a Family Doctor Hotline has been made available for all in need of assistance. In the autumn of 2003 a representative survey of the population was carried out to find out the expected need for the service. The possibility to consult a family physician 24 hours a day was considered important by 69% of people (aged 15–74) and 89% stated they would use medical telephone advising if it were available (Koppel, Aaviksoo & Paat 2007). The service was initiated by the EHIF in August 2005, with

the aim of offering 24-hour access to PHC consultation for the public, 7 days a week and 365 days a year. The Family Doctor Hotline improves access to PHC by enabling primary care consultation during out-of-office hours and for inhabitants of rural areas. The service has become an integral part of the general health care system and is available for everybody - irrespective of insurance or residence status. The initiative needs proper evaluation of the estimated financial impact on the health care system. At the time of writing each telephone contact will cost the EHIF on average €2.86 (EEK 45), whereas the average cost of a family doctor's visit (without analyses or tests) is €6.39 (EEK 100). However, it remains to be seen if the use of the Family Doctor Hotline will have an impact on the volume of calls to the emergency ambulance services and the number of hospital emergency rooms visits (Koppel, Aaviksoo & Paat 2007). The number of calls made has increased since the implementation of the service in 2005, from an average of 380 calls per 24 hours (EHIF 2006) to an average of 423 calls per 24 hours in 2007 (EHIF 2008, forthcoming). The service is free of charge for users for the first five minutes. The awareness of the general public about the service was investigated by the EHIF in 2006. According to the survey, the share of people that have used this service increased from 7% in 2005 to 10% in 2006. Moreover, 74% were aware of the service and the telephone number. However, only 59% of the non-Estonian speaking minorities were aware of the service (Koppel, Aaviksoo & Paat 2007).

Since the mid-1990s, clinical guidelines have been introduced in collaboration with the EHIF and the Estonian Society of Family Doctors, to improve the quality and consistency of care delivered. The guidelines cover key conditions in PHC, are usually prepared following detailed discussions with medical specialists and are usually based on best practice. However, given the resource constraints, the uptake is highly variable (Atun 2004). Since 2006, the EHIF, in cooperation with the Management Board of the Estonian Society of Family Doctors, has been introducing the family doctors' performance bonus system (EHIF 2006). According to policy at the time of writing, the priority areas are vaccination coverage, screening procedures and chronic disease monitoring. Expected outcomes of the policy are improved quality and effectiveness of preventive services, as well as better monitoring of chronic diseases. For family doctors, the goal is to improve motivation, resulting in better performing physicians (Koppel and Aaviksoo 2007c). The results after one year of implementation show that the overall uptake of the bonus system has been high and, on average, 63% of all the practices are involved; however, there is variation between regions (from 45% to 75%).

Comparing 2006 to 2005, a slight increase of family doctor consultations is visible (4%), and there has been a significant increase of family nurse individual consultations (32%). The results show that the practices involved

Fig. 6.1 Outpatient contacts per person in the WHO European Region, 2006 (or latest available year)



Source: WHO Regional Office for Europe 2007

Notes: EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia; Countries for which data were not available have not been included

in the bonus pay scheme have reached higher coverage in some of the areas, such as infant vaccination (average in Estonia 78%, with 80% involved in the bonus pay scheme; 74% not involved), management of diabetes (33% involved in the bonus pay scheme; 22% not involved) and essential hypertension (29% involved; 19% not involved). The EHIF aims to further develop the incentives system in close collaboration with professional associations, built on robust evidence and processes that are understandable to all stakeholders involved.

There were altogether approximately 8 million outpatient contacts in Estonia in 2005, of which family doctor visits accounted for 57%. This is on a level with the average for the EU15 countries (see Fig. 6.1).

Estonian primary care reforms have been successful: the country has effectively introduced a family medicine-centred PHC system covering the whole country. However, challenges for PHC remain. First, the PHC infrastructure is in need of capital investment to bring PHC centres to a standard that will enable provision of extended PHC services. This should also contribute to achieving a shift from secondary to primary care. Second, high prices for land, buildings and rent in cities, especially in the capital city of Tallinn, increase financial risk, discourage graduates of family medicine training programmes from practising and make it difficult for family doctors to secure appropriate premises. Third, a lack of incentives creates difficulties in attracting health professionals to rural areas (Atun 2004). The biggest challenge and key problem, however, is shortage of human resources. In particular, there is a shortage of family nurses (see Section 5.2 *Human resources*).

6.3 Secondary care

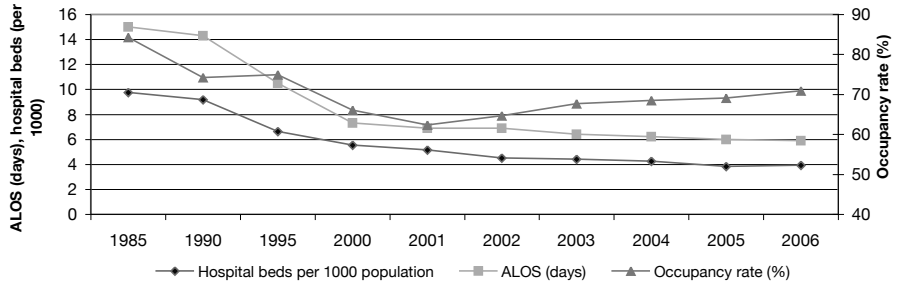
Prior to the 1990s, the Estonian health system was characterized by a large-scale network of secondary care institutions. The system had a curative focus, with excessive secondary care structures. All hospitals were owned by the State or local governments and the health care professionals working in the health system were salaried public employees, with salary levels determined centrally. Since the beginning of the 1990s, the delivery of specialized medical care in Estonia has undergone extensive reform involving recentralization of highly specialized services and decentralization of ambulatory specialist services. In 1992, following the introduction of health insurance and the establishment of autonomous providers, health care professionals ceased to be public employees, lost their civil service status and began to work under private labour regulations.

The drivers of hospital network reform in Estonia were the overcapacity of acute care hospital beds, low bed occupation rates, a low proportion of day-care services, too high ALOS in acute inpatient care and – for some specialties – a too small service area in which to maintain their competency. The three objectives listed in the Hospital Master Plan 2015 (see Section 5.1 *Physical resources*) were: to ensure access to high-quality medical care; to optimize the costs for establishing and maintaining the hospital network; and to ensure sustainability of the hospital network. To assess the achievement of these objectives, measurable targets were set:

- to decrease ALOS in acute care from 6.7 in 2001 to 4.6 in 2015;
- to decrease acute care beds from 6500 in 2001 to 3200 in 2015;
- to increase the bed occupancy rate in acute care from 67% in 2001 to 83% in 2015.

The level of acute care utilization in acute hospitals has improved over time (see Fig. 6.2). The number of beds per 1000 population and the ALOS have fallen, respectively, by 5.8 beds and 9.1 days since 1985. The bed occupancy rate fell steadily until 2001, before increasing again, mainly due to hospital mergers.

Fig. 6.2 Inpatient utilization in acute hospitals in Estonia, 1985–2006 (selected years)

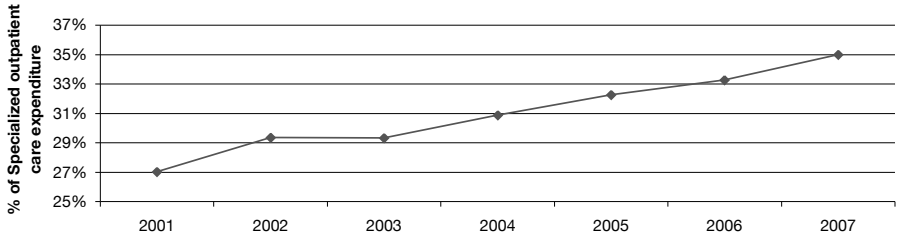


Source: WHO Regional Office for Europe 2007
Note: ALOS: Average length of stay

However, the bed occupancy rate demonstrates that the acute care hospital's network is still inefficient. It is therefore doubtful that the set target (83%) will be achieved, even though the trend over recent years has been positive.

The reduction of acute beds has been related to the establishment of a hospital licensing system. As a result, small hospitals, hitherto predominantly providing long-term care, have lost their licence to provide acute care and have been turned into nursing homes. Other hospitals have been turned into outpatient care centres providing specialist ambulatory care.

Fig. 6.3 Specialized outpatient care expenditure as a share (%) of total specialized care expenditure, 2001–2007



Source: EHIF 2008 (forthcoming)
Note: Data cover only EHIF financed services

One of the objectives of hospital reform has been to increase the importance of specialized outpatient care compared to inpatient care. It is possible to see some shift to outpatient care over time but the process has been quite slow. According to EHIF expenditure data on specialized in- and outpatient care in 2001–2007, an increase in outpatient care (which includes day care) expenditure as a proportion of total specialized care expenditure is visible, from 27% in 2001 to 35% in 2007 (see Fig. 6.3).

Since 2001, ownership, legal status and governance of hospitals are clearly defined. The hospital sector is dominated by public hospitals, and most hospitals are owned (or founded) by the State, local governments or public legal bodies. A few privately owned hospitals provide specific services, such as gynaecology, obstetrics, rehabilitation, general surgery services, orthopaedics and plastic surgery. In many instances, the hospital has multiple owners, for example a number of municipalities owning one hospital, or the State and municipalities jointly owning one hospital. While having multiple owners could in theory be beneficial to the hospital by broadening the base for financial support, analysis has actually shown that in reality this may weaken the owners' motivation to assume responsibility for the performance of the hospital. This has been expressed through the lower willingness of owners to invest in the hospital and/or through observed difficulties in agreeing on the investment between the different owners. The situation with multiple owners may also lessen the opportunity to hold owners directly and publicly accountable for hospital performance (Habicht et al. 2006). Since 2002, hospitals in Estonia (public or private) have been consolidated and several hospitals were merged into larger integrated organizations. All hospitals are required to act under private law as joint-stock companies or foundations.

From time to time, the question is raised as to whether private legal status is suitable for public hospitals. The main concerns are related to whether a joint-

stock company is an appropriate form and, therefore, a proposal was brought to the table during discussions at the Ministry of Social Affairs to allow public hospitals to operate only as foundations. Joint-stock companies are acting under the Commercial Code, which has raised the question whether these hospitals' top priority is to maximize profit or to work in the public interest. According to a study in which interviews with hospital managers and governors (the Supervisory Board members) were conducted concerning private legal status, the hospital managers did not see any risks to the public interests. Since the majority of hospitals are publicly owned, it was considered that there is enough scope for public sector supervision (Habicht et al. 2006). Nevertheless, there is no significant difference between a foundation and joint-stock company, and the opposition to limited-stock companies as a legal status for hospitals is mainly an emotional one (that is, the belief that hospitals should not be businesses). Both statuses enable the achievement of objectives other than profit maximization, as this is more a question of the owners' will than the hospital's legal status. One potential threat where joint-stock companies are concerned is the possibility that the owners could decide to take the profit out of the hospital rather than investing it in further development. As hospitals are owned by the public sector, this threat is mainly theoretical and could be counteracted by adding an extra provision to the statute of the hospital that dividends are not allowed to be extracted (Habicht et al. 2006).

As mentioned earlier, Estonia has preserved public ownership of the hospital network, but has introduced management concepts that until the time of writing have only been used in a private sector context. This has created a framework in which public hospitals are run as networks or integrated providers and as true business entities, with management empowered to ensure good clinical practice and efficient financial performance. As a side benefit of this concept, hospital management is independent of local political influence (Fidler et al. 2007). In the period from 1999 to 2001, 41 hospitals and outpatient clinics in urban areas were merged into six networks. During this process, management teams and supervisory boards were created and given operational responsibilities within the merged hospitals. The newly appointed hospital management teams were expected to realize efficiencies from economies of scale and to free hospitals from fixed costs by further restructuring buildings and bed capacity. Four of the networks were able to restructure their services and close seven facilities. The transfer of administrative decisions from publicly elected officials to corporate management has allowed for a significant restructuring of services and efficiency gains (Fidler et al. 2007).

The hospital management structures in operation in Estonia are explicit. Governance structures were agreed in 2001 and since then a 2-tier management model (supervisory and management boards) is in operation. However, the

role of the hospital supervisory boards has not achieved its full potential. Supervisory board members are nominated by hospital owners or founders. The selection of supervisory board members is mostly based on position (for example, members of city councils) rather than competence. As a result, these board members often lack experience in governing large organizations. One of the chief characteristics of hospital governance over the last few years has been its politicization. On the one hand it is seen as inevitable in democratic societies, but on the other it is a threat to hospital performance if it affects the selection of hospital managers and brings instability to the whole organization. The situation can only be improved by offering systematic training to supervisory board members, which is currently lacking (Habicht et al. 2006).

All health care provider organizations and health care professionals have individual contracts, either with the EHIF or their employer. The relationship between the EHIF and the hospital is based on contracts rather than direct ownership. Personnel who work in hospital-based outpatient and inpatient care departments have contracts with the hospital and are hence salaried employees.

Specialized outpatient care providers may be joint-stock companies or private entrepreneurs. Ambulatory specialist care is provided by health centres, hospital outpatient departments and specialists practising independently. Both public and private providers can hold contracts with the EHIF. In 2007 there were approximately 180 different ambulatory specialist care providers contracting with the EHIF. Some specialists (particularly gynaecologists, ophthalmologists, otorhinolaryngologist, orthopaedists, etc.) operate without EHIF contracts and patients are charged the full price, out of pocket, for any health care service provided by these specialists. In order to see ambulatory specialists, patients generally need a family doctor's referral to be admitted as a non-emergency inpatient. However, in some cases patients are able to access ambulatory specialists directly, without a family doctor's referral (see Section 6.2 *Primary care*).

The EHIF is not required to enter into a contract for financing health services with all health care providers and selective contracting in outpatient care was introduced in 2003. According to the procedure for provider selection, the EHIF announces its public procurement and all providers can submit their offers. The selection criteria for providers are approved by the Supervisory Board of the EHIF, and the main objectives of selective contracting are to motivate improvement of service quality and to introduce mild market competition into health care provision, as well as to purchase services in areas that are perceived less attractive by providers, in order to improve access to outpatient services in these areas. Nevertheless, the EHIF is required to contract with all HNDP hospitals providing outpatient care. Approximately 20% of outpatient care is

purchased using selective contracting. Once the providers are selected, further negotiations with selected providers continue to determine the volume of contracts. The contracts with selected providers are concluded for three years, while the financial parts of the contracts are negotiated yearly (see also Section 3.5 *Purchasing and purchaser–provider relations*).

Access to care is regulated by the Minister of Social Affairs by setting the requirements for geographical accessibility to health services. Geographical accessibility was established in the Hospital Master Plan 2015 according to the criterion that a hospital has to be located within a distance of 70 km or 60 minutes' drive (Hellers et al. 2000). Hospitals listed in the HNDP fulfil this principle, as most residents live in the service areas of 19 acute care hospitals. A regulation of the Ministry of Social Affairs specifies the specialties which have to be provided, including general surgery, internal diseases, paediatrics, obstetrics and gynaecology.

Requirements for accessibility also describe the maximum length of permissible waiting time. Decisions about waiting time targets for ambulatory specialist and inpatient care, which were first made in 2001, were delegated to the EHIF Supervisory Board in 2002 and are revised annually. In 2008 the maximum waiting times for specialist care were as follows: four weeks for ambulatory specialized care, and eight months for inpatient care and day surgery. Some interventions have longer maximum waiting times; for example, a year and a half for cataract surgery, two and a half years for large-joint endoprotheses, two years for otorhinolaryngeal surgery, one year for cochlear implants and eight months for cardiac surgery. The EHIF has set the objective of managing waiting lists in cooperation with partners according to the terms and conditions of the contract(s). Proper management of waiting lists enhances insured individuals' access to medical care. Data on waiting times, broken down by specialty (not procedure) – and from 2004 by cause/reason as well – are collected at provider level on a quarterly basis (from HNDP hospitals on a monthly basis) and monitored by the EHIF regional branches. Special efforts are made to assist those insured individuals who have been waiting for longer than the target limits. At the end of 2006 and 2007, for example, extra funds were allocated to shorten waiting lists in problem areas and specialties. Correct data on waiting lists guarantees contracts that match the needs of insured individuals. In 2007, 99.7% of patients had access to outpatient specialized care and practically 100% had access to inpatient care during regular reception hours (EHIF 2008, forthcoming).

Proper management of waiting lists has led to a situation in which budgetary constraints are no longer the primary reason for waiting times in 2007. The principal reason patients had to wait longer than the maximum waiting time was the limited capacity of health care providers. Mostly due to the limited

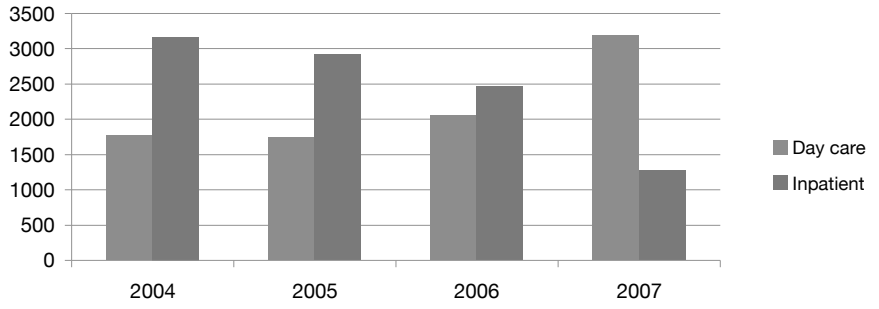
number of doctors, there were greater accessibility problems in outpatient specialized care for ophthalmology, gynaecology and in inpatient care and day surgery for otorhinolaryngology. Waiting lists (as opposed to waiting times) for interventions such as joint replacement, cataract surgery and cochlear implants are monitored centrally to assist prioritization of patients. Waiting list data are updated frequently, allowing patients to move from one queue to another on the basis of their need for treatment. The criteria used to assess the need for priority treatment in case of joint replacement are physical impairment (of functional mobility), pain and ability to work, care for dependants and ability to live independently. Those with a higher level of need are treated first. Similar criteria for needs assessment is used for cochlear implants and cataract surgery as well (including visual activity impairment as a criterion of the needs assessment). Although only patients on waiting lists for certain interventions undergo this needs assessment, there is evidence to show that, overall, those with greater need have shorter waiting times, which confirms the existence of implicit rationing at the provider level. Under certain conditions, which include unacceptable waiting times, the EHIF reimburses health care abroad (for more details see Section 3.2 *Population coverage and basis for entitlement*).

Day care

The concept of day care implies that patients come into a hospital or day-care unit for procedures and go home the same day. Day care in Estonia is seen as an elective treatment process requiring at least a 6-hour stay in a hospital or day-care unit. The treatment is completed the same day without the need for the patient to stay overnight. Day care is provided by hospitals and ambulatory care providers that have a particular day-care licence issued by the HCB. Day care covers a wide spectrum of surgical procedures (day surgery) from minor operations under local anaesthesia to major ones under general anaesthesia. More frequently performed procedures in day surgery include medical abortion, adenoidectomy, surgical removal of benign neoplasm, arthroscopy, tonsillectomy and cataract removals. In addition, day care covers some non-surgical procedures such as haemodialysis, chemotherapy and different diagnostic procedures. Day care is mainly financed by the EHIF according to the contracting process (see Section 3.5 *Purchasing and purchaser–provider relations*). In some areas (such as cataract removals, arthroscopy) where the providers have established private practices the patients pay for the full cost of their treatment. Improvements in surgical techniques and health technology have brought about a widening range of procedures which are suitable for day care. The focus on day care and day surgery was increased in 2002 through separate financing of day-care settings from ambulatory and hospital settings. Strategic purchasing was introduced by the EHIF in 2004, aiming to increase

efficiency and the volume of day-care services is agreed in the financial appendix of the contract(s) with health service providers. Since 2004, the case load of day care has increased by an average of 17% per year. In total the number of cases provided in day-care settings in the period 2004–2007 has increased by 60% (EHIF 2005; EHIF 2006).

Fig. 6.4 Number of adenoidectomies in day-care and in inpatient settings, 2004–2007



Source: EHIF 2008 (forthcoming)

Figure 6.4 shows the shift of adenoidectomies from inpatient to day-care settings. In the four year period from 2004 to 2007, the number of adenoidectomies performed in day-care settings increased by 80%. During the same period, inpatient adenoidectomies declined by 60%.

6.4 Ambulance services

In Estonia, emergency medical care is defined as outpatient health services for initial diagnosis and treatment of life-threatening diseases, injuries and intoxication and, if necessary, transportation of the person requiring care to a hospital. The organization of emergency services in Estonia was inherited from the Soviet system, which placed a strong emphasis on pre-hospital care provided by ambulance teams. Such systems, common in eastern European countries, comprised mixed models in which the ambulance had dual roles: to diagnose and provide on-site treatment and to transport the patient to the hospital. Since then, the organization of ambulance services has gone through several stages in terms of changes of financing schemes and services. From the early 1990s through to 1996, ambulance services were financed by regional sickness funds, with some additional transfers from the state budget. Insurance coverage defined

entitlement to these services, paid directly to the provider. In 1997 financing was centralized within the Central Sickness Fund, but coverage was still governed by insurance status, while centralization removed regional differences in service financing practices. In addition, incentives to provide services changed because the payment for each visit was linked to the preparedness of the ambulance services teams, headed by either a doctor or a specialized nurse.

Since 1998, ambulance services have been financed from the state budget. This ensured that everyone in Estonia (citizens as well as temporary residents) is entitled to receive emergency medical care. In 2002 responsibility for purchasing and monitoring ambulance services was shifted from the Ministry of Social Affairs to the HCB, under the supervision of the Ministry. Emergency medicine (EM) is recognized as an independent specialty in Estonia since 2000. In order to obtain the qualification of an EM specialist, a person admitted to a residency programme must complete a 4-year residency period. In 1998 the Faculty of Medicine at the University of Tartu established the first EM residency training programme. In addition, Estonia's system for continuous professional training is well established (see Section 5.2 *Human resources*).

The first draft of the Ambulance Services Policy Document was worked out in 1999, followed by a second draft in 2006, in cooperation with the Ministry of Social Affairs, the HCB (at the second draft stage) and ambulance services specialists. Due to procedural problems, neither draft was officially approved by the Ministry of Social Affairs. However, both documents have been widely used to develop the ambulance services system. The reporting system for ambulance services has been developed during recent years by the HCB. From 2006, data collection and system analysis are used as statistical tools, but due to a shortage of elementary statistical data and analyses before 2006, no analysis has been conducted that could provide a comprehensive overview of the performance of emergency services.

The Health Services Organization Act (which entered into force in 2002) established the regulatory framework for ambulance services. The owner of the ambulance crew must hold an HCB licence and may be a company, a private entrepreneur, a foundation, or a state or local government rescue service agency. A legal person owning an ambulance is not allowed to engage in any other area of activity than the provision of emergency medical care. Hospitals are exempted from this rule; of the total ambulance crews, 50% are owned by hospitals and the rest by other types of legal owner. The Government establishes the procedure for cooperation in emergency medical care between the emergency medical staff, hospitals, the Estonian Rescue Board and the police authorities; the Ministry of Social Affairs establishes the number of ambulance crews financed from the state budget. Ambulance services are provided by 90 ambulance crews and financed from the state budget through the Ministry of Social Affairs. The

HCB is responsible for purchasing and administration of ambulance services and concludes contracts with service providers. Financing of ambulance care is based on the number of nurses and physicians per ambulance crew, but the final amounts are decided through (state) budget negotiations (see Chapter 3 *Financing*).

An ambulance network covers all of Estonia and provides accessible services to all citizens. In addition, in hospitals there are emergency medical units staffed by specialists in EM and other specialty areas. Access to ambulance services is regulated by the Ministry of Social Affairs. According to regulations, one ambulance crew is required per 10 000–15 000 residents. The ambulance crew provides emergency medical care on the basis of a dispatch order received from the call centre. Administratively, the call centres belong to the structure of the Estonian Rescue Board, which is an autonomous governmental institution within the Ministry of Internal Affairs. One of the tasks of the call centres is to prioritize received calls according to specified guidelines. However, there is a lack of harmonized guidelines in this area and, as a result, call centres prioritize calls for service differently.

At the end of 2007, there were 90 ambulance crews manned by 1336 people. A total of 29 ambulance crews are led by a doctor specializing in EM or intensive care, and 61 ambulance crews are led by a nurse specializing in emergency medical care. A nurse and an emergency medical care technician, licensed to drive an emergency vehicle, are also the part of the crew. On some occasions there is an emergency medical care technician instead of a nurse, due to the lack of qualified workforce in rural areas. Furthermore, there are (cardiopulmonary) resuscitation crews located in Tallinn and Tartu, providing ambulance services all over the country. In the period 1999–2007 the average number of emergency medical care visits per year was approximately 250 000. At weekends the workload of emergency medical care providers is approximately 10% higher than during the working week (Health Care Board 2008).

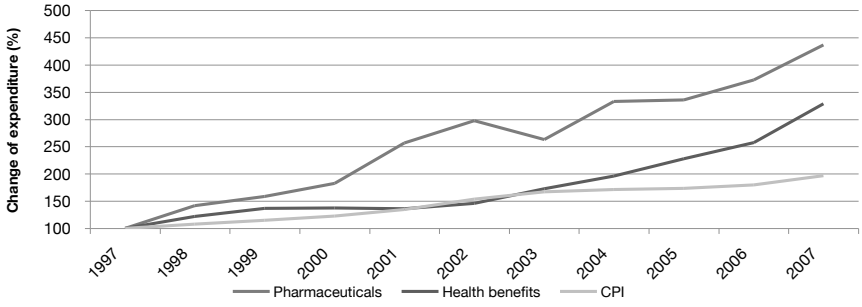
Ambulance services in Estonia are to some extent fragmented, with many providers and owners leading to duplication, cost inflation and regional differences in outcomes. Utilization of services in some cases is inappropriate, especially in rural areas. About a quarter of the calls do not require an emergency response. Non-serious calls which do not require immediate intervention account for approximately 70% of emergency calls. The proportion of clearly non-emergency aid is approximately 27%, of which at least 10% should come under the services of a family doctor and 6% is simply transportation of patients to and from a hospital. Almost half (41%) of the ambulance crews are manned by physicians, although the work could in most cases be managed by nurses. All ambulance crews are on 24-hour alert, irrespective of the fact that at night there are 50% fewer calls (National Audit Office 2004).

A key challenge for future emergency care is optimizing the organization in order to better link primary care, hospitals and emergency services. Therefore, the development of information and communication systems, periodic reviews of logistics schemes, and regulations for the number and size of ambulance crews, as well as elaboration and adoption of unified guidelines for handling emergency calls by all call centres are areas where further improvements could increase the effectiveness and efficiency of Estonia's emergency care services.

6.5 Pharmaceutical care

The pharmaceutical sector in Estonia was reformed during the 1990s, with the aim of establishing pharmaceutical regulatory authorities, creating a legislative framework, introducing a system for reimbursing pharmaceuticals and privatizing pharmaceutical services. All this was achieved during a relatively short period of time and with limited human resources. During the 1990s, monitoring of pharmaceutical utilization using Anatomic Therapeutic Chemical (ATC)/defined daily dose (DDD) guidelines was initiated nationally and the Drug Information Bulletin as well as the annual data sheet compendium Pharmaca Estica were launched. The Medicinal Products Act, covering all medicinal products entering the market in Estonia, was prepared during 1993–1994 and presented to the Estonian Government and Parliament. It was not approved in its amended form, however, until December 1995. Meanwhile, the pharmaceutical market was regulated by regulations of the Ministry of Social Affairs. Since 1993 a reimbursement system with compulsory patient

Fig. 6.5 Change of expenditure of pharmaceuticals, health benefits and CPI in health care, 1997–2007



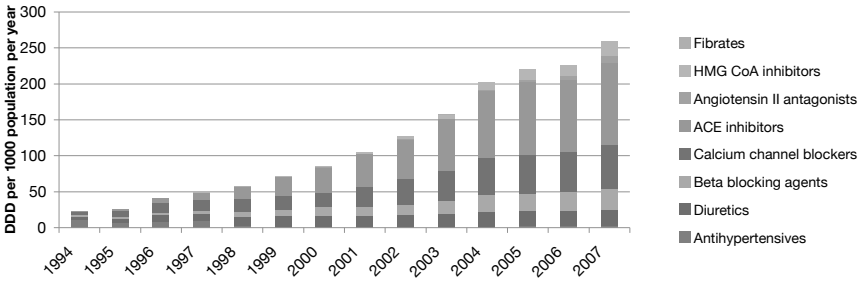
Sources: Statistics Estonia, 2008; SAM 2007; EHIF 2007
Note: CPI: Consumer price index

co-payments for pharmaceuticals purchased in pharmacies was introduced. The reimbursement category, and thus the level of co-payment, is determined according to the severity of the disease, efficacy of medication and the social status (ability to pay) of the patient. Whereas a lack of effective medication was the main issue until 1992, the increase of pharmaceutical costs has become a major problem since the end of 1990s. Pharmaceutical costs increased faster than other components of the EHIF budget and exceeded the consumer price index (CPI) in the health care sector considerably (see Fig. 6.5). Despite the cost-containment measures implemented in line with the new Health Insurance Act (2002), pharmaceutical costs have increased every year, with the exception of 2003.

There are three main reasons for the increase of pharmaceutical costs. First, the amount of pharmaceuticals used in Estonia has increased; second, older pharmaceuticals were replaced by more effective and more expensive medicines; and third, new pharmaceuticals have been introduced for treatment of diseases for which there was previously no medical treatment available or the existing treatment was not available in Estonia. The most recent two major qualitative changes in the choice of pharmaceuticals (that is, replacement with or addition of newer pharmaceuticals) allowed the prescribing physician to use more effective and safe medicines than ever before. Figure 6.6 shows the use of pharmaceuticals in the treatment of cardiovascular diseases during the period 1994–2007.

Increasing expenditure on pharmaceutical costs led to the need to implement cost-containment measures. In 2002 a positive list of reimbursed pharmaceuticals was introduced, where previously all pharmaceuticals with marketing authorization had been reimbursed by the EHIF. As a consequence,

Fig. 6.6 Change in use of pharmaceuticals in treatment of cardiovascular diseases, 1994–2007



Source: SAM 2007
Note: DDD: Defined daily dose

a patient has to pay the full price for pharmaceuticals that are not on the positive list. With regard to pricing measures, a major change was made in 2002 in the statutory mark-up scheme. This involved differentiating the mark-ups for pharmaceuticals in cheaper price groups, with the aim of making the sale of cheaper pharmaceuticals more profitable (Pudersell et al. 2007). In 2003, the reference price and price agreement system were introduced. Since then the EHIF only reimburses pharmaceuticals with reference prices or price agreement up to 100% or 75% (or 90%), and the remaining percentage has to be paid by the patient at the pharmacy. These measures have had multiple effects on the provision of pharmaceuticals. On the one hand, temporary cost-containment was achieved for public funds and an increase in the consumption of pharmaceuticals has been observed. However, on the other hand, patient cost sharing has gradually increased, which may have adverse effect on low-income population groups with chronic diseases.

The regulatory framework in the pharmaceutical sector is based on the Medicinal Products Act and the Health Insurance Act. The main stakeholders in the pharmaceutical sector are the Ministry of Social Affairs, the SAM and the EHIF. Since August 2002, following the introduction of the new Health Insurance Act, a Pharmaceutical Policy Unit was established within the structure of the Ministry of Social Affairs. The Ministry of Social Affairs is responsible for strategic planning in terms of pharmaceuticals, as well as pricing and reimbursement decisions, while the SAM is responsible for control of all pharmaceutical activities (for example, the issuing of marketing authorizations, classification of pharmaceuticals and pharmacovigilance), including medical devices and veterinary products. The SAM also acts as a supervising body in the pharmaceutical field and advises the Ministry of Social Affairs on the process of reimbursement. The EHIF is responsible for the reimbursement of pharmaceuticals and acts as an advisory body to the Ministry of Social Affairs on the process of reimbursement.

Pharmaceuticals in Estonia are solely distributed to the public through privately owned pharmacies, as the other kinds of distribution (such as through doctors, hospital pharmacies acting as community pharmacies, and mail-order or internet pharmacies) are not allowed. There have been discussions on whether to allow hospitals to distribute pharmaceuticals as community pharmacies, but thus far, the distribution mechanism has not changed. A total of 80% of the pharmacies are part of pharmacy chains. Hospital pharmacies only provide pharmaceuticals for hospital use. The manufacturers usually distribute their pharmaceuticals through large wholesalers, but some of them have established their own wholesale outlet as a separate company from their subsidiary office or manufacturing plant. In some cases, they even distribute to pharmacies directly. Most of the pharmacies are privately owned; only few of them are under

public ownership. If the owner of the pharmacy is a legal entity, there are no valid restrictions regarding the number of pharmacies owned. The number of pharmacies has increased over the years (see Section 5.2 *Human resources*).

There is a multi-channel system for pharmaceutical wholesale activities in Estonia. In 2006 there were 45 wholesalers licensed to sell human medicines and 28 of them sold medicines to general and hospital pharmacies and other institutions (SAM 2007). The wholesalers are organized in the Estonian Association of Pharmaceutical Wholesalers. Through this Association, wholesalers seek to influence policy-makers in Estonia, mainly regarding proposals about changes in relevant legislative acts. Most wholesalers are under non-Estonian ownership and the six leading wholesalers cover more than 90% of the medicinal products market (see Table 6.1).

Table 6.1 Market share (%) of the top six wholesalers, 2000–2007

Wholesaler	2000	2001	2002	2003	2004	2005	2006	2007
Tamro Eesti Ltd	33.0	31.8	30.9	30.1	29.9	30.5	30.2	31.0
Magnum Medical Ltd	38.0	43.3	48.0	47.8	42.4	25.9	26.7	27.2
Apteekide Koostöö Hulgimüük Ltd						15.0	12.9	12.4
OÜ Nordic Pharma (Armila Eesti Ltd)	3.6	2.9	2.5	3.1	4.7	10.0	11.6	11.0
AS Oriola	4.5	3.6	3.4	5.0	5.8	6.0	6.7	6.3
AS TopMed	7.9	7.1	4.7	4.4	4.6	4.9	4.4	3.9

Source: SAM 2007

Since 2003 the reimbursement system is characterized by a reference pricing system, that is, medicines are clustered in groups with a maximum (reimbursement) price. All pharmaceuticals used in outpatient care have been included in the reimbursement scheme, whereas most over-the-counter (OTC) pharmaceuticals, pharmaceuticals used in the inpatient care setting and some lifestyle pharmaceuticals have been excluded (such as pharmaceuticals against erectile dysfunction and obesity, as well as nicotine and alcohol substitution therapy). OTC pharmaceuticals that are included in the positive list are products for children with severe illnesses, pharmaceuticals containing iron and calcium as well as some artificial food preparations for allergic and premature children and for patients with phenylketonuria. The reference pricing system is based on internal price referencing, in which pharmaceuticals are grouped on the basis of different active ingredients (ATC-5 level classification), administering methods and pharmaceutical forms. During the first two years of the scheme, the mean average daily dose (ADD) price of the second and third cheapest

pharmaceutical was taken as a reference for the ADD price. This reference price was then used for the calculation of the prices of packs according to the number of ADD per pack. Since January 2005 the ADD price of the second cheapest pharmaceutical has been used as the reference price (Pudersell et al. 2007). The prices of pharmaceuticals which are not included in the reference pricing scheme are determined by price agreements, that is, contracts under public law between the Minister of Social Affairs and the manufacturer (or marketing authorization holder). The price agreement process starts with a proposal from the manufacturer to the Ministry of Social Affairs. Besides the proposed price and the volume of the pharmaceutical, the proposal must contain the prices of the pharmaceutical in certain reference countries (for example, the native country of the manufacturer, Latvia, Lithuania and Hungary) and an explanation about the price and the volume proposed. The Ministry asks the expert opinion of the EHIF, if necessary, and after receiving the expert opinion and successful negotiations, a price agreement is concluded and information about the wholesale and retail prices is published.

The reimbursement system in Estonia is disease specific. There are two groups of diagnoses, classified on the basis of the severity of illness. The pharmaceuticals listed for the most severe diseases receive the full (100%) rate of reimbursement and the pharmaceuticals for less severe (mostly chronic) diseases are reimbursed on a 75% basis. In the latter case, a higher reimbursement level of 90% for particular social groups (children under age 16, disabled and retired individuals) applies. Children under four years of age receive 100% reimbursement for all pharmaceuticals listed. Other pharmaceuticals in the positive list are reimbursed at a 50% rate. The pharmaceuticals reimbursed at a 100% and/or 75% (or 90%) rate cannot be reimbursed without an established reference price or a valid price agreement. In addition, patients may apply for individual reimbursement at the EHIF under special circumstances. This is mainly used in the case of pharmaceuticals with no valid marketing authorization in Estonia, but which may be needed for the individual patients and therefore imported on the basis of a one-off marketing authorization.

Since January 2003, a new type of supplementary benefit was introduced, the benefit in cash for pharmaceuticals. It is calculated on the basis of expenses incurred by a person on (covered) prescription pharmaceuticals during a calendar year. The aim of the monetary benefit is to enable people who spend more than €383 (EEK 6000) per calendar year on pharmaceuticals included in the EHIF positive list to obtain additional (pharmaceutical) reimbursement from the EHIF. The maximum additional benefit per person per calendar year is €1278 (EEK 20 000) and this helps reimburse the cost of the pharmaceuticals, first and foremost for those who use very expensive pharmaceuticals in their

treatment schemes or suffer from chronic diseases and must use medication for a prolonged period.

According to the 2002 Health Insurance Act, expenditure on the reimbursement of pharmaceuticals in outpatient care may not exceed 20% of the overall health care budget of the EHIF. Pharmaceuticals used in inpatient settings are part of health service prices paid by the EHIF, that is, they are allocated within the health service price. In some cases (TB, HIV treatment and vaccines) pharmaceuticals are funded from the Ministry of Social Affairs budget. Some pharmaceuticals (such as chemotherapy drugs) are included in the list of health services as separate health services and are purchased by the EHIF on the basis of a fee-for-service payment. The expenditure of these pharmaceuticals has increased year after year (EHIF 2007). Since 2006 an additional reimbursement scheme is in place for the pharmaceuticals used in IVF. This scheme is financed from the state budget through the EHIF. Private pharmaceutical expenditure consists mainly of expenses for co-payments and co-insurance of listed prescription pharmaceuticals and non-reimbursed pharmaceutical expenditure. There are no pharmaceutical budgets for doctors in Estonia.

Although there is no explicit regulation on the use of generics in Estonia (such as mandatory generic substitution), there are some measures introduced that seek to motivate doctors and patients towards the use of more generics rather than innovative pharmaceuticals. Doctors are encouraged to prescribe pharmaceuticals by their International Nonproprietary Name (INN) in the first instance. If prescribing by brand name, the doctor has to document this in the patient's medical record and mark "no substitution" on the prescription. If the pharmaceutical has been prescribed by INN and there is no medical reason for using the specific brand-name pharmaceutical, the pharmacist has to offer different generic equivalents to the patient. In discussion with the patient, the most appropriate pharmaceutical is chosen. The use of generics or off-patent pharmaceuticals is also promoted through the reference price system. The promotion of generic pharmaceuticals is mainly carried out to improve access to a greater variety of pharmaceuticals and to contain costs. However, generics are mainly seen as a cost-containment tool in the outpatient care setting. There are no data available about the use of generics in the inpatient sector (Pudersell et al. 2007).

Advertising of pharmaceuticals is regulated by the Medicinal Products Act, which was harmonized with the relevant EC Directive(s). The SAM is the national competent institution in charge of supervising pharmaceutical advertising activities. The advertising of pharmaceuticals before receiving marketing authorization is prohibited. Patient information leaflets, summaries of product characteristics and articles in referenced medical or pharmaceutical

journals in their unchanged form are outside the scope of the Act. Academic detailing is allowed only to health professionals (that is, medical practitioners, pharmacists and pharmaceutical assistants). Marketing authorization holders are prohibited to give gifts to health professionals of a value above €6.39 (EEK 100). Higher-value promotion activities are only acceptable in the form of supporting participation in scientific conferences. This support cannot be broadened to encompass people other than health professionals.

Patent protection legislation in Estonia is harmonized according to the European Patent Convention and ensures market protection for the originator medicinal pharmaceutical for 20 years. Under EU legislation there is the possibility of an extension for five more years under a Supplementary Protection Certificate. Recently adopted EU legislation obliges authorities to provide data protection for an 8+2+1-year period. This provides for an additional protection period for patented pharmaceuticals. After eight years, the SAM can start processing applications for generic pharmaceuticals under the EC Bolar amendment, which can then be marketed directly after the 10-year data protection ends. The authorities may provide for an additional year of data protection (and thereby delay generic market entry) for additional innovative indications (such as for paediatric indications). At the time of writing, no explicit provisions for parallel import and "government use" of patented products have been incorporated into national legislation. There are stipulations in the Estonian Patents Act concerning compulsory licensing, according to the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement (Pudersell et al. 2007).

In order to provide better opportunity to exchange experiences and make comparisons, the ATC classification of medicines and the DDD methodology recommended by WHO are used. The DDD is the assumed average dose per day for the pharmaceutical used in its main indication in adults. It is a technical unit of measurement and does not always correspond to the clinical dose that is actually used. All wholesalers report their quarterly pharmaceutical sales to the SAM. Statistical analysis of the data has been carried out regularly since 1994 and is published on the SAM web site. The consumption of each pack is calculated in volumes (DDD/1000 inhabitants per year), in units and according to the amount of money spent. Reporting on sales is mandatory by law for wholesalers. In 2007, pharmaceutical sales in Estonia at wholesale prices amounted to €170 million (EEK 2665 billion), an 18% increase compared to 2006. Since 2000, wholesale pharmaceutical turnover has increased by 137% (see Fig. 6.7).

During the Soviet era there was one manufacturing pharmaceutical plant in Estonia (Tallinn Pharmaceutical Factory) producing different generic medicines, including injections and ointments. In 1992, three new production units were constructed in Estonia, of which two were funded with Danish

Fig. 6.7 Turnover in wholesale prices, 2000–2007

Source: SAM 2007

capital and one with Swedish assistance. In 2002, eight licensed manufactures (mainly producing generics) were operating in Estonia (Jesse et al. 2004). In 2007, besides the original Tallinn Pharmaceutical Factory (which merged with the Latvian company Grindex in the early 2000s) there are some generics manufacturers mostly dealing with packaging of pharmaceuticals (such as Nycomed SEFA Ltd). Most of these are not of Estonian origin. Hence, the presence of pharmaceutical industry in the country is small, producing solely for the Estonian market. The proportion of local manufacturers versus international pharmaceutical companies is very low. Although there is no direct research-oriented industry, subsidiaries of the main international innovative pharmaceutical industry exist, which have formed an interest group in Estonia, the Association of International Pharmaceutical Manufacturers in Estonia. Furthermore, some representative offices of foreign generics industry have been established and have their own interest association (Estonian Generic Medicines Association). There are no producers of raw materials for pharmaceuticals in Estonia (Pudersell et al. 2007).

Although reform of the pharmaceutical sector in Estonia has largely been accomplished and at the time of writing the pharmaceutical sector is very similar to those in EU Member States, the system needs to evolve continuously to meet changing needs and challenges. One of the proposed changes for the future concerns the development and introduction of E-prescriptions, which embodies a digital prescription and retail delivery system of pharmaceuticals. This reform is to be carried out in close cooperation with other major initiatives (for more detailed information see Section 5.1 *Physical resources*, Subsection *Information technology*).

Since pharmaceutical expenditure is increasing faster than economic growth and other health care components (see Fig. 6.5), containing costs poses a continuous challenge for Estonia. Although reference pricing and price

negotiations have been introduced, cost-containment has been limited. The fact that OOP on pharmaceuticals is increasing could imply increased difficulties in access to pharmaceuticals, mainly for lower-income groups. To meet these challenges, further development of the reimbursement system is needed. The changes in reimbursement system should lead to cost-containment and a decline in OOP, along with simplifying the system of reimbursement and ensuring price controls for all reimbursed pharmaceuticals. Changes in the reimbursement system should aim to protect certain individuals (people with chronic conditions, low-income individuals, for example) against high financial risk and access difficulties. In addition, there is room to improve rational use of pharmaceuticals. In this respect, certain strategies are being considered, including introducing supply-side measures (such as prescription budgets, active feedback to doctors), encouraging rational prescribing (such as use of cheaper generics instead of expensive originator pharmaceuticals), introducing training programmes and promoting rational use of pharmaceuticals by patients.

6.6 Rehabilitation care

Rehabilitation care in Estonia is seen as an inseparable part of specialized medical care for restoration of impaired functions, preservation of restored functions or adjustment to a disability. Rehabilitation care is provided by health care providers licensed by the HCB. Departments of rehabilitation care providing outpatient and inpatient rehabilitation care are located in different hospitals. Furthermore, there are various spas in Estonia providing rehabilitation care; however, the services they provide are mainly financed out of pocket and without reimbursement by the EHIF or the Social Insurance Board (SIB).

In 2006, a new concept of rehabilitation care was introduced. The main change was related to the shift from procedure-centred care to a team-focused approach. The rehabilitation care team includes different specialists, including a doctor of physical medicine and rehabilitation, a physiotherapist and a social worker, as well as an occupational therapist, a speech therapist, a psychologist, a nurse and other specialists. However, the availability of rehabilitation services is limited due to the shortage of specialists working in a team. Since there are few qualified specialists, that is, physiotherapists and occupational therapists, a mere increase in the medical rehabilitation budget would do little to improve the situation. Of the targets set in the development plan for rehabilitation care to be reached by 2015, only 25% of the envisaged physiotherapists and 22% of the envisaged occupational therapists were active in 2006 (National Audit Office 2006). Since access to rehabilitation is geographically uneven and

differs greatly according to region, there is a need to increase the availability of outpatient medical rehabilitation in rural areas and to encourage service providers to provide services closer to the patient. Patients living in the bigger cities receive about two thirds more rehabilitation care services than people living in the rural areas of the country. Furthermore, only 20% of all people needing rehabilitation care actually receive this care and only half of them within medically acceptable time limits (National Audit Office 2006). Provision of outpatient rehabilitation care closer to the patient would increase the availability of and access to rehabilitation services, as well as being more cost-effective than inpatient services. Moreover, it can reduce the medically unjustified use of inpatient services.

Rehabilitation services financed by the SIB include social services for disabled people to improve their ability to cope and work independently. This service can only be provided to a person whose degree of severity of disability has been established by the SIB. In the course of this process, a rehabilitation plan is drawn up. Preparing a rehabilitation plan requires teamwork between the specialist and the patient, as described earlier. The SIB has contracts with different rehabilitation care providers that offer rehabilitation services. As far as rehabilitation care funded by the EHIF is concerned, the doctor of physical medicine and rehabilitation prescribes the necessary care and the procedures are carried out by the physiotherapist and other specialist(s) according to the patient's condition and general status requirements. The professional status of the physiotherapist as a key member of the team was introduced in 2002, and at the time of writing physiotherapists mostly practise in hospitals. In terms of future developments, the proportion of physiotherapists and other specialists working in outpatient settings must be increased in order to rectify the lack of service provision in rural areas.

6.7 Nursing care

In 2001 the Ministry of Social Affairs prepared the Nursing Care Master Plan 2015 in order to provide nursing care targets to match the hospital targets set out in the Hospital Master Plan 2015. The main changes recommended by the Hospital Master Plan 2015 were to turn small hospitals (mainly owned by local governments) into nursing care homes and to develop non-institutional nursing care services that provide home nursing and day-care nursing. The report set the target for nursing care beds at a minimum of 10 per 1000 of the target group, that is approximately 2100 beds in total. The fall in the number of acute care beds has not been accompanied by a sufficient increase in the volume of nursing

care services. Even though the volume of home and day nursing services has risen year on year, these services are not being developed to the necessary extent. This implies that many people needing nursing care cannot access nursing care services tailored to their needs. Nursing care is usually provided to elderly people with several chronic illnesses, who require help with treatment procedures and who cannot cope with the tasks of everyday life; and to adults with multiple conditions and partial incapacity to cope with everyday life, such as geriatric patients. This type of care is often of insufficient quality and does not meet contemporary requirements and expectations due to inadequacy of premises, lack of trained personnel (nurses, caregivers) and lack of appropriate financing for the services. Many nursing hospitals and welfare institutions are faced with an acute shortage of space and the standards are relatively low. In addition, there is still a shortage of nursing care beds. In terms of future challenges, appropriate facilities are needed to support the development of new service delivery models. Financial support worth €27.5 million from the ERDF for the period 2007–2013 should facilitate the development of nursing care facilities and improve the quality of services.

Reforms in the health care system are closely linked to the social welfare system. The systems of health care and social welfare are relatively separate from each other, which causes problems in terms of the transfer of people between the different systems (Ministry of Social Affairs 2005). The accessibility and quality of nursing care services is limited, due to the fact that the welfare and health care systems are financed from different sources – from the state budget and through the EHIF, respectively. Many social care home residents also need nursing care, but the amount of care provided is constrained by limited resources of municipal budgets. As the target group of nursing care and welfare services is largely overlapping, integration and better coordination of services are required to respond more effectively to the varying needs of elderly and chronically ill people. Strategies to optimize integrated care in Estonia are developed by interdisciplinary working groups but at the time of writing have not yet been implemented. For successful implementation, consensus between the different care sectors is required, along with legislative support from state bodies. Changes are also needed in financing: both combined financing from the EHIF, municipalities and personal resources; and at the service organization level, in terms of descriptions of minimum requirements and quality requirements for all nursing and social care. A 2007 amendment of the Health Services Organization Act (entering into force in 2008) provides an opportunity to arrange nursing service provision by the family doctor. This should bring home nursing care service closer to the patient, as discussed earlier.

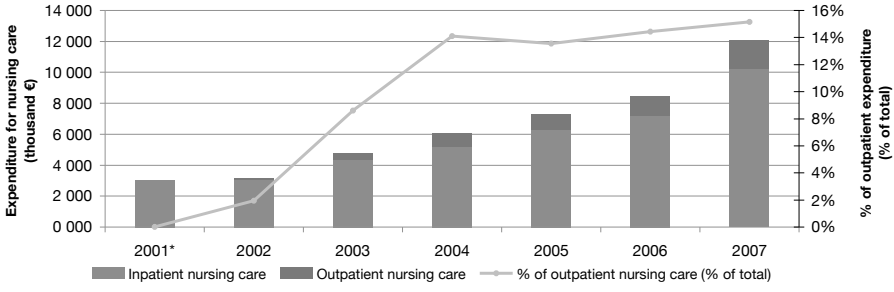
Quality requirements for nursing care allow care managers and providers to use standardized principles in the care process, keep nursing care quality high

(or improve it if necessary) and optimize the use of resources. However, the level of nursing care quality differs significantly between care facilities. There is a lack of common understanding of different quality requirements and the evaluation of service quality is often complicated.

The EHIF plays a significant part in the funding of nursing care. This is based on the principles of providing services tailored to the needs of insured individuals, including regional accessibility to care and proper utilization of the insurance funds. Since 2001 the EHIF covers the expenditure for nursing care separately from the expenditure of specialized medical care. At the time of writing the services funded by the EHIF are divided as follows: home nursing, geriatric assessment, home care for cancer patients and inpatient nursing care. Home nursing as an independent nursing service is included in the benefits package of the EHIF since 2003. It is mostly needed by immobile patients or those with restricted ability to move. Home nursing services do not require specific technological means and as such the provision of the service can be offered in the home environment. In 2004, geriatric assessments were included in the list of health services. The purpose of geriatric assessment is to assess a person's needs and provide them with suitable care services. It is based on a single assessment system for health care, nursing care and the country's welfare systems. Usually the primary assessment of needs is carried out in geriatric departments of hospitals but it is also possible at the person's place of residence. However, to further develop geriatric assessment, increasing the amount of service providers (that is, trained and skilled specialists) would be required.

Home care is also provided to patients suffering from cancer, often in the terminal stages of the disease. Inpatient nursing care is defined as 24-hour long-term nursing services provided mainly by nurses, social workers and physicians. The target group of inpatient long-term nursing care mainly comprises patients

Fig. 6.8 Expenditure for nursing care, 2001–2007



Sources: **EHIF 2002; EHIF 2004; EHIF 2006; EHIF 2007**
Note: *** Due to different structure of expenditure in 2000, all expenditures are shown under inpatient nursing care**

with chronic illness who need periodic medical supervision and treatment adjustment. In addition, the service is provided to patients at the terminal stage; patients who need additional follow-up treatment, rehabilitation and nursing care; and elderly patients who need health condition checks, treatment and counselling.

Expenditure on nursing care has grown over the years (see Fig. 6.8), mainly as a result of striving to offer better health services at patients' homes and adding new nursing care services to the benefits catalogue, for home nursing and geriatric assessment in 2003 and 2004, respectively. The share of expenditure on outpatient nursing care services (home nursing, home care for cancer patients and geriatric assessment) has increased, while the proportion of expenditure on inpatient nursing care has decreased.

6.8 Mental health care

The Estonian system of mental health services has improved considerably since the early 1990s. At the beginning of the 1990s, Estonia inherited a system based on institutional provision of care. Physical and mental disability was considered a taboo subject, and most disabled people were taken into an institutionalized care setting, even when they could have lived in the community with only modest assistance. Since that time, the system has transformed into a more humanist system in which the provided services primarily aim to improve the patients' quality of life. When the health system was restructured in the 1990s, a new concept of social services was developed with the intention of reducing and restructuring institutional care and developing a system of community care.

Mental health care in Estonia is regulated by many laws and regulations. Besides the Health Insurance Act and the Health Services Organization Act, the 1997 Mental Health Act (last amendment in 2006) regulates the organization of mental health care and defines the financial obligations of the State and local governments in the organization of such care. In addition, the Mental Health Act defines procedures and conditions for mental health care provision and involuntary treatment. It applies to all psychiatric cases and basically follows the 1991 United Nations principles on protecting the rights of those with mental health disorders. Financial resources from the state budget for social services are allocated to the county governments based on the number of people who need welfare services and these allocations also take into consideration the extent of services provided within the counties. Local governments must guarantee the accessibility of necessary social services for people with mental disorders. Mental health care is provided mainly by psychiatrists, psychiatric nurses,

nurses and psychologists. To access mental health care, the patient may turn directly to a specialist for an outpatient consultation, without a family doctor's referral. However, provision of services concerning mental disorders (such as depression) by family doctors has increased during recent years (Atun et al. 2008, forthcoming).

Mental health care in Estonia is seen as part of specialized medical care and includes the diagnosis, treatment, rehabilitation and prevention of mental disorders. It is provided in ambulatory care settings in the event that constant monitoring of the patient for diagnosis or treatment of care is not essential or the patient's mental state enables outpatient treatment. Inpatient care is mainly used in the event of short-term crises or for solving complex differential diagnostic and treatment problems. Inpatient care is required if there is a need to continuously monitor the patient over a certain period of time or if the patient is a danger to her/himself or others, depending on her/his state of mental health, and/or is not able to cope without medical assistance. Mental health care is provided on a voluntary basis and the compulsory treatment of a person with a mental disorder is only permitted if all of the following circumstances exist:

- the person has a severe mental disorder which restricts her/his ability to understand or control her/his behaviour;
- without inpatient treatment, the person endangers the life, health or safety of her/himself or others;
- other psychiatric care is not sufficient.

Compulsory psychiatric treatment is ordered by the courts according to the Penal Code. For the administration of inpatient compulsory psychiatric treatment in psychiatric hospitals, a person is hospitalized in the ward for compulsory psychiatric treatment and placed under supervision.

In 2003, the Government approved a Mental Health Policy Framework Document. This document was the result of multidisciplinary work led by the NGO sector and involved almost 1000 people over the course of a year. However, after some initial Government support for mental health issues, the original plan of action did not receive state funding and became less of a high priority for the Government.

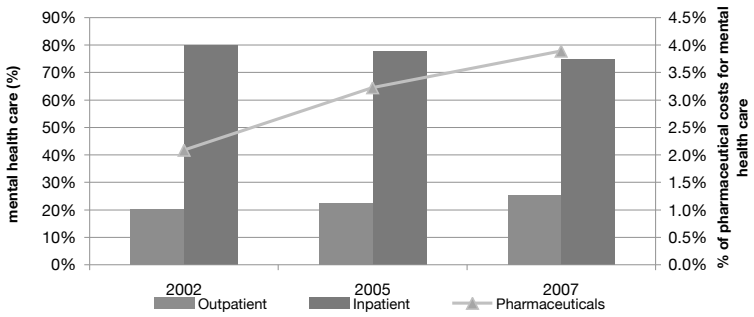
There are some nongovernmental supporting organizations in Estonia formed by people suffering from mental disorders. The mission of support groups is to improve the position of mentally disabled people in society. The EPAA focuses its activities on patients with mental health disorders and also gives advice to users of other health and welfare services. In addition, the Estonian Association for Supporters of People with Mental Disorders defends the rights of mentally ill individuals and their family members by improving the independence of people with mental disorders and increasing their quality of life. Nevertheless,

these organizations have had little influence on mental health policy-making thus far (Sarjas 2005).

Although the number of psychiatrists has increased from 174 in 2002 to 181 in 2006 and the number of psychiatric nurses working at health care providers has increased from 113 to 190 in 2006, the lack of human resources in mental health care provision is a growing problem. Based on optimal workload standards and the forecasting model for health care professional training, the optimal number of psychiatrists in 2015 is 260 (Ministry of Social Affairs 2008a). According to the development plan for nursing specialties, the required number of psychiatric nurses for 2015 is 540 (Ministry of Social Affairs 2002). During the 1990s the number of psychiatric beds decreased from 155.1 per 100 000 population to 74.8 per 100 000 and the average length of hospitalization decreased from 96 to 24 days. In 2006 there were 55.3 psychiatric beds per 100 000 and the number has remained stable since then. Children's psychiatric beds as a proportion of total psychiatric beds constitutes approximately 6% and the proportion of acute psychiatric beds 11%. The number of psychiatric beds as a proportion of all hospital beds slightly decreased during recent years and accounted for approximately 10% in 2006 (Ministry of Social Affairs 2008a).

The number of newly diagnosed cases of mental health conditions has doubled since the late 1990s, while hospitalization has increased substantially less. This may be due to better access to health care, reduced stigma regarding mental health conditions and the increased activity of family doctors in dealing with mental disorders. The number of PHC consultations had increased to double its 2001 levels by 2006. In the same period, the prescribing trend points to an increase in quality and a shift in favour of best practice. There is an obvious substitution of new-generation Selective Serotonin Reuptake Inhibitors over both benzodiazepines and tricyclic antidepressants (Atun et al. 2008, forthcoming).

Fig. 6.9 Division of mental health care services expenditure: pharmaceutical expenditure on mental disorders as a % of total pharmaceutical expenditure



Source: **EHIF 2007**

Mental health care expenditure is part of the specialized medical care expenditure within the budget of the EHIF. In recent years, expenditure on mental health care services has been stable at approximately 4% of all specialized medical care costs reimbursed by the EHIF. In 2007 the total costs of mental health care services amounted to €15.9 million (EHIF 2008, forthcoming). Within this figure, the proportion of outpatient mental health care services costs is increasing each year (see Fig. 6.9). In 2002, 20% of the funds allocated to mental health care services were spent in outpatient settings, whereas in 2007 this number has increased to 25%. The costs of outpatient pharmaceuticals for mental disorders have followed a similar trend; the share of total pharmaceutical costs has increased, doubling to 4% across a 5-year period.

The majority of expenses (nearly 99%) associated with mental health care services are related to the treatment of mental and behavioural disorders (diagnosis groups F00-F99 by International Classification of Diseases (ICD) 10 category). The proportion of the inpatient cost of F2 conditions (schizophrenia, schizotypic and delusional disorders) is significantly higher compared to the rest of the disease groups, comprising approximately one third of the total cost of mental health care services in 2007.

6.9 Dental care

Initially, since 1991, dental care in Estonia was part of the benefits package financed by the EHIF. All dental care services were provided for all insured patients free of charge. At the end of the 1990s, constraints in the EHIF budget led to a fragmentation of resources between providers, a minimum level of contract volumes and long waiting lists. These circumstances gave a good starting position for private providers to raise their prices, since the legal framework did not prohibit providers from doing so. All these developments – long waiting times, fragmented resources between providers and increasing OOP payments – resulted in low utilization of dental services. In 1999, 52% of the Estonian population had visited a dentist; in 2001 this number had declined to 42% (EMOR 2001). As a result, with the 2002 introduction of the new Health Insurance Act, Estonian society was ready to accept the exclusion of adult dental care from the benefits package in order to warrant the financing of children's dental care. Thus, the new reimbursement system guarantees dental care free of charge for individuals under 19 years of age (including orthodontics for certain diagnoses), according to the health services catalogue (for more about reimbursed health services, see Chapter 3 *Financing*).

The EHIF covers the costs of adult emergency dental care when the care is provided by EHIF-contracted providers. Abscess incision and extraction of teeth are among the services financed by the EHIF in emergency dental care cases.

When adult dental care was excluded from the benefits package in 2003 it was replaced with cash benefits up to a predefined ceiling, with the aim of covering implicitly the costs of annual preventive check-ups. The patient pays the provider directly for the service and receives reimbursement later, after submitting an application to the EHIF. Higher reimbursement rates are established for pregnant women, mothers of children up to one year of age and those having greater need for dental treatment because of a particular condition. In the case of dentures, the EHIF compensates, once every three years, the amount paid for dentures by insured individuals who are at least 63 years old or who receive an old-age pension. The amount, terms and procedure of payment are established by a regulation of the Ministry of Social Affairs. Since the new reimbursement system was introduced in 2003 the proportion of total eligible individuals who have applied for dental and denture benefits has been relatively low. Over the years, people's awareness of their eligibility for benefits has improved and the rate of utilization has slightly increased (see Table 6.2). However, utilization is still relatively low and further investigation of the reasons for this low utilization rate is yet to be pursued.

Table 6.2 Share (%) of total eligible individuals applying for dental and denture benefits, 2003–2006

Benefits	2003	2004	2005	2006
Dental benefits	17	18	24	21
Denture benefits	10	10	11	11

Sources: EHIF 2006; EHIF 2007

The regulatory framework for dental care provision is established by the Health Services Organization Act and the Health Insurance Act. Dental care is one of the specialized medical care specialties that may be provided by companies or private entrepreneurs which have a licence for the provision of dental care. The facilities and equipment necessary for the provision of dental care have to meet the requirements established by the Ministry of Social Affairs. During the 1990s dental care providers were quick to open private practices and the proportion of public dentists decreased rapidly. However, at the time of writing dental care is provided to some extent by publicly owned hospitals as well as private providers. It is becoming increasingly difficult in some areas of the country to ensure free services for children because dental care providers' interest in providing children's

dental care under the EHIF contract is relatively low. The main reasons for this include the additional bureaucratic burden the requirements impose on dental care providers. They have to meet certain requirements in terms of IT solutions for data exchange with the EHIF, as well as needing to conclude and monitor the contract(s). In addition, rapidly rising prices in dental care and an increasing demand for adult dental care, which is more profitable for dentists, have decreased the interest of providers in applying for an EHIF contract (Koppel and Aaviksoo 2007a) (see Chapter 3 *Financing*).

Quality monitoring of dental care services and providers is mainly left to the dentists' professional organization and the HCB. In 2003 and 2004 the EHIF initiated and funded a medical audit of dental care and compared dental costs for children and adolescents based on medical records. The audit concluded that the quality of dental care for children is generally satisfactory. Since the mid-1990s, the EHIF has funded dental health prevention programmes for children. First on a voluntary basis for those providers interested in participating, and then later also through a national programme fully funded by the EHIF. This programme includes oral hygiene education in schools, individual dental consultations, fluoride therapy and the application of protective substances, if medically necessary. At the time of writing the target group of the programmes is children aged 6–12 years old and in 2005 the coverage of these prevention programmes was approximately 50% (EHIF 2006).

The prices of dental care services funded through the EHIF are set according to the same procedure as all other health care services. Prices of dental care services are identical for all providers contracted by the EHIF. Prior to 2002, dental care prices were regulated, but patient co-payments were not, so about half of all dental care was paid for by patients, including child dental care. At the time of writing, the Government regulates the price-setting process for children's dental care. Dental care prices for adults are not regulated, as there is no competent authority responsible for the monitoring of the prices charged (see Chapter 3 *Financing*). As far as further developments are concerned, ensuring access to children's dental care is an ongoing challenge. The growing ability of the population to afford dental care and the steadily increasing number of foreigners seeking dental care in Estonia (Jesse and Kruuda 2006) increase the demand for dental care services and therefore could adversely affect the dental care providers' interest to applying to contract with the EHIF's for child dental care.

7 Principal health care reforms

Since regaining independence in 1991, Estonia has been undergoing extensive reforms to expand insurance coverage and availability of services (both public health and health care), to increase the responsiveness to patients and to change various other elements of the health system. Chronologically, the Estonian health system reforms can be divided into four development phases: the early 1990s, the mid-1990s, the late 1990s/early 21st century, and the current system at the time of writing.

The first two periods introduced a radical new direction for the health system and laid the foundation for the organizational structure (including the Ministry of Social Affairs, the health insurance fund and the SAM), including basic regulation on health financing and service provision. The reforms can be characterized by relatively short preparation periods and implementation deadlines. Reforms such as the introduction of a health insurance system were not prepared down to the very last detail, leaving considerable space for fine-tuning and regional innovation in implementation. However, due to the small size of the country, this did not result in unmanageable chaos, as might have been expected; rather, it created opportunities to learn from best practice when developing uniform national procedures from 1994 onwards.

The third phase focused more on incremental development, aiming to clarify and strengthen the regulatory framework, setting the strategic objectives, clarifying the functions and responsibilities of various stakeholders and exploring different ways of working. Compared to the previous periods, the reforms were planned in greater detail. The overall objectives of the changes were to increase the efficiency and transparency in the system. In 2001 and 2002, this culminated in a legislation update (including health financing, service provision, pharmaceuticals, obligations) that has since been the basis for further health system development.

In the fourth phase, current at the time of writing, the health system is being fine-tuned from day to day; however, there are no principle major changes applied. This last phase can be characterized as assessing the health system from various angles and developing further strategy. The continuous objectives for the health system have been to increase efficiency and sustainability. However, during further development, other objectives such as access, responsiveness, quality and accountability have also gained increasing attention. In the sections that follow, health system reforms and their potential impacts since the early 1990s are described, and emphasis is placed on the changes in recent years and the potential next steps.

7.1 The early 1990s: health insurance system to ensure sustainable financing

During the 1980s, when Estonia was part of the Soviet Union, health care coverage was virtually universal in terms of its breadth. In reality, the depth of coverage varied among population groups. Services were well developed in some specialties, such as maternal and child health, but in other areas the use of modern technology or clinical methods for treatment lagged behind practices in western European countries.

The first health care reform, before Estonia became officially independent, began with financing. The objective was to build a health insurance system to secure sustainable financing for the health care sector. From the centralized, integrated Semashko state model, the system was transformed into a decentralized SHI model, while fortifying health funds through earmarked taxes and enhancing systemic efficiency and responsiveness. Preparations began in the late 1980s, when changes were foreseen and the need to establish a functioning health system emerged. The first Health Insurance Act was approved by Parliament in 1991, before Estonia's official independence.

The re-established EMA, representing the majority of doctors, played a significant role in the successful initiation and implementation of health insurance reform. This support was important in streamlining the reform. EMA leaders and doctors recognized in the insurance system the possibility of ensuring sustainable funding for medical care in a new economic environment. In addition, some of the doctors from the EMA left clinical practice to become involved in politics, although this does not mean that health policy-making was controlled by the interests of providers. Another important success factor was the consensus and commitment of political parties to system reform between 1993 and 1995, during a period of political stability.

The health insurance system was designed around regions, in which 22 non-competing sickness funds were established. This was one part of the health care decentralization plan. The sickness funds were organized by county or city governments authorized to approve the sickness fund statutes and rules for calculating health care benefits. The Ministry of Social Affairs exercised a supervisory role over the health insurance system. To enhance national coordination, the Government set up an Association of Sickness Funds.

One reason for establishing a Bismarckian type of health insurance system was to ensure a sound revenue base for the health care system. Another important rationale was to relate health insurance closely to the labour market to give people incentives to participate in the formal labour market. Thus, the health insurance tax was introduced with a contribution, set at 13% of employees' salaries, paid entirely by employers. Other contribution rates were set for different kinds of entrepreneurs. The 13% rate on salaries still applies, but due to changes in the legal environment, other types of entities (such as self-employed farmers) have been reorganized and at the time of writing, universal taxation rates are used for them. At first, the health insurance tax was a separate tax. In 1994, it was incorporated into the social tax as a share earmarked for the health insurance (for more details, see Chapter 2 *Organizational structure*).

In the early stages, the regional sickness funds collected the health insurance tax and there was no central pooling or any risk adjustment of funds. Therefore, more deprived areas had lower revenues, which restricted access to care in those regions. Recognition of this shortcoming of regional organization impelled administrative changes. The established health insurance system was mandatory with no opt-out exceptions, but people were allowed to buy supplementary private insurance for expenditure not covered by the State. From the beginning, insurance coverage was almost universal because most population groups were eligible.

The introduction of a purchaser–provider split was seen as a tool to facilitate the downsizing of the provider network. Sickness funds contracted with service providers to ensure necessary care for insured individuals in their region(s). Providers were paid according to the price list approved by Ministry of Health (which later became the Ministry of Social Affairs). The price list was based on the German price list, but fees for different services were adjusted to local prices.

OOP payments for health care services were almost non-existent during the Soviet era. Formal OOP payments were not introduced at first for various reasons, including the population's low purchasing power. The first development in this field took place in 1993, when a reimbursement system for prescription pharmaceuticals was introduced, based on the positive list principle and limited

cost sharing. Co-payments were €0.32 (EEK 5) per prescription for medicines on the positive list with a co-insurance rate of 100% (defined by disease groups and pharmaceutical names), which also applied to population groups such as disabled people, children under three years old, and people over 70 years of age. Similar co-payments were introduced for medicines with a co-insurance rate of 90%, and slightly higher co-payments for prescription medicines with a co-insurance rate of 50%. This policy kept the share of private expenditure low in the early 1990s and provided good access to medicines.

This first wave of reforms laid the basis for a functional health system by establishing a sustainable and fully operational health financing system, an inevitable prerequisite for the later reforms. The health insurance system was crucial to ensure breadth and depth of coverage after the collapse of the Soviet system and supported the establishment of an overall social security system in the early 1990s. An important change while expanding the depth of coverage was the introduction of a new reimbursement system for prescription medicines, which made the latest medicines available with limited OOP payments. Another important change was the introduction of a purchaser–provider split to obtain transparent contractual arrangements for achieving efficient use of resources.

Even though the initial reforms can be considered quite successful, there were still a number of threats to the system, such as the low level of training of health insurance system personnel due to a lack of experience in the field as well as non-existing local training courses. However, the introduction of the health insurance system took place in the context of other major social, economic and political changes, including the rebuilding of a newly independent country, the reintroduction of democracy and the establishment of a market economy. Consequently, not only the new health insurance system and its administrators, but country as a whole was involved in a kind of "on-the-job" training programme. In fact, many regional sickness funds recruited managers from outside the health sector, and it could be argued that this introduced new thinking about efficiency, sustainability and new management styles in the health (financing) sector more quickly than a process of retraining existing medically qualified regional health administrators in health economics and management would have done.

At the beginning of 1993 the Ministry of Social Affairs was established, merging the social welfare, labour and health ministries. This created both challenges and opportunities, for example it allowed rapid developments not only in health care, but also in public health, for which a separate department was created. To regulate the pharmaceutical sector, the SAM was created under the Ministry of Social Affairs in 1993 (see Chapter 2 *Organizational structure*). The SAM, which since 1991 had existed as the Estonian Centre for Medicines, was set up to coordinate and control the authorization and registration of products,

pharmacies and other issues related to the pharmaceuticals market. Due to the number of different interests, the first regulation covering medicinal products was adopted in late 1995 after two years of discussions.

7.2 Mid-1990s: decentralizing the provider network to ensure access to modern, high-quality health care and public health services

The reorganization of the provider network marked the second phase of reforms. After the introduction of the purchaser–provider split, health care organizations gained more autonomy than they had been used to under the Semashko system. The new freedom opened space for incentives to restructure the provider network and to improve systemic responsiveness and efficiency. When the original version of the Health Services Organization Act came into force in 1994, the health service planning function was delegated largely to the municipalities to dilute the central Government's role (see Chapter 4 *Regulation and planning*). In the early 1990s the parallel health care delivery systems were abolished (with the exception of primary care for the armed forces, as well as primary and some secondary care in prisons). In 1991, the provider licensing system was enhanced, which was an important precondition for decreasing hospital network capacity to enable more efficient use of resources and to ensure quality. In 1994, after a detailed review of all providers, substandard providers were closed. In the same period, hospitals had been granted full employer rights, including hiring and firing of personnel. All medical staff lost their civil service status and began to work under private labour regulations, starting in 1992. However, legislation covering the hospitals enacted up to that point did not provide for supervision and accountability.

PHC reform was initiated in line with hospital sector reorganization. The first step in PHC reform was to introduce family medicine as a separate medical specialty (in 1993) and to start postgraduate training at the University of Tartu – the only university providing training for future doctors. Re-specialization training was introduced in 1991. The basic framework for family medicine, set out in the Health Services Organization Act, was amplified in the Family Practice Act during 1994, but the Act remained a draft and reform slowed down because there were no appropriate incentives. In 1997 the primary care reform plan was reinitiated by ministerial decree. In addition to family medicine, ambulance services were made universal, ensuring access to ambulance services for the whole population, funded from the State budget (as opposed to the previous, fragmented system which was funded by insurance or the State,

depending on the population group concerned). Furthermore, service quality was continuously improved, even with smaller numbers of teams available. These accomplishments contributed to the overall development of the health care sector.

Administrative changes were also implemented in the health insurance system. The first years of experience showed that a fully decentralized, uncoordinated system of sickness funds was too fragmented. Revenue collection was also fragmented, lacked the vital central pooling and risk-adjustment arrangements and contributed to widening inequalities between regions. To strengthen central functions such as planning, allocation of revenue between regions and control of financial resources, the Central Sickness Fund was established in 1994 and the regional sickness funds were subordinated to it. The revenue collected was pooled centrally and reallocated to the regions on a capitation basis. The regional sickness funds were cut to 17 in an attempt to improve the efficiency of resource utilization.

Alongside the introduction of the Central Sickness Fund, the State Health Insurance Council (SHIC) was established. The SHIC consisted of 15 members, nominated by the organizations represented on the Council and mandated to serve for three years. The main SHIC responsibilities were to approve the state health insurance budget and to develop the price list for health care services, and the role of the SHIC was mainly advisory. Concurrently with the establishment of the SHIC, the role of the Regional Health Insurance Councils was changed to an advisory capacity for each of the regional sickness funds (prior to 1994 they had full decision rights). Although their role was advisory, they had a significant influence on contracting processes. The SHIC existed until 2001, when a new health insurance organizational model was introduced, with its own supervisory structures and representatives of the State, beneficiaries and employers.

In the mid-1990s changes were also made in health insurance eligibility criteria by defining more precisely the groups eligible for health insurance without contributions. As a result, some segments of the working-age population remained uninsured. The motivation behind this change was to give clear incentives to participate in the legal labour market and to decrease the share of informal payments, which was a serious concern due to ongoing privatization and other radical changes in the economic environment.

Another important amendment of the Health Insurance Act was to allow regional sickness funds financial discretion only to the extent to which resources were available. In the early years, when resources were relatively plentiful

[2] One representative each from the Ministry of Social Affairs and the SIB, one county doctor, one municipal doctor, one provider representative, five representatives of employer unions and five representatives of insured individuals' unions.

compared to the services available, this provision was not so important. The providers' capacity to deliver sufficient services was the challenge at that time, but it was feared that, as provider capacity expanded, the health insurance system might be unable to cover all expenses. Regional fund managers have strictly followed this principle under the supervision of the central fund which is responsible for balanced revenue and expenditure. Only once, in 1999, did operating expenditure exceed revenue, and the deficit was covered from central reserves. The balanced budget principle was followed mainly because of the central fund's desire to show its independence from the state budget and to prove its ability to function autonomously in the health sector. Since the early 1990s, Estonia's general fiscal policy has always supported balanced budgets in every sector. This commitment is bound by strict regulation and generally conservative fiscal policy, which disapproves of public sector deficits.

In 1995, patient co-payments for primary care and specialist visits were introduced, where previously all care was provided without user charges. The co-payments were low (€0.32) and many population groups were exempt. Co-payments were introduced mainly to raise revenue for health care and to rationalize health care service utilization by eliminating unnecessary visits. However, this decision was politically sensitive because people were accustomed to free medical care and their willingness, but also their ability, to pay for medical care was limited. The argument for decreasing informal payments, which were common during the Soviet era, was not explicitly made in the political agenda. After 1995, cost sharing for pharmaceuticals was also increased by raising co-payments and introducing ceilings on benefits covered by the EHIF. Co-payments for pharmaceuticals continued to increase modestly in the mid-1990s, but more rapidly in the late 1990s and in the current century.

The Public Health Act of 1995 states that the general responsibility for health protection, promotion and disease prevention policy lies with the Ministry of Social Affairs, but it also notes that county governors and municipalities have a general obligation to secure public health services for their populations. The regulation is updated gradually to respond to current needs, but it has been the principal relevant legislation in effect for several years (since 1995). The strategic focus of the HPI has shifted from law enforcement and control towards prevention, monitoring and surveillance of communicable diseases and environmental factors. In addition, some efforts were made in the mid-1990s to reorganize the SANEPID system established in the Soviet era in the direction of public health and prevention.

The public health infrastructure was developed further in the mid-1990s, when health promotion specialists started to work at regional level, supported by the EHIF. Although the first public health programme had existed since 1992 (HIV/AIDS prevention programme), additional programmes were initiated, after

agreement on the legislative framework in 1995, to cover various areas over the years that followed (such as child and adolescent health; HIV/AIDS prevention; alcohol and drug abuse prevention; TB prevention). Financial support from the EHIF provided an additional boost from 1995 onwards, which enabled the launch of various disease prevention activities that were later followed by health promotion projects.

Problems in the development and implementation of reforms in the mid-1990s occurred rather more as a result of a lack of shared vision and political will than factors such as poor infrastructure or administrative skills. An example of positive conditions for successful reform is the introduction of the scheme for financing and regulating family medicine in 1997. Although this reform was initiated on the basis of a ministerial decree alone, it was seen as necessary by important stakeholders such as leading players in the Ministry of Social Affairs, the EHIF, the county doctors, the newly trained family doctors and the University of Tartu Faculty of Medicine. The joint efforts of these groups made the preparation and implementation of the reform possible within a 9-month period.

International organizations, as well as projects enabled through bilateral financial support have played a role in the health system reform process. The Estonian experience suggests that fruitful and mutually satisfactory cooperation with international organizations and experts can only take place when a vision of and commitment to reforms exists within the country itself. It is only then that international expertise can be effectively used. Since the early 1990s Estonia has been exposed to a number of experts and support in various forms (such as bilateral and regional schemes). Among others, a good example of effective cooperation was the support of the WHO Regional Office for Europe in developing the details of the primary care reforms, reforming public health and providing international comparisons.

The role of the World Bank's Estonia Health Project 1995–1999 in supporting the overall health care reforms was important in three ways. First, the project combined already existing initiatives, such as the introduction of health insurance and the retraining of family doctors, into a general health sector reform framework. This framework helped to provide oversight of the various reform agendas and to create an objective-oriented management and accountability structure for health care reform within the Ministry of Social Affairs and other institutions involved in reform planning and implementation. Second, the World Bank loan helped to "lock in" government commitment to health care reform at times when the political will to proceed with reforms was not strong. Third, having an overall framework for reform also helped to coordinate the activities of other donors and projects.

7.3 Late 1990s and early 21st century: recentralizing the health system and clarifying the roles

In the early 1990s the health system was decentralized to the municipalities and counties. The weakness of the implemented reforms lay in the lack of preparation in terms of staff training, accountability procedures, and guidelines for sustainable policy. In the health insurance system, some recentralization had already been put forward in 1994, with the establishment of the Central Sickness Fund. However, it was evident that the provider network restructuring needed reinforcement, as municipality-level planning of provider-related functions did not have the desired results. Protecting the interests of local providers often took precedence over system-level efficiency and accountability, and the municipalities, as administrative units, lacked the necessary revenue base and competences. Some functions clearly had to be recentralized and the legal status of providers established. The Ministry of Social Affairs had to take a stewardship role in planning the provider network for specialized care and primary care planning was centralized from municipal to county level (and in some fields up to the central level).

An important milestone in the third reform phase was the Hospital Master Plan 2015. This was a necessary accelerator for continuing hospital sector reform with clear targets, but it is worth noting that the principal changes in restructuring hospitals had started already by the time this Plan was formulated.

Until 1998, primary care was provided mostly in polyclinics and ambulatory facilities, owned by the municipalities and by a few private providers. In 1998 some primary care planning functions were recentralized from municipality to county. To foster the primary care reforms, the Ministry of Social Affairs introduced a new regulation and financing scheme for primary care in 1997, as mentioned earlier, with the goal of providing the whole population with family physician services by 2003. Ensuring access to primary care has been seen as an important precondition for centralizing specialist care and downsizing hospital network capacity. All Estonian inhabitants, insured and uninsured, must register with a family physician. A mix of payment methods for family physicians was introduced. To encourage physicians to retrain and become certified as family medicine specialists, they were offered an incentive of approximately €64 (1000 EEK) per month.

Some administrative changes have also been made in the health insurance system. In 1999 the social tax collection function was assigned to the Tax Agency, which transfers the revenue earmarked for health care to the health insurance fund. This allowed the health insurance fund to concentrate on the

pooling and purchasing function. Tax revenue collections have also increased over the years.

In the period since the early 1990s, as Estonia's own legal system evolved, the legal status of the sickness funds became blurred, with some features defined by the presence of public independent legal persons and some by a state agency related to the Ministry of Social Affairs. In 2001 the establishment of the EHIF as a public, independent legal body with seven regional departments clarified the roles of central and regional branches, as well as the EHIF ties with the Ministry of Social Affairs and the role of Supervisory Board. In 2002 the Health Insurance Act clarified the regulation of all aspects of the health insurance system, including benefits, reimbursement lists and reimbursement levels for health services and pharmaceuticals, maximum levels of cost sharing for insured people and contractual relations between the EHIF and providers. In 2003, seven regional departments were merged into four departments as a natural step in the centralization process, each covering 200 000–500 000 insured individuals.

The legal status of service providers was also defined more precisely, clarifying relations between purchaser and provider. Since 2002 all hospitals are required to act under private law as joint-stock companies or foundations. This legislative requirement in the Health Services Organization Act did not constitute a major change from previous policy, but was rather a somewhat delayed regulation of the de facto situation. Hospitals had been autonomous in their activities from the beginning of the 1990s, having had full managerial rights in personnel management, purchasing equipment, taking financial obligations to the hospital and in reality also having full residual claimant status. The requirement to define hospitals as joint-stock companies or foundations provided a clear regulatory framework for the rights and responsibilities of hospital managers. In Estonia, the hospital sector is dominated by public hospitals. Most hospitals are owned (or founded) by the State, local governments or public legal bodies (such as the University of Tartu). In many instances, the hospital has multiple owners, for example municipalities owning a hospital or the State and municipalities jointly owning one. While having multiple owners could be beneficial to the hospital in theory, by broadening base for financial support, analysis has shown that in reality it may weaken the owners' motivation to take the responsibility for the performance of the hospital (Fidler et al. 2007).

Whereas the first wave of reforms was initiated by doctors, the efforts to increase efficiency and protect the public interest prevailing during the reforms of the mid- and late 1990s were led by the Ministry of Social Affairs. The providers' influence in setting the reform agenda probably also decreased due to the absence of a specific health ministry from 1993 onwards. In 2003

an assistant minister post was established, through which a political doctors' representative played a steering role in the Ministry in addition to their regular health sector civil service. Since 2007 no assistant minister has been appointed, but nonetheless, the health care sector has strengthened its representation by virtue of the fact that the secretary general post is held by a doctor and the number of advisors with a health sector background has increased.

It is worth noting that since 1992 the main health care reform legislation has been passed and implemented during periods when the Minister of Social Affairs did not have a background in medicine. While the EMA, the Hospital Association and the Estonian Society of Family Doctors have been involved in reform preparation as the Ministry's negotiating partners, the Ministry has also involved other stakeholders and interest groups in reform preparation, either by assigning representatives to working groups or by including them at the consultation stage during the drafting of legislation or strategies.

The health insurance funds' role in proposing and preparing health care reforms increased from the mid-1990s onwards. The pressures of maintaining acceptable access to health services with limited resources, while trying to match increasing demand for new health services and pharmaceuticals as well as the demand for salary increases for providers, was probably most acutely felt on a daily basis by the health insurance system. This forced the EHIF to propose and prepare several provider payment reforms, including the introduction of DRGs or payment schemes for primary care to support overall health care development, as well as to propose organizational strategies for strengthening its purchasing power.

The most important feature of the third wave of health sector reforms has been the readjustment of the overall regulatory framework for health financing, health care providers and pharmaceuticals. In the years 1997–1999 a number of additional regulations were implemented (see Section 4.1 *Regulation*), covering the areas of psychiatric care; protection of the embryo and artificial fertilization; termination of pregnancy and sterilization; and occupational health and safety. As mentioned earlier, the health insurance fund and the health insurance acts were set up early this century, and the Health Services Organization Act was also adopted to clarify the roles and responsibilities of providers. The third important pillar of the purchaser–provider–patient triangle was established with the Law of Obligations Act, which entered into force in 2002, to regulate all contractual relations, including health sector contracts.

In terms of breadth of health insurance coverage, changes were made in insurance eligibility criteria and some population groups were excluded. However, the share of the uninsured population has not increased, because the employment level has strengthened. The third phase has also been

marked by growing OOP expenditure for pharmaceuticals as a side-effect of the cost-containment measures introduced for public funds. In addition, the OOP payments increased for adult dental care, which was excluded from the benefits package for adults and replaced with a low level of yearly monetary compensation (to implicitly cover the annual preventive check-ups). Furthermore, maximum ceilings for patient co-payments were set for specialist visits and hospital stays, keeping family physician visits free of charge for the insured population, but leaving the uninsured to cover all costs out of pocket, excluding those associated with emergencies.

Since the mid-1990s, the EU accession process has influenced policy and development priorities in health care, as well as in every other sector. Harmonization of legislation and procedures with those of the EU was given priority in all legislative development, drawing increasing attention to public health and occupational health and safety issues. At the same time, the development of the health care system followed the nationally determined path.

7.4 Current changes, future directions and challenges

The more fundamental changes to build a functioning health system in Estonia were made in the early stages of reform, during the early 1990s. The incremental arrangements that followed were made to support the public health, PHC and hospital sector reforms and to strengthen the EHIF's purchasing function. At the time of writing, attention has shifted to improving and monitoring performance of the system as a whole.

One continuing subject of debate concerns the low level of health expenditure in relation to GDP, although every year between 2003 and 2007 more funds became available in absolute terms due to rapid economic growth. In the long term, however, financial sustainability is a cause for considerable concern because care for an ageing population and an increase in chronic diseases will absorb more health resources. In terms of public financing, broadening the health insurance revenue base (taxing other incomes in addition to salaries) is one option. A second option is to persuade local municipalities to increase their financing by expanding their responsibilities, for example, by providing health care services for the uninsured population. These and other options have been discussed openly in various forums in recent years, yet no decisions have been made because the underlying alternatives demand strong political commitment and significant reallocation of resources. In 2006 the decision was made to increase the State's contribution rate, which will increase the budget by less

than 2% and affects only 4% of the insured population. It is important, however, to avoid increased fragmentation of the health financing scheme when looking for additional resources.

Another topic under discussion is the expansion of private financing by fostering more favourable conditions for private insurance or by increasing OOP payments. OOP payments have been increasing in an attempt to activate macro-level cost-containment in public funding by rationalizing use of health care services and pharmaceuticals. Therefore, the impact of rising OOP payments on different social groups should be evaluated, especially considering the fact that current evidence shows that access to medicines may already be constrained.

The 2003 reforms introduced a positive list for prescription medicines, a reference pricing system and price agreements for prescription medicines. This has had multiple effects on the provision of pharmaceuticals. On the one hand, cost-containment has been achieved for public funds and an increase in the availability of pharmaceuticals has been observed. On the other hand, however, patient cost sharing has gradually increased, which raises questions regarding further reform needs. Introducing targeted exemptions could be considered, especially for people with chronic conditions. In addition, supply-side measures such as prescription budgets, active feedback to doctors, and rational prescribing training programmes have been discussed. Nonetheless, in the absence of strong commitment to contain costs, expenditure on pharmaceuticals has been increasing every year.

The uninsured are the most vulnerable population group in terms of high OOP health expenditure. At the time of writing, the insurance eligibility policy for the working-age population is deliberately tied to labour policy, and health insurance is seen as an incentive for obtaining a job in the formal market, that is, subjected to payroll taxes. Changes introduced in 2007 provide additional coverage for those who participate in the active labour force. This link is unlikely to be severed in the near future, thus barring the way to full universal coverage. However, as of 2008 there are discussions on broadening coverage of PHC services for uninsured people, but various options are still being considered.

Although a number of public sector funds are available for the health sector, additional resources have been made available in recent years. The latest developments include targeted funding for certain services in line with government policy (for IVF, for example), or efforts to improve the infrastructure (providing for hospital network capital costs using the EU structural funds). In addition, such funds are made available to scale up public health programmes (such as rapidly increasing budgets for Estonia's HIV/AIDS prevention strategy) or for new initiatives (such as the launch of a cardiovascular disease prevention strategy in 2005 and a cancer prevention programme in 2007). These public

health-related funds, most implemented by the NIHD founded in 2003, have increased public health services provided both to the individual and the population in general. There has been an overall increase in awareness and the number of specialists working on public health at county and municipality levels since the adoption of these strategies. However, new challenges have emerged, such as limited availability of health sector specialists and service providers (including NGOs), a low level of accountability, and the need for better coordination between the health sector and other sectors, such as social services.

A trend in recent years has been the development of concrete plans or programmes by the Ministry of Social Affairs in specific health care or public health areas, with a clear mandate and financial commitments instead of general policy statements, as well as a broader consultation process, increased accountability and reporting. The preparation process is built on concept/papers and consultations, whereas many public health strategies have the intersectoral approaches. In recent years this has led to the development (or update) of the cardiovascular disease prevention strategy in 2005, the HIV prevention strategy in 2006, the cancer prevention strategy in 2007 and an update of the TB prevention programme in 2008. All these strategies have a long-term vision with targets, a 4-year framework and 1-year action plans, of which the latter two are reviewed annually. This process is in line with overall government strategy planning, which has created a stronger commitment to health-related strategies.

In the public health field it is possible to see major accomplishments in areas such as tobacco control, in which several interventions have been made since the 1990s. This continued with the adoption of the WHO Framework Convention for Tobacco Control and a national legislation update, as well as harmonization with EU legislation. For example, a ban on smoking in public places was introduced in June 2007. However, failure in recent years to control sales and marketing of alcohol has resulted in a situation in which increased alcohol consumption now constitutes one of the country's main public health concerns. Furthermore, since the early 21st century, the HIV/AIDS epidemic presents an ongoing challenge to the whole health system in terms of prevention and treatment (for more detailed information see Section 1.4 *Health status*).

In the field of service purchasing and payment methods, a number of reforms have been introduced. Since 2006, contracts with providers are open-ended, but with lower returns when exceeding the negotiated contract limit (as opposed to the capped contracts used previously). The DRG-based payment system introduced in 2004 is expected to provide an additional incentive to hospitals. In primary care, a bonus payment to encourage disease prevention and chronic disease management was introduced in 2006 and additional targets for professional development are planned for 2008. Discussions on how to

stimulate quality improvement in hospitals (learning from the recent primary care developments) have been ongoing over recent years. In terms of pricing, the transparency of the price list preparation was increased and activity based costing – which has been under preparation since 2003 – was included in the price list calculations in 2006.

In terms of service delivery, the main challenge is presented in the need to optimize the system. The strength of the current delivery system is strong family medicine-centred PHC. This system covers a wide range of services without co-payments and with minimal waiting times. It is complemented by the ambulance (emergency) services for care outside normal working hours, which now mounts to a quarter of all health care visits. This slight overuse of this service can be considered a weakness in the delivery system, because many such "visits" turn out to be cases treatable by family physicians or simply calls for transportation. This was one of the reasons for opening the 24-hour primary care call centre in late 2005. The service rapidly gained popularity and led to an observed decrease in ambulance emergency service use.

The challenge lies in making the delivery system more patient-centred and coordinating care at the primary level, with the development of additional nursing and rehabilitation services. The current reforms support the widening of the scope of primary care, in terms of more involvement of nurses on individual consultations and setting incentives for practices in general. Further expansion would enable more efficient use of resources and ensure better access to and quality of care. Continuity of care presents another challenge: bringing outpatient care and high-quality hospital services close to patients without long waiting lists. All this hinges on the availability of human resources, particularly nurses, who for several years have been migrating to neighbouring countries or leaving nursing for jobs outside the health sector.

In anticipation of EU accession, medical training was harmonized with EU legislation and a slight increase in admission numbers has since been agreed to tackle the lack of human resources due to ageing and migration of health workers. Furthermore, essential changes have been applied through the structural reform of medical education institutions and changes in the curricula for the training of nurses, midwives and other professionals. Although these changes have improved the supply and quality of health care workers, there still is a lack of professionals working in health care facilities. Therefore, salaries have been subject to high-level discussions with the aim of decreasing migration of health care professionals to other countries, limiting the outflow of staff from the health sector and increasing the overall motivation of the workforce. This has led to a significant increase in the income of professionals in recent years, for example doctors now earn up to twice the national average salary (see Section 5.2 *Human resources*).

Ownership and governance structures of hospitals were agreed in 2001 and since then a 2-tier management model is used, consisting of a supervisory and management board. Lately, there has been increased discussion on the need to improve accountability, transparency and overall good governance in the current model. One of the achievements since 2006 in this field was the requirement to disclose hospital budgets to the public and publish annual reports. However, this remains an area which needs increased attention in terms of competence and experience levels within the supervisory and management boards. In addition, there is scope to increase performance in the hospital sector through improving communication between the boards and explicitly defining their respective roles. Concerning PHC, the 2007 reform has sought to broaden practice ownership to municipalities, thus increasing public ownership. However, it is too early at the time of writing to be able to assess any fundamental changes.

The regulatory framework has been updated in recent years (Medicinal Products Act, as well as communicable diseases prevention and control). However, these changes have been minor compared to the basic reforms earlier in the century. In addition, many of the regulations have been updated to bring them in line with EU legislation. Some changes have taken place in terms of organizational structures and public agencies under the Ministry of Social Affairs. First, a new institution was established in 2003, when the NIHD replaced three institutions and now coordinates public health. Second, the HCB was established in 2002 to license providers and professionals. This underscores the trends visible over recent years, such as delegation of authority from the Ministry of Social Affairs to its agencies and in the meantime downsizing the number of agencies and institutions (see Chapter 2 *Organizational structure*).

In recent years target-setting and reporting have been used to increase accountability in the health sector. Setting targets and measuring the performance of various health programmes and strategies has been implemented (such as for the HIV/AIDS strategy and annual reporting). A similar trend has been observed for various organizations, for example, the EHIF releases detailed publicly available annual reports. In addition, the performance of the health system (and its various components) has been assessed by both national and international organizations over recent years. However, the clear challenge is how to transform the monitoring and evaluation results into effective actions to increase the performance of the health system.

The Government's only officially endorsed national health policy statement dates back to March 1995. It describes the country's major health problems but does not set clear targets for tackling them. However, its tone and purpose was rather inspirational. From 1997 to 2006, several comprehensive health policy documents were developed by civil servants in the Ministry of Social Affairs, stakeholders and partners, but none of these succeeded in influencing

government-level discussion. This is partly due to changes in government and new incumbents wanting to initiate their own policy development process. At the same time, many of the prepared drafts have been visionary and inspirational and have influenced important reform initiatives, action plans of institutions and the drafting of new regulation. Therefore, the development of health policy can be seen as an important process to debate the policy issues. However, it is worth noting that these papers were often prepared by a small group of people. This changed in 2006 when the policy concept paper ("Investing in Health") was endorsed by the Government and a mandate was provided to the Ministry of Social Affairs to prepare a national health strategy for 2008–2020. The strategy builds on national consultations and various international agreements and sets out a vision for the Estonian health sector (including public health and health care, but also other health-related topics, such as the environment). In early 2008 this process is at a halfway stage and the document has not yet reached a political consensus; it is therefore too early to evaluate the impact of the policy paper on future reforms.

8 Assessment of the health system

This section attempts to assess the Estonian health system against its stated objectives and a range of criteria. However, the intention is not to describe all the details presented in the previous chapters, which are essential to evaluating the performance of particular health system functions and areas. The performance and assessment of the Estonian health system has been subjects of major discussions since the early 2000s and both national research teams and international organizations have published a number of reports on such matters (for example on health financing, primary care, the hospital sector, public health services, quality of care, human resources). These reports assess the current level of system performance and propose further options, summarized in the corresponding chapters.

8.1 The stated objectives of the health system

The objectives of the Estonian health system and health care reforms that took place during the 1990s have not always been explicitly stated. At the start of the 1990s the broad aims of the reforms were to secure and sustain health care funding through the establishment of an earmarked revenue base, to enhance quality of care (in part by "catching up" in terms of technology and medicines used in western European health systems) and to provide increased patient choice. However, due to resource constraints, the broad aim of reforms carried out towards the end of the 1990s has been to improve health system efficiency. This was the primary purpose of introducing family medicine-centred PHC, restructuring the hospital sector, and introducing various provider payment mechanisms and pharmaceutical reimbursement reforms (see Chapter 7 *Principal health care reforms*).

In recent years there have been a variety of high-level governmental strategic documents which set several health sector-related objectives and targets. First, there is the 2007 Government coalition programme (Coalition agreement), which states that the main objective of the Government is to achieve positive natural growth of the population through an increased birth rate, increased life expectancy and improved quality of life. In addition, it identifies several reform areas for the current coalition Government, which came into power after scheduled parliamentary elections in March 2007. Furthermore, the Estonian Action Plan for Growth and Jobs for the implementation of the EU Lisbon Strategy, the Estonian National Plan for the Use of Structural Funds and the 4-year State Budget Strategies all set explicit health-related targets (such as healthy life expectancy, financial protection and insurance coverage, long-term financial sustainability, responsiveness and satisfaction, and specific disease-related targets).

At the time of writing the Ministry of Social Affairs is preparing the National Health Strategy 2008–2020, which is seen as an overarching strategy and policy for the health system. It aims to guide further improvements requiring public health and health care services to work in a more integrated manner, as well as focusing on "health in all policies". In addition, measurable targets are available in specific health sector strategies, such as the National HIV/AIDS Strategy 2006–2015 and the National Strategy for Prevention of Cardiovascular Diseases 2005–2020. These health strategies involve measuring achievements and reporting to stakeholders on health sector activities (as well as intersectoral aspects) with the aim of improving both accountability and transparency.

Health sector objectives can also be found in the mission statements and objectives of key stakeholder institutions, such as the Ministry of Social Affairs and the EHIF. The Ministry has defined a broad mission statement in order to provide the correct environment for ensuring equal opportunities for life in Estonian society (towards a human-centred society) (Ministry of Social Affairs 2008b). This also includes various health-related objectives, such as increasing LE (as well as decreasing the gap in LE between men and women), increasing quality-adjusted life years (QALY), limiting the incidence of HIV, maintaining the level of population satisfaction with health care quality and access. These targets are set to be achieved by 2011 and a range of measures are defined to ensure their realization (Ministry of Social Affairs 2007).

Health insurance principles and objectives are set out in legislation. They include solidarity, limiting the level of patient cost sharing based on the principles of providing health services according to need, equal access to treatment regardless of place of residence and effective and expedient use of funds. To put these aims into practice, the EHIF sets its own objectives in a 4-year plan approved by the EHIF Supervisory Board. EHIF objectives include

improving access to and quality of care (for example, through the development of clinical guidelines as well as its contracting processes), organizational development and customer service (Habicht 2008, forthcoming).

It is quite obvious that the objectives and targets in these documents reveal some inconsistencies. Overall, however, it ought to be recognized that the health sector uses these as a steering instrument and as targets for which health sector leaders can be held accountable. In addition, where objective-setting earlier this century predominantly emanated from within the system, objectives have become increasingly represented in various other strategic government documents and plans.

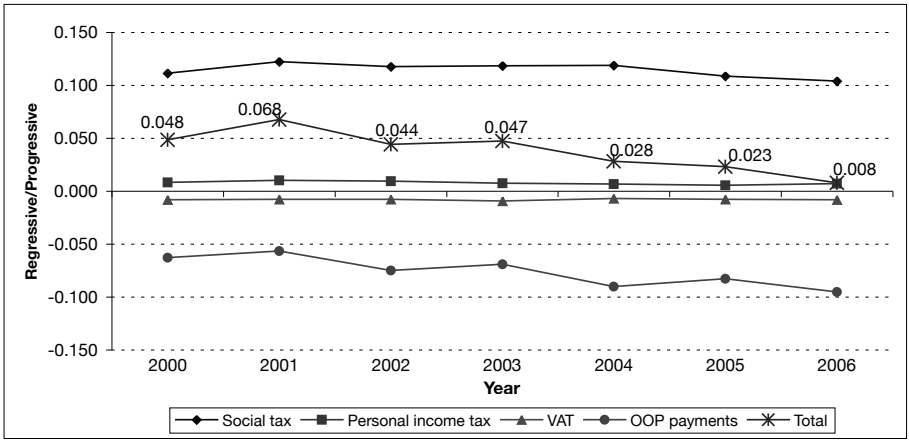
8.2 The distribution of the health system's costs and benefits across the population (equity in finance as well as in the distribution of services and resources for the population)

The majority of health care funding comes from public sources – approximately three quarters of total expenditure on health care. Most of this public revenue is raised from the working population and employers, through an earmarked payroll tax, equal to 13% of wages, which accounts for two thirds of total expenditure on health care (see Chapter 3 *Financing*). The older generation also contributes to public expenditure through taxes on consumption and property. However, these arrangements, taking into account the potential drawbacks of a (currently positive) labour market situation and ageing population, have raised questions regarding the long-term sustainability of the system and the need to diversify the sources of funding in the years to come (Couffinhal and Habicht 2005; Võrk et al. 2005).

The fact that the health system is predominantly financed through a flat-rate payroll tax suggests that it broadly adheres to the principle of horizontal and vertical equity. The payroll tax ensures redistribution of health care resources from higher-income groups to lower-income groups (through fund pooling) and from the healthy to those in poor health. There is also substantial redistribution of resources within the health insurance system as the contributing insured population (54% of all insured people) cover the expenditure spent on health care for children, pensioners and other non-contributing groups. In the past the share of total health financing from OOP payments has risen. Recent results from analysis of the progressivity of health care financing shows that social tax, which is a major source of financing, as well as personal income tax, are

highly progressive components compared to OOP payments (the second largest in financing) and value-added tax (VAT) which are regressive components of financing. The overall financing is slightly progressive, meaning that households with higher gross income also pay more for health care (higher expenditure). However, progressivity has decreased during the period 2000–2006, mainly due to the increasing share of regressive OOP payments (see Fig. 8.1).

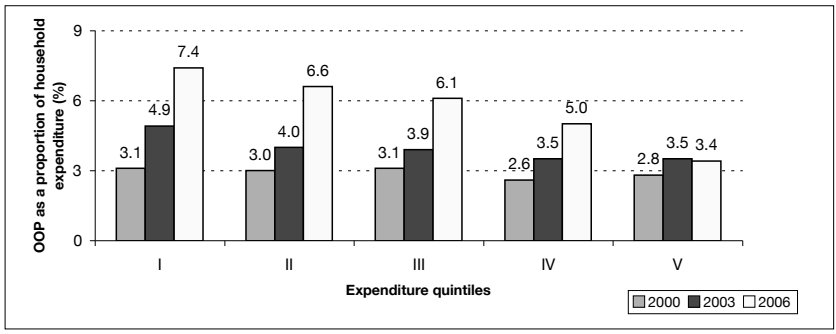
Fig. 8.1 Progressivity of health financing in Estonia: Kakwani progressivity indexes weighted to health care financing components in Estonia, 2000–2006



Source: Võrk 2008
Notes: OOP: Out-of-pocket (payment); VAT: Value-added-tax

The impact of rising OOP payments (mainly due to prescription medicines and adult dental services) has resulted in a higher proportion of households spending more than their capacity to pay. For instance, the latest surveys show that in 2000 and 2006 respectively, 15% and 27% of households, after their food expenses were covered, spent more than 10% of the rest on paying for health care. Approximately 2–4% of households have greater health expenditure than their capacity to pay (defined as households' potential spending above their subsistence expenditure); that is, catastrophic expenditure that threatens their access to health care services. The average share of OOP payments as a proportion of total household expenditures has been increasing, from 3% in 2000 to approximately 6% in 2006 and the burden of this expenditure is increasingly distributed towards lower-income households (see Fig. 8.2 and Chapter 3 *Financing* for more details). The risk of relatively high expenditure is increasing for low-income households (especially the lowest quintile) with the presence of individuals 65 years and older, or household members with disabilities or chronic diseases.

Fig. 8.2 Distribution of out-of-pocket payments as a proportion of household expenditure by quintiles in 2000, 2003 and 2006



Source: Võrk 2008
Note: OOP: Out-of pocket (payment)

The health system does not guarantee the same level of access to the entire population. There are differences between the rights of insured people – approximately 95% of the population – and uninsured individuals. The former are entitled to the same health services, with some variation based on age and effectiveness criteria – for example, there are different reimbursement levels for adult and child dental care. At the same time, the uninsured are only guaranteed access to emergency medical services, funded by the State. The health care components of specific public health programmes (such as HIV/AIDS, TB) also cover specific services for the uninsured population. For other health services, they must usually pay out of pocket, although some municipalities fund a limited range of health services (but this varies between regions).

The per capita allocation of resources to regional budgets and the system of contracting, based on the principle of money following the patient, should, in theory, ensure equal access to health services for groups living in different regions. The actual distribution of benefits among regions and income groups has been studied in various years. The study found that in 1999, among people aged 25 to 74, those living in rural areas made more use of telephone consultations with a doctor and visits to family doctors but less use of specialists and dentists compared to those living in the capital city Tallinn (Kunst et al. 2002). Hospitalization rates were at a similar level for all groups. Variations in utilization were observed for income and education levels as well (Habicht and Kunst 2005). However, in recent years, regional variations in specialized care have been an area of concern, to be studied further. Studies of primary care reforms have shown increased utilization of family doctor services and overall improved availability of primary care services (Atun et al. 2006), but in recent years more concerns are being voiced related to quality of and access

to the health services (especially in rural areas). Access to hospitals, measured by utilization, has been at a stable level over the years, although at the same time major restructuring has taken place (see Chapter 6 *Provision of services*). Waiting times and access to specialists for outpatient services or consultations has been a major concern for the public. Utilization of health services has increased in terms of consultations per insured individual: for primary care (from 3.1 in 2003 to 3.8 in 2006), outpatient care (1.8 to 2.0 over the same period) and prescription medicines (3.2 in 2003 to 4.2 in 2006), while the number of hospitalizations per insured person has slightly decreased (0.20 to 0.19 over the same period).

8.3 Efficiency of resource allocation in health care

Primary care services are equitably distributed across the country, with financial incentives in place to encourage family doctors to work in rural areas. However, there is concern regarding how to motivate doctors and nurses to work closer to the client in rural areas. To build relations in terms of prevention and promotion, the quality bonus system was introduced for family doctors and a number of screening programmes are in place (see Chapter 3 *Financing*). Secondary care services are also equitably distributed among the regions (in terms of physical access), although there is some variation in terms of the services provided in county hospitals and there is an ongoing process to concentrate specialized services in the relevant centres and to establish a more modern health care delivery system focusing on outpatient care.

Financial resource allocation has remained stable since 2004. The main areas of expenditure – prevention, primary care and specialist care – have all risen steadily (see Chapter 3 *Financing*). There has also been an increased focus on more efficient provision of services in specialized care (for example, an increase in elective surgery by 20% in 2006, compared to previous year). However, the main challenge is the observed shortage of doctors and other specialists in selected areas since 2006, which threatens the provision of services in all settings.

At the time of writing approximately one third of specialized care expenditure is allocated to outpatient care and two thirds to inpatient care (see Chapter 3 *Financing*). The relatively low share of inpatient care as a proportion of total expenditure, combined with increased emphasis on ambulatory care, have contributed to increased spending on pharmaceuticals (for more information see Section 6.5 *Pharmaceutical care*). With regard to public health services,

increased allocations of resources to various programmes (from the state budget) and activities (from various actors such as the EHIF and private sector sources) have been observed since 2006. However, it is too early to assess the impact of such additional resources.

8.4 Technical efficiency in the production of health care

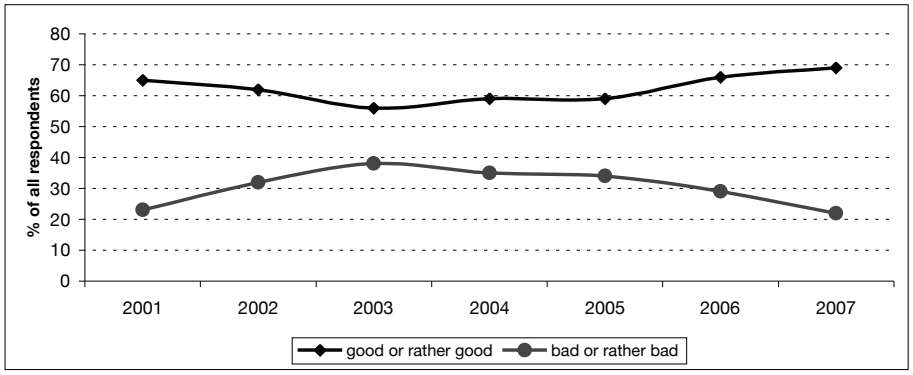
Health care expenditure has been constrained by the limits of revenue raised through the earmarked payroll tax and annual state budget allocations, prompting efforts to increase efficiency in the delivery of health care. The decline in the hospital ALOS has been heavily influenced by the implementation of the Hospital Master Plan (see Chapter 6 *Provision of services*) and the EHIF's contracting and payment policy. The EHIF has been active in using the contracting system to set targets for greater use of outpatient care and day-care surgery. Transforming hospitals into networks in the three largest urban centres since the late 1990s was intended to increase efficiency, and early evidence suggests that the reform has been successful in this respect (Fidler et al. 2007). Pharmaceutical reimbursement was relatively inefficient until 2002, when legislative changes were introduced to permit reimbursement based on the price of generic pharmaceuticals, resulting in a reduction of 13% in EHIF spending on pharmaceuticals in the following year. However, the shift has been more towards private OOP payments rather than achieving overall cost-containment in pharmaceutical spending (see Chapter 6 *Provision of services*). At the primary care level, the increase in consultations (by family doctors and family nurses since 2006) and evidence-based prescription practices suggests a positive contribution to the system's overall technical efficiency (Atun et al. 2006). As an illustration, the 2008 Health Consumer Powerhouse study, which takes a patient perspective, ranks the Estonian health system as first in the category "best value for money" but in other categories Estonia performs in line with the average level among EU countries (Health Consumer Powerhouse 2008).

8.5 Quality of care

A number of quality-related initiatives are required by specific legislation, such as licensing (professionals and providers), developing minimum requirements, authorization of pharmaceuticals, implementing population satisfaction surveys,

introducing complaints procedures, and so on (Põlluste et al. 2006). These initiatives are carried out by a number of institutions, such as the Ministry of Social Affairs, the HCB and other agencies, the EHIF, professional associations and health care providers (see Chapter 4 *Regulation and planning*). Since the late 1990s the annual population satisfaction survey on health care monitors public perception on health care quality and access, as well as satisfaction with family doctors, specialists, dentists and hospitals. Results of the latest survey are posted on the EHIF web site. The results show that since 2003 a steady increase in perceived quality by the population has been observed (see Fig. 8.3). Both the EHIF and the Ministry of Social Affairs have set objectives for improving overall levels of satisfaction with health care quality and access. In addition, various quality initiatives are carried out at the provider level (such as patient satisfaction questionnaires in hospitals), which provide information on the developments in quality improvement. Although increased attention has been devoted to quality, the information base is not yet sufficient.

Fig. 8.3 Population opinion on health care quality, 2001–2007



Source: Adapted from EHIF and MOSA population satisfaction surveys, 2001–2007

Giving the EHIF independent status and giving providers private status (albeit under public ownership) have involved some risk in terms of accountability, particularly in terms of ensuring that these autonomous institutions meet national health policy objectives. During the preparation of the legislation that gave the EHIF independent status, careful attention was paid to safeguarding public accountability. For example, the Minister of Social Affairs automatically chairs the EHIF Supervisory Board, and there are strong requirements for the EHIF to make information about its operation publicly available (by means of annual reports, among other methods). However, the same cannot be said about the accountability procedures that are in place for public hospitals, and only initial steps have been taken to improve their governance.

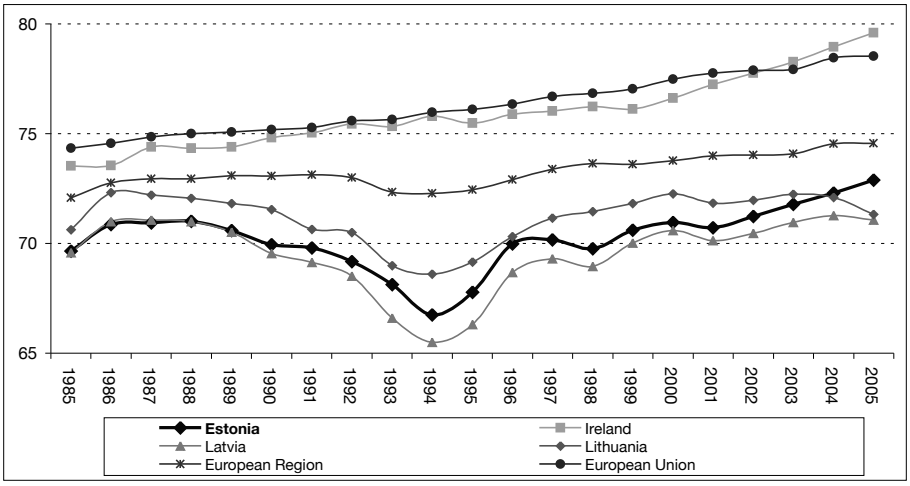
At the time of writing there are no comprehensive studies regarding the extent to which patient rights are respected; however, this topic has been discussed in public increasingly frequently (see Section 2.5 *Patient empowerment*). At the same time, the level of awareness of insured people regarding their rights and responsibilities has increased, as shown in recent polls. From 2003 to 2007 the awareness of rights has risen from 61% to 70% (Faktum and Ariko Ltd 2007). Population awareness varies by area: overall knowledge is higher regarding primary care and insurance coverage compared to knowledge on specialized services and access to care.

8.6 The contribution of the health system to health improvement

The current health status of the population has been influenced by the political and economic reforms that took place at the beginning of the 1990s, as well as changes in lifestyle and health system changes. On the one hand, political and economic changes have contributed to a better economic situation and improved well-being, but on the other hand, there are also widening inequalities in health. However, according to several health and health system indicators, Estonia is currently performing better than many other eastern European countries and some EU Member States. In 2005, Estonians are living longer than ever before and over the years a steady improvement in LE has been observed (see Fig. 8.4). Following this trend, many other health indicators are improving, such as infant mortality, as well as public health indicators, such as eating habits and physical activity levels (among both adolescents and adults) (see Section 1.4 *Health status*). The majority of the current avoidable disease burden is concentrated among the working-age population and is caused by various risk factors, such as smoking and alcohol consumption. The future challenge remains as how to implement public health measures within and outside the core health system in order to improve population health (Lai et al. 2007).

International comparisons of mortality trends for treatable and preventable mortality levels have shown large variations in Europe (Newey et al. 2004). LE is increasing in most EU countries, and while the contribution of the health system varies in each case, it is clearly present in all countries. In the case of Estonia, it becomes clear that when comparing the 1990–1991 and 2000–2002 figures that the health system has contributed to these LE gains over the years, as the burden of both treatable and preventable causes has been reduced.

Fig. 8.4 Life expectancy at birth in Estonia and selected countries, 1985–2005



Source: WHO Regional Office for Europe 2007

Health system changes have contributed to the population's improving health status in various ways, including the improved availability of comprehensive primary care and medicines. For example, better availability of contraceptives and the provision of counselling services for adolescents have led to a decline in abortions per 1000 live births from 1527 in 1993 to 631 in 2006; anti-ulcer medicines have contributed to modern treatment and fewer surgical interventions; and better availability of pharmaceuticals for mental health conditions has enabled increased levels of treatment on an outpatient basis. However, all these increases in expenditure and availability of medicines have not yet produced the expected outcomes in terms of population health. Health care has made a significant impact on the population's quality of life, for example through cataract surgery and endoprotheses. In 2008 the health system offers a wider range of services than it did at the beginning of the 1990s, and its services are still expanding.

9 Conclusions

Since regaining independence, Estonia has vigorously and quite successfully reformed its economic and social sectors. Attention has shifted in recent years to incremental changes after large-scale legislative reforms took place in the early 1990s and at the beginning of this century. The current system is built on solidarity-based health financing; a modern provider network based on family medicine-centred PHC; modern hospital services and more attention paid to a public health and E-health solutions. This has resulted in a steadily increasing LE since 1999 for women (78.1 years in 2005) and men (67.3 years in 2005) and continuously high population satisfaction rates with access and quality. Since the late 1990s an increased birth rate has been observed; however, this remains lower than current death rates. Other positive trends are visible regarding decreasing tobacco use among adults, high vaccination rates for and decreasing incidence rates of communicable diseases. However, some key challenges need, or are already receiving, the attention of Estonian policy-makers.

Inequities exist in health status and health behaviour. The main disease burden challenge is premature mortality caused by external causes and lifestyle-related risk factors. The main risk factors leading to ill health are related to tobacco use, low levels of physical activity, alcohol consumption and obesity. However, the most serious health challenge facing the Estonian health system is the high level of HIV incidence, which peaked in 2001. This and other factors are closely related to the current behavioural patterns of both adolescents and adults. To tackle these public health challenges, a number of policies and strategies are being launched and the coming years will tell if there is measurable success.

The Estonian health care system is mainly publicly funded through solidarity-based, mandatory health insurance contributions in the form of earmarked social

payroll tax, which mounts to almost two thirds of total health care expenditure. However, private expenditure comprises approximately a quarter of all health expenditure and has shown an increasing trend. As a consequence, health financing has become more regressive over recent years. In the future, this growing OOP expenditure may hinder health access for low-income population groups.

Contributions to the mandatory health insurance fund are related to employment, but the share of non-contributing individuals (such as children and pensioners) represents almost half of the insured population. In the longer term this may pose a threat to financial sustainability of the health system, as the narrow revenue base is mostly related to wages and the population is ageing rapidly. This could be complicated by a potential downturn in economic activity. Over recent years, steps have been taken to increase population coverage as well as the revenue base, but the impact of these steps is still marginal. This challenge is particularly important in the face of rising patient expectations and pressures and increased costs and volume of health care services. If solidarity and equity are to be maintained and guaranteed for the future, additional resources need to be found from public sources of revenue. Although more resources have been allocated to health care and public health programmes, a further fragmentation of financing sources should be monitored closely and avoided where possible.

Estonia inherited a large, ineffective hospital network with poor facilities from the Soviet era. Various structural and managerial reforms in the 1990s reduced the number of hospitals (and beds) and restructured the provider network. The reforms aim to modernize the network and enable the provision of high-quality services, while ensuring adequate health service access. This process of modernizing the current facilities is ongoing and is assisted by various resources, including support from the EU structural funds. Modern, centralized acute and high-technology care increases the need for attention to geographical access and the development of outpatient services close to the patient(s).

Estonia faces a lack of human resources in the health care sector. Although EU accession in 2004 led to a temporary migration increase of doctors and nurses to neighbouring EU countries, the main challenge has been to retain qualified professionals in the health care sector (they often opt for better paid jobs outside the health care sector) and the ageing of the current workforce. Therefore, strong emphasis has been laid on long-term planning in order to increase training for nurses and doctors.

Increasing concerns of the population are waiting times for outpatient services and overall access to health care services. Various initiatives have been implemented, including a 24-hour primary care call centre in late 2005, widening the scope of services and introducing financial incentives to improve

quality. In addition, more emphasis is placed on quality of care, which is visible in initiatives such as voluntary accreditation of professionals by their associations, introduction of quality handbooks in hospitals and the development of clinical guidelines. At the same time, however, less attention has been paid to guidelines for patients. In relation to both access and quality, the coordination and approach to tackling chronic conditions are continuous concerns. Several additional topics need further attention, most noticeably patient empowerment, self-care, home care and long-term care services.

Furthermore, some key challenges remain, including improving regulation of providers to ensure better public accountability. Improving governance with regard to ownership status, roles of stakeholders and best practices require attention in the coming years in order to improve the performance of Estonia's health care providers.

10 Appendices

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10.3 Useful web sites

National sites

Estonia State Portal (Citizens Internet Portal): http://www.eesti.ee

President of the Republic of Estonia: http://www.president.ee

Riigikogu – Parliament of Estonia: http://www.riigikogu.ee

Government of the Republic of Estonia: http://www.valitsus.ee

Ministry of Social Affairs: http://www.sm.ee

Ministry of Justice: http://www.just.ee

Ministry of Internal Affairs: http://www.siseministeerium.ee

Ministry of Defence: http://www.mod.gov.ee

Ministry of Finance: http://www.fin.ee

Ministry of the Environment: http://www.envir.ee

Ministry of Agriculture: http://www.agri.ee

Portal for Local Municipalities: http://portaal.ell.ee

Estonian National Electoral Committee: http://www.vvk.ee

Citizenship and Migration Board: http://www.mig.ee

Estonian Data Protection Inspectorate: http://www.dp.gov.ee

Estonian E-Health Foundation: http://www.e-tervis.ee

Estonian Health Insurance Fund: http://www.haigekassa.ee

Estonian Tax and Customs Board: http://www.emta.ee

Health Care Board: http://www.tervishoiuamet.ee

Health Protection Inspectorate: http://www.tervisekaitse.ee

Labour Inspectorate: http://www.ti.ee

National Institute for Health Development: http://www.tai.ee

Social Insurance Board: http://www.ensib.ee

State Agency of Medicines: http://www.ravimiamet.ee

Statistics Estonia: http://www.stat.ee

Veterinary and Food Board: http://www.vet.agri.ee

Estonian Geriatric and Gerontology Association: http://www.egga.ee

Estonian Hospital Association: http://www.haiglateliit.ee

Estonian Medical Association: http://www.arstideliit.ee

Estonian Nurses Union: http://www.ena.ee

Estonian Patients Advocacy Association: http://www.epey.ee

Estonian Society of Family Doctors: http://www.perearstiselts.ee

Estonian Centre of Behavioural and Health Sciences: http://www.psych.ut.ee/~ekttk/index.en.html

Estonian Genome Project Foundation: http://www.geenivaramu.ee

PRAXIS Centre for Policy Research: http://www.praxis.ee

Tallinn University of Technology: http://www.ttu.ee

Tallinn University: http://www.tlu.ee

Tartu University: http://www.ut.ee

International sites

European cancer registries study on cancer patients' survival and care - EUROCARE-3: http://www.eurocare.it

European Community Health Indicators: http://ec.europa.eu/health/ph_information/dissemination/echi/echi_en.htm

Global Fund: http://www.theglobalfund.org

International Compendium of Health Indicators: http://www.healthindicators.org/ICHI/general/startmenu.aspx

International Network Health Policy & Reform - Health Policy Monitor: http://www.hpm.org/en/index.html

Millennium Development Goal Indicators [online database]: http://mdgs.un.org

Statistical Office of the European Communities (Eurostat): http://ec.europa.eu/eurostat

Transparency International: http://www.transparency.org

Joint United Nations Programme on HIV/AIDS: http://www.unaids.org/en

United Nations Population Information Network – A guide to population information on United Nations system web sites: http://www.un.org/popin/index.html

US Census Bureau International Database: http://www.census.gov/ipc/www/idb/country/enportal.html

WHO Regional Office for Europe European Health for All database (HFA-DB): http://www.euro.who.int/hfadb

WHO Regional Office for Europe Tobacco Control Database: http://data.euro.who.int/tobacco

World Bank: http://www.worldbank.org

10.4 HiT methodology and production process

The Health Systems in Transition (HiT) profiles are produced by country experts in collaboration with the Observatory's research directors and staff. The profiles are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources, and examples needed to compile HiTs. 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/observatory/Hits/20020525_1.

Authors draw on multiple data sources for the compilation of HiT profiles, ranging from national statistics, national and regional policy documents, and published literature. Furthermore, international data sources may be incorporated, such as those of the Organisation for Economic Co-operation and Development (OECD) and the World Bank. OECD Health Data contain over 1200 indicators for the 30 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 (HFA) database. The HFA database contains more than 600 indicators defined by the WHO Regional Office for Europe for the purpose of monitoring Health for 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 HFA data have been officially approved by national governments. With its January 2007 edition, the HFA database started to take account of the enlarged European Union (EU) of 27 Member States.

HiT authors are encouraged to discuss the data in the text in detail, especially if there are concerns about discrepancies between the data available from different sources.

A typical HiT profile consists of ten chapters:

1. **Introduction**: outlines the broader context of the health system, including geography and sociodemography, economic and political context, and population health.
2. **Organizational structure**: provides an overview of how the health system in a country is organized and outlines the main actors and their decision-making powers; discusses the historical background for the system; and describes the level of patient empowerment in the areas of information, rights, choice, complaints procedures, safety and involvement.
3. **Financing**: provides information on the level of expenditure, who is covered, what benefits are covered, the sources of health care finance, how resources are pooled and allocated, the main areas of expenditure, and how providers are paid.
4. **Regulation and planning**: addresses the process of policy development, establishing goals and priorities; deals with questions about relationships between institutional actors, with specific emphasis on their role in regulation and what aspects are subject to regulation; and describes the process of health technology assessment (HTA) and research and development.
5. **Physical and human resources**: deals with the planning and distribution of infrastructure and capital stock; the context in which information technology (IT) systems operate; and human resource input into the health system, including information on registration, training, trends and career paths.
6. **Provision of services**: concentrates on patient flows, organization and delivery of services, addressing public health, primary and secondary health care, emergency and day care, rehabilitation, pharmaceutical care, long-term care, services for informal carers, palliative care, mental health care, dental care, complementary and alternative medicine, and health care for specific populations.
7. **Principal health care reforms**: reviews reforms, policies and organizational changes that have had a substantial impact on health care.

8. **Assessment of the health system**: provides an assessment based on the stated objectives of the health system, the distribution of costs and benefits across the population, efficiency of resource allocation, technical efficiency in health care production, quality of care, and contribution of health care to health improvement.
9. **Conclusions**: highlights the lessons learned from health system changes; summarizes remaining challenges and future prospects.
10. **Appendices**: includes references, useful web sites and legislation.

Producing a HiT is a complex process. It involves:

- writing and editing the report, often in multiple iterations;
- external review by (inter)national experts and the country's Ministry of Health – the authors are supposed to consider comments provided by the Ministry of Health, but not necessarily include them in the final version;
- external review by the editors and international multidisciplinary editorial board;
- finalizing the profile, including the stages of copy-editing and typesetting;
- dissemination (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.

10.5 About the authors

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The Health Systems in Transition profiles

A series of the European Observatory on Health Systems and Policies

The Health Systems in Transition (HiT) country profiles provide an analytical description of each health care system and of reform initiatives in progress or under development. They aim to provide relevant comparative information to support policy-makers and analysts in the development of health systems and reforms in the countries of the European Region and beyond. The HiT profiles are building blocks that can be used:

- to learn in detail about different approaches to the financing, organization and delivery of health care services;
- to describe accurately the process, content and implementation of health care reform programmes;
- to highlight common challenges and areas that require more in-depth analysis; and
- 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 countries of the WHO European Region.

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All HiT profiles are available in PDF format on ***www.euro.who.int/observatory***, where you can also join our listserve for monthly updates of the activities of the European Observatory on Health Systems and Policies, including new HiTs, books in our co-published series with Open University Press, policy briefs, the ***EuroObserver*** newsletter and the ***Eurohealth*** journal. If you would like to order a paper copy of a HiT, please write to:

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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.

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