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Estonia

Health system review

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Preface

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

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

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

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

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

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

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

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

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This edition was written by Taavi Lai (MoSA), Triin Habicht (EHIF), Kristiina Kahur (HC Management Consulting Ltd), Marge Reinap (WHO Country Office Estonia) and Raul Kiivet (University of Tartu). It was edited by Ewout van Ginneken, working with the support of Reinhard Busse of the Observatory's team at the Berlin University of Technology. The basis for this edition was the previous HiT on Estonia which was published in 2008, written by Agris Koppel, Kristiina Kahur, Triin Habicht, Pille Saar, Jarno Habicht and Ewout van Ginneken, and edited by Ewout van Ginneken.

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In mid-2013, the University of Tartu joined the European Observatory on Health Systems and Policies Monitor network and became the National Lead Institution for Estonia.

The European Observatory on Health Systems and Policies is a partnership, hosted by the WHO Regional Office for Europe, which includes the Governments of Austria, Belgium, Finland, Ireland, the Netherlands, Norway, Slovenia, Spain, Sweden, the United Kingdom and the Veneto Region of Italy; the European Commission; the European Investment Bank; the World Bank; UNCAM (French National Union of Health Insurance Funds); the London School of Economics and Political Science; and the London School of Hygiene & Tropical Medicine. The Observatory team working on HiTs is led by Josep Figueras, Director, Elias Mossialos, Martin McKee, Reinhard Busse, Richard Saltman, Sarah Thomson and Suszy Lessof. The Country Monitoring Programme of the Observatory and the HiT series are coordinated by Gabriele Pastorino. The production and copy-editing process of this HiT was coordinated by Jonathan North, with the support of Caroline White, Jane Ward (copy-editing), Pat Hinsley (typesetting) and Sarah Cook (proofreading).

List of abbreviations

AIDS	Acquired immunodeficiency syndrome
CT	Computed tomography
DRG	Diagnosis-related group
EHIF	Estonian Health Insurance Fund
EPAA	Estonian Patients Advocacy Association (<i>Eesti Patsientide Esindusühing</i>)
ERDF	European Regional Development Fund
ESF	European Social Fund
EU	European Union
EU12	12 countries that joined the EU in 2004 and 2007
EU15	15 EU Member States before May 2004
EU27	All 27 EU Member States as of 2013
GDP	Gross domestic product
HIV	Human immunodeficiency virus
HNDP	Hospital Network Development Plan
HTA	Health technology assessment
ID	Identification (card)
INN	International Nonproprietary Name
MRI	Magnetic resonance imaging
NGO	Nongovernmental organization
NHP	National Health Plan 2009–2020
NIHD	National Institute for Health Development
NordDRG	Nordic diagnosis-related group system
OECD	Organisation for Economic Co-operation and Development
OOP	Out-of-pocket (payments)
QBS	Quality Bonus Scheme
SAM	State Agency of Medicines
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
USSR	Union of Soviet Socialist Republics
VAT	Value added tax

VHI	Voluntary health insurance
WHO	World Health Organization

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Abstract

This analysis of the Estonian health system reviews recent developments in organization and governance, health financing, health-care provision, health reforms and health system performance.

Without doubt, the main issue has been the 2008 financial crisis. Although Estonia has managed the downturn quite successfully and overall satisfaction with the system remains high, it is hard to predict the longer-term effects of the austerity package. The latter included some cuts in benefits and prices, increased cost sharing for certain services, extended waiting times, and a reduction in specialized care. In terms of health outcomes, important progress was made in life expectancy, which is nearing the European Union (EU) average, and infant mortality. Improvements are necessary in smoking and alcohol consumption, which are linked to the majority of avoidable diseases. Although the health behaviour of the population is improving, large disparities between groups exist and obesity rates, particularly among young people, are increasing. In health care, the burden of out-of-pocket payments is still distributed towards vulnerable groups. Furthermore, the number of hospitals, hospital beds and average length of stay has decreased to the EU average level, yet bed occupancy rates are still below EU averages and efficiency advances could be made. Going forwards, a number of pre-crisis challenges remain. These include ensuring sustainability of health care financing, guaranteeing a sufficient level of human resources, prioritizing patient-centred health care, integrating health and social care services, implementing intersectoral action to promote healthy behaviour, safeguarding access to health care for lower socioeconomic groups, and, lastly, improving evaluation and monitoring tools across the health system.

Executive summary

Introduction

Estonia is the smallest of the three Baltic states, with a population of 1.3 million. Estonia became independent in 1920, was occupied by the Soviet Union in 1940 and regained independence in 1991. Rapid economic and social reforms ensued and the country acceded to the European Union and NATO in 2004 and to the OECD in 2010. Estonia was on a par with the Scandinavian countries both economically and in terms of population health before the Soviet occupation brought stagnation and decline that culminated in the breakdown of the economy and a dramatic decline in population health in the early 1990s. The worst population health status in recent history was recorded in 1994, with pre-independence life expectancy only regained in 2000. Radical economic reforms since then brought rapid economic growth during 2000-2007 averaging 8.8% annually. The global economic crisis, in combination with a strictly enforced policy of balanced public budgets, resulted in a 14% contraction of the Estonian economy in 2009; Estonia regained economic growth of 3% in 2010.

Reforms in the health and social systems have been as substantial as in the economy. Reduction in mortality has been significant, which is reflected in increasing life expectancy from 66.5 years in 1994 to 76.3 in 2011. At the same time, the life expectancy gap between the sexes is about 10 years, one of the highest in the EU, and one of the major contributors to Estonia's shortfall in comparison to average EU life expectancy of 79.0 years (in 2009).

As across Europe, the Estonian population is ageing. Cardiovascular disease and cancers are the leading causes of mortality and morbidity in Estonia, with musculoskeletal diseases and mental health problems becoming gradually more important. A legacy from the transition in the early 1990s of a high burden due to deaths from external causes (in particular suicide, assault and transport accidents, especially among men) remains among the principal public health challenges. Harmful alcohol use is a major issue; the consumption of pure

alcohol per capita increased from 5.6 litres in 1995 to 12.6 litres in 2007. Even though the role of infectious diseases is declining, HIV/AIDS and tuberculosis remain significant issues, including multidrug-resistant cases of tuberculosis, which constituted 23.4% of new tuberculosis infections in 2011. The national health policy document National Health Plan 2009-2020 sets life expectancy goals by 2020 at 75 years for men and 84 years for women, and targets for healthy life expectancy are set at 60 and 65 years respectively.

Organization and governance

The health system is overseen by the Ministry of Social Affairs and its agencies, with key national agencies including the State Agency of Medicines, the Health Board (responsible for supervising healthcare providers, ensuring communicable disease surveillance and enforcement of health protection legislation) and the National Institute for Health Development (a research and development agency in public health). The financing of health care is mainly organized through the independent Estonian Health Insurance Fund (EHIF). The eHealth Foundation operates the national e-Health system, which is an information exchange platform that connects all providers and allows data exchange with various other databases. The platform allows every patient access to his or her health data.

Fundamental reforms of the early 1990s aimed to move the health system away from a centrally funded and managed system to a decentralised model funded through social insurance. These were followed by a legislative review during 2000-2003 that took a more incremental approach to areas including health financing, service provision and regulation of relations between different parties (e.g. purchaser, provider and patient). In later years, regulation has been implemented to harmonise law with EU legislation and to respond to emerging needs. Experience with decentralization in the 1990s did not result in efficient and accessible health services and a trend towards centralizing planning and regulatory functions have been visible in the last decade.

Estonia has worked to strengthen methods and processes for the systematic use of evidence in policy-making through international collaborations such as at EU level. A Centre for Health Technology Assessment has been established within the University of Tartu; it remains to be decided whether future HTA activities will be carried out by a separate governmental agency or commissioned from academia.

Financing

Overall health expenditure in Estonia is relatively low at 5.9% of GDP in 2011 (the EU average was 9.59%), and lower than the other Baltic states. However, the proportion of publicly-funded health expenditure is relatively high (only the Czech Republic and Croatia are higher, among central and eastern European countries), and the national health plan includes the specific objective of holding out-of-pocket contributions at less than 25% of total health expenditure.

Funding is mainly through solidarity-based mandatory health insurance contributions in the form of an earmarked social payroll tax, which amounts to about 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, drawing on general tax revenue. The contribution of the local municipalities in health financing is relatively small at just over one percent of total health expenditure; the municipalities have no defined responsibility for covering health care expenditure and their financing practices thus vary widely. Private expenditure comprises approximately 20% of all health expenditure, mostly in the form of co-payments for medicines and dental care. This share has fallen during the crisis because out-of-pocket payments fell in line with spending in the economy, though reinforcement of generic prescribing also played a role. External sources of health care financing (mostly EU structural funds) play a rather small role at just over one percent of total health expenditure, though their contribution is important to capital investments and public health activities.

The health insurance system covers 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 has been argued to be a threat to the financial sustainability of the health system, as the narrow revenue base is mostly related to wages; options have been proposed to broaden the revenue base of the health system.

The main purchaser of health care services for insured people is the EHIF. 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 groups (DRGs) system has been implemented since 2004, complementing fee-for-service payments and those related to bed-days. For 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

All health institutions in Estonia are fully responsible for their operations in economic and financial terms, including managing debts and making investment decisions. During the economic boom between 2004 and 2008, when the health insurance budget doubled, funds were used to increase salaries of health care personnel as well as to invest in medical equipment and renovation of facilities, with support from the EU structural funds. By 2010 the physical infrastructure of most hospitals had been improved considerably and the hospitals were able to invest in different high-tech solutions and thus provide improved care. Due to the economic recession, the health care budget in Estonia has not increased since 2008. This has constrained the capacity of health institutions to invest in facilities or technologies, particularly because priority has been given to salary increases in order to retain health professionals.

The ratio of doctors per head of population working in Estonia is comparable to the EU27 level, but the ratio of nurses to physicians is considerably below the EU27 average. This hampers the provision of acute care and the further development of nursing care. Due to high emigration rates and insufficient supply from medical schools and age-structure, the number of doctors working in Estonia is estimated to decrease at a rate of 1–2% per year, and that of nurses twice as fast.

The quantitative targets of the Soviet era resulted in a substantial overprovision of hospital beds, and the regionalization of different sectors within the USSR resulted in overcapacity in surgical specialties in Estonia. Moreover, health system reforms during 2000–2002 created a legislative background for a market environment, and hospital managers perceived that they were competing for the EHIF contracts. This created false incentives to invest into development of the specialist services that are favourably priced by the EHIF, despite the fact that these are also provided by other hospitals. This duplication is most intense in Tallinn, where three large hospitals aim to cover the full scale of services. The uncoordinated development of hospital infrastructure and outpatient specialist medical services seriously threatens the sustainability of hospitals, especially the smaller ones.

Provision of services

Various structural and managerial reforms in the 1990s and 2000s sought to reduce the number of hospitals (and beds) and establish primary care at the centre of service delivery. Primary care is the first level of contact with the health system and provided by independent family doctors working alone or in groups, increasingly supported by family nurses, and practising on the basis of a practice list of enrolled patients. Primary care doctors carry out a partial gatekeeping function for secondary care, although some specialists (eg: gynaecologist, psychiatrist) can be accessed directly. Secondary care health services are provided by publicly or privately owned health care providers (hospitals and outpatient care offices). Waiting times can be substantial (the case of some interventions), and have been increased as part of cost-saving measures following the 2008 financial crisis. Pharmaceuticals are distributed to the public through privately owned pharmacies. Since April 2013, pharmacies are allowed to sell pharmaceuticals through the internet. Ambulance services are financed at national level, ensuring that everyone in Estonia receives emergency medical care. Palliative and long-term care are delivered as part of nursing care. Complementary and alternative medicine (CAM) does not play a significant role in the Estonian health system and is not regulated by legislation.

Public health has been moving from the centralized sanitary-epidemiological system inherited from the Soviet era where focus was mainly on enforcement and control to a more decentralized multi-stakeholder system where emphasis is also on disease prevention, health promotion and addressing determinants of health.

Principal health reforms

The key issue of recent years has been to manage the consequences of the financial crisis that started in 2008. The main goal was to sustain financial protection for the population without eroding the overall benefit package. An austerity package was implemented involving some cuts in benefits and prices, increased cost sharing for certain services, extended waiting times, increased value added tax (VAT) on medications, promotion of rational use of medicine, a focus on primary and outpatient care, and a reduction in specialised care. Salaries also fell because of a drop in available funding. The EHIF used its financial reserves accrued over the growth years to counter the fall in available

funding and in the end managed the downturn quite successfully, with most of its reserves remaining. European structural funds were also used to offset some of the drops in public health funding and capital investment.

The major health policy initiative since the early 2000s was the approval of the NHP in 2008, although implementation has been somewhat taken over by the impact of the crisis. This lack of action combined with discontent about salaries of health personnel, the lack of a collective salary agreement and high workloads formed the main triggers for a national strike of physicians and nurses in October 2012. They also argued that the government had failed to proceed with vital structural reforms for many years, such as restructuring the provider network and addressing issues of sustainability of the health system. An agreement to end the strike was reached in December 2012. Several problem areas and actions to ensure health system sustainability were collectively identified and addressed in a roadmap. However, it is too early to predict whether these structural reforms will actually follow and what the long-term outcomes of the strike will be.

Assessment of the health system

This assessment of the Estonian health system takes place against the background of recovery from a financial crisis, the full impact of which may be too early to evaluate. Life expectancy has been steadily improving since the late 1990s and is nearing the average EU level. However, a large ten-year gender gap in favour of women persists, and hinders progress toward EU averages. Many other health indicators are improving rapidly as well, most notably infant mortality. 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. While the health behaviour of the population is improving overall, improvements are not uniform in age-sex and socioeconomic groups. In the case of physical activity and dietary habits, this translates into increasing obesity rates in most population groups, and especially among younger age groups.

In health care, although volume reductions and austerity programmes were implemented following the financial crisis, ironically the number of people reporting barriers in access to care declined substantially – probably due to people postponing accessing care. The proportion of out-of-pocket payments in health care funding has been falling since 2006, yet the burden of this expenditure is still distributed towards vulnerable groups. Population surveys

indicate in parallel that the overall satisfaction with Estonian health care has been stable and high. Although satisfaction with care quality has increased significantly, satisfaction with access to care has not increased since 2003.

Findings on efficiency of the health system are mixed. On the one hand the number of hospitals, hospital beds and average length of stay has decreased to EU average level. On the other hand, bed occupancy rates are still below EU averages and there remains significant variation among service providers which indicates further room for improvement. Moreover, the rate of nurses per physicians has remained stable over the years also indicating opportunity to improve efficiency.

Finally, comparative data from OECD countries indicate that life expectancy in Estonia is lower than could be expected from the level of health care expenditure per capita. At the same time, Estonia is nearing the stage at which increases in health care expenditure provide ever-diminishing returns in improved life expectancy. Hence, systematic changes in the health system are needed in coming years to sustain the rapid gains in life expectancy since the mid-1990s. Possible areas to focus such efforts include reducing health disparities between different population groups, improving financial protection of vulnerable groups in access and use of health care services, reducing behavioural health risks in the population and further increasing efficiency and service integration in health care.

Conclusions

The Ministry of Social Affairs and the EHIF have managed the downturn quite successfully, although it is hard to predict the longer-term effects of some of the cuts. During these years, some important reforms were postponed, which created discontent among the workforce. It is evident that there are a number of long-standing challenges that need addressing in the coming years to maintain the momentum of past reforms.

First, the most debated issue has been sustainability of health care financing in a system based on payroll taxes. The increased wages and reduced workload agreed in December 2012 will only increase this pressure. Second, a key issue for the Estonian health system is guaranteeing a sufficient level of human resources. This means that there is a need for more training of health professionals as well as redesigning financial incentives and increasing accountability. Third, patient-centred health care and good access to high quality health services is

another health system priority. Further integration of health and social care services into a comprehensive chronic disease management system would greatly improve patient centeredness. In addition, there is a need for stronger, comprehensive and sustained intersectoral action to promote healthy behaviour and prevent injuries, which are the main sources of avoidable ill health. Fourth, although the level of out of pocket expenditure has been decreasing since 2010, its impact on lower social-economic groups' access to services, especially to dental care, pharmaceuticals and medical devices remains a concern. Lastly, there is a need to enhance provider activity evaluation and monitoring tools across the health system to improve quality and health outcomes. Investments in the e-health system play a critical role here through better exchange of information and increasing accountability.

The cooperation agreement that was signed in January 2013 addresses many of these challenges. However, whether these challenges will be met will largely depend on how this document is put into action.

1. Introduction

Estonia is a country on the east coast of the Baltic Sea with a population of 1.3 million. Estonia became independent in 1920, was occupied by the Soviet Union in 1940 and regained independence in 1991. Fast economic and social reforms ensued with the country's accession to the European Union (EU) and the North Atlantic Treaty Organisation in 2004 and to the Organisation for Economic Co-operation and Development (OECD) in 2010. Estonia is a democratic parliamentary republic while the head of state is a president with mainly representative functions. Estonia was similar to the Scandinavian countries both economically and in population health before being absorbed by the Soviet Union in 1940, which was followed by a period of stagnation and decline that culminated in the break-up of the economy and a dramatic decline in population health in the early 1990s. The worst population health status in recent history was recorded in 1994. Radical economic reforms since then have brought rapid economic growth, averaging 8.8% annually during 2000–2007. Yet the global economic crisis, in combination with a strictly enforced policy of balanced public budgets, resulted in a 14% contraction of the Estonian economy in 2009. Estonia regained economic growth by 3% in 2010.

Reforms in the health and social systems have been as substantial as in the economy. The reduction in mortality has been significant. This is also reflected in an increasing life expectancy from 66.5 years in 1994 to 76.3 in 2011. At the same time, the life expectancy gap between the sexes is about 10 years, one of the highest gaps in the EU, and one of the major contributors to lower life expectancy compared to the EU average life expectancy (79.0 years in 2009).

The Estonian population is ageing. Cardiovascular diseases and cancers are leading causes of mortality and morbidity, with musculoskeletal diseases and mental health problems becoming gradually more important. A high

burden from injuries and deaths from external causes (especially among men), a legacy from the transition in the early 1990s, remains an important public health challenge.

1.1 Geography and sociodemography

Estonia is the smallest of the Baltic States, the three republics lying on the east coast of the Baltic Sea. The country is situated on the eastern border of the EU, bordered by the Russian Federation to the east and Latvia to the south (Fig. 1.1). It covers an area of approximately 45 227 km², 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 with 160–190 rainy days per year.

Fig. 1.1

Map of Estonia



Source: United Nations, 2013.

Estonia has a population of 1 294 455 according to the latest census (as of 31 December 2011), approximately 30% living in rural areas. Since 1990, the population has decreased by approximately 230 000 (approximately 32 000 since 2000), while in the two main cities, the population has been stable (Statistics Estonia, 2013). Causes of population decline are mostly migration to the east and west, plus natural negative growth. The crude birth rate has increased continuously from a low of 8.8 live births per 1000 population in 1998 to 12.0 in 2008, after which it stabilized around 11.8 during 2009–2010 (Statistics Estonia, 2013). The death rate has declined steadily since 1994 (WHO Regional Office for Europe, 2013) but positive population growth was achieved only in 2010 and even then only marginally for that particular year (Table 1.1). In terms of the population's age structure, people aged 0–14 years make up about 15% of the population, which is a declining proportion, and the share of the population aged 65 years or older has remained stable around 17% since 2007 (WHO Regional Office for Europe, 2013). These trends are not reflected yet in the age-dependency ratio, which has fluctuated between 50% and 47% during the period 2000–2012, but the burden of an ageing population is expected to increase in coming years, as the birth rate and working-age population are predicted to decline (Table 1.1).

Table 1.1

Demographic indicators, 1980–2011

Indicator	1980	1990	2000	2005	2010	2011
Total population	1 477 219	1 569 174	1 369 515	1 346 098	1 340 160	1 339 928
Population, female (% of total)	54	53	54	54	54	54
Population aged 0–14 years (% of total)	n/a	22.25	18	15.25	15.24	15.42
Population aged 65 years and above (% of total)	n/a	11.64	15.07	16.62	17.04	17.1
Population aged 80 and above (% of total) ^a	2.16	2.55	2.63	3.2	4.17	4.36
Natural population growth (average annual growth rate) ^a	2.71	1.76	–3.9	–2.2	0.03	–0.39
Population density (per km ²)	32.66	34.69	30.28	29.76	29.63	29.62
Fertility rate, total (births per woman)	2.02	2.05	1.39	1.5	1.64	1.52
Birth rate, crude (per 1 000 people)	15.03	14.21	9.54	10.66	11.81	10.96
Death rate, crude (per 1 000 people)	n/a	12.45	13.44	12.86	11.78	11.35
Age dependency ratio ^{a,b}	n/a	0.89 (1989)	0.50	0.47	0.48	0.48
Distribution of population (% rural/urban)	69.7	71.1	69.4	69.4	69.5	n/a
Proportion of single-person households ^a	n/a	n/a	31.2	31.8	37.0	34.9
Literacy rate (%) in population aged 15+ years	99.8	99.8	99.8	n/a	99.8	n/a

Sources: WHO Regional Office for Europe, 2013; ^aStatistics Estonia, 2013.

Notes: n/a: Not available; ^bThe age dependency ratio is the ratio of the combined child population (aged 0–14) and the elderly population (aged 65+) to the working age population (aged 15–64).

During the period as part of the USSR, 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 25.4% (2006) and has remained stable ever since. Other minority groups include Ukrainians (2.0%) and Belarusians (1.1%), of whom more than 40% in total have migrated from Estonia since 1989. Over 90% of the Russian-speaking population lives in Tallinn and the cities of north-east Estonia, near the border with the Russian Federation (Statistics Estonia, 2013). Other main sociodemographic indicators show that the proportion of the population with upper secondary or tertiary education is stable at 82% in 2011 (European Commission, 2013a); only 15% of the population professes a belief in God (European Commission, 2005b) and these mainly come from Lutheran and Greek or Russian Orthodox congregations (Statistics Estonia, 2013).

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 a conservative fiscal policy combined with a liberal economic policy and a simple taxation system. Estonia joined the EU in 2004, which had a significant additional impact on economic development in the country. In 2011, the GDP per capita (purchasing power standards) was 67% of the average for the 27 EU Member States as of 2007 (EU27) (European Commission, 2013a). Average annual growth of GDP per capita in Estonia during 2000–2007 was 8.8%, but the global economic crisis affected the Estonian economy severely with a 5% contraction in 2008 and a 14% contraction in 2009. However, there was a 3.4% increase in GDP per capita in 2010 and an 8.3% increase in 2011 (Statistics Estonia, 2013) (Table 1.2).

Economic reforms since regaining independence in 1991 had a positive impact on the labour market: the unemployment rate decreased to 4.7% by 2007 compared with 7.2% in the EU in the same year. During the economic crisis, unemployment rose rapidly and peaked at 16.9% in 2010 (EU average 9.7%) (European Commission, 2013a). However, in line with the recovering GDP, the unemployment rate fell to 10.2% in 2012 while it increased to 10.5% in the EU on average. A large share of unemployment during the economic crisis was accounted for by men, who had a 5–6% higher unemployment rate than women. The situation has almost normalized, with the unemployment gap decreasing to 2.3% in 2011 (Statistics Estonia, 2013).

Table 1.2
Macroeconomic indicators, 1995–2011

	1995	2000	2005	2006	2007	2008	2009	2010	2011
GDP, PPP (current international \$)	9 072.1	13 533.3	22 275.1	25 712.4	28 956.9	29 582.3	26 095.4	26 927.2	29 473.8
GDP per capita (constant €)	3 984.8	5 779.1	8 306.7	9 162.9	9 863.1	9 460.8	8 131.9	8 403.4	9 100.4
GDP per capita, PPP (current international US\$)	6 314.8	9 881.9	16 547.9	19 137.7	21 582.7	22 085.2	19 470.3	20 092.5	21 995.3
GDP average annual growth rate ^a	8.7	10.3	9.1	10.3	7.7	-4.0	-14.0	3.4	8.3
Public expenditure (% of GDP) ^b	41.3	36.1	33.6	33.6	34.0	39.5	45.2	40.6	n/a
Cash surplus/deficit (% of GDP)	1.6	0.2	2.0	2.6	2.8	-2.3	-1.5	0.03	n/a
Tax burden (% of GDP)	1.6	0.2	2.0	2.6	2.8	-2.3	-1.5	0.0	2.0
General government gross debt (% of GDP) ^b	8.2	5.1	4.6	4.4	3.7	4.5	7.2	6.7	6.1
Value added in industry (% of GDP)	32.9	27.5	28.6	29.7	29.6	28.9	26.6	28.9	n/a
Value added in agriculture (% of GDP)	5.8	4.9	3.6	3.2	3.1	2.7	2.6	3.5	n/a
Value added in services (% of GDP)	61.3	67.6	67.9	67.1	67.2	68.3	70.8	67.6	n/a
Labour force, total (thousands) ^b	n/a	662.4	659.6	686.8	687.4	694.9	690.9	686.8	695.9
Unemployment, total (% of labour force)	9.7	13.6	7.9	5.9	4.7	5.5	13.8	16.9	12.5
Relative poverty rate	n/a	18.3	18.3	19.4	19.5	19.7	15.8	17.5	17.5
Income or wealth inequality (Gini coefficient) ^c	30.1	37.0	34.1	33.1	33.4	30.9	31.4	31.3	31.9
Real interest rate	7.5	2.5	-1.1	-3.4	-4.6	3.0	10.9	7.0	3.2
	(1996)								

Sources: World Bank, 2013; ^aStatistics Estonia, 2013; ^bWHO Regional Office for Europe, 2013; ^cEuropean Commission, 2013a.

Notes: n/a: Not available; PPP: Purchasing power parity.

Estonia operates a conservative fiscal policy that, 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. This is directly linked to the strong fluctuations in GDP and unemployment described above. The small and open economy is vulnerable to changes in the global economic environment. In addition, public spending was cut severely to maintain a balanced state budget in the face of reduced revenues. As of 2011, government debt in Estonia is 6% of GDP while the EU average is 82.5% (European Commission, 2013a). This strict fiscal policy also resulted in Estonia joining the euro in 2011. A similar conservative approach is used for the health budget, which so far has been balanced every year. However, some tough budget cuts were made at the height of the economic crisis along with the use of accumulated financial reserves to avoid further cuts.

The Estonian taxation system is simple and transparent, with few exceptions and differentiations. The Estonian flat-rate personal income tax is one of the most liberal tax regimes in the world. A planned reduction in the personal income tax rate by 1 percentage point per year down to 18% was, however, halted during the economic crisis in 2008 and the rate has remained at 21% since then. 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. Value added tax (VAT) was increased from 18% to 20% in 2009 and the VAT on pharmaceuticals, medical aids and devices from 5% to 9%. Excise taxes on car fuel, alcohol and tobacco did increase significantly in 2008, which also increased the regressivity of taxation (lower-income households paying relatively more for consumer goods). Increase of taxes for alcohol (over 30%) and tobacco (82%) was argued to have a beneficial impact on health status through decreased consumption of these goods (Lai & Habicht, 2011). A new development in this area is outlined in the state budget strategies produced in 2012 for 2013–2016 and in 2013 for 2014–2017 (Ministry of Finance, 2012, 2013), according to which excise taxes for alcohol should increase 5% annually until 2016 and for tobacco 10% in 2012 and 2013 and 6% in 2014 to offset decreasing relative prices of these products. 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 (13% earmarked for health insurance and 20% for pensions for retirees). In 2002, a compulsory unemployment insurance scheme was implemented, with contributions paid by both employees and employers.

Distribution of wealth in Estonia is slightly less equal than the EU average. In 2011, the Gini coefficient for Estonia was 31.9 while the EU average was 30.7. However, there is a positive declining trend in income inequality in Estonia, in that the Estonian Gini coefficient was 37.4 as recently as 2004 (European Commission, 2013a). Another indicator relevant for distribution of wealth, but also one of the socioeconomic determinants, is the proportion of people in poverty or at risk of social exclusion. Such people constituted 23.1% of the Estonian population in 2011 compared with an average of 24.2% in the EU (European Commission, 2013a). Also here the trend is positive as the population in poverty constituted 25.9% in 2005 compared with 25.6% in the EU on average. Therefore, the overall outlook for Estonia is positive and converging with European averages.

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 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 12 parliamentary plenary assemblies. The Government of the Republic of Estonia exercises executive power pursuant to the Constitution and the laws of the Estonian Republic. Since 1992, when the first elections in newly 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 long-term economic and social reforms.

The head of state is the president, elected for a five-year term by the parliament, or an electoral body consisting of members of the parliament 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 domestically and internationally, and proclaiming or refusing the laws passed in the parliament. Furthermore, the president controls the parliament, nominates the prime minister for the

parliament and also appoints and releases from service the members of government and some senior public servants such as the state auditor, judges and the management of defence forces.

The latest parliamentary elections were held in March 2011, resulting in a two-party centre-right coalition. A total of nine active political parties participated in the 2011 parliamentary elections (National Electoral Committee, 2012). 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 8400 to 550 000. 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 226 municipalities (*omavalitsus*) including 33 cities. Municipalities have, on average, 5500 citizens, but they range in size from approximately 70 to 100 000 people (Statistics Estonia, 2013). 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 11.57% of personal income tax paid by people living in a particular municipality to that municipality (State Gazette, 2013).

Since regaining independence, the proportion of the workforce in trade unions has gradually declined and is now 3% (European Commission, 2013b). However, trade unions are present in the council of the Estonian Health Insurance Fund (EHIF) and other similar bodies and have the power to negotiate with the state and employers. Overall, the influence of organized interest groups in Estonia is growing as their competence and membership is increasing; 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 domestically and internationally has been its accession to the EU and the North Atlantic Treaty Organisation in May and December 2004, respectively. Estonia also

joined the OECD at the end of 2010. The process leading up to entering these organizations has been the important driver for political and economic change in Estonia since the mid-1990s.

The level of satisfaction of Estonians with EU membership increased after accession and was at its highest in late 2007, with 66% of Estonians considering EU membership “a good thing”, while the same figure for the EU as a whole was 57% (European Commission, 2012). By May 2011, only 49% of Estonians and 47% of Europeans considered membership of the EU a good thing. One possible cause for the relatively high satisfaction with the EU before the economic recession may have been the visible financial support received from the EU since the country’s accession. Accordingly, 80% of Estonians thought in 2007 that Estonia had benefited from EU membership (compared with a 59% average in the EU27). In 2011, 68% of Estonians thought that Estonia had benefited from EU membership (compared with 52% for the EU27).

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 WHO Constitution with all its amendments and approved the WHO Framework Convention on Tobacco Control. In 2008, Estonia hosted a WHO European regional ministerial conference, resulting in the adoption of *The Tallinn Charter: Health Systems for Health and Wealth* (WHO Regional Office for Europe, 2008).

When joining the World Trade Organization in 1999, Estonia signed up to the General Agreement on Trade in Services, 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.

According to the World Bank (2010) Worldwide Development Indicators, Estonia belongs in the top 20% of the countries in the world regarding voice and accountability, rule of law and government effectiveness, while being among the top 10% in regulatory quality. In the area of corruption control,

these indicators placed Estonia among the top 25% of countries and in the upper one-third for political stability. According to Transparency International's annual assessments on corruption, Estonia ranked 29th among 183 countries in the Corruption Perception Index in 2012 (Transparency International, 2012), while it ranks 32nd among 174 countries in human development (UNDP, 2013).

1.4 Health status

Trends in health status in Estonia can historically be divided into three main periods. At the end of the 1930s, life expectancy in Estonia matched that of the Scandinavian countries but with the Second World War and its absorption into the Soviet Union, public health improvements slowed down and were levelling off in the 1970s. This culminated in a dramatic decrease of health status during the collapse of the USSR and the economic transition of the early 1990s. Average life expectancy at birth fell from a pre-independence high of 71.2 years in 1988 to 66.7 years in 1994. After this, life expectancy started to improve again but the pre-independence peak of 1988 was overtaken only in 2000. The gap with the EU average is still significant, albeit closing (about four years in 2010 compared with about seven years in 2002; WHO Regional Office for Europe, 2013). One of the major causes of this life expectancy below the EU average is the relatively low male life expectancy (71.3 years in 2011) in Estonia, which is about 10 years shorter than female life expectancy (81.4 years in 2011) (Table 1.3). Remarkably, the fastest increase of life expectancy in the 2000s was observed during the economic crisis (2008–2010), when it increased by about a year annually (WHO Regional Office for Europe, 2013).

Table 1.3

Life expectancy and mortality, selected years

Indicator	1985	1990	1995	2000	2005	2010	2011
Life expectancy at birth (years)	69.65	69.94	67.77	70.95	72.89	76.03	76.63
Life expectancy at birth, male (years)	64.55	64.68	61.48	65.43	67.31	70.70	71.27
Life expectancy at birth, female (years)	74.35	74.97	74.35	76.31	78.23	80.84	81.43
Crude death rate, male (per 1 000 population)	12.89	12.85	16.28	14.67	14.25	12.56	12.07
Crude death rate, female (per 1 000 population)	12.60	12.10	12.96	12.38	11.68	11.11	10.73

Source: WHO Regional Office for Europe, 2013.

The national health policy document National Health Plan 2009–2020 (NHP; Ministry of Social Affairs, 2008) sets life expectancy goals by 2020 at 75 years for men and 84 years for women, while targets for healthy life expectancy (disability-free life expectancy) are set at 60 and 65 years, respectively. Table 1.4 shows that healthy life expectancy in Estonia increased by more than four years among men and women between 2004 and 2010, reaching 54.1 and 58.2 healthy years, respectively. In comparison, the EU average healthy life expectancy actually declined by 0.4 years for men and 1.1 years for women in the same period, reaching 62 and 63 healthy years respectively.

Table 1.4

Healthy life expectancy, selected years

Indicator	2004	2005	2006	2007	2008	2009	2010	2011
Healthy life expectancy, females (years)	53.8	52.4	53.9	54.9	57.5	59.2	58.2	57.9
Healthy life expectancy, males (years)	50.0	48.3	49.6	49.7	53.0	55.0	54.1	54.2
Healthy life expectancy, females (% of life expectancy)	69.1	67.1	68.6	69.6	72.3	73.8	72.0	71.3
Healthy life expectancy, males (% of life expectancy)	75.4	71.8	73.5	74.0	77.2	78.8	76.6	76.1

Source: European Commission, 2013a.

Cardiovascular (circulatory) diseases are the main cause of death in Estonia (Table 1.5), accounting for 46% of deaths among men and 62% among women in 2012. The proportion of cardiovascular deaths is slowly increasing with declining overall mortality and increasing life expectancy. The second largest cause of deaths is cancers (24% of deaths in 2012) while injuries and external causes are the third largest cause (7% in 2012) (Statistics Estonia, 2013). However, when looking at the life-years lost through premature deaths, injuries and external causes emerge much more prominently and account for 18% of life-years lost compared with 40% for cardiovascular diseases and 21% for cancers in 2006 (Lai & Köhler, 2009). A worrying indication regarding cancers is that the male mortality rate is decreasing very slowly and remained about 50% higher than the EU average in 2010. Furthermore, although overall cancer mortality for women is declining below the EU average, the lung cancer mortality rate for women is slowly increasing, albeit at a significantly lower rate than the EU average (WHO Regional Office for Europe, 2013).

Table 1.5

Main causes of death, selected years

Causes of death, all ages (ICD-10 classes; standardized death rate per 100 000)	1985	1990	1995	2000	2005	2010	2011
Infectious and parasitic diseases	10.51	8.45	14.29	10.52	7.27	7.62	8.56
Tuberculosis	6.23	5.51	10.51	7.54	3.44	2.56	2.74
HIV/AIDS ^a	n/a	n/a	0	0.22	2.45	3.13	4.48
Circulatory diseases	778.66	693.97	683.82	569.82	498.17	408.31	369.24
Malignant neoplasms	192.54	195.93	203.48	202.38	196.92	185.25	186.45
Colon cancer	n/a	n/a	n/a	n/a	17.76	17.68	19.93
Cancer of larynx, trachea, bronchus and lung	37.09	41.83	44.36	40.84	36.56	34.34	34.58
Breast cancer, females	20.43	22.72	26.17	30.67	23.99	20.4	22.57
Cervical cancer, females	8.79	7.19	7.22	6.85	6.75	7.53	7.43
Diabetes	4.39	4.95	6.20	7.44	12.20	7.80	8.13
Mental and behavioural disorders, disease of nervous system and sense organs	10.23	12.91	16.67	14.18	29.89	21.68	22.53
Ischaemic heart diseases	497.99	432.52	414.99	336.11	264.18	199.15	174.25
Cerebrovascular diseases	235.86	215.03	204.50	163.31	122.94	62.19	55.90
Respiratory diseases (bronchitis/emphysema/asthma)	16.65	16.32	15.78	12.61	11.05	10.82	10.40
Digestive diseases	29.35	28.48	34.41	40.63	42.89	35.62	31.90
Chronic liver disease and cirrhosis	n/a	5.57	14.13	18.79	21.72	18.58	16.13
External causes, injury and poison	115.99	131.40	202.06	147.67	116.13	76.33	77.22
Transport accidents	16.60	35.43	28.44	17.80	14.59	6.82	8.51
Suicide and self-inflicted injury	31.39	27.59	40.89	26.20	18.74	14.83	14.29
Ill-defined conditions, symptoms, signs	47.41	25.44	15.30	14.30	12.25	10.22	11.42

Sources: WHO Regional Office for Europe, 2013; ^aStatistics Estonia, 2013.

Note: n/a: Not available.

Following from these data, it is likely that 70% of the improvement in life expectancy in the period 2000–2010 came from reduced mortality from cardiovascular diseases and injuries, while 8% of the improvement could be attributed to reduction in cancer mortality. However, these three causes still hold the key to life expectancy improvement as ischaemic heart disease, stroke and hypertensive disease were the leading causes of avoidable mortality in Estonia in 2010 (Lai, 2011). The large difference in male and female life expectancy in Estonia is also explained by differences in avoidable mortality. Specifically, cardiovascular diseases and external causes account for 30% and 26%, respectively, of deaths among men under-65 years, while accounting for only 22% and 14%, respectively, among women.

The main health problems in Estonia currently are cardiovascular diseases, cancers and injuries, although musculoskeletal diseases and mental health problems are gaining importance (Table 1.6). A large proportion of the changes in morbidity can be linked to decreasing mortality, increasing life expectancy, as

Table 1.6
Morbidity and factors affecting health status, selected years

	1985	1990	1995	2000	2005	2010	2011	2012
Hospital discharges, ischaemic heart disease (per 100 000)	n/a	936.16	990.23	1 117.33	998.14	900.27 (2009)	n/a	n/a
Hospital discharges, cerebrovascular diseases (per 100 000)	n/a	379.88	496.93	501.64	619.05	714.18 (2009)	n/a	n/a
Cancer incidence (per 100 000)	298.75	315.39	385.07	440.16	482.51	531.22 (2008)	n/a	n/a
Trachea, bronchus and lung cancer incidence (per 100 000)	42.20	48.11	56.24	54.62	54.60	54.23 (2008)	n/a	n/a
Tuberculosis incidence (per 100 000)	35.62	26.96	43.43	57.76	35.58	21.12	22.09	n/a
AIDS incidence (per 100 000)	0	0	0.28	0.22	2.15	1.94	2.84	n/a
HIV incidence (per 100 000)	n/a	0.51	0.77	28.48	46.13	28.06	27.31	n/a
New invalidity/disability cases (per 100 000)	n/a	355.86	516.97	3 317.45	1 300.43	1 532.95	1 632.10	n/a
Population self-assessing health as good, male (%)	n/a	n/a	n/a	n/a	50.00	51.00	5.00	54.00
Population self-assessing health as good, female (%)	n/a	n/a	n/a	n/a	43.00	44.00	49.00	57.00
Regular daily smokers aged 15+ (% population)	n/a	24.5	n/a	33.5	n/a	26.5	n/a	26.0 ^a
Regular daily smokers aged 15+, male (% population)	n/a	45.2	n/a	44.1	n/a	36.8	n/a	36.2 ^a
Regular daily smokers aged 15+, female (% population)	n/a	15.1	n/a	19.9	n/a	18.7	n/a	18.3 ^a
Pure alcohol consumption, aged 15+ (litres per capita)	n/a	9.85	8.27	7.90	13.06 ^b	11.36 ^b	12.03 ^b	n/a

Sources: WHO Regional Office for Europe, 2013; ^aTekkel & Veideman, 2013; ^bOrro et al., 2013.

Note: n/a: Not available.

well as to the transition from a developing post-Soviet country into a high-income European country. As a result, chronic diseases have come gradually to the forefront. Similar trends can also be seen in the burden of disease figures. The proportion of mortality as a cause of lost life-years is gradually being replaced by losses from lifetime morbidity (Lai & Köhler, 2010).

Even though the role of infectious diseases is declining, human immunodeficiency virus (HIV) infection, acquired immunodeficiency syndrome (AIDS) and tuberculosis (TB) remain a concern. HIV incidence has come down from the onset of the epidemic at 108.1 diagnosed cases per 100 000 in 2001 to 23.5 in 2012, while TB incidence has come down from its highest point of 59.2 cases per 100 000 in 1998 to 13.7 in 2012 (Health Board, 2013a). The HIV/AIDS epidemic began among injecting drug users in the north-eastern part of the country and has mostly been concentrated in that population ever since. By the end of 2012, the total number of people diagnosed as HIV positive was 8377, while the prevalence estimate by the Joint United Nations Programme on HIV/AIDS (UNAIDS) indicated 9900 possible cases for 2011 (UNAIDS, 2013). With TB, the main concern currently is the high rate of multidrug-resistant disease, which constituted 23.4% of new TB infections in 2011, and the increasing proportion of HIV-positive individuals among those infected with TB (Viiklepp, 2012).

Health behaviour strongly influences the health status of the Estonian population. The most debated factor is currently harmful alcohol use. The consumption of pure alcohol per capita increased from 5.6 litres in 1995 to 12.6 litres in 2007. In the period 2008–2009, several interventions, for example restrictions on sales times and some restrictions on advertising, were put in place, especially at the end of this period. However, the relative price of alcohol decreased as incomes grew faster than alcohol prices. This changed when incomes fell in the economic crisis (2008–2010) and alcohol excise taxes were increased on several occasions. As a result, per capita alcohol consumption fell to 9.7 litres in 2010 (Lai & Habicht, 2011), followed by a slight increase in 2011 when the economy started its recovery.

The prevalence of daily smoking has been falling gradually and reached 26% in the adult population in 2012 from 30% in 2000 and 34% in 1994. In 2012, 36% of men and 18% of women were daily smokers, with the overall decline in smoking prevalence mostly attributable to men (Table 1.6). There is significant difference by education: while only 16.2% of men with a university degree smoke daily, the share of daily smokers among men with secondary or primary and lower education was around 43% in 2012. Overall levels of physical activity

among adults during leisure time have remained largely unchanged since 2002. In 2012, about 43% did not engage in any sports at least once a week for half an hour. However, of those being physically active, about 21% did sports two to three times a week compared with 18% in 2000, with no gender differences in leisure time physical activity. In parallel, approximately 30% of Estonian adults were overweight in 2012 (28% in 2000) and 17% were obese (14% in 2000). The increase of overweight and obese adults has been fastest among young adults. Among men aged 16–24 years, the proportion of overweight people increased by 14.3 percentage points and reached 21% in 2012. In the same period, the proportion of overweight women aged 16–24 years increased from 5.5% in 2000 to 10% (Kasmel et al., 2001; Tekkel & Veideman, 2013). According to the Health Behaviour of School-aged Children study (Aasvee & Minossenko, 2011), 13% of girls and 19% of boys aged 11 were overweight or obese in 2010 (a 40% and 50% increase, respectively, compared with 2005), while 16% and 19% of boys and girls respectively, were physically active at age 11 (compared with 9% and 13%, respectively, at age 15). Finally, 48% of girls and 63% of boys aged 15 years in Estonia in 2010 reported that they had tried smoking before the age of 13, and 13% of girls and 20% of boys drank alcohol at least once a week (Aasvee & Minossenko, 2011).

The level of vaccination coverage in Estonia is quite good yet slightly decreasing in recent years. Except for measles, mumps and rubella (93.6%), all relevant immunization categories for coverage of children were close to 95% margins in 2012.

Infant mortality has been falling steadily from 12.3 per 1000 live births in 1990 to 2.4 in 2011 (Table 1.7), falling below the EU average (4.1) (WHO Regional Office for Europe, 2013). Improvements in under-5 mortality are substantial but less than for infant mortality. In 2011, the under-5 mortality rate was 3.1 per 1000 in Estonia compared with 4.9 in the EU (WHO Regional Office for Europe, 2013). As in other transition countries, the Estonian birth rate fell dramatically in the early 1990s. It reached 8.8 per 1000 population in 1998, and showed a moderate increase to 12.0 in 2007, before slightly falling to 11.0 in 2011. However, population projections do not expect it to reach population replacement levels. The frequency of abortions – a common method of birth control in all former Republics of the USSR – has declined from almost 1600 abortions per 1000 live births in 1980 to 456 in 2011. This is still about twice the EU average (WHO Regional office for Europe, 2013).

Table 1.7

Maternal and child health indicators, selected years

Indicator	1985	1990	1995	2000	2005	2010	2011
Adolescent birth rate, mothers under 20 years (% all live births)	9.08	13.11	13.67	10.00	7.78	4.11	3.82
Termination of pregnancy (abortion) rate (per 1 000 live births)	1 508.76	1 318.60	1 308.09	975.36	670.31	447.84	455.68
Perinatal mortality rate (per 1 000 births)	15.74	13.75	15.28	8.68	8.10	5.66	4.89
Postneonatal mortality rate (per 1 000 live births)	n/a	4.30	4.59	2.60	2.16	n/a	n/a
Infant mortality rate (per 1 000 live births)	14.09	12.33	14.88	8.42	5.44	3.29	2.38
Under-5 mortality rate (per 1 000 infants)	18.47	16.72	19.02	10.84	7.28	4.78	3.09
Maternal mortality rate (per 100 000 live births)	46.55	31.38	51.82	38.26	13.94	6.32	13.62
Syphilis incidence rate (per 100 000)	6.85	3.38	71.97	44.18	8.25	5.15	5.00
Gonococcal infection incidence (per 100 000)	156.35	129.05	200.61	63.31	21.40	8.13	13.14

Source: WHO Regional Office for Europe, 2013.

Note: n/a: Not available.

Other maternal and child health indicators have also improved significantly over the last 10 years (Table 1.7). The maternal mortality rate reached zero in 2007 until 2009 but in 2011 it was above the EU average (WHO Regional Office for Europe, 2013). Improved and easily accessible birth control as well as health education have certainly played a role in the substantial reduction in the incidence of abortions and sexually transmitted infections (e.g. syphilis incidence declined from a 1997 high of 79 per 100 000 population to 5 in 2011 and gonococcal incidence from a 1993 high of 217 per 100 000 population to 13.1 in 2011).

2. Organization and governance

The regulatory framework of the Estonian health system is laid down in five major pieces of legislation: the Health Insurance Act, the Health Services Organization Act, the Public Health Act, the Medicinal Products Act and the Law of Obligations Act. The foundations and principles, however, were outlined in earlier versions of the Health Insurance Act and the Health Services Organization Act. The steward of the health system is the Ministry of Social Affairs. The organizational structure includes various agencies of the Ministry of Social Affairs (e.g. State Agency of Medicines (SAM), Health Board, National Institute for Health Development (NIHD)); public independent bodies (the EHIF); (mainly publicly owned) hospitals under private regulation or private primary health care units; and various nongovernmental organizations (NGOs) and professional associations. The main policy document is the NHP (Ministry of Social Affairs, 2008), which aims to integrate all existing sectoral health plans, strategies and development plans into one plan that presents linkages between the various stakeholders of the health system and other sectors. It remains to be seen how the trend of merging all planning and reporting of strategies into the NHP will affect future intersectoral collaboration and whether the governance mechanisms of the NHP will be used to its full extent to have a broader impact across sectors.

The fundamental reforms of the early 1990s were followed by a legislative review during 2000–2003 that addressed various areas, including health financing, service provision and regulation of relations between different parties (e.g. purchaser, provider and patient). In later years, regulation has been implemented to harmonize the framework with EU legislation and to

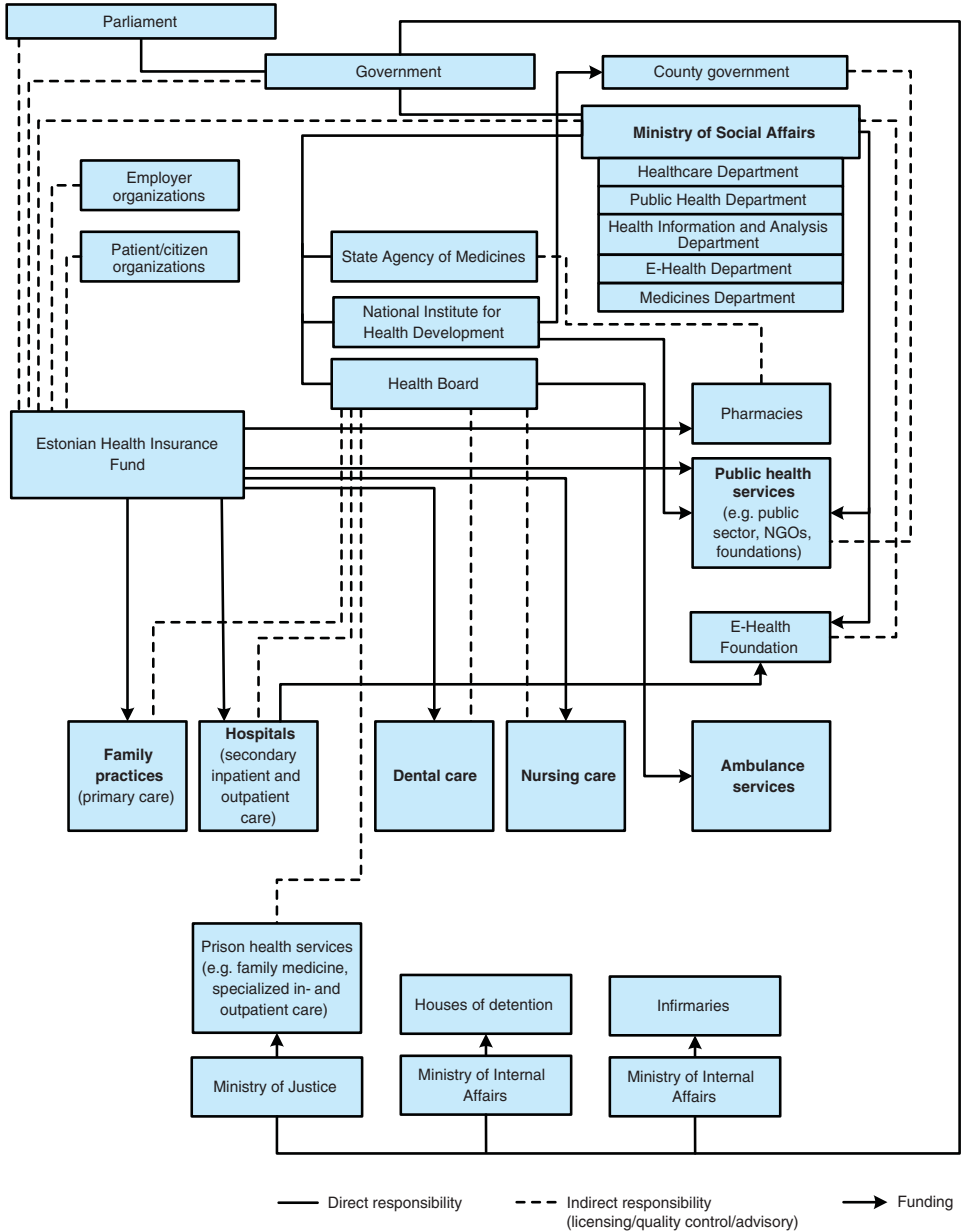
respond to emerging needs. Experience with decentralization in the 1990s did not result in efficient and accessible health services, and a trend towards centralizing planning and regulatory functions has been visible.

The main institutions that collect and analyse health data are the EHIF, NIHD, Health Board, Ministry of Social Affairs, SAM and the Estonian eHealth Foundation. The last operates an e-health system, which is an information-exchange platform that connects all providers and allows data exchange with various other databases. The platform allows every patient access to his or her health data. In the future, it will be used for automatic generation of anonymized health information. Estonia has worked to strengthen methods and processes for the systematic use of evidence in policy-making through international collaborations. It remains to be decided, whether future health technology assessment (HTA) activities will be carried out by a separate governmental agency or commissioned from academia.

2.1 Overview of the health system

The Estonian health system is based on compulsory, solidarity-based insurance and universal access to health services made available by providers that operate under private law. Stewardship (planning and regulation) 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. The Ministry of Social Affairs and its agencies are responsible for the financing and management of public health and ambulance services financed 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. Estonia has received international acclaim for its energetic health reforms and the efficiency gains it has made, but challenges still persist regarding accessibility and quality of health care, as well as patient safety and empowerment issues and the long-term sustainability of health financing. An overview of the Estonian health system as a whole is presented in Fig. 2.1.

Fig. 2.1
Organizational structure of the Estonian health care system



2.2 Historical background

Estonia has been under foreign dominance (by Danes, Swedes, Germans and Russians) since the 13th century until 1918, and first gained independence in the aftermath of the First World War, when the Estonian Republic was formed. Independence was lost in 1940 after the outbreak of the Second World War, when the USSR occupied the Estonian Republic. The long-lasting German and Swedish, but also Russian, presence in Estonia was influential in shaping political and cultural behaviour, the value system, administrative structures and the development of the health system. Some of these structures and values were silently retained during the Soviet era and later formed the basis for establishing the social security systems 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 changes can be divided into those occurring in three periods: before 1940, 1940–1990 and 1991–2012.

Before 1940

Prior to being absorbed by the Soviet Union 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 hospital 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. Employees of large enterprises formed the first sickness funds on Estonian territory under Russian legislation in 1913–1914. 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 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 professional associations for physicians were founded. However, Estonia still had one of the lowest levels of health insurance coverage among European

countries and only approximately 18% of its population had cover 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 absorption 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 managed by the government through central planning. The political 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 system. 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 for the provision of services to people outside Estonia, but also reflected the fact that Estonia was considered to be strategically important during the Cold War period. The health care delivery system focused mainly on curative care. Primary health care was fragmented. There were separate polyclinics for adults, children and women, as well as specialized dispensaries. These acted as referral points to directly access specialists rather than as gatekeepers. 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 choice was limited. 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. 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. 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. The public health system was based on the USSR sanitary-epidemiological service network (SANEPID), which was centralized, and public health services were provided under a unified institutional structure. The main emphasis of the public health service was on enforcement and control.

1991 to 2012

After regaining independence in 1991, Estonian society experienced radical change and the centrally planned hierarchical economy was transformed into a market economy. At the same time, fundamental reforms completely changed health system financing, organization and planning to ensure adequate funds

for health care, to enhance systemic efficiency and to improve response to the needs of the Estonian population. Preparations for the reforms had begun in the late 1980s when central control from Moscow was decreasing and more opportunities for local decision-making were arising in Estonia. The reforms began with establishing a social health insurance model, where funds were collected through earmarked taxes instead of from the state budget. One aim of the reforms was also to move away from a centralized, state-controlled system to a decentralized one. The Health Insurance Act of 1991 and the Health Services Organization Act of 1994 laid the foundation for the organizational structure. Despite some amendments in the course of reform – notably a reconsidering of the initial decentralization envisaged and the recentralization of some tasks – the original plans set out in this legislation have not changed substantially.

In order to remove major structural inefficiencies inherited from the Soviet era, the provider network was restructured. The hospital network capacity decreased substantially in the first half of the 1990s. Also parallel health systems were integrated into the system, with some exceptions. Furthermore, primary health care reform aimed at a shift from hospital care towards primary care and providing universal access to family physician services. To ensure access to pharmaceuticals, the first essential drug list was developed, followed by the introduction of a reimbursement system for prescription pharmaceuticals and the adoption of the Medicinal Products Act (1995). In the early stages of the reforms, the modernization and decentralization of the public health system was initiated. This foresaw a shift from a centralized sanitary-epidemiological system to a system focused also on noncommunicable disease prevention and health promotion. This necessitated developing a public health infrastructure, sustainable funding and a legislative framework, which was provided by the 1995 Public Health Act. Also in 1995, the Health Policy Document was approved (Government of the Republic of Estonia, 1995) and remained, despite several attempts at renewal, the only comprehensive health policy plan until 2008, when the NHP was approved (Ministry of Social Affairs, 2008).

After the fundamental reforms of the early and mid-1990s, the focus shifted to incremental development and improvement of the health system. In the early 2000s, the regulatory framework was updated to clarify and further recentralize the functions and responsibilities of various stakeholders. The Health Insurance Fund was transformed into an independent public legal body in 2000; a new Health Services Organization Act and a new Health Insurance Act were adopted in 2001 and 2002, respectively. 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. The adoption of the Law of Obligations Act in 2001 established a new relationship between patients and providers based on legally binding contractual agreements.

During later years, the incremental improvements in the health system were aimed at increasing the efficiency and sustainability of the system. Ensuring access to care, responsiveness, quality and accountability, setting targets and measuring performance increasingly gained attention. Lastly, the foundations were laid for the implementation of an e-health system to integrate all health system databases into a single information system (Table 2.1).

Table 2.1

Major health care reforms and policy initiatives, timeline from 1991

Year	Reforms and initiatives
1991	Establishment of Health Insurance system and regional sickness funds through adoption of the Health Insurance Act (renewed)
	Improving the provider licensing system
	Beginning of primary care reform: introduction of the respecialization training for family doctors
1992	Medical staff moved from a civil service status and began to work under private labour regulations
	Development of the first essential drug list
	Adoption of the National HIV/AIDS Programme 1992–1997 (finished)
1993	Established the Public Health Department in the University of Tartu by reorganization
	Establishment of the Ministry of Social Affairs
	Establishment of the State Agency of Medicine and the Centre for Health Promotion (later merged to NIHD in 2003)
	Primary care reform: introduction of family medicine as a separate medical specialty and starting of postgraduate training
1994	Introduction of the reimbursement system for prescription pharmaceuticals
	Adoption of the Health Service Organization Act (renewed in 2001)
1995	Establishment of the Central Sickness Fund with the subordinate regional sickness funds (centralized)
	Adoption of the Medicinal Products Act (renewed)
	Patient co-payments for primary care and specialist visits introduced
1997	Adoption of the Public Health Act
	Health Policy Document approved by the government (cancelled in 2008)
	Primary care financing reform and establishing requirement for family doctors to be registered
	Adoption of the Mental Health Act
1999	Adoption of the Artificial Insemination and Embryo Protection Act
	National Programme on the Prevention of HIV/AIDS and Other Sexually Transmitted Diseases 1997–2001 (finished)
	Adoption of the National Tuberculosis Programme 1998–2003 (finished)
2001	Adoption of the Occupational Health Act
2002	Adoption of the Estonian Health Insurance Fund Act
	Renewal of the Health Services Organization Act (1994)
2002	Adoption of the Law of Obligations Act
	Establishment of Health Care Board (merged to Health Board in 2010)
	Renewal of the Health Insurance Act (1991)
	Adoption of the National HIV/AIDS Prevention Programme 2002–2006

Year	Reforms and initiatives
2003	Adoption of the Hospital Master Plan 2015
	Adoption of the Communicable Diseases Prevention and Control Act
	Establishment of NIHD
2004	Adoption of the first intersectoral health strategy: National Strategy for Drug Use Prevention until 2012 (finished)
	Renewal of the updated Medicinal Products Act (1995)
	Adoption of the National Tuberculosis Programme 2004–2007 (finished)
2005	Implementation of diagnosis-related groups as payment system
	Adoption of the Blood Act
	Adoption of the National Strategy for the Prevention of Cardiovascular Diseases 2005–2020 (abolished in 2012)
2006	Adoption of the National HIV and AIDS Strategy 2006–2015
	Establishment of Estonian eHealth Foundation
	Updating of the Hospital Master Plan 2015 and approved by government
2007	Adoption of the National Cancer Strategy 2007–2015
2008	Adoption of the National Tuberculosis Strategy 2008–2012
	Adoption of the NHP
	Establishment of the health information system (nationwide e-health system)
2010	Establishment of the Health Board
2012	Centralization of primary care organization

Chapter 6 provides an analysis of recent health care reforms; a more detailed analysis of earlier health care reforms can be found in *Health in Transition Estonia 2008* (Koppel et al., 2008).

2.3 Organization

The main bodies responsible for planning, administration, regulation and financing of the health system are the Ministry of Social Affairs, the Health Board, SAM, NIHD and EHIF. This section gives a brief outline of the roles played by the state and its agencies, 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 parliament, the Social Affairs Committee, formed in 1992, deals with draft acts concerning social insurance and welfare, labour relations, health and health care. The chairman of the Social Affairs Committee is an elected member of the parliament. The parliament is represented on EHIF's Supervisory Board by the Chairman of the Social Affairs Committee and a member of parliament.

The Cabinet of Ministers (referred to as the government) holds executive power pursuant to the Constitution and the laws of the Republic of Estonia and develops and implements state policies. In the health sector, the government plays a planning and regulatory role by approving regulatory acts involving public health issues and government level strategies and plans, as well as setting health care services prices (see section 3.7) and approving hospital network restructuring plans. The government also nominates members to the EHIF Supervisory Board (see later in this section).

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 and representing health interests in negotiating policies of other sectors, 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, the Ministry of Social Welfare and the Ministry of Labour. Consequently, it has three major policy divisions: health, social services and labour. Occupational health issues are divided under the Ministry's health and labour division. State administrative responsibility 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 of the Ministry of Social Affairs. In the health sector, 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.

Since the mid-1990s, the subdivision of health policy areas in the Ministry of Social Affairs into separate departments has changed many times. Since 2010, the health division is divided into five administrative departments with the responsibilities described in Table 2.2.

Three subordinate health agencies operate under the Ministry of Social Affairs. The Ministry's health division coordinates the activities of the Health Board, SAM and NIHD, although each agency is directly responsible only to the Minister of Social Affairs.

The *Health Board* was established in 2010 by merging the Health Protection Inspectorate, the Health Care Board and the Chemicals Notification Centre, plus the medical devices department of SAM. The aim was to reduce fragmentation and duplication of responsibilities, as well as to reduce the administrative burden and to ensure more synergies and efficient use of resources. The responsibilities of the Health Board are divided among three divisions: health

Table 2.2

The main functions of health departments in the Ministry of Social Affairs

Department	Functions
Health Care	<p>Formulate and implement health care policy to ensure access, quality and safety of health care services</p> <p>Ensure population awareness and satisfaction with health care services</p> <p>Leading role in all health care developments in all health sectors and health policy</p>
Medicine	<p>Formulate and implement pharmaceutical policies</p> <p>Development of regulation to ensure accessibility, quality, safety and rational use of pharmaceuticals, medical devices and biological products</p> <p>Procurement and delivery of pharmaceuticals for national public health programmes (e.g. antiretroviral and anti-TB drugs, vaccines)</p>
Public Health	<p>Formulate and implement health policy to ensure health protection and a healthy environment, promote health, prevent diseases and disease-related harm</p> <p>Leading role in health policy development in environmentally caused health risks (e.g. Drinking water, food and chemical safety), control of infectious diseases, prevention of non-communicable diseases, child and adolescence health</p>
e-Health	<p>Implementing and planning e-health projects</p> <p>Administration and development of health information systems</p> <p>Standardization and implementation of data sets</p> <p>Nomenclature and classification of medical documents</p>
Health Information and Analysis	<p>Creating the conditions for knowledge-based policy-making in the ministry to ensure the objective assessment of health systems development and the impact of implemented or planned policies and of best international practices</p> <p>Coordinating the collection of health statistics</p> <p>Supporting the development and efficient implementation of intellectual capital</p>

Source: Government of the Republic of Estonia, 2004, latest updated 27.10.2012.

care, health protection and enforcement. The health care division's functions include licensing health care providers and registering health professionals, organizing ambulance services and occupational health care, ensuring the safety of medical devices, health sector preparedness for emergencies and managing poison information. Starting from 2013, the health care division is responsible for organizing primary health care, which before was the responsibility of county governors. The health protection division is responsible for communicable disease surveillance, national and local epidemiological services, implementation of the national immunization scheme, chemical safety and environmental protection. The enforcement division ensures compliance with the health protection legislation. The Health Board structure consists of one central office, four regional offices and laboratories (which include physics, chemistry, virology and microbiology).

The SAM was established in 1993 and is the agency responsible for the marketing authorization and quality control of human and veterinary pharmaceuticals, as well as regulation and control of pharmaceutical trade

(including imports and marketing). It is also responsible for the safety of donated cells, organs and tissue transplants as well as for promoting rational use of medicines, regulation and control of the use of narcotic and psychotropic substances and approval of clinical trials.

The NIHD, a research and development agency in public health, was established in 2003 by merging three public health institutions. The NIHD has become an acknowledged centre of excellence in the area of public health, responsible for applied research, public health monitoring and evaluation, including collection of health statistics and maintaining national medical registries. It is also responsible for implementing national public health strategies and programmes, as well as planning and managing provision of public health services. In the area of health promotion, the role of the NIHD is health marketing and supporting public health activities in different settings and levels. Furthermore, it offers training and capacity building in public health, health management and social care. A scientific board consisting of 18 members governs the NIHD.

In 2001, the EHIF obtained its present status as a public independent legal body, merging the Central Sickness Fund and the 17 regional sickness funds into one organization. Its main role is 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 a 15-member Supervisory Board consisting of representatives from state, employer and insured individuals' organizations. 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 four-year development plans, annual budget, regular reports, maximum waiting times and selection criteria for contracting. It also approaches the government through the Minister of Social Affairs for approval of the EHIF's list of health care services. Operational management is the responsibility of the EHIF's Management Board, which can have three to seven members and is elected for a five-year period. The EHIF's central and four regional departments carry out contracting, claims processing and population needs assessments.

In addition, the *Estonian eHealth Foundation* was established in 2005 by the Ministry of Social Affairs, three major hospitals and three professional organizations. Its main responsibility is to develop, promote and manage national e-health system and its components.

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 four prisons in Estonia at which family medicine, dental services and specialty (inpatient) care are provided. Prisoners with TB are treated in the special hospital of Tallinn prison. The Ministry of Justice also provides HIV/AIDS and TB prevention and drug addiction services in prisons. If a prisoner needs health services that are not provided by the prison health system, treatment will be organized through the general health care system. Since 2010, all the medical wards and hospitals are integrated with the Estonian Health Information System.

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). Persons needing treatment against infectious disease or for psychiatric condition(s) will be referred to hospital. In addition, the Ministry of Internal Affairs is responsible for preparedness planning and crisis management. Its Minister is the head of the Crisis Committee formed by the government.

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 Ministry of Education and Research is responsible for developing school curricula in general education including also curricula for health education, organizing youth activities also related to health promotion and setting the admission quotas for publicly funded medical training positions in higher education. In addition, it supports research and development through proper financing mechanisms.

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. Until 2013, the county governors had certain responsibilities in primary care and health statistics collection; however, these responsibilities were centralized to the Health Board and NIHD, respectively. The remaining functions in health are only in public health, where the county governments' responsibilities are to

coordinate intersectoral collaboration between different institutions responsible for health and the municipalities, and to develop and implement health projects and programmes in accordance with the national strategies.

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 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. Since 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 (some local governments give financial support to primary care providers) and by making it easier to employ family doctors. One municipal family medicine practice was established in the capital Tallinn and one in the small municipality of Rannu. Some municipalities finance some care for the uninsured, 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. Only individuals or institutions operating as private legal entities can provide services: 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 doctor(s) or local municipalities; these companies are restricted to providing only primary and nursing care services. The only areas of direct state control include the Health Board’s decisions on family doctor service areas 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 with 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. Chapter 5 has a more detailed discussion.

In the public health sector, services are provided by NGOs, foundations or private entities who are contracted by the NIHD. However, the number of service providers willing to provide services is hindered by human resources constraints and low financial incentives for providers.

The role of professional and patient organizations

There are several professional organizations in Estonia. The most prominent professional group is the Estonian Medical Association, which represents more than half (2800) of all Estonian doctors (4376 in 2010) (Estonian Medical Association, 2012). It was re-established in 1988 and is the main representative association for doctors involved in public negotiations with employers and the Ministry of Social Affairs. Over the years, the Estonian Medical Association has been very active, together with other Estonian professional organizations, in negotiating minimum wages in collective agreements and in participating in the general debates and discussions on health care policies and challenges. The Estonian Medical Association also had a leading role in the health workforce strike at the end of 2012.

A total of 37 main medical specialties are recognized by the Ministry of Social Affairs (2001). These specialties all have their own professional associations. Other types of professional association are formed on the basis of certain diseases or diagnostic treatment methods. The professional associations aim to promote and advance their specialties professionally, develop competence requirements and conduct competence assessments. Professional associations draft development plans for their respective medical specialties that are used by the Ministry of Social Affairs in the decision-making process; however, these do not have any legislative power.

Among these professional associations is the Estonian Family Doctors' Association, which was established in 1991. The Association has played an important role in developing family medicine and implementing family medicine reform since 1997 and it continues efforts to further strengthen the primary care system. The Association unites the majority of more than 900 family doctors, which forms approximately 20% of all doctors working in Estonia.

The Estonian Nurses Union was established in 1923 and re-established in 1990. The Union represents more than half of all nurses in the country and it has been active in redefining professional standards in nursing, developing guidelines and improving the training curriculum for nurses. The Union has also been visible and powerful in negotiating minimum wages. Together with the Estonian Midwives Association, which was established in 1992, a strategy was drafted setting priorities for development for 2011–2020 (Estonian Nurses Union and Estonian Midwives Association, 2011). Currently there are four main nursing specialties with 14 subspecialties. All these specialties have created their own development plans.

Hospitals have joined together to form the Estonian Hospital Association, which had 22 members at the end of 2012. Most of these members are acute care hospitals, but there are also some nursing hospitals. The Association represents hospitals in negotiations with professional organizations about minimum wages and with the EHIF about the framework agreement. The Association also actively participates in discussions on health care legislation and policy developments. A representative of the Association is also a member of the EHIF Supervisory Board (Estonian Hospital Association, 2012).

The oldest and most prominent patient organization is the Estonian Patients Advocacy Association (*Eesti Patsientide Esindustühing*, abbreviated in English to EPAA). One of the main functions of the EPAA is management of complaints, and advising and representing patients (see section 2.9.3). The EPAA has been actively involved in discussions and in drafting and debating legislation. It is involved in most ministerial working groups set up to discuss new policies or strategies and it is a member of the Health Care Quality Expert Commission. Patient groups have also been formed to represent people with specific illnesses or disabilities, such as the Diabetic Society and the Multiple Sclerosis Society.

Patient/consumer involvement in health care 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. However, there is room for improvements in terms of capacities and influence on health policies.

Research organizations

The University of Tartu is the only academic medical institution in Estonia and wields considerable influence on health issues. 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 has been promoting applied research on public health, health management and health economics, as well as providing training in public health and health management. In 2012, the Centre for Health Technology Assessment was established at the Department of Public Health. Furthermore, Tallinn University and the Tallinn University of Technology have carried out research in the areas of public health, e-health and biosciences. The NIHD is primarily a national research institute (see above), with research covering biostatistics and epidemiology, oncology, medical virology, infectious diseases, drug addiction and risk behaviour.

In 2001, an interdisciplinary unit, the Estonian Centre of Behavioural and Health Sciences at the University of Tartu Faculty of Social Sciences, was recognized as a national centre of excellence in research. The main objective of the Centre is to develop interdisciplinary research and organize doctoral studies in the fields of behavioural and health sciences (Estonian Centre of Behavioural and Health Sciences, 2013).

In the same year the government set up the Estonian Genome Project Foundation and tasked it with responsibility for the Estonian Genome Project. Since 2007, the Estonian Genome Project has been the responsibility of the University of Tartu in the Estonian Genome Centre. At the end of 2011, the biobank contained the gene samples of 51 515 participants, representing about 5% of Estonia's adult population, and is available for national and international scientific research projects (Estonian Genome Centre, 2012).

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. After regaining independence, several professional publications 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 *Apteeker* for pharmacists and the newspaper *Meditisiiniuudised (Medical News)*. The newspaper *Terviseleht* mainly targets 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 were initiated to host 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. It is clear 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 in the early 1990s established a significant degree of decentralization in the health system. 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, some functions were 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 four main phases in (re)centralization.

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.

Second, organizations such as the EHIF and the Health Protection Inspectorate, the predecessor of the Health Board, which used to be represented in each county became centralized so that they then covered several counties. These changes aimed to improve efficiency in the use of qualified personnel and reduce the costs of administration. 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 were delegated to managers within the EHIF and at the provider level. Health care providers obtained the legal status of private entities operating under private law. In practice, this meant that direct responsibility for provider performance was 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.

Lastly, in 2012, further recentralization of primary health care took place. Since the start of 2013, the administrative functions related to primary health care (forming and assignment of family practices, temporary substitution of family physicians, supervision) have been transferred from county governors to the Health Board. Also the collection of health statistics was centralized to the NIHD and one additional layer (that of county governor) was removed. In addition, several management functions in the health sector were centralized, for example accounting (in 2009). Information technology planning and human resource management of state agencies have been (or will be) centralized.

2.5 Planning

The Ministry of Social Affairs is responsible for planning in the Estonian health system. Currently, the main policy document is the NHP, which was adopted by the government in 2008. The NHP aims to integrate all existing sectoral health

plans, strategies and development plans into one plan that presents linkages between the various stakeholders of the health system and other sectors (see section 2.6). As a result, all stakeholders should know their role in improving population health in Estonia.

The NHP contains measurable targets with specific indicators and a detailed list of activities that are directly linked to the state budget, which, in turn, is based on a four-year state budget strategy prepared by the Ministry of Finance (Ministry of Finance, 2010, 2012, 2013). All NHP activities and expenditures are reviewed annually and additional outcome reviews are carried out every second year. Because it is the highest level plan, the outcomes of the NHP have to be reported to the government. Development of the NHP took several years of consultations and public discussions. The final structure that emerged consisted of two main goals that are to be achieved by actions in five main areas. These main goals are to (1) increase life expectancy at birth to 75 years for men and 84 years for women by 2020 and (2) increase healthy life expectancy at birth to 60 years for men and 65 years for women by 2020. The five strategic areas, which have their own specific goals supported by a selection of measurable indicators to track progress, are:

- social cohesion and equal opportunities
- safe and healthy development for children and youth
- living, working and learning environment to support health
- healthy lifestyle
- development of the health care system.

In addition to activities that are directly linked to the state budget, the NHP gives additional suggestions to municipalities, private organizations and individuals on how they could improve the health of the population or themselves. Interestingly, these suggestions have not been updated since the NHP, came into force whereas the state budget-funded activities are reviewed every year. In addition, initially the aim was to clearly outline all the activities and resources needed for population health improvement, not only the ones that are actually financed.

While the NHP is the only overarching health strategy, there have been and still are a number of more specific health policy documents, strategies or development plans in force. Probably the most important of such policy documents has been the Estonian Hospital Master Plan 2015 (Hellers et al., 2000), which was evaluated and adapted into the Hospital Network

Development Plan (HNDP) (Government of the Republic of Estonia, 2003; see also section 4.1). The HNDP did not fully cover the planning of nursing care and rehabilitation services planning and separate plans for these areas were developed.

The trend towards centralizing some planning and regulatory functions was prompted partly by the experience of the 1990s, which showed that decentralized planning did not result in efficient and accessible health services, although in many cases progress was made in response to patient needs. The EHIF was forced to use contracting 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. The EHIF plans its expenditures four years ahead in line with the state budget planning principles. This four-year budget framework identifies priority areas of development and provides the basis for the more detailed annual budgets.

Responsibility for primary care planning is shared by the Ministry of Social Affairs at the national and county levels, as laid out in the Primary Healthcare Development Plan (Ministry of Social Affairs, 2009b). The Ministry regulates the overall number of family doctors per county based on population numbers and geographical density. In 2013, the planning and management of primary care access shifted from county governors to the Health Board. Since 2000, the general long-term planning of specialist care has been the responsibility of the Ministry of Social Affairs. The EHIF translates the Ministry plans into shorter-term contracting policy. It focuses on the volume of health services, giving priority to improving access and by doing so also reducing inpatient waiting times to acceptable levels. Staffing levels of ambulance service teams are planned by the Health Board. 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.

The reduction in hospitals, inpatient care, duration of hospital stay and other factors has increased the role of nursing care. Recognizing this gap in health care service provision, the Ministry of Social Affairs adopted the Nursing Care Network Development Plan 2004–2015 (Ministry of Social Affairs, 2003), which specifies the services for patients who no longer need expensive and high-technology active treatment. The aim of the Nursing Care Network Development Plan is to improve the availability and quality of outpatient and inpatient nursing care services and to use health insurance resources effectively.

Planning of human resources in health care has been a relatively neglected area. In the early 1990s, the number of admissions to medical courses decreased in an attempt to address the Soviet “overproduction” of medical doctors. Since the mid-1990s, the Ministry of Social Affairs has attempted to plan future admission rates for medical and nursing training. Recent workforce plans take into account predictions of professional mobility, ageing of the workforce and – the largest negative factor – qualified health professionals who work outside the health care sector or outside Estonia.

The most notable planning tools in the area of public health after 2000 were the National Strategy for Prevention of Cardiovascular Disease 2005–2020 (Government of the Republic of Estonia, 2005; strategy abolished in 2012), the National HIV and AIDS Strategy 2006–2015 (Ministry of Social Affairs, 2005), the National Drug Addiction Prevention Strategy until 2012, the National Cancer Strategy 2007–2015 (Ministry of Social Affairs, 2007) and the National Tuberculosis Control Programme 2008–2012. All these strategies were meant to provide detailed guidance for action plans with specific actions, budget and outcomes. The Ministry of Social Affairs is responsible for strategic planning and oversight, while the NIHD and other stakeholders implements the actions. The planning of yearly action plans is based on the input from the NIHD and other partners, which depends on their available resources and institutional will.

As indicated above, the initial aim of the NHP was to link policy documents into one comprehensive plan, with specific activities defined in lower-level strategies. However, currently there is a trend of integrating these strategies into the NHP to reduce the administrative burden on the Ministry of Social Affairs. The first strategy to be integrated was the National Strategy for Prevention of Cardiovascular Disease 2005–2020. The detailed activities of the Strategy were distributed between the five priority areas of the NHP without a possibility of clearly distinguishing or grouping activities that targeted prevention of cardiovascular diseases. It is unclear whether, when and how the other area-specific policy documents will be merged into the NHP. In parallel, the area-specific strategies that were considered high priority and that were reported directly to the government were demoted to the ministerial level.

2.6 Intersectorality

The main tools for intersectoral health planning are the NHP (Ministry of Social Affairs, 2008) and the national health strategies (see section 2.5). The Ministry of Social Affairs coordinates the planning, implementation and evaluation of

the NHP. The NHP has a Steering Committee whose responsibilities are to plan the activities and necessary resources based on the analysis of the previous implementation period and targets. The Steering Committee consists of the main partners: the Ministry of Social Affairs, the Ministry of Agriculture, the Ministry of Culture, the Ministry of Defence, the Ministry of Education, the Ministry of the Environment, the Ministry of the Interior, the Ministry of Economic Affairs and Communication, and the Ministry of Justice; and representatives from the main political parties, the government, the Chancellor of Justice Offices, local municipalities and academia. Each member reports to the Steering Committee for the organization or actions in their particular area of competence, for achievement of objectives in the respective government area and for submission of the information required for reporting to the Ministry of Social Affairs and expert groups. The implementation report is presented to the government. There is scope to develop this Steering Committee into a more strategic intersectoral body.

In addition, a formal consultation and feedback mechanism is in place for all government level legislative and strategic documents. Prior to adoption, other ministries and stakeholders have the opportunity to comment, propose amendments or disagree. The initiating ministry has to respond to the comments and provide justifications if comments are not taken into account. All pending issues are negotiated either bilaterally or during the government sessions.

Examples of national strategies that are implemented multisectorally include the National Drug Addiction Prevention Strategy until 2012 (adopted in 2003) and the National HIV and AIDS Strategy 2006–2015 (adopted in 2005). Until 2012, the HIV/AIDS Strategy and National Drug Addiction Prevention Strategy were coordinated by a government commission involving representatives from responsible ministries and other organizations, but now the committees are only at the ministerial level. The main partners are the Ministry of the Interior, the Ministry of Education and the Ministry of Justice. The Ministry of Social Affairs coordinates the HIV/AIDS Commission, but the Ministry of the Interior took over the coordination of the Commission for Drug Prevention from the Ministry of Social Affairs in 2012. Furthermore, there are strategic development plans related to health but coordinated by ministries other than Ministry of Social Affairs, such as the National Road Safety Programme 2003–2015 (Ministry of Economic Affairs and Communication), the Violence Reduction Development Plan 2010–2014 (Ministry of Justice) and the Development Plan on Physical Activity, 2011–2014 (Ministry of Culture). The activities of such

plans are also integrated with the NHP. It remains to be seen how the trend of merging all planning and reporting strategies into the NHP (see section 2.5) will facilitate future intersectoral collaboration.

2.7 Health information management

2.7.1 Health information systems

The Ministry of Social Affairs is responsible for governance of the health information system in Estonia. This responsibility is shared between the Department of Health Information and Analysis and the Department of e-Health. The former is responsible for developing the overall infrastructure of the health information system and health indicators. It also provides analytical input in setting policy. The latter department focuses on development of the e-prescription and e-health patient record systems. The health registries are a joint responsibility of these two departments, but management is the responsibility of the Health Board and NIHD.

There are several institutions that collect and analyse health data in Estonia. The main institutions are the EHIF, NIHD, Health Board, Ministry of Social Affairs, SAM and the Estonian eHealth Foundation. The EHIF collects the main activities in health service provision mainly based on health insurance claims data according to contractual agreements with service providers. A part of this data collection and analysis also covers service quality and waiting lists. Additionally, EHIF collects and analyses data pertinent for reimbursement of prescription drug costs and sick leave benefits to the population. Finally, EHIF also conducts annual population surveys in collaboration with the Ministry of Social Affairs. These cover issues such as access, affordability and satisfaction with health care services.

The NIHD collects and analyses national health statistics as well as data on the health care workforce, use of health care services, and other resources in health care. The NIHD is also responsible for collection and analysis of National Health Accounts information. Further, the NIHD conducts regular population health and risk factor surveys and a wealth of other surveys and evaluations, mostly in the area of public or population health, that feed into the health policy process. The NIHD produces regional health profiles and supports municipalities in their health information needs. Finally, the NIHD manages

and develops several national health registries, such as the registries of causes of deaths; abortions and birth; cancer; and TB. The development of a cancer-screening registry started in 2012.

The Health Board is tasked with collection and analysis of notification data on communicable diseases directly from health care service providers (see also section 5.1). The Health Board is also responsible for maintaining databases on licensed medical practitioners in Estonia as well as health care service providers acting in Estonia.

The e-health system is a uniform and standardized information-exchange platform that connects all providers and allows data exchange with various other sources such as registries. The data collected and used in this system are personalized to allow every patient access to his or her own health data. Patients can allow or deny access to their data to any selection of doctors for use in treatment and care planning. The e-health system will also have a statistics module, which will be used for automatic and ad-hoc generation of anonymized health information, which to a degree is currently collected by several of the institutions mentioned above. The day-to-day management and development is handled by the Estonian eHealth Foundation, which is an independent institution under the regulatory supervision of the Ministry of Social Affairs.

Collection, management and analysis of personal health data in Estonia is regulated by the Personal Data Protection Act. The regulations are rather strict and all health information systems are expected to achieve the highest security level. The Estonian Data Protection Inspectorate implements these regulations. 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.

2.7.2 Health Technology Assessment

Until recently, Estonia had no systematic programme for HTA, mainly because of lack of interest from policy-makers and lack of trained human resources.

Elements of HTA – namely independent evaluation of evidence on efficacy and safety – have been used in the process of granting marketing authorization for pharmaceuticals and medical devices. Since 2002, regulations have been in effect on how new treatment methods and procedures should be introduced into the EHIF benefit package and on how new pharmaceuticals should be evaluated in order to be reimbursed by the EHIF. The assessment of new services and pharmaceuticals is carried out by health economic evaluation

and considers the perspectives of society and patients in addition to cost-effectiveness criteria. However, this assessment is based on the information submitted by the applicant or manufacturer and is not carried out systematically or following a common methodology. On the organizational level, occasionally some hospitals have conducted cost-analysis studies if high-cost technologies (e.g. magnetic resonance imaging (MRI) or computed tomography (CT) scanners) are purchased.

Since 2008, the EHIF has been working together with the National Institute for Health and Care Excellence in the United Kingdom to share experience and strengthen the methods and processes for the systematic use of evidence in policy-making in Estonia. This collaboration included a study tour to the United Kingdom, training on methods in Estonia and a policy round table discussion on HTA in May 2010. As a result, the Ministry of Social Affairs in 2010 nominated the University of Tartu to represent Estonia in EUnetHTA, a European Commission-funded Joint Action for 2010–2012, connecting 46 national and regional agencies from all 27 EU Member States. It should put into practice an effective and sustainable HTA collaboration and harmonize and standardize HTA-related activities.

In 2011, for the first time, the Ministry of Social Affairs commissioned the University of Tartu to evaluate the cost-effectiveness of specific treatment modalities, namely that of three vaccination schemes: for rotavirus, *Streptococcus pneumoniae* (pneumococcus) and human papillomavirus. The three reports are designed to support decisions whether to include any of these new vaccines in the national vaccination programme.

The Centre for Health Technology Assessment was established in 2012 as part of the Department of Public Health at the University of Tartu, with a staff of 8–10 young research fellows who have master degrees in public health, economics or mathematical statistics. The Centre is funded by a Ministry of Education grant and should produce 25 HTA reports by 2015. It remains to be decided whether future HTA activities will be carried out by a separate governmental agency or commissioned from academia.

The topics to be developed into HTA reports are decided by the Ministry of Social Affairs and the EHIF. The recommendations and conclusions arising from HTA will be used to assist decisions on adding new technologies to the benefit package as well as to adjust the medical practices and clinical guidelines according to emerging evidence on efficacy and safety, and economic use of resources.

In summary, as of 2012, considerable progress has been made in Estonia to create formal procedures for HTA and to develop capacity in this field to support evidence-based decision-making in health care and public health.

2.8 Regulation

Article 28 of the Constitution of the Estonian Republic states the people's right to health protection and social security. The regulatory framework of the Estonian health system is laid down in five major pieces of legislation: the Health Insurance Act (2002), the Health Services Organization Act (2002), the Public Health Act (1995), the Medicinal Products Act (2004) and the Law of Obligations Act (2001).

The main actors in regulation of the health system in Estonia are the parliament, government, the Ministry of Social Affairs and its agencies and the EHIF. The parliament as a legislative body proceeds and passes main acts and approves the state budget. The government and the ministries are responsible for the secondary legislation (regulations and decrees).

At the state level in general, health system regulation and stewardship are the shared responsibility of five ministries.

- Ministry of Social Affairs: 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 persons;
- Ministry of Justice and Ministry of the Interior: joint responsibility for health services provided in prisons and other custodial settings;
- Ministry of Defence: organizes and pays for primary care for military personnel; and
- Ministry of Finance: organizes and coordinates state strategic planning as well as collation of the state budget and is represented in boards of health care providers established by the government.

Regulation and supervision of the health system are the responsibility of the Ministry of Social Affairs. The health acts (laws) are enforced with the support of governmental and ministerial regulations. The main health policy document, the NHP, was adopted in 2008 (Ministry of Social Affairs, 2008).

In addition, the Nursing Care Network Development Plan 2004–2015 (Ministry of Social Affairs, 2003) and the new Primary Health Care Development Plan 2009–2015 (Ministry of Social Affairs, 2009b) are important policy documents which together give direction to regulation.

The state and local municipalities exert influence on the regulation and planning process of hospitals through participation in supervisory boards. Patients are represented in working groups and commissions of the Ministry of Social Affairs, and are also members of the EHIF Supervisory Board. In general, the governance of the health system is based on regulation and contractual relations rather than subordinate relationships.

2.8.1 Regulation and governance of third-party payers

The Estonian Health Insurance Fund Act 2000 established the EHIF as the single, legally independent, public organization responsible for the paying and purchasing of health services. After the last restructuring of the EHIF in 2004, only four of the regional departments and the single central department were left. According to the current organizational setup, each regional department covers 175 000–500 000 insured individuals. Today, the regional departments are mainly responsible for the planning and monitoring of health care service budgets and contracts and are the first point of contact for providers. The EHIF has broad autonomy to contract with service providers while maintaining government supervision and participation. Important policy decisions about the health insurance system remain under the parliament, the government or the Ministry of Social Affairs (Box 2.1).

The EHIF is responsible for covering the expenses of preventive and curative health services provided to insured individuals. It also finances the purchase of medicinal products and medical devices and provides benefits for temporary incapacity for work. 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 more information, see section 2.9.6). Private health insurers fall under the legal framework for private insurance and are not supervised by health authorities. EHIF contracts have evolved and reflect the EHIF's increasing role in becoming a stronger purchaser in negotiations with provider organizations.

Box 2.1 Regulation

Establishment of system objectives and principles. Health Insurance Act (parliamentary decision).

Contributions definition. Social Tax Act (parliamentary decision).

Contributions rate. Social Tax Act (parliamentary decision).

Coverage (eligibility). Health Insurance Act (parliamentary decision).

Co-payments. Principles and general regulations for upper limits are established in the Health Insurance Act (parliamentary decision). Actual co-payments are defined in the List of Health Services (governmental decision). Co-payments for pharmaceuticals are defined in the Reference Prices of Pharmaceuticals and List of Reimbursed Pharmaceuticals (ministerial decision).

Benefit package. Basic principles are established in the Health Insurance Act. The actual benefit package is defined by the List of Health Services (governmental decision).

Provider payment methods. List of Health Services (governmental decision) and its application (Ministry of Social Affairs decision).

Prices (level of funding). Prices are defined in the List of Health Services. Price calculation methodology is defined in ministerial regulations.

Contracting. Basic principles (list of criteria for provider selection, terms and necessary parts of contracts) are established in the Health Insurance Act. Application rules for provider selection criteria are defined by supervisory board decisions.

Budget. Basic principles are established in the Health Insurance Act. Allocation between different services is decided by EHIF Supervisory Board.

Waiting time limits. EHIF Supervisory Board decisions.

Source: Habicht, 2008.

2.8.2 Regulation and governance of providers

In 2002 the new Health Services Organization Act came into force, establishing a separate state agency, the Health Care Board (now the Health Board), for licensing and supervision of providers; since the start of 2013 this includes supervision of primary care providers (before this the responsibility was with the county governor's office). All health service providers have to acquire a licence. The act clearly defines all providers as private entities operating under private law, with the public interest represented through public membership of supervisory boards for providers established by public authorities. 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 joint-stock companies (profit-making) or foundations (non-profit-making). These new organization and management forms have increased the autonomy of hospital management and resulted in

increased cost–efficiency of hospital services provision (Tsolova et al., 2007). In contrast with other health service providers, ambulance services and public health providers can take a different legal form.

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

- Health Board licences for (public and/or private) health care facilities and all health service providers (also family practices since 2013);
- a five-year period for licence renewal for health care providers (until 2014);
- Health Board register of doctors, dentists, nurses and allied practitioners (e.g. midwives), providers and pharmacists (registering is for life);
- SAM approval for pharmaceuticals sold and used in Estonia and licences for pharmacies;
- notification to the Health Board for new devices on the market and also for hazards and incidents occurring after market entry;
- safety certificates provided by the Health Board or other nationally competent authority for medical devices or other health-related equipment;
- Estonian Data Protection Inspectorate approval for concordance of personal data processing with data protection rules required for health care providers or in health-related databases; and
- voluntary external quality assessments and improvement programmes in line with statutory inspection requirements.

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 (e.g. World Bank and the Dutch Institute for Healthcare Improvement). However, it was not until 2002 that the new Health Services Organization Act formalized the requirements of quality assurance for health service providers. According to these regulations, all providers are obliged to have a quality handbook, which is the basis for their internal quality assurance system. Although there is no single quality assurance policy framework adopted in Estonia, there have been several developments in this field.

The EHIF, which has supported the development of clinical guidelines since the 1990s, acts as the coordinator of clinical guidelines development. A project by the World Health Organization (WHO), EHIF, the Faculty of Medicine of the University of Tartu and various experts aimed to harmonize guidelines

development in order to raise the level of evidence-based medicine. The main product was the new *Estonian Handbook for Guidelines Development* launched in 2011 (WHO, 2011), and a web site where all information about guidelines is collected (www.ravijuhend.ee). A new Guideline Advisory Board, with 12 members including representatives of nurses and patients, was established in 2011 to govern the whole guidelines development process.

2.8.3 Registration and planning of human resources

Registration of health care workers

All doctors, nurses, midwives and dentists working in Estonia have to be registered with the Health Board, the competent authority for licensing health professionals, which issues registration certificates after verifying their training and qualifications. The registration procedure was started in 2002 and is regulated under the Health Services Organization Act. The registration is a one-time action and it lasts for the lifetime of the professional. In order to be recognized, the health care professional seeking the right to practise in Estonia must submit a registration form and all diplomas/certificates attesting the qualifications in the relevant health profession. The Health Board verifies the authenticity of information submitted and makes a registration decision within one month. The Health Board maintains a public register of all health care institutions and health care professionals and the types of licences issued.

For health professionals arriving from abroad, the procedure is the same, but in addition to professional qualifications, the applicant has to provide proof of the right to practise the profession in their country of origin. For EU nationals, no additional requirements are applied and after registration by the Health Board they can practise as do Estonian nationals. Non-EU nationals may have to pass aptitude tests, as will be decided by the Health Board according to the qualifications and training the applicant has received outside the EU.

Health care professionals from Estonia wishing to work in other EU Member States have to apply for the appropriate certificate from the Health Board to present it to the respective agency in the country of destination.

Whereas registration of a health care professional lasts for life in Estonia, there is no statutory relicensing or reaccreditation. However, several specialist organizations (the professional societies of family medicine, cardiologists and surgeons) have instituted systems for regular recertification, for which the health care professionals must undergo continuous medical education and present proof of professional activities performed.

Planning of health care personnel

As described in section 4.2, almost all physicians, dentists and pharmacists practising in Estonia are graduates of the University of Tartu Faculty of Medicine, and nurses come from the two health care colleges in Tallinn and in Tartu.

The number of students entering training for health care professions is set by the Ministry of Education and Research, which finances the student positions. The Ministry of Education is advised by a committee on the training of health professionals, established by the Minister of Social Affairs in 2002. This advisory committee comprises all stakeholders, for example the Ministry of Social Affairs, the Ministry of Education and Research, all three training institutions and representatives from major professional associations. In theory, the committee should take into account the needs of employers, and the Ministry of Social Affairs has developed a forecast model to support planning of health care personnel.

There have been two major misjudgements in planning the training of health care professionals in Estonia. First, in the 1990s admission to physician training at the University of Tartu was decreased to as low as 70 students per year. This is less than half of the number needed to keep the number of practising doctors constant at 3 per 1000 population. This continued for almost 10 years and resulted in a deficit of young doctors. In 2012, there were 684 doctors over 65 years of age working in Estonia, equalling 15% of the physician workforce, up from 5% in 1998 (Table 2.3). Second, the student intake for the training of nurses was cut in the early 2000s to less than half of the number of graduates needed. However, since 2009, the number of nurses in training has been increasing again, to a total of 350–400 per year. Yet this is still insufficient to increase the number of practising nurses to a level of 9–10 per 1000 population, as this would require 600 graduates in nursing per year for the next 15 years.

Table 2.3

Number of doctors and students of medicine in Estonia

	1998	2005	2012
Practising doctors, total	4 612	4 589	4 521
Practising doctors aged 65+ years (%)	5	8	15
Graduates of medicine per year	61	89	121
Students admitted to 1st study year, total	75	118	140

Therefore, despite the advisory committee attempting to forecast the need for future health care professionals, it did not take into account the age structure of the physicians and nurses actually working in Estonia and seriously underestimated the emigration of health professionals from Estonia (see section 4.2). However, as of 2012, this has been acknowledged and the Ministry of Social Affairs is developing plans and resources to rapidly increase student admissions.

2.8.4 Regulation and governance of pharmaceuticals

The pharmaceutical sector in Estonia was reformed during the early 1990s with the aim of establishing pharmaceutical regulatory authorities, creating a legislative framework, introducing a system for reimbursing pharmaceuticals and privatizing pharmaceutical services. The Medicinal Products Act, covering all medicinal products and pharmaceutical activities in Estonia, was approved in 1995. In 2002, the Medicines Department was established within the Ministry of Social Affairs, which, since then, has been responsible for strategic planning in terms of pharmaceuticals, as well as for pricing and reimbursement decisions. The SAM and EHIF advise the Ministry of Social Affairs on the process of reimbursement and the EHIF carries out the reimbursement of pharmaceuticals.

The Estonian regulatory framework for pharmaceuticals is harmonized with EU legislation and international guidelines and is based on proven quality, safety and efficacy. Since joining the EU in 2004, the SAM has been an active member of the EU drug regulatory network, contributing to the decentralized, mutual recognition and centralized marketing authorization procedures for medicinal products and other functions. Increasingly, pharmaceutical companies have selected the SAM as a reference state in the European decentralized marketing authorization procedure in order to enter the markets of other EU Member States.

The SAM is in charge of supervising pharmaceutical advertising, which must comply with the Medicinal Products Act and be in line with the approved summaries of product characteristics published on the SAM web site. Advertising of prescription medicines and academic detailing is allowed only to physicians and pharmacists and there are detailed regulations on what promotion activities are acceptable. Advertising to the public is allowed only for over-the-counter medicines, with strict limitations and directions on what information has to be presented and how.

Patent legislation in Estonia is harmonized according to the European Patent Convention and ensures market protection for the originator of a medicinal pharmaceutical for 20 years. Recently adopted EU legislation on Supplementary

Protection Certificates obliges authorities to provide data protection for an 8+2+1-year period. This provides 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. Until now, no explicit provisions for parallel import and “government use” of patented products have been incorporated into national legislation.

Since 1993, there has been a reimbursement system for prescription-only medicines purchased in pharmacies. The reimbursement category determines the level of patient co-payment and is based on the severity of the disease, the efficacy of the medication and the social status of the patient by the regulations of the Ministry of Social Affairs. In 2002, a positive list of reimbursed pharmaceuticals was introduced; before then, all prescription medicines with marketing authorization had been reimbursed to a certain extent. Only very few selected over-the-counter products for children with severe illnesses and for patients with phenylketonuria have been included in the positive list.

The reimbursement system in Estonia is disease specific and there are two groups of diagnoses, classified on the basis of the severity of illness. The pharmaceuticals listed for the most severe diseases (i.e. diabetes, cancer) receive the full (100%) rate of reimbursement; pharmaceuticals for less severe chronic diseases (i.e. hypertension, asthma) are reimbursed on a 75% basis. A higher reimbursement level of 90% for disabled and retired individuals applies, as well as for children aged 4–16 years, and children under 4 years of age receive 100% reimbursement for all pharmaceuticals listed. The rest of the pharmaceuticals in the positive list are reimbursed at a 50% rate.

In addition, patients may apply for individual reimbursement at the EHIF under special circumstances and for supplementary reimbursement. This is mainly used for 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 2002, applications by manufacturers for EHIF reimbursement follow the common Baltic guidelines for pharmacoeconomic analyses. The application, accompanied by clinical and pharmacoeconomic data, must be submitted to the Ministry of Social Affairs. The SAM then evaluates the clinical data, while the EHIF assesses the economic data. Both provide a written report to a ministerial committee that makes recommendations to the minister. After a positive opinion from the committee, the price is negotiated between the manufacturer and the Department of Medicines of the Ministry of Social Affairs.

Since 2003, the reimbursement system operates a reference pricing system: that is, medicines from different manufacturers and containing the same or similar active ingredient are clustered in groups with a maximum (reimbursement) price. Since January 2005, the average daily dose price of the second cheapest pharmaceutical product has been used as the reference price (Pudersell et al., 2007).

The prices of pharmaceuticals with active ingredients that have a single manufacturer in Estonia are not included in the reference pricing scheme but are determined by price agreements: contracts under public law between the Minister of Social Affairs and the marketing authorization holder. For price negotiations, the manufacturer has to present also the expected sales volume of the pharmaceutical, and the prices of the pharmaceutical in certain countries, including the host country of the manufacturer. When the price agreement is concluded, information about the wholesale and retail prices is published.

Manufacturers are free to set their own prices for non-reimbursed pharmaceuticals. However, as described in the previous section, the Ministry of Social Affairs determines the reference prices for the reimbursed prescription pharmaceuticals and these reference prices determine the amount paid by the EHIF. The price difference between the retail price and the reference price has to be paid by the patient.

There are no profit controls or any clawback systems to recollect excess profits in pharmaceutical sales. The only administrative measure used is the cost-plus mark-up system for wholesalers and pharmacies, fixing the maximum mark-ups for both reimbursed and non-reimbursed pharmaceuticals, including over-the-counter drugs. This method differentiates the mark-ups for pharmaceuticals regressively and is thus aimed at making the sale of cheaper pharmaceuticals more profitable for pharmacies (Pudersell et al., 2007).

Pharmaceuticals used in hospital settings are usually included in the price of health services paid by the EHIF. However, some selected groups of pharmaceuticals (cancer chemotherapy, dialysis products) are included in the list of health services as separate entities of pharmaceutical care and are paid for by the EHIF in addition to health services. The prices of these hospital-use pharmaceuticals are determined by the EHIF, but the expenditure on this category of pharmaceuticals has increased considerably in recent years (EHIF, 2011a).

There are no pharmaceutical budgets for doctors and no mandatory generic substitution in pharmacies in Estonia. However, the regulations stipulate that doctors prescribe pharmaceuticals by their International Nonproprietary Name (INN). If prescribing by brand name, the doctor has to justify this in the patient's medical record (e.g. patient refuses generic, or cheapest option is not available). If the pharmaceutical has been prescribed by INN, the pharmacist has to offer different generic equivalents to the patient and advise on the prices accordingly.

Generic prescription has been strongly promoted in public campaigns organized by the EHIF in 2010 and 2011. It has successfully reduced costs on reimbursed prescription pharmaceuticals for the EHIF and the patients, as well as increasing the proportion of generic prescription to 70% by the end of 2011 (EHIF, 2011a).

The SAM controls information about medicines that is directed to either prescribers or consumers through the market authorization process, and national language summaries of product characteristics are published on the SAM web site. The SAM has been distributing a bimonthly drug information bulletin free of charge to medical doctors and to all pharmacies.

Three measures that could support rational use of medicines remain to be implemented. These include (1) the development and issuing of guidelines that are based on therapeutic considerations, (2) drug budgets to motivate doctors to take costs into consideration, and (3) monitoring physicians' prescribing behaviour and providing detailed feedback to the prescribers (Kanavos et al., 2009).

2.8.5 Regulation of medical 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. Before its enactment, the area was regulated by several acts. The Medicinal Products Act and related provisions regulate manufacturing, marketing and advertising of medical devices and give rules for market supervision. It also regulates the liability of market actors for non-conformities, violations and perpetrations.

Since 2010, the competent authority for medical devices in Estonia is the Health Board (previously this was 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, and is 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; or
- birth control.

2.9 Patient empowerment

2.9.1 Patient information

In 2008, a centrally managed e-health concept was introduced that aimed to make all information about patient health available to patients (using their identification (ID) card) and health professionals. The patient has the right to decide who can access his or her personal (not critical for life) information. 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.). This should improve the continuity and integration of care by providing and exchanging the appropriate information about the patient for health care workers working in different levels/institutions of the health system. However, the e-health system is not explicitly designed to improve patient information.

Information related to health insurance is available from a variety of sources. The EHIF has set up web sites, local service desks, telephone services and information leaflets, as well as regular mass media advertisements. Estonian citizens have access to personal information such as coverage, benefits received, and medicine use through a state-managed central data exchange (“X-Road”), which uses ID cards and passwords for privacy protection. Furthermore, the EHIF web site contains 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. Furthermore, information about entitlements on receiving cross-border care in the EU is available on the EHIF web site and related publications.

The Ministry of Social Affairs and other state agencies (including the NIHD, SAM and Health Board) have their own web sites and printed publications, mostly containing contact data, responsibilities and provided services, as well as reports and statistics of public interest. In addition, NIHD manages web sites on health information such as generic drugs (www.terviseinfo.ee) and other web sites on prevention and promotion (e.g. www.alkoinfo.ee, www.hiv.ee, www.narko.ee and www.toitumine.ee). Health service providers have the legal responsibility to provide information on availability, accessibility and prices of services, which is done mostly through web sites.

According to a survey conducted in 2011 (Saar Poll, 2011), 45% of patients prefer to get health-related information via the Internet. The use of the Internet has increased throughout the years to match other preferences: in 2008, 34% of patients used the Internet, 38% used television, 35% used newspapers and 29% used their family physician.

Public information on the performance and quality of the health system and health care provider is still limited. To bridge this gap, the EHIF has recently developed a report where selected indicators of HNDP hospitals are presented. The report has been publicly available on the web page of EHIF since April 2012 and is accessible for everyone. In addition, the EHIF provides information on family physicians' performance (see sections 3.7.1 and 5.3).

2.9.2 Patient choice

Estonian health insurance provides universal coverage and its coverage in terms of benefits is broad. As Estonia has a single-payer system, no competition or choice between different purchaser organizations exists. Since 2006, patients can choose the health care provider they prefer. Before then, choice was limited to the contracted providers of the EHIF regional department where a given patient was registered. At the primary health care level, all citizens in Estonia have to register on the practice lists of the family physician of their choice. Family doctors may refuse an individual when the list is full or the person does not live within their catchment area. According to a survey, 96% of the population is aware that they can switch family physicians and 83% of patients are satisfied with the services of their family physician (Saar Poll, 2011). Furthermore, with a referral, a patient also has a free choice of

specialist. However, this free choice may be constrained when there are waiting lists (see section 5.4). Providers without a contract with EHIF are freely accessible to everyone willing to make out-of-pocket (OOP) payments.

2.9.3 Patient rights

The basis for discussions and drafts of legislative documents on patient rights in Estonia has been *A Declaration on the Promotion of Patients' Rights in Europe* (WHO Regional Office for Europe, 1994). The draft of the Patient Rights Act was discussed in parliament in 1996 and 2002. In 2011, the topic was raised again by the parliamentary Social Affairs Committee, but these discussions have not resulted in any legislation. The rights and obligations of patients have been incorporated in the Law of Obligations Act (enforced in 2002). The Law of Obligations Act defines the contractual relationship between the patient and their doctor and requires the involvement of patients in decisions regarding their own health. Health care providers need written informed consent to be signed by patients before providing any health services. Doctors have a duty to inform patients about their health issues and required health services. The Act also states that a provider cannot promise that an operation will be successful or a patient will recover. The patient has the right to a second opinion paid for by the EHIF. Estonia has also signed and ratified the Biomedical Convention, which entered into force in 2002 and regulates, among other things, issues surrounding gene testing.

The EPAA counsels and represents patients who have complaints about such issues as malpractice, poor quality and limited access to care (see section 2.3). The EPAA processes approximately 1700 different complaints yearly (EPAA, 2012). The vast majority is related to patient–provider contacts. A representative of the EPAA is also a member of the Health Care Quality Expert Commission, which assesses most complaints (see section 2.9.4). The capacity of the disease-based patient groups to represent patients and their rights is rather limited.

The general level of patient rights protection is rather weak. Yet the situation has been improving as a result of advocacy by the EPAA and increased awareness among patients about their rights.

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

2.9.4 Complaints procedures

The Health Services Organization Act and Law of Obligations Act jointly regulate the complaints procedures (mediation, claims) for health services and make the health care provider responsible for malpractice and low-quality of health services. 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 Health Care Quality Expert Commission, which acts under the Minister of Social Affairs. The Commission's main role is to act as an independent counsellor for patients but its decisions have no legislative power. If the Commission finds the health care provider to be responsible for malpractice and causing health damage, the patient has a right to have their case heard in court and the Health Board could fine or withdraw the licence of the health provider concerned.

In 2012, the Health Care Quality Expert Commission managed 132 patient complaints (Table 2.4), 31 (23.5%) related to malpractice, of which 25 (80.6%) were related to medical errors. Since 2004, the total number of complaints has almost doubled, which does not necessarily reveal changes in health care quality but rather the increasing activity of patients in lodging complaints.

Table 2.4

Official complaints made to the Health Care Quality Expert Commission, 2004–2012

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Complaints, total	73	60	78	63	64	105	125	128	132
Malpractice cases, total	24	17	20	18	16	24	35	37	31
Medical errors	17	15	18	12	11	17	20	28	25
Other reasons	7	2	2	6	5	7	15	9	6

Source: Health Care Quality Expert Commission, 2013.

2.9.5 Public participation

The main mechanism for public participation has been the inclusion of representatives of insured groups in the EHIF 15-member Supervisory Board. Five members come from 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 approves the EHIF's long- and short-term strategies and the yearly health insurance budget.

In addition, patients are represented in the Guideline Advisory Board, which was established in 2011 to improve the quality of health services by supervising the development of efficient and evidence-based clinical guidelines. The Board has 12 members, including two patient representatives (as of early 2013). Members are appointed for a term of three years.

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 of the survey has been broadened over time and now allows observing time trends. In general terms, the satisfaction of the population with health service access and quality has been relatively high across various years (see section 7.3).

2.9.6 Patients and cross-border health care

The EHIF is responsible for all cross-border patient mobility issues. Because Estonia is a Member State of the EU, individuals covered by the insurance system are entitled to receive services that are covered by statutory insurance in the other EU Member States, and Iceland, Liechtenstein, Norway and Switzerland. Based on EC Regulation 883/2004, Estonian insured can use the European Health Insurance Card to receive health services abroad, paid by the EHIF, when on a temporary stay (for example, as tourists). On producing the card, insured Estonians on a temporary stay abroad and in need of treatment are entitled to reimbursement of health care under equal conditions and equal tariffs as nationals of the Member State of treatment, including financial participation (cost-sharing). The reimbursement does not cover travelling costs. Payments for health services provided in other Member States to persons insured with the EHIF have increased during the period 2008–2011 almost four times, from €1.4 million to €5.3 million (EHIF, 2012b).

Furthermore, Estonian insured may ask the EHIF for pre-authorization when planning to receive treatment abroad. This care cannot be denied if it is covered by the Estonian basic benefit package but cannot be provided in Estonia within a medically justifiable time limit. Other national criteria applied in this decision are whether the service is medically justifiable, and if it is of proven medical efficacy, with a probability of success of at least 50%. If granted, patients are entitled to reimbursement of health care under equal conditions and equal tariffs as nationals of the Member State of treatment, including financial participation (cost-sharing). The reimbursement does not cover travelling

costs. Additional reimbursement is fully in the competence of the EHIF. EHIF payments for health services incurred abroad have increased by almost four times since 2008 and amounted to €5.3 million in 2011 (EHIF, 2012b).

Information on the number of prior authorizations granted by the EHIF is available and is published in annual reports. This number has increased from 18 patients in 2002 (EHIF, 2003) to 199 patients in 2012 (EHIF, 2013b). In 2012, 109 out of 199 patients were children; 56 persons were referred for treatment abroad, 126 for examinations, and 17 were searching for unrelated bone marrow donors through the Finnish Red Cross. The majority of patients were treated in Finland and Germany, while the number of examinations was highest in the Netherlands and Belgium (EHIF, 2013b).

As for patients coming from abroad to receive treatment in Estonia, the spa hotels are most active in both domestic and foreign markets. Estonian spas have reported that 67% of their services have been provided to foreigners (Aaviksoo et al., 2010). In other areas of health care, there is evidence of patient mobility too. For example, 30% of dental care providers have offered their services to foreigners. In addition, plastic surgery, ophthalmology, in vitro fertilization treatment, radiology and some other diagnostics services are among the services provided to cross-border patients.

Most clients come from neighbouring countries, such as Finland and Sweden, but increasingly also from the Russian Federation and Latvia. According to a survey (Aaviksoo et al., 2010), providers see most potential in diagnostics (e.g. telemedicine), dental care, spa services, plastic surgery and orthopaedics, yet 82% of them do not pursue this opportunity.

Other evaluated aspects of cross-border care (e.g. foreign patients seeking health care in Estonia, or Estonian citizens seeking health care abroad without authorization of the EHIF) are difficult to assess as reliable data are not available from health care providers or from patients.

3. Financing

The Estonian health care system is mainly publicly funded through solidarity-based mandatory health insurance contributions in the form of an earmarked social payroll tax, which amounts to about 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 constitutes approximately 20% of all health expenditure, mostly in the form of co-payments for medicines and dental care. This share has fallen during the economic crisis, partly because OOP payments fell in line with spending in the economy but also because of increased generic prescribing. The private spending share of EHIF's reimbursed medicines decreased from 38.8% in 2008 to 33.0% in 2012.

The main purchaser of health care services for insured people is the EHIF. The health insurance system covers about 95% of the population. Contributions are related to employment, but the share of non-contributing individuals (e.g. 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. The financial crisis of the late 2000s has shown just how vulnerable the system is. Estonia sought to ensure financial protection to the population without eroding the benefit package. A diverse austerity package was rolled out involving some cuts in benefits and prices, increased cost-sharing for inpatient long-term care, extended waiting times, increased VAT on medications, promotion of rational use of medicine, a focus on primary and outpatient care, and a reduction in specialized care. Salaries were not explicitly cut, but they fell because of a fall in available funding. The EHIF also used its financial reserves and in the end managed the downturn quite successfully.

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 (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 scheme (QBS), implemented in 2006, which aims to foster disease prevention and management of selected chronic conditions.

3.1 Health expenditure

Estonia spent 5.9% of its GDP on health in 2011 (Table 3.1). Health care is largely publicly financed. 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 9.3% and 1.4%, respectively, of total health care expenditure in 2010. The public share of health care spending has declined from 89.8% in 1995 to 79.3% in 2011.

Table 3.1

Trends in health care expenditure, 1995–2011, selected years

	1995	2000	2005	2010	2011
Mean annual real growth rate in GDP (%)	6.5	9.7	8.9	2.3	4.0
Mean annual nominal growth rate in total health expenditure (%)	n/a	4.0	12.9	-6.3	n/a
Total government spending (% GDP)	n/a	36.5	33.4	40.7	n/a
Government health spending (% total government spending)	n/a	11.0	11.4	12.0	12.3
Total health expenditure (US\$ purchasing power parity, per capita)	n/a	522	831	1 156	1 190
Share of GDP (%)	6.4	5.4	5.0	6.3	5.9
Public health spending (% GDP)	n/a	4.1	3.8	5.0	4.7
Private health spending (% GDP)	n/a	1.3	1.2	1.3	1.1

Source: NIHD, 2013.

Note: n/a: Not available.

In 2011, private sources accounted for 19.2% of total expenditure on health care, rising from 7.5% in 1995. The share of private financing peaked in 2006 at 26.1% of health spending and has been decreasing since then. One reason for the decreasing private share has been the impact of the financial crisis

in 2008. While health insurance protected spending on health services from falling, private spending on health fell substantially, in line with other spending in the economy. The main share of private financing is related to dental care and pharmaceuticals. High pharmaceutical-related spending is caused by high OOP payments for medicines because individuals do not opt for the cheapest generic alternative and, therefore, pay the price difference out of pocket. However, generic prescribing and public awareness campaigns have decreased private spending on pharmaceuticals. The private spending share of EHIF's reimbursed medicines decreased from 38.8% in 2008 to 33.0% in 2012.

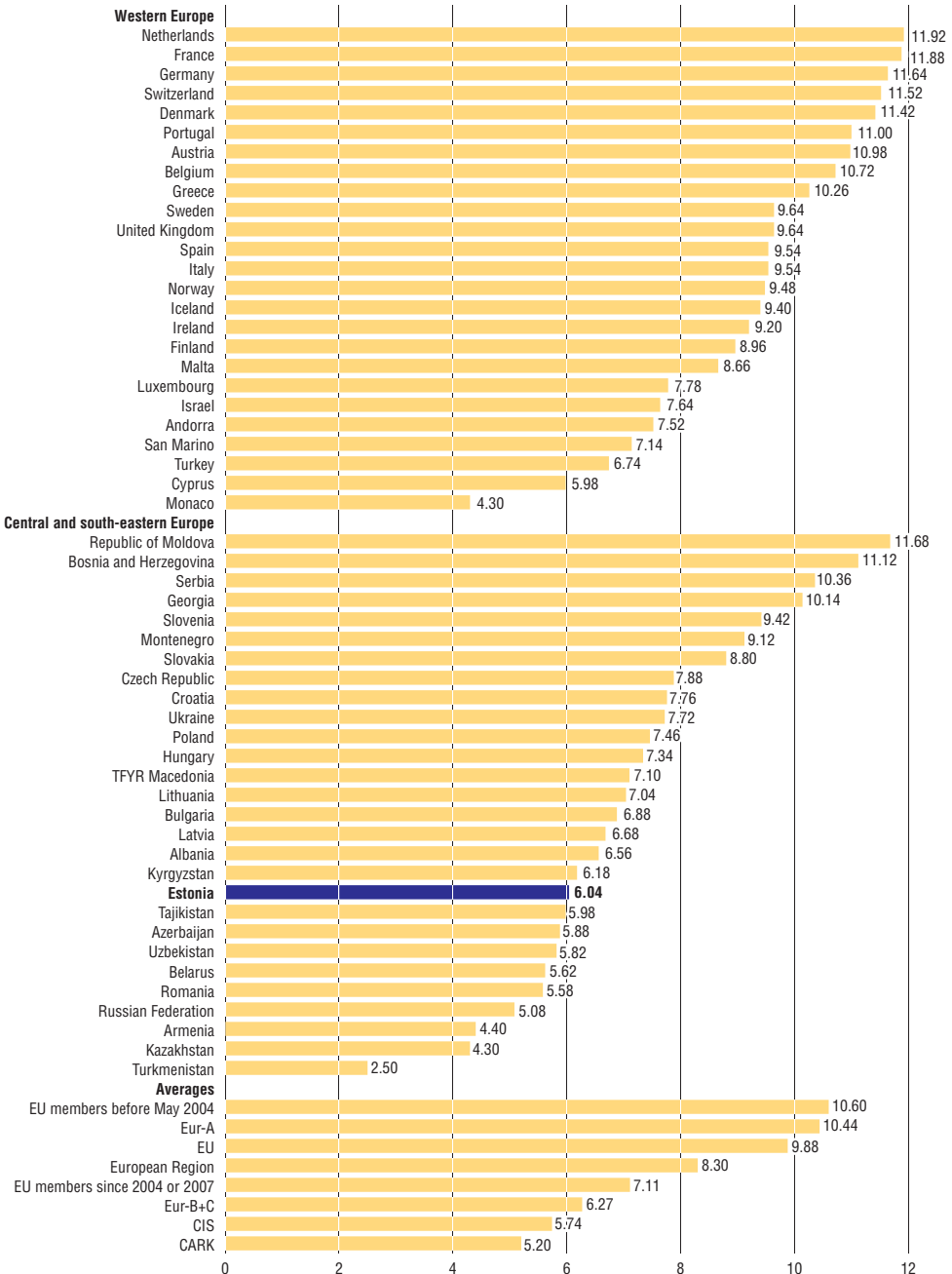
The balance between public and private spending is targeted in the NHP. It sets the objective to hold the share of OOP payments in the total health care cost at lower than 25%. It has been recognized that the current mix of public–private expenditure is reasonable and on a par with the average for the 15 EU Member States before May 2004 (EU15). Increasing private expenditure should, therefore, be treated with caution. Among central and eastern European countries, the public share is only higher in the Czech Republic and Croatia (see Fig. 3.4, below). External sources of health care financing, mostly EU funding, play a rather small role expressed as a share of total health expenditure but it does play an important role in capital investments and public health activities.

The long-term sustainability of health system financing has become a larger concern over the years. In 2009, the EHIF, in collaboration with the Ministry of Social Affairs and the WHO Regional Office for Europe, conducted an in-depth analysis of the Estonian health financing system's mid- and long-term sustainability. The report *Responding to the Challenge of Financial Sustainability in Estonia's Health System* was launched in 2010 (Thomson et al., 2010). Its main conclusion was that there was a need to broaden the public revenue base for the health sector if it was to achieve its objectives. In late 2011, a follow-up report signalled that there was still no progress made in dealing with long-term sustainability. In parallel, the Ministry of Finance commissioned a study on the financial sustainability of the social insurance system, including pensions, unemployment, incapacity to work benefits and health insurance. The study analysed several scenarios and options for health system financing (PRAXIS, 2011).

From a European perspective, the level of health expenditure as a share of GDP in Estonia has been rather low over time, with small variations reflecting changes in the economic environment (Fig. 3.1). In the late 1990s, it was somewhat higher, after which it fell and stagnated at around 5% between 2001 and 2007. Since then, it started rapidly increasing because of the shrinking

Fig. 3.1

Health expenditure as a percentage of GDP in the WHO European Region,
WHO estimates, 2010



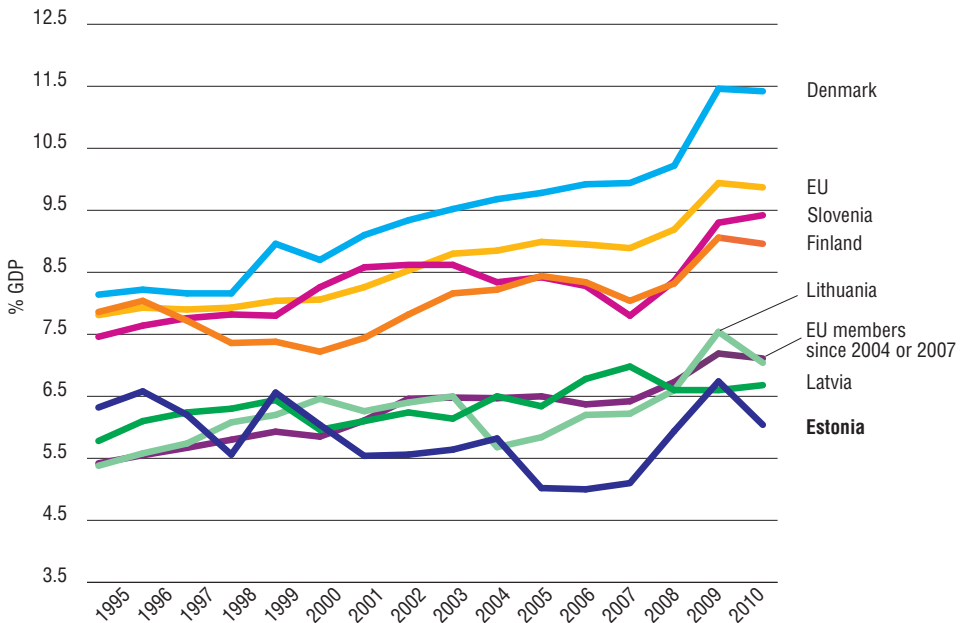
Source: WHO Regional Office for Europe, 2013.

Notes: CARK: Central Asian Republics and Kazakhstan; CIS: Commonwealth of Independent States; Eur-A, B, C: Regions as in the WHO list of Member States, last available year; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

GDP during the financial crisis and reached its highest point in history in 2009 (6.7%). With the economy picking up again, this share fell in 2010. A similar impact of the financial crisis can also be observed in other EU Member States (Fig. 3.2). In the near future, the health expenditures share is expected to fall to the pre-crisis level if revenues remain on a stable trajectory.

Fig. 3.2

Trends in health expenditure as a percentage of GDP in Estonia and selected countries, 1995 to latest available year



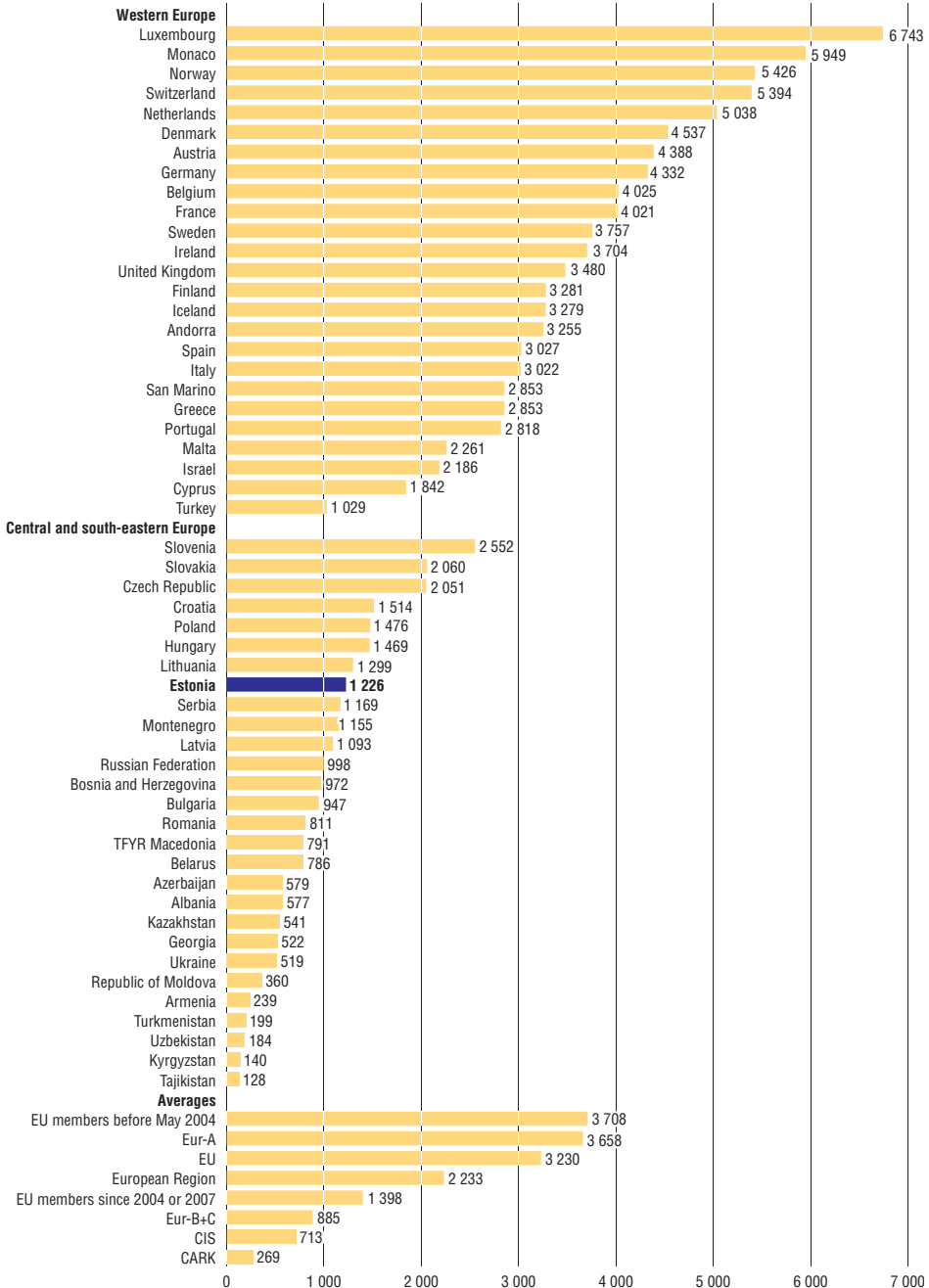
Source: WHO Regional Office for Europe, 2013.

Health care expenditure in purchasing power parity per capita has increased from a low of US\$ 522 in 2000 to US\$ 1190 in 2011. In 2010, the per capita spending was slightly below the average for the 12 countries that joined the EU in 2004 and 2007 along with Estonia (EU12) (Fig. 3.3). Furthermore, public spending on health in Estonia is higher than all EU averages (Fig. 3.4).

In 2011, the majority of public funds were allocated to inpatient care, followed by outpatient care and medicinal products and pharmaceuticals (Table 3.2).

Fig. 3.3

Health expenditure in US dollars purchasing power parity per capita in the WHO European Region, WHO estimates, 2010

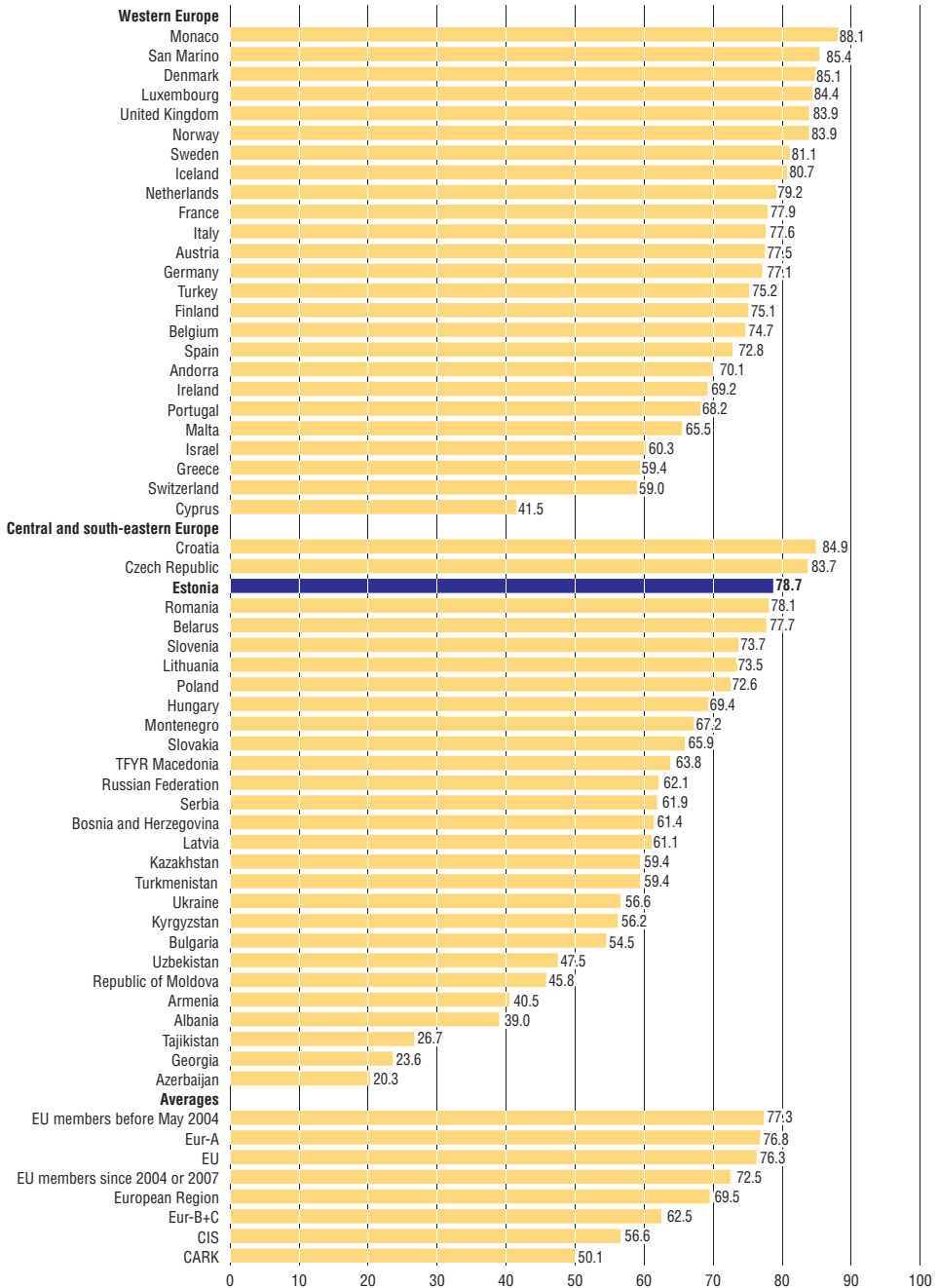


Source: WHO Regional Office for Europe, 2013.

Notes: CARK: Central Asian Republics and Kazakhstan; CIS: Commonwealth of Independent States; Eur-A,B,C: Regions as in the WHO list of Member States, last available year; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Fig. 3.4

Health expenditure from public sources as a percentage of total health expenditure in the WHO European Region, 2010



Source: WHO Regional Office for Europe, 2013.

Notes: CARK: Central Asian Republics and Kazakhstan; CIS: Commonwealth of Independent States; Eur-A, B, C: Regions as in the WHO list of Member States, last available year; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Table 3.2

Public expenditure on health by service types, 2011

Type of expenditure	% total expenditure on health	% total public expenditure on health
Health care services	53	60
Inpatient care	27	33
Day care	2	2
Outpatient care	24	24
Home care	0	0
Rehabilitation	2	1
Long-term care	4	4
Ancillary services	11	13
Medicinal products	24	15
Public health programmes	3	3
Health administration	2	3

Source: National Health Accounts, NIHD, 2013.

3.2 Sources of revenue and financial flows

The Estonian health care system is mainly publicly funded through social health insurance contributions in the form of an earmarked social payroll tax, which amounts to about two-thirds of total funding (for more details see Table 3.3). This earmarked payroll tax is pooled by the EHIF, which has four regional departments but acts as a single purchaser of care. In 2011, 94% of EHIF funds consisted of payroll tax paid by employees, while the remaining 6% was paid by the state on behalf of certain groups, such as the unemployed. Other purchasers/payers of health care, funded by general tax revenue, include the Ministry of

Table 3.3

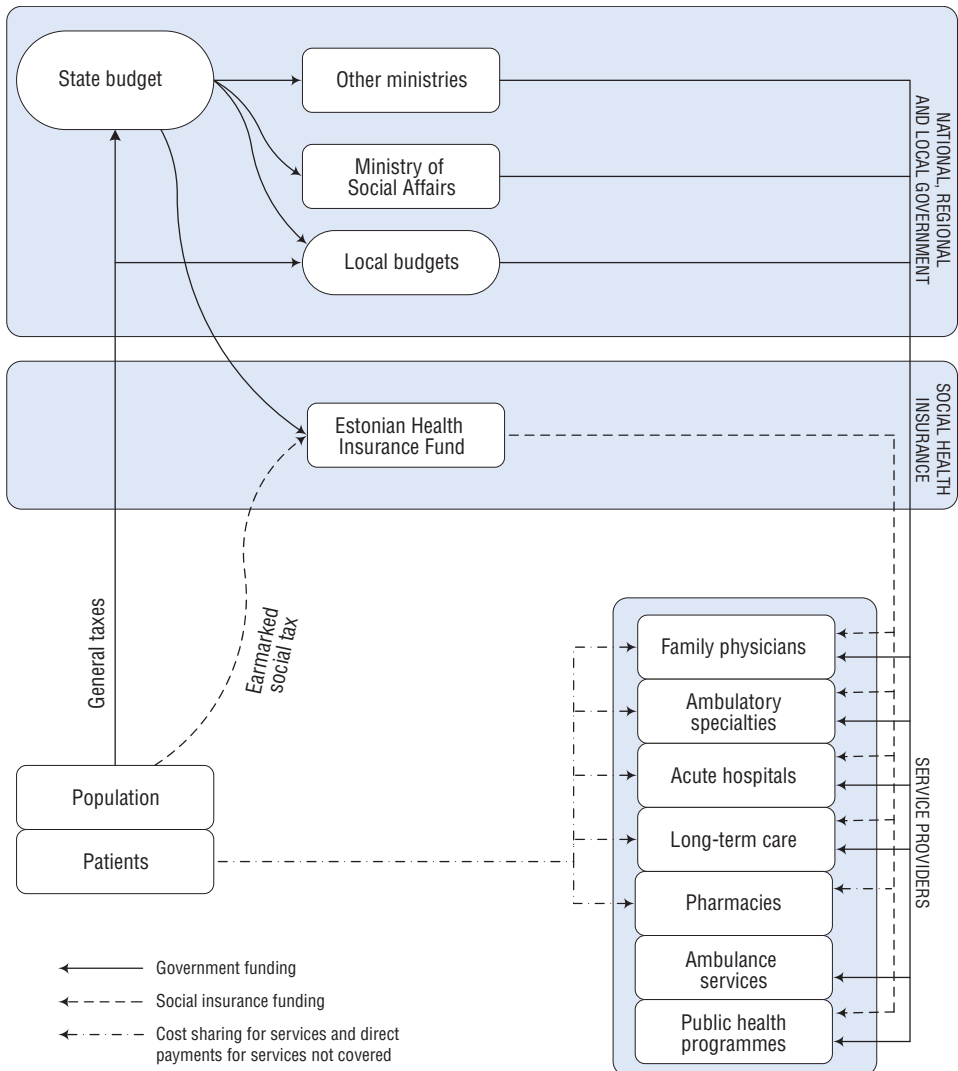
Share of main sources of health care financing in Estonia, 1995–2011, selected years

Source of financing	Percentage				
	1995	2000	2005	2010	2011
Public	89.8	76.4	76.7	78.9	19.3
Taxes (state and municipal)	12.4	10.4	10.5	10.7	10.7
Social health insurance	77.4	66.0	66.2	68.2	68.6
Private	7.5	23.3	23.0	20.3	19.2
Out-of-pocket	7.5	19.7	20.4	18.6	17.6
Private health insurance	0.0	1.0	0.3	0.2	0.3
Other	0.0	2.6	2.3	1.5	1.4
External sources	2.7	0.3	0.3	0.9	1.4

Source: National Health Accounts, NIHD, 2013.

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 yet diverse role. Private expenditure makes up approximately 20% of all health expenditure, mostly in the form of co-payments. Fig. 3.5 depicts the financial flows in the Estonian system.

Fig. 3.5
Financial flows in the Estonian health system



3.3 Overview of the statutory financing system

3.3.1 Coverage

Breadth: who is covered?

The core purchaser of health care services for insured people is the EHIF, an independent public body. The EHIF operates through four regional departments, each covering one to six counties. Its main responsibilities include pooling funds, contracting service providers, reimbursement of health services and pharmaceuticals plus coverage for sick leave and maternity benefits.

At the end of 2011, 94.5% of the population (almost 1.25 million people) was covered by mandatory health insurance offered by the EHIF, which includes the employed, children and retired persons. The uninsured are mostly among the working-age population between 20 and 60 years who are economically inactive or working abroad. Entitlement to coverage is based on residence in Estonia and entitlement rules of specific groups are defined by law. It is not possible to opt out of insurance. The only group excluded from coverage is the prison population, whose health care is organized and paid for by the Ministry of Justice. Since the end of 2002, some previously uncovered groups 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 are eligible for coverage without contributing, such as children and pensioners; those whose contributions are paid from their wages by employers (13% of wages); those who are covered by contributions from the state; and those who are covered on the basis of international and voluntary agreements. Table 3.4 shows the proportion of insured individuals in each group.

Table 3.4

EHIF entitlement criteria and percentage of insured people in different entitlement groups, 2011

Group	% of insured
Persons eligible for coverage without contributing	48.9
Employed insured persons	45.6
Persons insured by the state	5.3
Other insured persons	0.2
Persons insured under international agreements	0.2
Persons considered to be equal to insured persons under voluntary agreement	0.02

Source: EHIF, 2011a.

Since the end of 2002, voluntary coverage has been extended to those who may otherwise remain uninsured. Eligibility for voluntary coverage is restricted to Estonian residents who receive a pension from abroad (usually because they have worked abroad and have returned to Estonia to retire) and to people who are currently ineligible 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 a particular study and people temporarily out of work but not registered as unemployed. Voluntary members (264 people in 2011) are entitled to 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 on the basis of their region but may access health care services all over Estonia. All insured people were formerly issued a plastic card with a magnetic stripe (paper cards were issued prior to 1998) that they were required to present when being treated. This card has been replaced by a national ID card introduced in 2001. Patients can show providers any document that confirms their national ID number, such as a driver's licence. European Health Insurance Cards can be issued to those travelling in the EU.

Since 1999, providers have been obliged to check the patient's insurance status through the Internet. This online information system also allows the insured to check their own personal data (e.g. name, address, employer, insurance validity and family doctor) through the Internet portals of the government (X-Road) and using commercial banks.

Scope: what is covered?

The EHIF's benefits can be divided into two groups: benefits in-kind (85% in 2011) and cash benefits (15% of expenditure on health insurance benefits in the same year).

In-kind benefits

The in-kind benefits cover 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, in large part because 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 optician services. However, at the end of 2002, dental care for adults was excluded and replaced by cash benefits (Table 3.5).

Table 3.5

Selection of the most common cash benefits provided by the EHIF, 2012

Type	Description	Reimbursement rate (% or €)
Temporary incapacity for work ^a	Sickness benefit	70% of the previous year's income eligible for the social tax; the employer pays this from the fourth to eighth day and the EHIF pays from the ninth day after temporary incapacity for work Hospitalization and outpatient care up to 182 days (240 for TB) per year 100%: occupational illness or accidents at work (up to 182 days), the EHIF pays from the second day after temporary incapacity for work
	Maternity benefit	100%: pregnancy and maternity leave (up to 140 days), the EHIF pays from the first day after leave
	Adoption allowance	100%: adoption leave (70 days if child is under 10 years), the EHIF pays from the first day after leave
	Care allowance	80%: nursing a child under 12 years of age up to 14 days, the EHIF pays from the first day after leave 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, the EHIF pays from the first day after leave
Adult dental care	Persons older than 63 and persons receiving old age and incapacity for work pensions	€19.20 per calendar year
	Pregnant women	€28.77 per calendar year
	Mothers of children under 1 year	€28.77 per calendar year
	People with illnesses that affect need for dental care	€28.77 per calendar year
	Dentures for persons aged over 63 years and persons receiving old age pensions	€255.65 per three calendar years
Additional reimbursement of outpatient drugs	Drugs on the positive list prescribed by ambulatory providers	50% of €384.00–640.00 per calendar year
		75% of €640.00–1 300.00 per calendar year
		0% above €1 300.00

Source: Parliament of Estonia, 2002, Health Insurance Act, 2002.

Note: ^aThe benefit paid by an employer is calculated based on the average salary of the individual concerned in the last six months. The benefit paid by EHIF 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).

The EHIF also finances disease 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 screening

(e.g. breast and cervical cancer, phenylketonuria and hearing in neonates). At the same time, many preventive health care services are increasingly financed through the publicly financed primary and specialist care budget.

During the 1990s, 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. Since 2002, there have been clearer and more explicit rules for the inclusion of services and pharmaceuticals in the benefits package as well as for the level of cost-sharing. With the establishment of the EHIF as an independent public body, it became responsible for defining the benefits package, in collaboration with other stakeholders. The EHIF and the Ministry of Social Affairs agree on the benefits package, after which the government makes the final decision by endorsing the list of services and by giving each item in the list a reimbursement price. As a result, the terms “price list” and “benefits package” are used interchangeably in Estonia.

The EHIF Management 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. 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.

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. Based on the application, the supporting documentation and the budget impact, the EHIF Supervisory Board makes a recommendation to the Ministry of Social Affairs, and the Ministry in turn makes a recommendation to the government. About 100 applications are issued during the year and processed at the same time as the health care budget for the following year is decided.

In addition to changes in the benefits package, explicit rationing can take place in other ways. For example, contracts between the EHIF and providers include additional separate agreements about the volume of some services to be provided, for example for cochlear implantation. The use of

high-cost interventions is also monitored through the contracting process, and in some cases specific limitations may be noted in the price list or other relevant documents.

Nevertheless, 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.

Cash benefits

The first group of (cash) benefits (Table 3.5) 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 for 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.

The system for cash benefits was reformed radically during the financial crisis. First, the financial responsibility of patients and employers was increased. Starting from July 2009, no benefit is paid during the first three days of sickness or injury (previously only the first day was excluded). The employer pays the benefit from the fourth to eighth day (the employer did not share in the cost previously) and the EHIF starts paying the benefit from the ninth day (previously it paid from the second day). In addition, the rate of sickness benefit was reduced from 80% to 70% of the insured person's income. The sickness benefit rate in the case of caring for a child aged under 12 years was reduced from 100% to 80%. The maximum length of maternity leave was reduced from 154 days to 140 days. Second, before 2009 all insured persons aged 19 years and over could apply for the dental care benefit of €19.18, but from 2009, this right was retained only by insured persons over 63 years of age, pregnant women, mothers of children up to 1 year of age, persons with a greater need for dental treatment because of a particular condition and persons eligible for a work incapacity pension or an old-age pension. It is worth noting, however, that the costs of adult emergency dental care as a share of the total dental care services budget are marginal, which is a result of strict supervision of indications by the EHIF.

Depth: how much of benefit cost is covered?

Estonia has a comprehensive system of cost-sharing in place consisting of statutory co-payments for specialist care, co-insurance for some services and a sophisticated pharmaceuticals cost-sharing scheme. It is worth noting that there are no user charges (except for home visits) in primary care to avoid financial barriers in accessing a family doctor or nurse (see section 3.4).

3.3.2 Collection

Most health care resources are channelled through the EHIF. In 2011, health insurance, state budgets, municipal budgets and private sources of funding accounted for 68.6%, 9.3%, 1.4% and 19.2% of total health care financing, respectively (see Table 3.3, above). External sources contributed 1.4% to health care funding in 2011. The following subsections discuss each of these complementary sources of financing in turn.

The main source of health insurance revenues is social health insurance contributions paid by salaried workers and self-employed people, who together make up around 46% of the insured population (Table 3.4). The non-contributing individuals (49% of the insured population in 2011) are implicitly subsidized by the other categories, reflecting strong 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. The state contributes on behalf of a small proportion of the covered population (approximately 5% in 2011) that includes individuals on parental leave with children under 3 years, individuals registered as unemployed and caregivers of disabled people. The state's contribution for this group is defined annually when the state budget is approved but it cannot be lower than the contribution rate calculated based on the previous year's minimum wage. Voluntary members pay a contribution of 13% of the national average salary of the previous year. In 2012, the voluntary contribution amounted to approximately €103 per month.

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.

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 (Thomson et al., 2010). 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 & Habicht, 2005). The need to broaden the revenue base for health insurance has been recognized and hotly debated but there is no political commitment for any changes (Thomson et al., 2010).

State budget

The Ministry of Social Affairs and its agencies administered 92.9% of the state budget funds allocated to the health system in 2010. Most of the state budget in 2010 was allocated to ambulance services (32.4%), treatment for uninsured people (7.1%), medical devices and medicines (17.4%) and health promotion and population health through public health programmes (16.0%).

For the uninsured, the state budget only funds emergency care. Since 2003, the Ministry has required the EHIF to administer the 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. Most funds are channelled to hospitals, but a small share of emergency services is delivered to uninsured people by family physicians (since 2003 the whole population has been enrolled with a family physician). In addition, some municipalities (partly) reimburse health care providers that treat uninsured people.

The Health Board, a specialized agency of the Ministry of Social Affairs, administers the ambulance services. 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.

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.

Furthermore, the state budget funds some prevention programmes for communicable and noncommunicable diseases, and additional funds have been allocated to public health since 2001, collected through a tax on gambling. Other ministries also fund some specific activities within their fields, for example the Ministry of Justice is financing HIV and TB prevention activities in prisons. However, this funding was cut in the financial crisis. However, a significant share of funding was shifted from the state budget to the European Social Fund (ESF) programme (see Chapter 6).

Local municipalities have no defined responsibility for covering health care expenditure and therefore financing practices vary widely.

3.3.3 Pooling of funds

The EHIF collects and pools funds centrally to balance regional disparities in income. Since 2001, when the EHIF achieved autonomous status, its budget has been approved by its Supervisory Board, which comprises representatives from the state, employers and employees. Before the annual budgeting starts, the EHIF Supervisory Board approves the four-year EHIF revenue and expenditure planning cycle. 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 EHIF budget cannot be approved by the Supervisory Board before the national budget has been approved.

The EHIF has three reserves to ensure solvency. The cash reserve (liquidity portfolio), ensures daily cash flows are managed smoothly. Administered by the State Treasury, it consists of instruments such as local deposits and commercial paper. The second reserve, the mandatory reserve, decreases risk from macroeconomic changes. Set at 6% of the EHIF's yearly budget, the mandatory reserve is created by transferring at least 2% of the budget to the reserve every year since the EHIF's inception. The mandatory 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.

In addition to these reserves, the EHIF has retained earnings if annual revenues were higher than expenditures. At the end of 2011, EHIF had accumulated earnings amounting to €163.4 million, equalling almost a quarter of the EHIF's annual budget. These retained earnings accumulated during periods of rapid economic growth because the EHIF slowed down the annual growth of expenses compared with revenue growth. This countercyclical budgeting enabled EHIF to use these accumulated earnings during the last crisis and avoid a fall in expenditures.

Table 3.6 shows how the EHIF budget was allocated in 2012 (EHIF, 2012a). Some funds are 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.

Table 3.6

Breakdown of the EHIF budget by category, 2012

Category	Budget 2012 (€, thousands)	% of total
Health services		
Prevention	7 330	0.9
Primary care	71 538	9.1
Specialist care	448 105	56.9
Long-term care	16 502	2.1
Dental care	19 243	2.4
Health services in total	562 718	71.5
Health promotion	968	0.1
Pharmaceuticals	101 841	12.9
Sickness benefits	88 468	11.2
Other monetary benefits	8 975	1.1
Other benefits	16 174	2.1
Use of the reserves	-6 560	-0.8
Expenditure in total	787 184	100
Health insurance benefits in total	779 144	99.0
Administration costs	8 040	1.0

Source: EHIF, 2012a.

Most EHIF funds are allocated to its four regional departments based on an age-adjusted and utilization of health services per capita formula according to the number of insured people in each region. The EHIF Management Board approves regional departments' budgets. Contracting with providers takes place at regional level, by the regional departments of the EHIF.

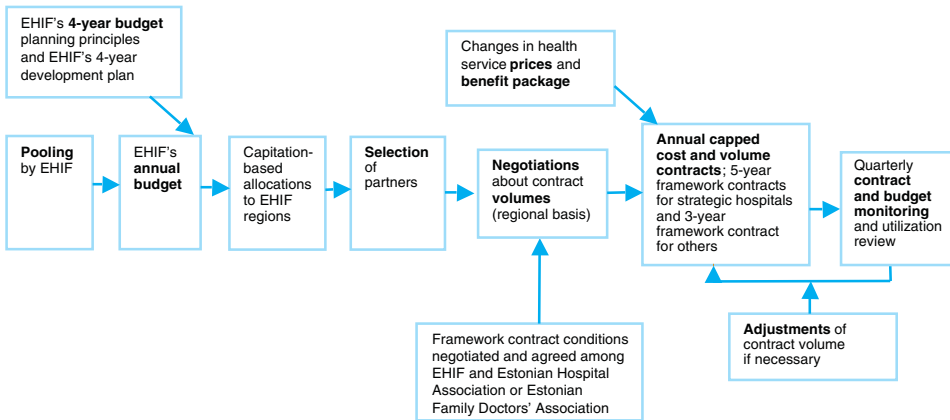
A very small (less than 1%) amount remains to be administered centrally (since 2012 by a regional department, before it was the responsibility of the central department) for some expensive and infrequent treatments. In addition, pharmaceutical and temporary sick leave benefits (open-ended obligations for the EHIF) are administered centrally. The allocation of funds during the contracting process is further specified in section 3.3.4.

In terms of the state budget, the Ministry of Finance sets budgetary ceilings for each ministry 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, which accounts for over 40% of the total state budget, there is competition for funds from each sector. As mentioned above, 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.

3.3.4 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. In the early 1990s, the contract was rather unsophisticated and only the capped total costs were agreed. Currently, the contracts include agreements on service quality and access as well as detailed cost- and volume-based financial appendices. The contracts cover five years for HNDP hospitals and three years for other providers. However, the financial appendices are negotiated yearly.

The EHIF only contracts providers licensed to work in Estonia by the Health Board. The EHIF is required to contract with all HNDP hospitals (19 acute care hospitals in Estonia), which all have a historically determined guaranteed contract volume of at least 75% of the previous year. The EHIF uses selective contracting only with hospitals outside the HNDP. In 2011, about 8% of expenditure and 20% of treatment cases were outside HNDP hospitals through the selection process in specialist care. Selective contracting is intended to introduce 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. The selection criteria, such as proximity of service provision to patients, share of services provided in day care and previous experience, are approved by the Supervisory Board. The

Fig. 3.6**Budgeting and contracting process of the EHIF**

EHIF announces public tenders and all providers can submit their bids. These bids are evaluated according to strict criteria following negotiations between EHIF and providers.

The basic content of the contracts is determined by the Health Insurance Act, and the EHIF's Supervisory Board endorses the basic principles for contracting. The EHIF negotiates the standard contract conditions with provider associations such as the Estonian Family Physicians Association and the Estonian Hospital Association. This ensures that the contract terms are universal and apply to all providers. In addition to the standard contract conditions, there are financial appendices that are agreed by each provider individually for one year. Since contract terms are negotiated centrally, the Estonian Hospital Association has increased its membership to virtually all hospitals.

The EHIF's 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. 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 six weeks and inpatient care within eight 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.

Further negotiations 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 discussed above, 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, day care and outpatient care. This partitioning enables the EHIF to actively monitor and influence the providers' behaviour. However, there is also a degree of flexibility in the contracts. First, providers are allowed to reallocate up to 5% of the specialty contract sum and cases to different specialties. Second, there is a financial reserve included in each contract that 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 on certain conditions.

The financial implementation of the contracts is monitored quarterly through the management information system. In the 1990s, some hospitals exhausted their contract volumes several months before the end of the contract period. As a result, some hospitals only provided emergency care and postponed all elective care to the next year. The EHIF and providers have been focusing more on adequate contract planning and ex-ante quarterly monitoring to avoid these situations.

Although the EHIF is the main purchaser of health care, the Health Board is responsible for purchasing ambulance services. The Health Board does so through public tender and eligible providers can submit their bids. The financing of ambulance services is based on the number of nurses and physicians per ambulance team, as described above, 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 and the financial reporting requirements.

3.4 Out-of-pocket payments

OOP payments consist of statutory cost-sharing for EHIF benefits, direct payments to non-contracted providers or for services and products not part of the EHIF benefits package as well as informal payments. Since the mid-1990s, OOP payments have increased steadily as a proportion of total expenditure on health care, largely through the growth of the private health sector. During the last financial crisis, the OOP share of total expenditures decreased because OOP payments fell in line with spending in the economy.

In 1995 a fee of €0.30 was introduced for initial outpatient visits to public hospitals and health centres. However, because of political pressure, large groups such as pensioners, disabled people and children were exempted from the fee a few months later. Private specialists were allowed to set their own fees even for publicly funded services. 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. The 2002 Health Insurance Act defined co-payments that contracted providers may charge, regardless of whether these are public or private providers. The Act sets maximum limits to the co-payments and regulates its annual adjustment to the inflation level. However, these annual adjustments were never made. This changed in 2013, when maximum co-payment levels were increased by the inflation rate for the period 2002–2013.

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 €5.00 (until 2013 the maximum limit was €3.20) for home visits (Table 3.7). EHIF-contracted providers of ambulatory specialist care can charge a maximum fee of €5.00 (until 2013 the maximum limit was €3.20) 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 2002 Health Insurance Act 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 emergency departments, which led to public dissatisfaction. An amendment effective from August 2004 exempted children under 2 years of age and pregnant women from the 12th week of pregnancy from co-payments for primary care home visits and specialist ambulatory visits.

Hospitals can charge a maximum fee of €2.50 per day (until 2013 the maximum limit was €1.60) 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

Table 3.7**Cost-sharing by types of care in 2013**

Care type	2013
<i>Primary care</i>	No co-payment for office visits Home visit fee (up to €5); children under 2 years and pregnant women after week 12 of gestation are exempted
<i>Outpatient specialist care</i>	
Outpatient specialists (contracted by health insurance, EHIF, the distinction important for 2007)	Co-payment of up to €5; children under 2 years and pregnant women after week 12 of gestation are exempted
Outpatient specialists (not contracted by EHIF)	All patients charged according to provider established pricelist, but up to the "reasonable" cost
Dental care	No co-payment for child dental care, covered by EHIF Adult dental care not covered by EHIF
<i>Inpatient care</i>	Co-payment of up to €2.5/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 in vitro fertilization, rehabilitation, voluntary termination of pregnancy) set out by EHIF Co-insurance of 15% for nursing care
<i>Pharmaceuticals</i>	Prescription medicines for chronic diseases: co-payment of €1.27 plus co-insurance of 0% or 25% of the drug price (or 10% for those aged 4–6, receiving disability or old age pensions, or older than 63) Prescription medicines for those younger than 4 years, only co-payment of €1.17 General prescription medicines: co-payment of €3.19 per prescription, plus co-insurance of at least 50% of the drug reference price Annual spending: outpatient prescription medicine expenditure is eligible for additional reimbursement at 50% (yearly expenditures €384–640), 75% (€640–1300), 0% (>€1300)

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. For non-contracted providers, 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 €3.19 per prescription, plus some of the price of the pharmaceutical. The general reimbursement rate is 50% of the pharmaceutical price (minus the co-payment). A government regulation lists pharmaceuticals for chronic illnesses that are subject to a lower co-payment of €1.27 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 of age. 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, full (100%) reimbursement of pharmaceuticals was reintroduced for children younger than 4 years of age.

Medicinal products account for the highest share of OOP expenditure (61% in 2011) of which 68% is OOP payments for prescription drugs (Table 3.8). The second highest cost category is health care services (26%), consisting mostly of expenditure on dental care (87% of all expenditure on health care services).

Table 3.8

OOP by type of service as a percentage of total OOP expenditure, 2011

	Share of total OOP (%)
Medicinal products	61
Prescription drugs	41
Long-term care	5
Health care services	26
Dental care	23
Rehabilitation	6
Others	2

Source: National Health Accounts (NIHD, 2013).

Some services, such as inpatient nursing care 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). 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; and
- 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.

The system of cost-sharing, which has been 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 Estonian 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. Neither the Ministry of Social Affairs nor the EHIF collects national data on the actual amounts charged by providers.

Some of the increase in private expenditure in Estonia is the result of "queue jumping". To avoid waiting times, some patients choose to obtain treatment on a private basis for the full cost of this treatment. According to a regulation, "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. The latest health sector corruption survey (University of Tartu, 2011) concluded that the role of informal payments is marginal; 2% of patients acknowledged having paid informally to obtain faster access to care and about 3% paid after getting the treatment. Overall, informal payments do not appear to be widespread or significant in magnitude. This may be because of the introduction of formal co-payments in 2002 or because of the generally low level of corruption and informal payment practices.

3.5 Voluntary health insurance

Prior to 2002, a commercial market for voluntary health insurance (VHI) had not really established itself, largely because of the comprehensive range of benefits covered by the EHIF and the absence of substantial waiting times for treatment. In addition, private insurers acknowledged the complexities of offering health insurance in a small population. 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.

Because of the absence of insurance products in the market, at the end of 2002 the EHIF began to offer voluntary coverage for those not otherwise eligible for EHIF coverage (e.g. retirees returning to Estonia receiving a pension from a non-EU country, the non-working spouses of EHIF-insured individuals). At the end of 2011, there were only 232 people covered by voluntary agreement. At the same time, commercial insurers entered the market with the aim of providing an alternative to VHI. In 2010, there were 15 insurance companies who offered some kind of health insurance. These companies still provide mostly travel health insurance.

The increasing incomes of the Estonian population and rising expectations about the health system have nurtured discussions about the potential role of VHI in the future. The expansion of VHI has been under discussion since the early 1990s. The potential market for VHI in the future mainly lies in covering cost-sharing requirements for pharmaceuticals, long-term care or dental care costs, or ensuring faster access to care or better nonmedical care standards. So far this has remained at a discussion level without any concrete steps being taken. 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.

3.6 Other financing

3.6.1 Parallel health systems

Parallel health systems play a small role in the health system as whole; the Ministry of Defence pays for primary care for military personnel and the Ministry of Justice pays for health care for prisoners.

3.6.2 External sources of funds

External funding is small as a share of total health expenditures. In 1995, it accounted for 2.5% of total health care expenditure but by 2000 it had declined to virtually zero. However, in recent years the share has been fluctuating in

line with available financing from the European Regional Development Fund (ERDF). For example, in 2009 external funding accounted for 3.9% of total health care expenditures while in 2011 this share was 1.4% (NIHD, 2013).

External funding from EU structural funds has been rising since 2007. In general, external funding has been used to invest in infrastructure, but during the financial crisis that started in 2008 external funding was also used to fill the gaps in falling government financing. In 2011, 76% of external funding was used to finance capital investments and 24% to finance public health activities.

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. A grant of US\$ 10 million was received for the period 2003–2007 to provide harm-reduction services to drug users, 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. The receipt of this grant meant that the share of external funding in the public health budget was over 10% in 2006 and 2007. It fell to less than 1% in 2008 before it increased again because of receipt of European Economic Area and related Norwegian grants as well as funding from the ESF (Table 3.9). The ESF “Promotion of Healthy Choices and Lifestyles” measure for the period 2008–2013 allocated €9.5 million to national programmes to improve healthy behaviour. During the financial crisis, government financing on public health decreased by 43% (2009) but external funding was used to fill the gap.

Table 3.9

The percentage of external funding in public health

Year	% public health funds as external funding
2005	8.0
2006	14.8
2007	11.8
2008	0.3
2009	3.1
2010	8.6
2011	12.6

Source: NIHD, 2013.

When Estonia acceded to the EU, new funds became available that were used for capital investment. Estonia received €24.8 million from the ERDF for the period 2004–2006 to support the renovation of the Estonian hospital network (the programme was delayed and, therefore, the grant period was

extended to 2008). Additional ERDF grants for the period 2007–2013 included €110.2 million to optimize the acute care hospital network and €27.5 million to develop nursing care facilities. The main challenge in effective implementation of ERDF support is the long-term perspective of the investments. These need to account for changing patterns of morbidity and clinical practice arising from population ageing, shorter lengths of stay in hospital, an increase in ambulatory surgery and technological advances.

3.6.3 Other sources of financing

The role of other sources of financing is marginal and includes mostly employer-paid occupational health services.

3.7 Payment mechanisms

3.7.1 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. The management of this list is the responsibility of the EHIF but the government gives its final approval. 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).

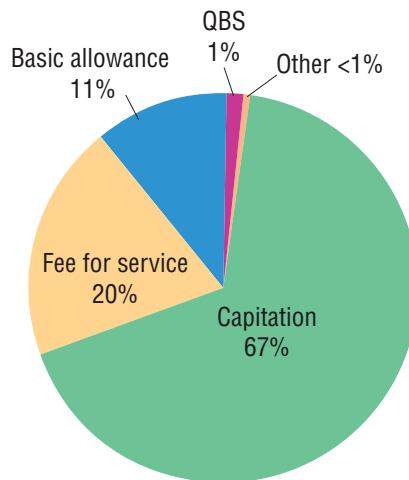
Since 2002, the EHIF’s health service list is approved by the government in order to increase public accountability and to make it less vulnerable to provider influence, as it had been when the Minister of Social Affairs was solely responsible for amendments and updates. The list of services and prices is updated at least once a year. The price list contains more than 2000 different items, including a whole range of different payment methods. In primary care, this includes mainly a combination of capitation and fee-for-service, while outpatient specialists are remunerated through mainly fee-for-service, per diem and DRG-based payment methods. The main method in outpatient care (laboratory tests, radiology etc.) is fee-for-service payment, whereas for inpatient care, a mix of fee-for-service, per diem and DRG-related payment methods is used. Inpatient fee-for-service payment involves also per diem-based

units. The per diem unit includes the costs of basic examination, diagnosis and treatment planning, nursing, meals, simple medical procedures, laboratory tests and pharmaceuticals.

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. 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 (Fig. 3.7). Practices receive monthly pre-payments, which are recalculated twice a year to reflect changes in the patient list (as patients can change family physicians).

Fig. 3.7

Structure of the average family physician's budget by type of remuneration, 2011



Source: EHIF, 2012b.

After the family physician payment reform of 1998, the capitation fee was similar for all people, irrespective of their age. Age-adjustment was introduced after only one year, forming three groups of capitation fee (up to 2 years of age, 2–70 years of age and older than 70 years). This age-adjustment principle was used until the end of 2011. Meanwhile, only the capitation fee amounts for different age groups were amended. At the end of 2010, the Estonian Family Physicians Association submitted a proposal to EHIF to increase the differentiation of capitation payments because the role of family physicians had changed and they had assumed more responsibility for children's health

check-ups, as well as the prevention of chronic diseases and management of patients' care. This eventually resulted in an agreement about five new capitation payment groups: patients aged up to 3 years, 3–7 years, 7–50 years, 50–70 years and over 70 years.

Family physicians can receive separate additional fee-for-service payments up to a maximum of 37% of their total capitation payment if they participate in the QBS and perform well according to the QBS standard (see below). The lower rate is for family physicians participating but not receiving results (34%) and for non-participating family physicians. Graduated rates are used to provide incentives for family physicians not only to participate but also to attain good results and to promote improvements in quality of care.

The EHIF and the Estonian Association of Family Doctors agree on the procedures to be reimbursed by fee-for-service payment, after which this list is approved by ministerial decree. The list has been expanded over time as family physicians were providing more types of care and now offer services such as laboratory and ultrasound tests. The objective is to provide incentives for family physicians to manage and provide more services at primary care level.

Practices also receive a basic monthly allowance to cover costs of premises and transport for doctors or nurses. Additional and more marginal payments are made to compensate family physicians in remote areas. Furthermore, 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.

The new QBS was introduced in 2006. The main purpose of this initiative was to increase the quality and effectiveness of preventive services, as well as to improve monitoring of chronic diseases. The QBS includes three domains: disease prevention, chronic disease management and additional activities. Each domain has several indicator groups, with a total of 45 indicators. Family physicians earn points for reaching performance targets for each indicator. The points are awarded on an "all or nothing" basis; that is, if the physician reaches the target, she or he is awarded all of the points. If the physician fails to reach the target, no points are awarded. Family physicians are eligible for bonus payments if they achieve at least 80% of possible points. The list of family physicians receiving bonus payments is published on EHIF's web page.

The QBS is a joint initiative of the EHIF and the Estonian Family Physicians Association. A key factor in implementing the QBS has been the electronic billing data collection system, which enables monitoring of family physicians'

activities without need for additional data collection. Since its introduction, the number of participating family physicians has risen from 50% in 2006 to 90% in 2010, reflecting its broad acceptance. During the first year, all participating family physicians received a small quality bonus payment (25%) to reward voluntary participation in a new scheme. QBS has highlighted the importance of clinical guidelines and performance monitoring at primary health care level. Until now, it has been the only quality rewarding system in Estonian health care. The cost of the scheme, about 1% of the primary health care budget, is relatively small and there is ongoing discussion to expand the QBS and make it more attractive.

The average revenue that family physicians receive from the EHIF was €80 800 (which does not include QBS) per year in 2011. The maximum quality bonus payment for all three domains is €3835, which would form 4.5% of a family physician's total annual revenues. The development of QBS over the years is given in Table 3.10. The family physician's actual income is determined by these revenues minus their own practice costs, although some are salaried in larger group practices.

Table 3.10

QBS size, regularity of payment and related incentives

	Size of the bonus payment	Regularity of payment	Other incentives
2007 ^a	€255.65/month	Every month	27% for everybody
2008	€3 067.76/year	Once per year	27% for non-attending and 32% for attending family physicians
2009	€3 067.76/year for domains I–II; €766.94/year for domain III	Once per year	27% for non-attending and 32% for attending family physicians
2010 ^b	€3 067.76/year for domains I–II; €766.94/year for domain III	Once per year	27% for non-attending and 32% for attending family physicians
2011 ^b	€3 067.76/year for domains I–II; €766.94/year for domain III	Once per year	27% for non-attending and 32% for attending family physicians
2012	€3 067.76/year for domains I–II; €766.94/year for domain III	Once per year	29% for non-attending and 34% for attending family physicians and 37% for family physicians receiving bonus payment

Notes: ^aThe payment is made in the next year and, therefore, the first year in the table is 2007 when the first payment for the year 2006 results was made; ^bIn 2010, the total amount was 6% and in 2011 3% lower because of the economic crisis-related price reduction.

The EHIF implemented a DRG-based payment system for inpatient services in 2004. The DRG system was mainly seen as a tool to increase productivity and efficiency. Another motivation for introducing DRGs was that the old fee-for-service and per diem payment systems had led to volume inflation. 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 large amount of detailed diagnostic data available to the EHIF through the invoicing system facilitated this process. By 2003, all primary classifications were implemented, and from 2004 the NordDRG system became operational. The NordDRG 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. To minimize any financial risk, the proportion of DRG payment for each case was gradually raised from 10% in 2004 to 70% in 2009 (EHIF, 2009). All inpatient care cases, as well as outpatient care cases involving surgical procedures, come under DRGs. However, some types of care, such as psychiatric, rehabilitation and follow-up care, are not reimbursed using DRGs. There are also some exemptions according to the principal diagnosis (e.g. chemotherapy), services provided (e.g. organ transplantations) and referred cases. In addition, cases that are too low or high in cost are reimbursed through fee-for-service.

In principle, health service prices should cover all costs related to providing services except those related to research and teaching activities, which are funded separately. All prices approved are maximum prices, and providers and the EHIF can agree on lower prices in the contracts. Revision of service prices and payment methods can be initiated by provider or specialist associations or by the EHIF (see also section 3.3.1).

In 2003, the EHIF started reviewing the pricing principles of health care services in order to improve transparency and justification. 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 was also expected that the new pricing methodology would enable a transparent discussion in the case of different inputs and provide an incentive to make cost-accounting systems more efficient.

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

First, the EHIF developed principles to be used in the compilation of the activity-based costing model for health services. 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 professionals 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. Every year, one or two specialties are updated (e.g. in 2011 general surgery and nuclear medicine were updated). The activity-based costing model of health care services has been an important tool to make pricing transparent and to enable all stakeholders to understand tariff calculation principles.

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 (see section 4.1.1). Since 2012, e-health management is also included in prices.

3.7.2 Paying health care personnel

During the Soviet era, health care professionals were, similar to civil servants, working as salaried employees in health facilities owned by the state or municipalities. Salary levels were determined centrally. Since the early 1990s, new health care legislation allowed individual providers to work according to private law for the first time and gave institutional providers more autonomy under a different legal status. Although many institutions are still controlled by the state or municipalities, the level of salaries is now established through individual negotiations between employers and employees, taking into account the collective agreements between associations.

Health care professionals’ salaries are determined by the minimum amount of cases contracted with a 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 Estonian Medical Association and the Estonian Nurses Union

negotiate the levels of minimum hourly wage/salary for their respective professions with the Estonian Hospital Association. The Ministry of Social Affairs and the EHIF are sometimes also involved in these negotiations.

The income of family physicians vary and are determined by the revenues they receive from EHIF minus the expenses for running their practice, although some are salaried.

Although health care providers are private entities, the NIHD monitors their financial status and overall salary levels through statistics and annual salary surveys (Table 3.11).

Table 3.11

Average monthly wages of health personnel (in Euros), 2006 and 2012

	Average monthly wage (€)			Increase (%) of monthly salary between 2006 and 2012
	2006	2011	2012	
Doctors	1 113	1 704	1 781	60
Nurses	565	867	889	57
Carers	335	488	497	48

Source: NIHD, 2013.

4. Physical and human resources

All health institutions in Estonia operate under private law and in economic and financial terms are fully responsible for their operations, including managing debts and making investment decisions. During the economic boom in 2004–2008, when the health insurance budget doubled, more funds were used to increase salaries of health care personnel, as well as to invest in medical equipment and renovation of facilities. By 2010, the physical infrastructure of most hospitals had been improved considerably and the hospitals were able to invest in different high-technology solutions and to develop the provision of the respective services. Because of the economic recession, actual health care spending in Estonia has not increased since 2008. This constrains the capacity of health institutions to invest into facilities or technologies, particularly because salary increases are given priority to retain health professionals.

The number of doctors working in Estonia on a population basis is at the EU27 level, but the ratio of nurses to physicians is considerably below the EU27 average. The latter hampers the provision of acute care and the further development of nursing care. Because of high emigration rates, insufficient supply from medical schools and age structure, the number of doctors working in Estonia is estimated to decrease at 1–2% per year and that of nurses twice as fast. The current provision of acute hospital care services is not sustainable in Estonia, because not all hospitals have enough patients, qualified doctors and nurses or funding for improvement of hospital services. Elaboration and implementation of a human resource strategy and integrated information systems is vital for the proper functioning of the health care system.

4.1 Physical resources

In Estonia, all health care institutions (acute hospitals, primary care centres, dentist offices, nursing care hospitals, etc.) operate under private law as joint-stock companies or non-profit-making foundations and have to be licensed by the Health Board to provide any type of inpatient or outpatient medical care as well as to provide nursing care (see section 2.8.2).

In 2012, there were approximately 1000 health care institutions licensed in Estonia and among these 65 provide inpatient care and are classified as hospitals. Among the 900 outpatient care providers, one-third are primary care centres (family practices) and one-third are dentist offices. There are 150 providing specialized outpatient medical care and 30 providing outpatient rehabilitation services. The vast majority of the outpatient institutions are owned and run by the staff providing the respective services and are very small in terms of population served, as well as turnover and financial potential (NIHD, 2013).

The 65 hospitals licensed to operate in Estonia in 2012 include 35 nursing and rehabilitation hospitals. There are 10 private small hospitals, which provide very selected services of specialist medicine (gynaecology, orthopaedics, etc.) and are operated as profit-making companies. This leaves 19 acute care hospitals, which are publicly owned and provide general inpatient care; however, these are still very different in size and profile, and subsequently have very different investment needs. This chapter concentrates on physical infrastructure of these 19 general hospitals, which, in addition to inpatient care, provide the majority of the outpatient specialist services and employ most health care personnel in Estonia (NIHD, 2013).

4.1.1 Capital stock and investment

The health care institutions in Estonia are financially fully independent and accountable and have to administer their running costs as well as all investments themselves. In the 1990s, it was the responsibility of hospital owners – the state or the municipalities – to cover the capital costs of hospitals, while the EHIF had to cover only the running costs of provision of medical services. The government and the municipalities neglected their responsibilities and as a result infrastructure deteriorated in most of the hospitals. In addition, most hospital buildings were older than 30 years and technically outdated or even unsuitable to provide modern hospital services.

On these grounds, a concentrated effort was undertaken in 1999–2002 to map the current status of hospital infrastructure, and functional development plans were created for each hospital to describe the investment needs in the perspective of 15–20 years. In addition, the Ministry of Social Affairs commissioned foreign consultants to develop a master plan for hospital care (Hellers et al., 2000). This document noted that Estonia's geographically decentralized hospital system resulted in excess acute care capacity and a considerable deficit in rehabilitation and nursing care. It suggested considerable changes in the profile and number of hospitals providing acute care.

In 2003, the HNDP, the abridged version of the Estonian Hospital Master Plan 2015, was approved (Government of the Republic of Estonia, 2003). The HNDP listed the 19 public hospitals and their investment needs in order to renovate their premises and to restructure their services. In total, €274 million were foreseen as necessary investment for acute care facilities and €47 million for nursing care facilities.

The investment needs described in the HNDP were not met by the state budget but have served as a basis for the implementation of EU structural funds. The EU has supported the renovation of Estonian hospital buildings through the ERDF with a total of €25 million during 2004–2006 and €138 million for 2007–2013. The latter instalment included €28 million to build new facilities or renovate existing ones for nursing care in 20 hospitals and is the first major investment made to offset the unmet need for nursing care.

The majority of EU support has been allocated to build new facilities for tertiary care at the University of Tartu Hospital and the North Estonia Medical Centre (in Tallinn), which both provide one-quarter of all inpatient hospitalization episodes and outpatient visits in Estonia. Since the investment needs were identified in 2000, approximately one-half of these have been covered by EU support. This support was allocated by the Ministry of Social Affairs to only a very few hospitals that were able to raise the required co-financing (25–40%) by taking considerable long-term loans; however, this concentration of support made it possible to construct and equip the new buildings in time and avoided dilution of limited resources.

The formal government policy since 2003 is that the capital costs are calculated into the price list of services reimbursed by the EHIF to cover the investment in medical technology and depreciation of premises. This means that capital costs are allocated on the basis of activities (services provided), but not according to investment needs (Tsolova et al., 2007). This rationale worked well during the economic boom in 2004–2008, when the total EHIF budget

doubled and the increasing revenue was used to increase salaries of health care staff as well as to invest in medical equipment and renovation of facilities. In fact, by 2009, the physical infrastructure and the working environment of most hospitals had been improved considerably.

However, the future of the health care infrastructure looks grim, as there are no plans to cover investment costs of hospitals from either the state budget or EU support, and because of the economic recession, the EHIF budget has remained at its 2008 level. This constrains the ability of hospital managements to invest in facilities or technologies; further constraint comes because salary increases are given priority to prevent the migration of health professionals.

In order to cover the investment needs of publicly funded health institutions, there have occasionally been discussions to develop public–private partnerships. However, such discussions have ceased in recent years because of the lack of available public funding through the EHIF, which cannot guarantee sufficient return for private investors.

4.1.2 Infrastructure

In 1991, Estonia had about 120 hospitals with about 18 000 beds. Since then, the number of hospitals and the number of beds have fallen dramatically and by 2001, there were only 67 hospitals with about 9100 beds. Most of the small hospitals were either closed or turned into nursing homes to be operated by municipalities and to provide social services (NIHD, 2013).

In 2002, many hospitals were merged, and by the beginning of 2003, the number of hospitals had fallen to no more than 50. Since then, new nursing care hospitals and small private hospitals have opened, and in 2012 there were 65 active hospital licences (NIHD, 2013).

The 19 hospitals listed in the HNDP take up 90% of the specialized medical care expenditure in Estonia and are divided pursuant to the Health Services Organization Act into regional, central, general and local hospitals. This hierarchy of hospitals is related to the spectrum of specialist medical care and specific services each hospital is expected to provide. University of Tartu Hospital and North Estonia Medical Centre (in Tallinn) are the two largest hospitals in Estonia. Both of them operate approximately 900 beds for acute (curative) care, employ close to 500 physicians, and account for 20–25% of the budget for hospital care in Estonia (NIHD, 2013).

These two, together with the next four largest hospitals (East-Tallinn Central Hospital, West-Tallinn Central Hospital, Pärnu Hospital and the Ida-Viru Central Hospital), provide approximately 80% of inpatient hospitalization events and 70% of outpatient visits to medical specialists. The rest of the hospitals in the HNDP are classified as general and local hospitals, which are small hospitals with 50 to 200 beds to provide treatment for common diseases (Government of the Republic of Estonia, 2003).

Approximately 250 000 patients have been hospitalized annually in the period 1995–2008 in Estonia despite the total number of beds for inpatient acute care halving. Since 2009, the annual number of hospitalizations has decreased to 240 000. This was achieved by shortening the average length of stay and increasing the use of day care. In parallel to the decreasing number and proportion of beds for acute and psychiatric care, the number of beds for nursing care has been constantly increasing (Table 4.1).

Table 4.1

Hospital resources and performance indicators in Estonia

	1995	2000	2005	2010	2011
Hospital beds, total	11 994	9 828	7 374	7 145	7 165
Beds per 1 000 population	8.56	7.19	5.48	5.33	5.35
Acute (curative) care beds, total	9 528	7 298	4 817	4 350	4 371
Beds per 1 000 population	6.80	5.35	3.58	3.24	3.26
Psychiatric beds, total	1 527	1 083	723	730	735
Beds per 1 000 population	1.09	0.79	0.54	0.55	0.55
Tuberculosis beds	305	317	273	211	187
Beds per 1 000 population	0.21	0.23	0.20	0.16	0.14
Rehabilitation beds	211	302	323	297	314
Beds per 1 000 population	0.15	0.22	0.24	0.22	0.23
Nursing care beds	423	828	1 238	1 557	1 558
Beds per 1 000 population	0.30	0.60	0.92	1.16	1.16
Hospital admissions per 1 000 population	209	204	183	182	181
Average length of stay (days)	12.7	9.2	7.9	7.7	7.8
Bed occupancy rate (%)	77	70	72	74	75
Day care admissions per 1 000 population	n/a	15	28	49	49

Source: Ministry of Social Affairs, 2009a; NIHD, 2013.

Note: n/a: Not available.

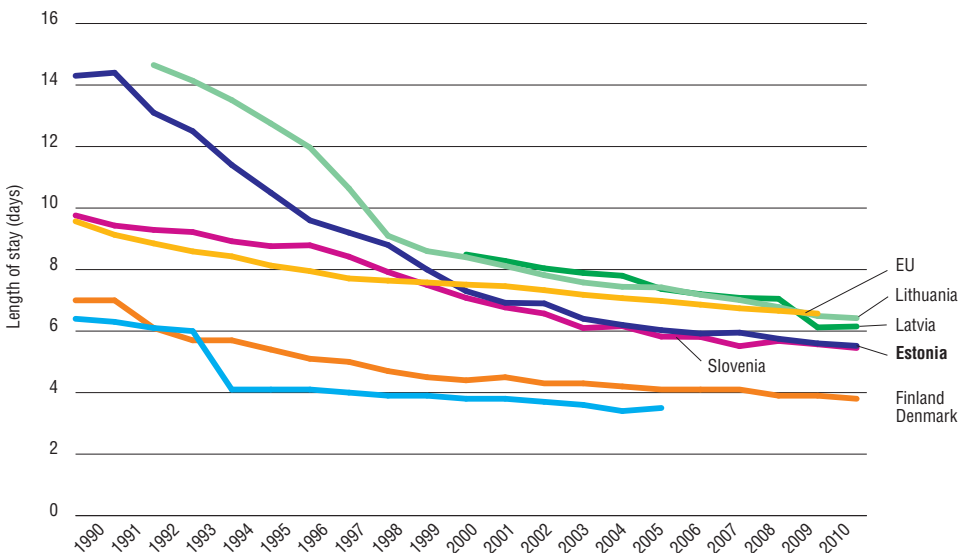
Rehabilitation is an important part of active treatment and is aimed at the restoration of impaired functions, the preservation of restored functions or adjustment to a disability. All major hospitals have rehabilitation departments

and are also developing departments for nursing care. The number of beds for nursing care in these hospitals should be increased significantly in the future to meet the increased demand from an ageing population in Estonia.

Figs 4.1 and 4.2 show that there has been a continuous decline in the average length of stay and in the number of acute beds in Estonia throughout the 1990s, mirroring the strong trend in the other Baltic States and the more gradual decline in the EU27. Since the early 2000s, the number of acute hospital beds per 1000 inhabitants in Estonia is roughly at the EU average but well below the average for the EU12 (WHO Regional Office for Europe, 2013).

Fig. 4.1

Average length of stay in acute care hospitals only, selected countries, 1990 to latest available year

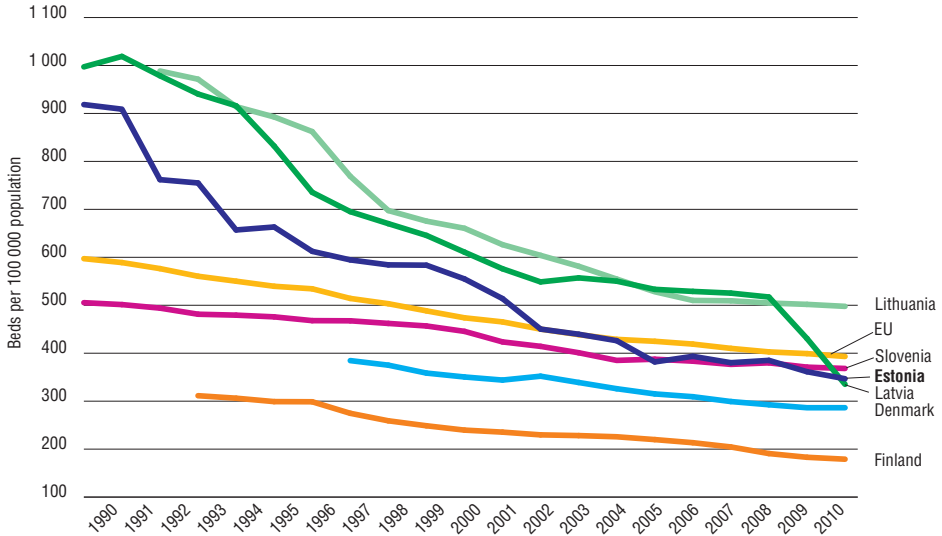


Source: WHO Regional Office for Europe, 2013.

The changes in the profile and structure of hospital services in Estonia have followed the projections outlined in the original Estonian Hospital Master Plan 2015 (Hellers et al., 2000), but in a slow and uncoordinated manner. This Plan suggested active reorganization of acute care services requiring specialized clinical competence and the introduction of high-technology medical equipment into selected central hospitals to avoid duplication and waste of human and financial resources. In addition, rehabilitation services, nursing care and supportive care of chronic conditions should have been actively developed in the remaining

Fig. 4.2

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



Source: WHO Regional Office for Europe, 2013.

hospitals. However, for political reasons the Hospital Master Plan was not implemented by the Ministry of Social Affairs but left to the discretion of individual hospital management boards, which on their own were not able to change the provision of services in a coordinated manner.

Health system reforms during 2000–2002 created a legislative background for a market environment, which affected financing and delivery of hospital care (Habicht, Habicht & Jesse, 2011). Estonian hospital managers perceived that they were competing for the EHIF contracts. This created false incentives to invest into development of the specialist services that are favourably priced by the EHIF, despite the fact that these are also provided by other hospitals (Tsolova et al., 2007). This duplication is most intense in Tallinn, where three large hospitals aim to cover the full scale of services, and among small local and general hospitals, who compete for the medical specialists in order to generate income on the services these specialists provide.

One of the major drawbacks from not implementing the Estonian Hospital Master Plan 2015 is that in many aspects the continuity of care is problematic. There is insufficient collaboration between the different levels of care – primary care (family physicians), hospital care and outpatient specialist services – as

well as insufficient capacity for long-term (chronic) care and rehabilitation. Fragmentation of responsibilities is directly arising from the financing mechanism of health institutions, which covers the (isolated) services provided by individual specialists or institutions but does not take into account the outcome or the perspective of patients with chronic conditions, who need comprehensive and integrated care.

The uncoordinated development of hospital infrastructure and outpatient specialist medical services seriously threatens the future of hospitals, especially the smaller ones. The current provision of acute hospital care services is not sustainable, because not all hospitals have enough patients, qualified doctors or funding for improvement of the hospital services (National Audit Office, 2010). The Ministry of Social Affairs is expected to lead efforts to consolidate acute hospital services and to develop regulations and financial mechanisms to facilitate networking and task allocation that is in the best interest of patients.

4.1.3 Medical equipment

The health institutions, including hospitals for acute care and nursing care, and those providing outpatient primary or specialist medical services are independent in their decisions regarding the introduction of new medical technologies and have to finance these in full. There are no national regulations on what equipment has to be present in hospitals and no financial restrictions on what can be bought or at what price. The hospital management is fully responsible for all aspects of hospital operation, including managing debts and making investment decisions (Tsolova et al., 2007).

Different schemes of short- and long-term loans are commonly used to buy, rent or lease medical equipment and it is a management decision whether the institution can recover the price of the equipment from the services provided and according to the fixed price list of EHIF services, as this is the main source of revenue for the institutions. Because of the perception of competition among providers, there are strong incentives to introduce high-technology and high-cost equipment, and cost-benefit analysis is not usually performed.

During the economic boom (2004–2008), prices of all EHIF services were increasing fast and all hospitals were able to invest in different expensive medical equipment and technological solutions. However, in 2012, the number of CT scanners and MRI units was still below the OECD average for 2009 (Table 4.2).

Table 4.2

Functioning diagnostic imaging technology units and examinations in Estonia and OECD average

	Estonia 2005	Estonia 2008	Estonia 2012	OECD average 2009
CT scanners, total (per million population)	7.5	15.7	17.2	23
MRI units, total (per million population)	2.2	6.7	9.7	12
CT examinations (per 1 000 population)	73	144	284	132
MRI examinations (per 1 000 population)	12	38	50	47

Sources: National Audit Office, 2011; NIHD, 2013; OECD, 2011.

Much of this equipment was bought in late 2006, because from 1 January 2007 the VAT on medical devices and aids was increased from 5% to 18%, thus illustrating that governmental fiscal decisions can create unexpected consequences. As a result, most CT scanners bought by small local and general hospitals are underused, either because there is insufficient demand or because there are no competent staff to operate them. In the current financial situation, most hospitals are no longer in a position to upgrade the equipment at the pace expected by medical specialists (National Audit Office, 2011).

The investments made into medical equipment during the economic boom increased the possibilities of medical staff providing a sufficient number of high-technology diagnostic and curative services to the population. In parallel, emergency medical departments have been established, manned and equipped in all hospitals to operate 24/7, and patients are increasingly using these. This resulted in accurate and quicker diagnosis and increased options for patient-friendly treatment in acute medical care. As a result, the Estonian rates per population of coronary angioplasty, hip and knee arthroplasty, endoscopic surgery and cataract surgery are comparable with the OECD and EU averages (OECD, 2011; NIHD, 2013).

While most decision-making powers on services provided are delegated to hospital management boards in Estonia, national policy-makers should make sure that monitoring and benchmarking procedures are in place in order to maintain equity and access to good quality of care all over the country. Policies should be directed to such areas as strengthening continuity of care, clarifying the responsibilities of hospital management and supervisory boards, and implementing standards for capital investment and accreditation across hospitals. The EHIF has coordinated the development of tools for routine

monitoring of hospital performance in terms of needs and costs of care to ensure adequate benchmarking, and since 2012 has made the results available on its web site.

4.1.4 Information technology

Estonia has taken remarkable steps during its transition to an information society. There are many examples of the successful use of information technology solutions in the public sector. For example, the Internet portal www.eesti.ee is a secure environment where citizens and businesses can communicate with the state offices and use governmental services. More than 90% of Estonia's population holds an ID card that enables their authentication in an electronic environment via the Internet and a digital signature. Legislation now obliges public sector institutions to accept digitally signed documents with equal authority to handwritten ones.

Eurostat (European Commission, 2013b) data show that 68% of households in Estonia had Internet access in 2010, which is close to the EU27 average (70%) and considerably higher than in 2006 (46%). While in most EU27 countries, the proportion of users of the Internet has reached 85–93% in all age groups, in Estonia only 65% of those aged 55–74 were using the Internet in 2010. More information can also be found in sections 2.7.1 and 2.9.1.

From an information technology perspective, the Estonian health care landscape is quite diverse. Estonian providers were quick to launch electronic data management in the 1990s; this was also stimulated by incentives from the EHIF, which was interested in receiving billing data electronically rather than on paper. Over the years, most providers of health care services deployed their own information systems and, consequently, these are not mutually compatible and cannot exchange information.

To combat these information technology problems, the Ministry of Social Affairs initiated in 2005 the development of four e-health projects: electronic health records, digital images, digital registration and digital prescription. It was expected that the implementation of these four projects would create a unified national health information system that would be linked with other public information systems and registers while using the existing public information technology solutions. The management of this initiative (except digital prescription) was entrusted to the Estonian eHealth Foundation, established in 2005 by the Ministry of Social Affairs, and the system was scheduled to become operational by 2009, but only the digital prescription project, coordinated by the EHIF, was launched in 2010.

The solution for electronic health records was expected to connect existing information technology systems of all health care providers and to include the most important medical records, visits and other health-related information for the patient. Legislation was put into effect that all providers should submit relevant medical information to the electronic health record system and have also the right to use its data. Individuals can access their own medical data by using their electronic ID cards via the patient's portal.

The digital image archive is a technical platform to enable Estonian health care providers, including family physicians, to access digital imaging to follow health condition changes over the years for a patient and to allow experts to become involved to give opinions on complex cases. This solution is using the approach originally developed by the three largest medical centres in Estonia: University of Tartu Hospital, North Estonia Medical Centre and East-Tallinn Central Hospital.

The digital prescription project was coordinated by the EHIF and was launched in 2010. Doctors prescribe medications for patients using their computer software and forward an electronic prescription to the national database. The e-prescription is then immediately accessible in every pharmacy on a patient's request. In May 2011, just 15 months after the launch, 84% of prescriptions were being issued digitally. More than 95% of pharmacies are ready to process e-prescriptions and, according to the 2011 patient survey, 92% of users of digital prescription are satisfied with the service (Saar Poll, 2011). Now physicians can access a patient's full prescription history online and use this readily available information for quality pharmaceutical care.

By 2012, several components of the electronic health records were functional, but because of technical problems with compatibility and some resistance from staff, not every health provider is submitting the data as expected. As a result, the system does not contain sufficient information on every patient and does not allow easy access and use at every location. In addition, the original idea – that governmental funding was made available only to develop and maintain central data depositories – did not work as most providers were too small to make the required investments and did not have the competence in information technology to develop the compatible user workstations and software. Therefore, the expected benefits from the health information system remain to be elaborated, and further national development and management initiatives need to be taken to reach the goals.

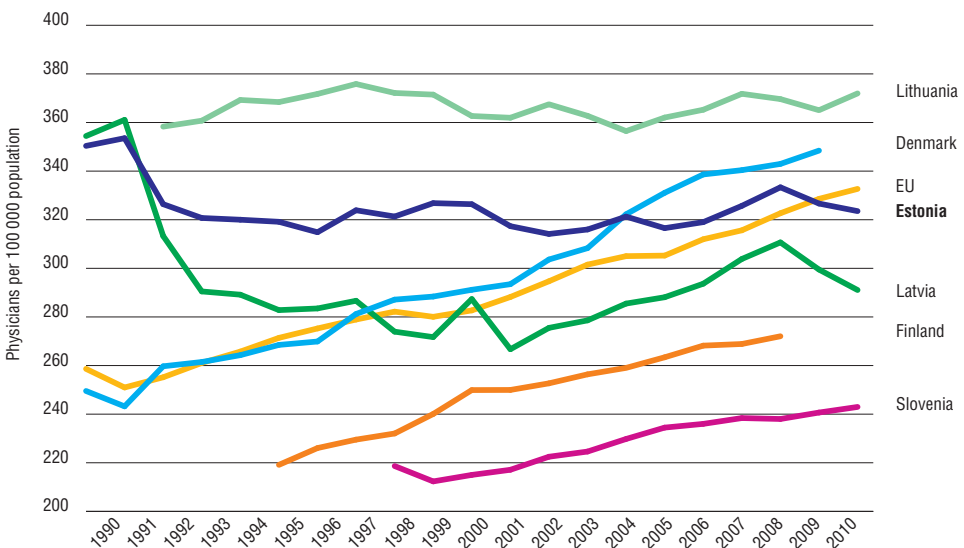
4.2 Human resources

4.2.1 Health workforce trends

In the early 1990s, when health care reforms were planned and implemented in Estonia, it was a general perception that there was an oversupply of doctors. This was true in a historic perspective and for certain specialties, but not for the total number of doctors active in clinical practice (Kiivet & Asser, 2006). At the same time, the main problem in the supply of health care personnel, the shortage of nurses, was not recognized and has not yet been solved.

Between 1991 and 2000, the total number of doctors decreased by 18% (from 5500 to 4500), and the number of nurses decreased by 12% (Ministry of Social Affairs, 2002). Since then, the number of physicians per 10 000 population has gone up slightly, being roughly at the European average in 2010 (Fig. 4.3), while the number of nurses per 10 000 population on balance stagnated and remains considerably below the European average (Fig. 4.4), although in later years a downward trend is visible. The ratio of nurses to physicians rose to 2.2 to 1 in 2010, well below the EU average of 2.5 to 1 in 2010 (Fig. 4.5). Table 4.3 shows health personnel numbers in different categories according to national data.

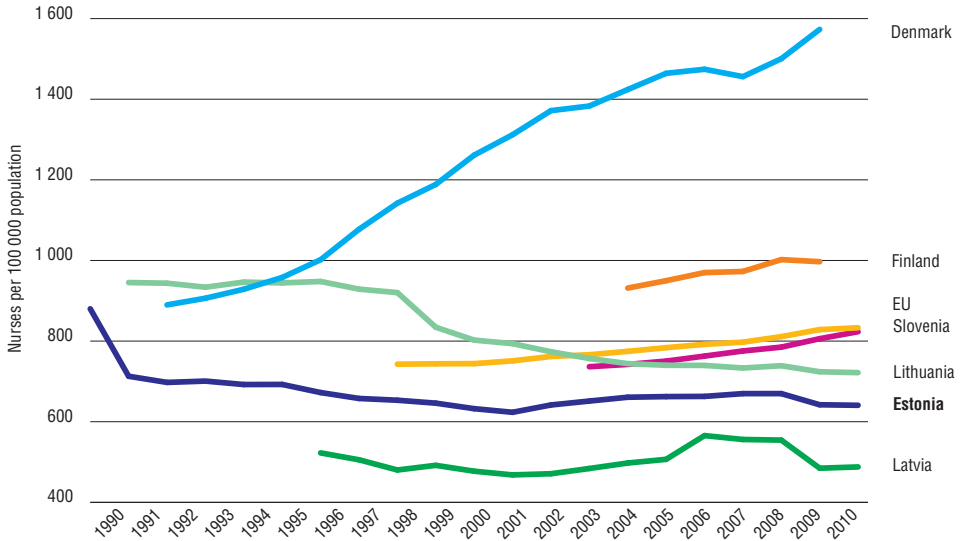
Fig. 4.3
Number of physicians per 100 000 population in Estonia and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe, 2013.

Fig. 4.4

Number of nurses (physical persons) per 100 000 population in Estonia and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe, 2013.

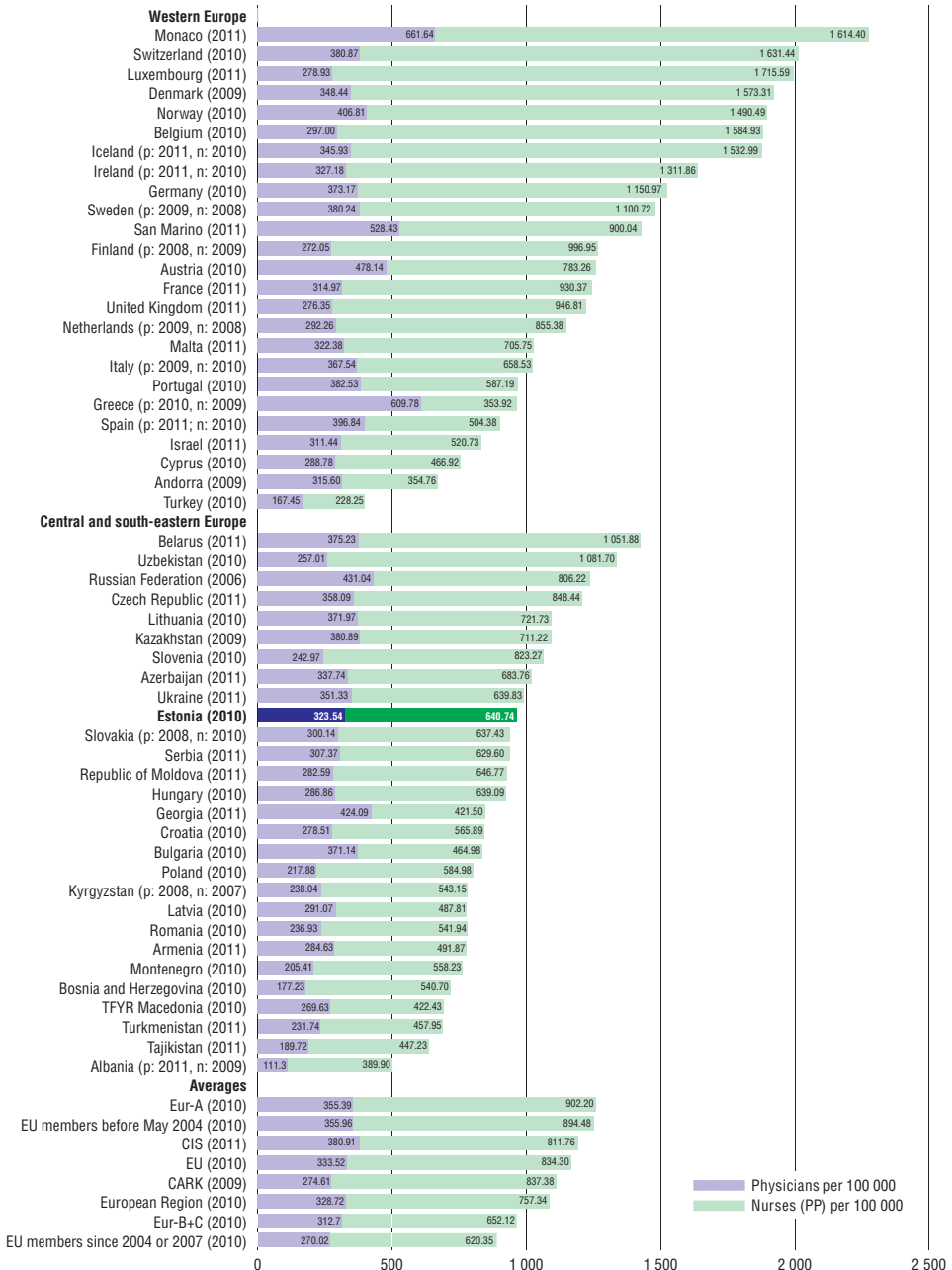
The decline in the number of nurses and doctors in Estonia since 2008 (Figs. 4.3 and 4.4) has two main reasons. The first, migration abroad, is difficult to combat by governmental policies as it is mainly determined by economic reasons. The second reason was unfortunately the official government policy in the 1990s to reduce the number of admissions to the Faculty of Medicine, which was widely supported by doctors themselves in the hope of increasing salaries by decreasing the supply of new doctors. As a result, the Ministry of Education reduced the number of students admitted from 200 per year in the 1980s to 70 in 1995.

It took considerable effort to increase the admission quota to 100 per year in 2000–2003 and to 140 from 2006 onwards. This was a result of intensive consultations in which, by 2002, the Ministry of Social Affairs claimed that 3 physicians and 8 nurses per 1000 population should be the optimal goal to reach in 10 years (Ministry of Social Affairs, 2002). To achieve this, the annual intake of student nurses should be 600, but the lack of financial and human resources did not allow this and it remained at 300–320 students for a decade.

In the 1990s, better salaries outside the health care sector in Estonia (e.g. the pharmaceutical industry for physicians and the beauty industry for nurses) posed the main challenge to keep staff working in the health care sector.

Fig. 4.5

Number of physicians and nurses per 100 000 population in the WHO European Region, 2010 or latest available year



Source: WHO Regional Office for Europe, 2013.

Notes: CARK: Central Asian Republics and Kazakhstan; CIS: Commonwealth of Independent States; Eur-A,B,C: Regions as in the WHO list of Member States, last available year; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Table 4.3

Active health care personnel in Estonia per 100 000 population

	1990	1995	2000	2005	2012
All physicians	3.60	3.41	3.19	3.10	3.12
Family physicians	n/a	0.06	0.33	0.63	0.69
Surgical specialists	n/a	0.74	0.75	0.92	1.05
Therapeutic specialists	n/a	1.56	1.28	1.11	1.22
Psychiatrists	n/a	0.12	0.12	0.13	0.15
Dentists	0.58	0.66	0.76	0.89	0.96
Nurses	6.58	7.46	6.64	6.36	5.82
Midwives	0.62	0.46	0.37	0.32	0.42
Pharmacists	0.59	0.65	0.60	0.63	0.61

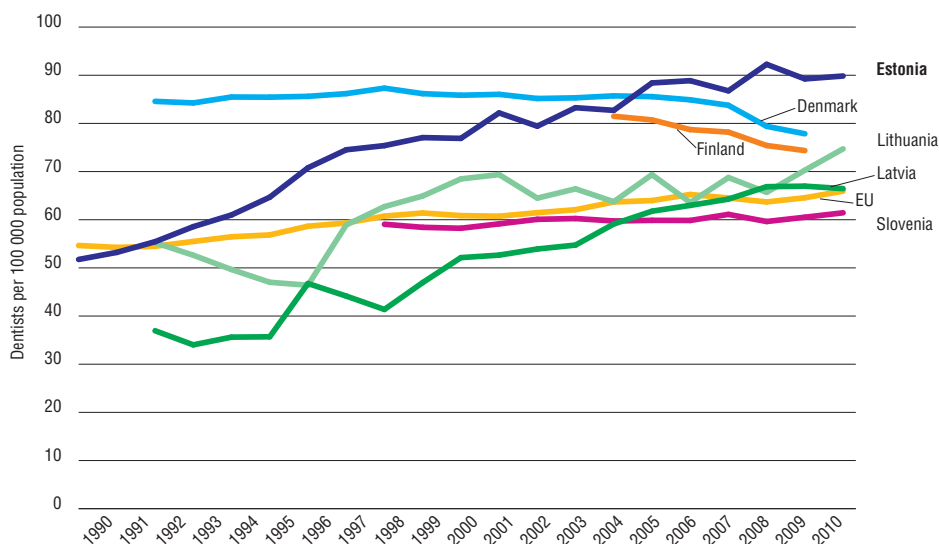
Source: Ministry of Social Affairs, 2000–2008; Health Board data.
Note: n/a: Not available.

According to Health Board data, 15% of physicians and 6% of nurses working in health institutions have passed retirement age in 2012, which somewhat alleviates the decreasing number of health care workers.

The number of dentists per 100 000 population active in Estonia (89.8 in 2010) is above the European average of 65.9 (Fig. 4.6), and the number of pharmacists active in Estonia (63.1 in 2012) is also slightly above the European average of 61.5 (Fig. 4.7).

Fig. 4.6

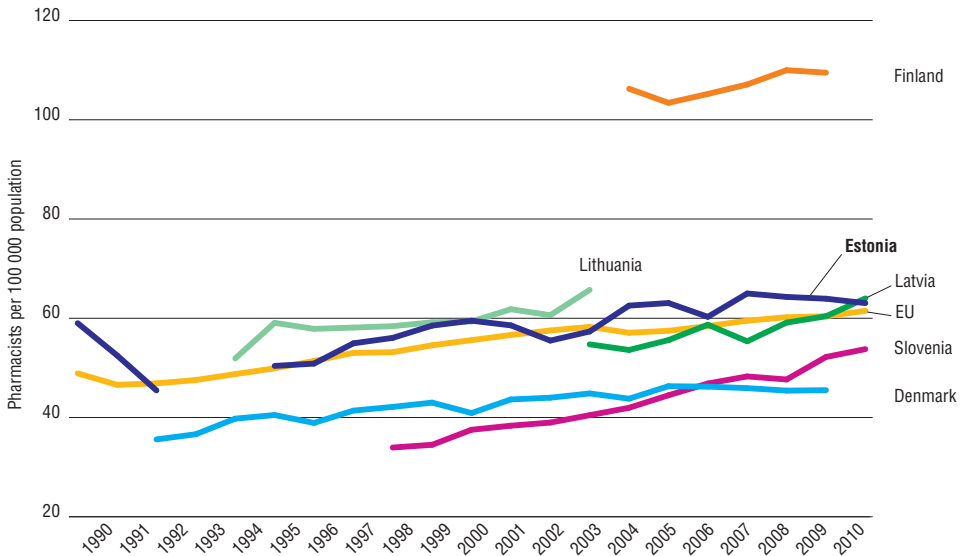
Number of dentists (physical persons) per 100 000 population in Estonia and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe, 2013.

Fig. 4.7

Number of pharmacists (physical persons) per 100 000 population in Estonia and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe, 2013.

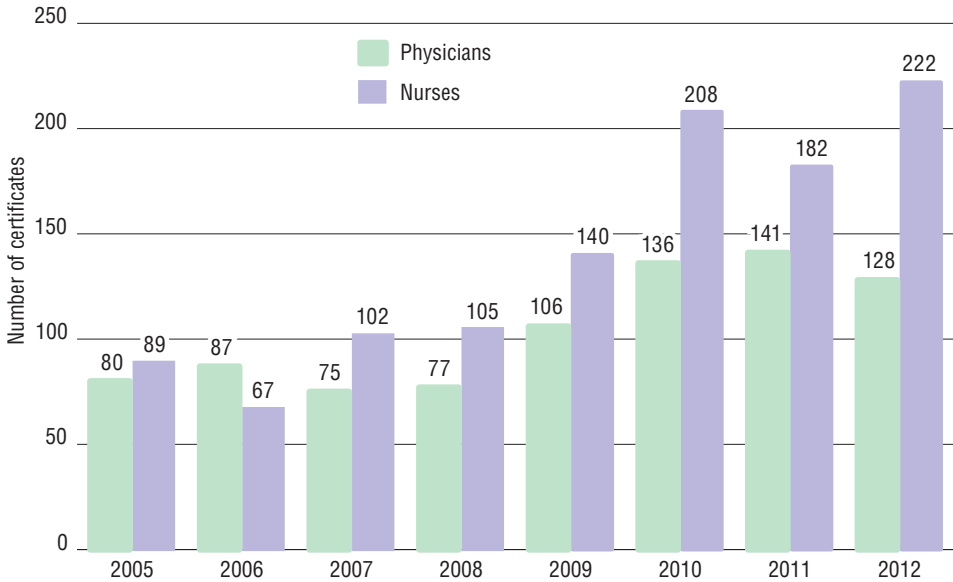
4.2.2 Professional mobility of health workers

Estonia started to formally register health care personnel only in 2003, and since 2004 the Health Board has information about the number of doctors, nurses and other health care professionals working in Estonia, as well as about those wishing to work abroad. At the request of a registered health professional, the Health Board issues certificates of conformity of studies for employers and national regulatory bodies in other EU Member States. However, these data might be misleading in terms of how many are actually working abroad because the Health Board does not have any feedback on whether the concerned health professional has actually left and started to work in another Member State. As shown in Fig. 4.8, the numbers of both physicians and nurses were highest at the time when the EU labour market was opened for Estonian citizens, and increased again in 2009 during the economic crisis (Saar & Habicht, 2011).

However, in a recent study (Kiivet, Visk & Asser, 2012) it was revealed that half of the physicians and nurses who received certificates of conformity of studies from the Health Board during 2004–2011 continued to have a job in a health care institution in Estonia. Therefore, not every health care

Fig. 4.8

The number of certificates issued by the Health Board to Estonian physicians and nurses in order to verify professional qualifications for obtaining work abroad



Source: Health Board, 2013b.

employee who has seriously considered leaving Estonia actually migrated for good. This has created an unusual situation in which hundreds of physicians and nurses work part-time in Estonia and part-time in neighbouring Finland, where there is a shortage of doctors and nurses. It takes only two hours by ferry from Tallinn to Helsinki (80 km). The reasons to work in Finland are almost exclusively economic as the salary level in Finland is up to four times higher than in Estonia. Furthermore, the cultural environment and language are similar. Advertisements for vacant positions in Finland have become one of the major sources of income for printed and online media in health care. Doctors without residency training can work independently in Finland but not in Estonia. Mechanisms or incentives to slow the migration abroad of physicians and nurses are lacking.

Until recently, there was no migration of health workers from abroad to work in Estonia because of the very conservative work permit policies and strict requirements for knowledge of the Estonian language, which is very difficult to learn elsewhere in the world. So far, the few doctors and nurses who have come to the country are citizens of Russia, Ukraine and other states of the

former USSR. However, because of the decreasing size of the Estonian health workforce, the strict immigration policies should become more flexible in the coming years.

4.2.3 Training of health personnel

The vast majority of physicians, dentists and pharmacists working in Estonia are graduates from the Faculty of Medicine, University of Tartu, which is the only medical school in Estonia. Nurses and midwives are graduates from health colleges located in Tallinn and Tartu. These two health colleges also teach the other health professionals who are not regulated by EU Directive 2005/36 (European Commission, 2005a): laboratory assistants, pharmacy assistants, radiology technicians, optometrists, physiotherapists and specialists in environmental health and health promotion.

The curricula of the four regulated professions (physicians, dentists, pharmacists and nurses) were rearranged to meet EU requirements during 2002–2004 in anticipation of EU accession. This was more a technical issue, as the length and content of teaching had always followed the traditional European structure. As there is a natural monopoly of training of regulated health care professionals in Estonia, evaluation of these programmes is carried out by international peer review and accreditation mechanisms. As a result, the training and education of health workers are well recognized internationally, which is illustrated by the high recruitment rates of Estonian physicians and nurses abroad.

It takes six years of study to become a medical doctor authorized to practise medicine, and five years to practise dentistry or pharmacy. Admission quotas for publicly funded undergraduate or postgraduate medical training positions are set by the Ministry of Education, as discussed in detail in section 2.8.3. In addition, since the early 1990s, the University of Tartu has also admitted 20 foreign students annually (mainly from Finland) to study medicine in English, all of whom have returned to work in Finland and do not contribute to health care in Estonia.

A major change was introduced in the 1990s in the training of specialist physicians in Estonia and since 1995 a postgraduate residency programme of three to five years has to be completed in order to be licensed as a specialist. In Estonia, doctors of family medicine (general practice) are also defined as specialists, and it takes three years of residency training to become a family doctor.

Postgraduate specialist medical training (residency) is separately financed from the state budget through the Ministry of Social Affairs and is not part of the regular health care budget. The University of Tartu runs residency programmes, and the admission quotas for state-funded residency positions are formalized by a contract between the University and the Ministry of Social Affairs. The resident physicians have fixed employment contracts with the teaching hospitals and they have to rotate as specified in the residency programme. In this way, residents serve specified terms in different hospitals and hospital departments in order to obtain maximum experience to fulfil their future responsibilities.

The Tallinn and Tartu Health Colleges provide basic training for nurses and midwives in compliance with EU requirements. The duration of nursing and midwifery training is 3.5 and 4.5 years, respectively. The training comprises theoretical studies and comprehensive practical clinical instruction, which is conducted in teaching hospitals under the supervision of the colleges.

The nursing profession was incorporated in Estonian legislation only in 2001 and since then there are four main nursing specialties. These include primary care (family medicine) nursing, clinical nursing, intensive care nursing and mental health nursing; these require a one-year postgraduate theoretical and practical training course, provided by the two health colleges.

Since 2005, the training possibilities for public health specialists have been expanded. In 2007, a curricula for health promotion specialists was opened in Tallinn Health Care College and in 2008 in Haapsalu College of Tallinn University. This training takes three years and after graduation students obtain a higher education degree allowing them to continue their studies in a master's programme in Tallinn or Tartu Universities.

Since 2001, the University of Tartu Faculty of Medicine has also offered a master of science programme in public health (Master of Science in Health Sciences), with the options to specialize in epidemiology, health management or environmental health. By 2012, more than 100 students had completed and defended their master thesis in public health and graduated. Admission to the programme is open to anyone with a bachelor's degree or equivalent level of education in medicine, biology, health sciences, social sciences or economics.

4.2.4 Career paths for doctors

After completion of their medical degree, physicians have the following career options:

- to work in a health institution as a physician without the right to work as an independent provider or to open private practice;
- to continue in postgraduate specialist medical (residency) training;
- to continue academic studies for a doctorate (PhD); or
- to leave health service provision to work as a civil servant or public employee in the field of health care management in health institutions or governmental bodies or in the pharmaceutical sector.

The majority of medical graduates enter residency training in Estonia, which is the most direct path to becoming a specialist. As of 2012, virtually all physicians working in Estonia are specialists except for those who are still in residency training in order to become specialists. In fact, the career path to become a clinical specialist has become so strong a driver that the Medical Faculty has difficulty recruiting PhD students from among medical graduates, and the higher administrative positions in health are filled by nonmedical staff.

Specialists are usually employees of hospitals, but in certain fields (gynaecology, psychiatry, ophthalmology) there are number of independently working providers. The majority are salaried employees whose contracts are negotiated with the hospital management. The hospital management has the power to determine salaries and individual career paths for the physicians they deem important for the provision of specific services. There are no specific governmental regulations on salaries and workload of health workers despite efforts of trade unions. Considerable differences exist between the salaries of health workers in similar positions and specialties even in the same health institution.

4.2.5 Career paths for other health personnel

Graduates of nursing have the same career options but are also sought after outside the health sector, especially in the pharmaceutical and beauty industries and in other areas where the skills and values of the nursing profession are valued.

5. Provision of services

The Ministry of Social Affairs acts as the steward and governing body in the health system. It uses the NHP as a comprehensive policy document, setting overall goals. Various structural and managerial reforms in the 1990s and 2000s sought to reduce the number of hospitals (and beds) and establish primary care at the centre of service delivery. Primary care is the first level of contact with the health system and is provided by independent family doctors working solo or in groups and practising on the basis of a practice list. Secondary care health services are provided by publicly or privately owned health care providers (hospitals and outpatient care offices) operating under private law. Pharmaceuticals are distributed to the public through privately owned pharmacies. Since April 2013, pharmacies can also distribute pharmaceuticals through the internet. Hospital pharmacies only provide pharmaceuticals for hospital use. Ambulance services are financed from the state budget and provided by ambulance crews, ensuring that everyone in Estonia receives emergency medical care. Palliative care and long-term care are delivered as part of nursing care. Complementary and alternative medicine does not play a significant role in the Estonian health system and is not regulated by legislation.

5.1 Public health

Public health has been moving from the centralized sanitary-epidemiological system where focus was mainly on enforcement and control to a more decentralized multi-stakeholder system where emphasis is also on disease prevention, health promotion and addressing determinants of health. The reforms began with the Public Health Act in 1995, which laid out tasks and responsibilities in public health. This Act has been amended frequently and at the time of writing a new Public Health Law is under preparation that should

clarify the roles and hitherto fragmented responsibilities. In addition, in search of efficiency and synergy, the trend on the national level has been to close or merge smaller bodies.

The Ministry of Social Affairs acts as the steward and governing body in public health (Deputy Secretary General, Department of Public Health and the Work and Environment Department). Other main national actors are the Health Board, the NIHD, the EHIF, the Labour Inspectorate, the Ministry of the Environment and the Environmental Inspectorate, and the Veterinary and Food Board under the Ministry of Agriculture. At the county level, public health activities are coordinated by a health promotion specialist who acts also as a link between county and municipality levels. At the municipal level, municipalities are required to control whether health protection legislation is adhered to and implemented in their territory and coordinate activities concerning health promotion and prevention of diseases. The main planning and stewardship tool in the public health area is the NHP (Ministry of Social Affairs, 2008). Furthermore, several strategies developed for priority health issues set strategic goals, indicators, measures and priority actions (see also sections 2.5 and 2.6).

Communicable disease surveillance and control

The surveillance and control of communicable diseases are undertaken mainly by the Health Board. Responsibilities related to surveillance and control of TB and HIV/AIDS lie within the NIHD, which also manages the TB Registry. The Public Health Act (1995), the Communicable Diseases Prevention and Control Act (2003) and several other regulations regulate communicable diseases prevention and control.

Surveillance of communicable diseases is built around the Estonian Communicable Diseases Information System, which requires family physicians, medical consultants and laboratories to report 62 communicable diseases and 101 etiological agents. The proportion of paper-based reporting is gradually decreasing and in early 2012 more than half of notifications were electronic. If there is serious infectious disease or suspicion thereof, telephone and e-mail reporting is used. The data are stored nationally at the Estonian Communicable Diseases Registry, effective since October 2009. The electronic system has reduced the time lag in reporting, yet many cases are not reported by some family physicians and hospitals and the Health Board does not strictly enforce it.

Estonia has a mandatory countrywide reporting system for communicable disease outbreaks. The suspicion of outbreaks has to be immediately reported to the Health Board. Protocols specify the response to epidemic outbreaks for 59 diseases.

The Health Board investigates communicable disease outbreaks (including foodborne disease with the Veterinary and Food Board) and an obligatory report is prepared. County departments of the Health Board Regional Service are responsible for the detection and investigation of outbreaks of communicable disease. Investigation procedures include epidemiological investigations, laboratory diagnostics and, if necessary, legal action.

Environmental health protection

Environmental health protection is mainly the responsibility of the Ministry of Social Affairs (Department of Public Health), the Health Board and the Ministry of the Environment (through the Environmental Inspectorate).

A system of health impact assessment of environmental factors is in place. In accordance with the Environmental Impact Assessment and Environmental Management System Act, a limited number of licensed experts assess the potential impact of objects and activities on human health and well-being. However the impact assessments are rather general and lack details. Therefore, a new risk assessment bureau was created in 2010 with the main tasks of analysing health threats and risks from the living environment, preparing guidelines for the assessment of the impact of environmental risks on health and informing the general public of health risks. However, at the time of writing there is only one expert working in the bureau and further capacity building and improved collaboration is needed.

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 surveillance is divided between the Ministry of the Environment (through the Environmental Inspectorate), the Ministry of Agriculture (through the Veterinary and Food Board) and the Ministry of Social Affairs (through the Health Board). The Ministry of the Environment is responsible for ensuring and preserving the quality of both ground and surface water. Responsibility for protecting the health of the population and coordinating activities in the area of drinking and bathing water falls under the Health Board. As both food safety and environmental health issues are important parts of the EU acquis communautaire, Estonia's accession to and membership of the EU has brought about considerable investment in these areas.

The responsibilities and measures with regard to air pollution and noise are regulated by the Ambient Air Protection Act, which, together with specific regulations, covers all requirements set out in the relevant EC directives. The Environmental Inspectorate and the Health Board have shared responsibilities in supervision of the air, while noise is solely the responsibility of the Health Board.

Activities related to food safety are regulated by the Food Act. Since 2007, the Ministry of Agriculture, with its Veterinary and Food Board, is the leading institution for all major legislation and supervision concerning food, including alcohol. Data, investigations and evaluations are provided for risk assessment via different regular monitoring programmes and laboratory analyses by authorized official laboratories.

The main legislative act in emergency planning is the Emergency Preparedness Act, adopted in 2009 to provide a framework for the organization of planning and action during emergencies. There are two specific emergency plans for health that have been adopted by the government. These are the emergency plan related to epidemics and the plan for mass poisoning. In 2004, an Influenza Pandemic Preparedness Plan was developed in the Ministry of Social Affairs.

The Health Board is also responsible for chemical safety (including detergents and biocides) and cosmetic products. The Poisoning Information Centre was established in 2008 and is now part of the Health Board; it maintains a database with information on first aid and therapy for each type of poisoning and informs the public. A telephone hotline has seen sharply increasing numbers of calls.

Occupational health

The Occupational Health and Safety Act (adopted in 1999) regulates responsibilities in the field of occupational health and safety at the state and enterprise level. Employers are responsible for assessing occupational hazards, preparing a written action plan and notifying their employees of risk factors. The Labour Inspectorate is responsible for supervising employers' compliance with these regulations. The Advisory Committee on the Working Environment at the Ministry of Social Affairs issues recommendations in terms of work environment policy development and implementation.

The occupational health specialist's role is to ascertain environmental risk factors at work, conduct medical check-ups and advise with regard to the working environment. Employers have to provide regular medical check-ups

for their employees. The Health Board is responsible for the licensing and training of occupational health specialists and participates in the development of occupational health programmes and their implementation.

Occupational health is monitored using various health statistics on occupational conditions, work-related health conditions and occupational accidents. The employer has to inform the Labour Inspectorate of any incidents after which an investigation occurs. However, underreporting is of concern.

Since 2008, EU structural funds have been allocated to activities to reduce work-related health risks and to promote health in the workplace. A development plan for health-promoting workplaces was drafted. In 2010, the Ministry of Social Affairs adopted a separate Occupational Health and Safety Strategy for 2010–2013 with an action plan (Ministry of Social Affairs, 2010). Although the introduction of unemployment insurance has been a positive example, introducing work accident and occupational disease insurance has not been feasible because of lack of consensus. Although introducing such an insurance scheme was included in the government coalition programme for 2011–2015, developments are still in the early stages.

Health promotion and education

In 1995, the Ministry of Social Affairs introduced a financing mechanism for national and community-based health promotion projects and started training regional community health promotion coordinators. At the beginning, health promotion projects were mainly financed from the health insurance funds, but later parallel funding from the EHIF and the state budget also occurred. Since 2010, these community-based activities have been financed from the ESF because of cuts in the state budget.

With the adoption in 2005 of the National Strategy for the Prevention of Cardiovascular Disease 2005–2020 (Government of the Republic of Estonia, 2005), the county health promotion network was institutionalized and health promotion specialists were employed by the county governments and worked in newly established county “health rooms”. A health room is a centre for regional health promotion and health development and is responsible for implementing the county health strategy in collaboration with the local municipalities and health-promoting networks. The activities are implemented under the stewardship of an intersectoral health council, which has been created in all counties and in three cities, Tallinn, Tartu and Narva.

At the local level, the municipalities are tasked with health-promoting activities. However there is still room for improvement by responding better to the needs of the population. The municipalities and counties have been encouraged since 2009 to compile health profiles and develop related action plans. As of late 2012, 104 of 226 municipalities and all counties had developed health profiles (NIHD, 2013). The EU structural funds programme was used to create incentives and build capacities.

The NIHD is responsible for developing a national support system and national action plan as well as providing counselling, guidelines and other supporting materials and training for health promotion specialists at all levels (counties, municipalities, schools, kindergartens and workplaces). The NIHD also disseminates health information to the public.

Since 1995, the EHIF has dedicated a certain amount of its budget to health promotion activities approved by the EHIF Supervisory Board and in coordination with the stakeholder committee. These activities have been part of the national strategies since 2005 and later part of the NHP. A Public Health Council was established in 2004 at the EHIF, consisting of representatives of national authorities and stakeholders, to formulate priorities, evaluate project proposals and monitor their results. To date, project funding has been mainly focused on risk factors for noncommunicable diseases and has included various awareness campaigns and events, trainings, disseminating health information and actions that support health-promoting activities in various settings. A major proportion of the health promotion budget (42% in 2011) of the EHIF has been invested in community development, mainly for injury prevention. The aim is to shift from activities targeted at the general population to targeting risk groups or stakeholders.

Lastly, since 2004, the development and financing of community health promotion has been gradually moved from a project-based format to a more strategic planning system through the development of health profiles and planning of activities based on these, as well as through top-down planning of EHIF health promotion funding. However, the system needs further development and capacity building to ensure sustainability and equal capabilities across municipalities, as well as to focus more on health inequities. Debate is needed to clarify the responsibilities of municipalities and county governments. The end of the EU structural fund financing in 2013 necessitates renegotiating the financing schemes to ensure continuous and equal financing, as well as to put proper incentives and accountability systems in place.

Disease prevention

The NIHD, the EHIF, Health Board and Ministry of Social Affairs all have a responsibility in disease prevention. In addition, some municipalities provide counselling and harm-reduction services, such as opioid substitution therapy in Tallinn.

The NIHD is responsible for the implementation of disease prevention activities planned in the NHP and financed by the state budget as well as from the ESF programme. The functions of the NIHD are to develop preventive services, to purchase the services from providers and to provide training and supervision for these. The main services provided free of charge to users are harm-reduction and rehabilitation services for (injecting) drug users (needle exchange programmes, counselling, opioid substitution therapies); there are also HIV/AIDS voluntary testing and counselling services, smoking cessation services, sexual health and youth counselling, and the WHO DOTS (directly observed treatment, short-course) treatment for TB. Antiretroviral drugs and drugs for TB are procured centrally by the Ministry of Social Affairs and distributed to health care providers to disseminate them free of charge for patients with TB or HIV/AIDS. Alcohol brief interventions at primary care level, smoking cessation and some HIV counselling services are financed from the ESF programme; however, the funding of these services after 2013 is unclear. The access to some drug and alcohol addiction services is restricted by limited available places or high co-payments.

The Ministry of Justice provides disease prevention services in prisons. All prisoners are tested against HIV on arrival and retested once a year and receive HIV/AIDS counselling. In addition, opioid substitution was introduced into prisons and arrest houses, provided by the Ministry of Justice and Ministry of the Interior, respectively. Although this is considered a positive initiative, availability needs to be improved. TB prevention and DOTS treatment has proved to be successful in prisons as well. The main problem is ensuring care continuity after discharge from prison.

Most of the preventive services funded by the EHIF are part of either primary health care or specialized medical care, including testing, screening, counselling and immunization, as well as monitoring of pregnancies. The family doctor QBS covers child check-ups, which include criteria for vaccination coverage and health check-ups in certain age groups (1 month, 3 months, 12 months, 2 years and pre-school), as well as check-ups and counselling by family nurses for certain adult risk groups (people aged 40–60 years with hypertension or diabetes). The objective of the QBS is to motivate primary health care providers

to address prevention issues (see section 5.3). Part of the EHIF budget is specifically dedicated to national disease prevention projects such as youth health counselling on reproductive health and sexually transmitted infections; screening for phenylketonuria, hypothyroidism and hearing in neonates; prevention of heart disease; prenatal diagnosis of hereditary diseases; school health services and medical check-ups for young athletes; and a screening programme for early detection of cervical and breast cancer and early detection of osteoporosis. However, these projects do not cover uninsured people. Since 2010, school health services are provided by school nurses and the services account for the biggest share of the budget for preventive services under the EHIF.

Screening programmes for breast and cervical cancers are financed by the EHIF and coordinated by the Cancer Screening Foundation. The target group for breast cancer since 2002 is women aged 50–62 (before 50–65 years) and for cervical cancer since 2003 is women aged 30–55 (before 35–59 years). Other screening activities are carried out during regular health service provision. Even most of the cytological cervical tests (80%) are performed during regular health examinations. A mammography bus offers tests in counties to increase the availability of screening. During recent years, the objective has been to increase the participation rate as the coverage has been relatively low.

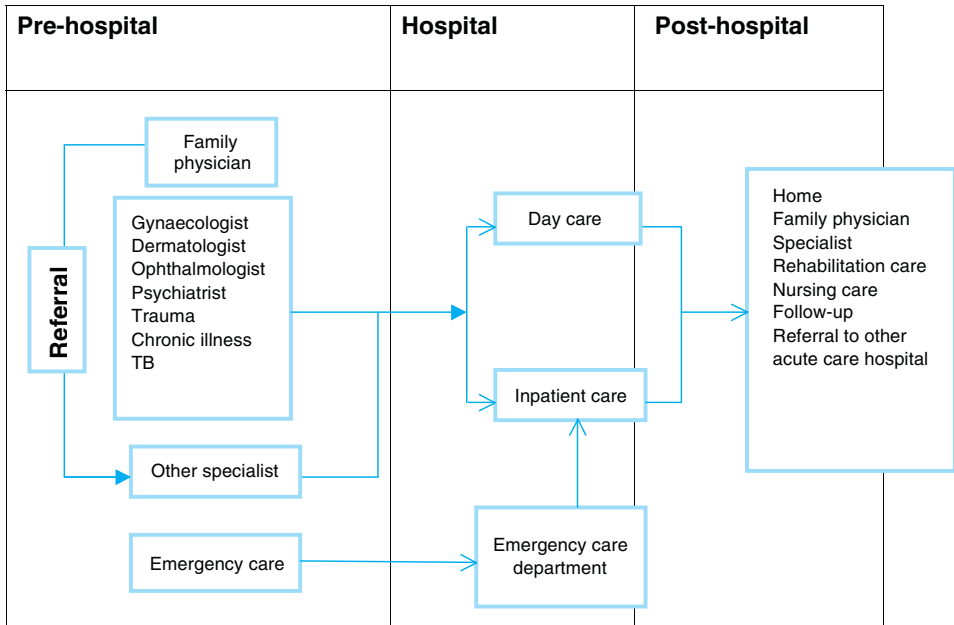
The general legal framework for immunization is given by the Communicable Diseases Prevention and Control Act 2003. The national immunization scheme is defined by regulation of the Minister of Social Affairs, organized by the Health Board and financed by the EHIF and the state budget. Immunization of children is the responsibility of family doctors and school nurses. A committee advises which vaccines to include in the national immunization scheme. Recently, vaccination against rotavirus and additional revaccination for 15–17 year olds against whooping cough was included into the scheme. Vaccination coverage has been adequate and WHO recommendations have been met. Yet in some counties the coverage has been below WHO averages. Furthermore, immunization rates are gradually declining. Immunization against seasonal influenza, which is not publicly funded, is remarkably low: 1.3% of the total population in 2011 (Health Board, 2012).

Because of the limited number of actors involved, capacity to provide public health services is insufficient (see also section 2.3). This seriously impedes coverage and access, as well as the quality of such services. However, the NIHD has taken steps to improve quality by providing regular training, supervision and mentoring opportunities to service providers in HIV and drug prevention.

5.2 Patient pathways

The patient pathway is the route a patient takes from their first contact with the health system, through referral, to the completion of their treatment. The first point of contact with the health system is usually the family physician with whom the patient is registered. Family physicians have a partial gatekeeping function. Patients need a family doctor’s referral in order to see most specialists and to be admitted as a non-emergency inpatient. Depending on the problem, the pathway can differ, as there are some specialties that are directly accessible without referral (Fig. 5.1)

Fig. 5.1
Clinical pathways in the Estonian health system



Source: Adapted from Sagan et al., 2011.

If hospital or day-care treatment is necessary, the family physician or specialist issues a referral. However, patients may bypass the family physician or other specialist in an emergency. Discharge from hospital or day-care unit for the majority of patients is to home. However, for some patients, it may be necessary to continue treatment in a rehabilitation unit or have a follow-up visit from a family physician or specialist. In some complex cases, patients will be referred to or transferred to another acute care hospital.

Dental care for children up to 19 years of age is included in the benefit package but only from contracted providers. As dental care for adults is not included in the benefit package, patients have a wide range of providers to choose.

In addition, there are specific pathways in place for patients suffering from cancer. So far, the pathways have been developed for patients with gynaecological cancers. There is also an initiative in the Ministry of Social Affairs to develop similar pathways for cardiology disorders.

5.3 Primary/ambulatory care

Prior to independence, the Estonian health system was characterized by a large network of secondary care institutions and a fragmented primary health care level, with a tripartite system of polyclinics for adults, children and women and specialized dispensaries. Polyclinics were staffed by internists, paediatricians, gynaecologists and subspecialists. Primary care doctors acted as referral points to specialists rather than as gatekeepers. At the same time, citizens had direct and free access to emergency and specialist services in dispensaries and hospitals. All hospitals and primary health care units were publicly owned and health personnel were salaried public employees. Doctors who worked at the primary health care level had low status and pay compared with specialists. The system had a curative focus but too many secondary care structures to be financially sustainable (Atun et al., 2006).

Reform of primary care began in 1991 with the aim of developing a family medicine-centred primary health care system and establishing family medicine as a medical specialty. In 1992, re-specialization courses for family practitioners started in the University of Tartu. In 1993, family medicine was designated and recognized as a medical specialty, and a new three-year postgraduate training programme in family medicine was set up. Since 2003, only one three-year residency programme is used for the training of family doctors.

The 2001 Health Services Organization Act established primary care as the first level of contact with the health system, provided by independent family doctors. Every family doctor has a service area (an area of a local government) determined by the Health Board (before 2013 by the county governor) and maintains a practice list. The Act and subsequent regulations of the Ministry of Social Affairs define the responsibilities of family doctors and family nurses in practising the specialty. The Act also establishes family doctors as private

practitioners contracted by the EHIF. Family doctors are private owners and may practise as private entrepreneurs or companies. The latter may merge only with other companies providing primary health care and may not be partners or shareholders of companies providing specialized medical care. Since 2008, the local government can act as a partner and shareholder of a primary health care company. The law also outlined family doctor activities, nursing care, social services, teaching and scientific research in health care.

Most family doctors with a practice list are contracted by the EHIF. In 2011, there were 802 practice lists in Estonia (EHIF, 2012b). In the period 1998–2002, the proportion of solo practices increased to 87% in 2000, before decreasing to 72% in 2002 (Atun, 2004) and 44% in 2011 (EHIF staff, personal communication). The consolidation of family physicians into group practices is in line with other developed countries where the scope of family medicine extends beyond gatekeeping, in order to increasingly manage and coordinate patient care (Atun, 2004).

The practice list cannot exceed 2000 or be less than 1200. In 2011, 24% of all lists had more than 2000 enrolees (EHIF, 2012b), a percentage that has not changed in recent years. Once the 2000 persons limit is reached, an assistant family doctor has to be hired to provide services to all enrolees on the practice list. A 2013 amendment to the Health Services Organization Act specifies the terms for when the maximum number of individuals exceeds 2000 enrolees with the aim of ensuring better access to primary health care. According to this amendment, any medical doctor with or without specific family doctor training can be hired as assistant doctor.

At the time of writing, the average practice list contains approximately 1750 individuals (EHIF staff, personal communication). 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 – either when the maximum number enrolled exceeds 2000 people or when the place of residence of the person is not in the service area of the family doctor concerned. However, a new person may be registered if the list already includes a family member of the applicant, for example when a mother registers a newborn.

As for geographical distribution of family physicians, 77% of them are situated in urban areas with 23% in rural areas. This proportion has not changed during the last years (EHIF staff, personal communication).

All family doctors are required to work with at least one family nurse, even though there is a shortage of trained family nurses. To stimulate compliance, the EHIF applies a coefficient of 0.8 on the capitation fee for family doctors working without a nurse: 5 family physicians out of 802 in 2011 (EHIF staff, personal communication). Since 2013, the EHIF pays for a second family nurse if the nurse has a separate room for independent work.

Minimum practice standards for rooms, furniture and equipment in practice premises are also specified by regulation and monitored by the Health Board and, in some cases, by the EHIF. The scope of services and functions of each category of primary health care personnel is specified by regulation of the Ministry of Social Affairs. Regulations specify in detail which services and investigations should be provided by the family physician within the scope of their contract with the EHIF.

The EHIF and the Estonian Association of Family Doctors agree on the terms of a basic contract. Before the start of the calendar year, the EHIF branches contract the family doctors. The financial part of the contract is revised four times a year based on changes in numbers of registered patients (see section 3.3.4).

The family physician model is supported by the payment method. Family doctors are paid a combination of a basic monthly allowance, an age-weighted capitation fee per registered insured per month, some fees for services provided, additional payments based on distance to the nearest hospital and performance-related payment (see also section 3.7.1).

The Ministry of Social Affairs, Health Board and the EHIF monitor access and quality of primary care. Family doctors are required to schedule at least 20 visiting hours a week. Furthermore, the practice reception must be open between 08:00 and 18:00 hours every working day and the practice premises must be open for at least eight hours each working day, of which at least one day a week must be until 18:00. The independent reception hours of a family nurse have been increased since 2010 from 10 to 20 hours (2013) per week. A regulation of the Minister of Social Affairs requires that a patient with an acute condition must be provided with an appointment with a family doctor on the same day, and in non-acute cases within five working days. According to information gathered from family physicians, 99.5% of patients with acute conditions had an appointment with the family doctor on the same day in 2011, which is similar to the previous year's observations. 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 five working days (EHIF staff, personal communication).

Since 2005, the Family Doctor Hotline service offers 24-hour access to primary health care consultation for the public, 7 days a week and 365 days a year. It aims to provide access to medical advice when family physician offices are closed and to decrease the burden on emergency rooms and ambulances. The service is available for everybody irrespective of insurance or residence status. The number of calls made has increased from an average of 380 calls per 24 hours in 2005 (EHIF, 2006) to an average of 595 calls per 24 hours in 2011 (EHIF, 2012b). The service is free of charge for the first five minutes. Public awareness about the service has increased. The share of people that have used this service during out-of-office hours increased from 4% in 2006 to 18% in 2011 (Saar Poll, 2011). The main reason for calling was related to a health problem, yet 1% of calls involved organizational questions.

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 (see section 5.2). Until 2012, a patient could continue to see the specialist once a referral was made by a family physician. Since 2012, however, only patients with severe conditions needing special monitoring may continue visiting the specialist without referral. The aim of the change was to strengthen the disease management role of the family doctor.

Patients have to pay the full price, out of pocket, for any specialist consultation without referral from their family doctor. There are exceptions; for example, patients have direct access without referral to ophthalmologists, dermatovenerologists, gynaecologists, psychiatrists, dentists and pulmonologists (in case of TB), plus all needed specialist care in case of trauma.

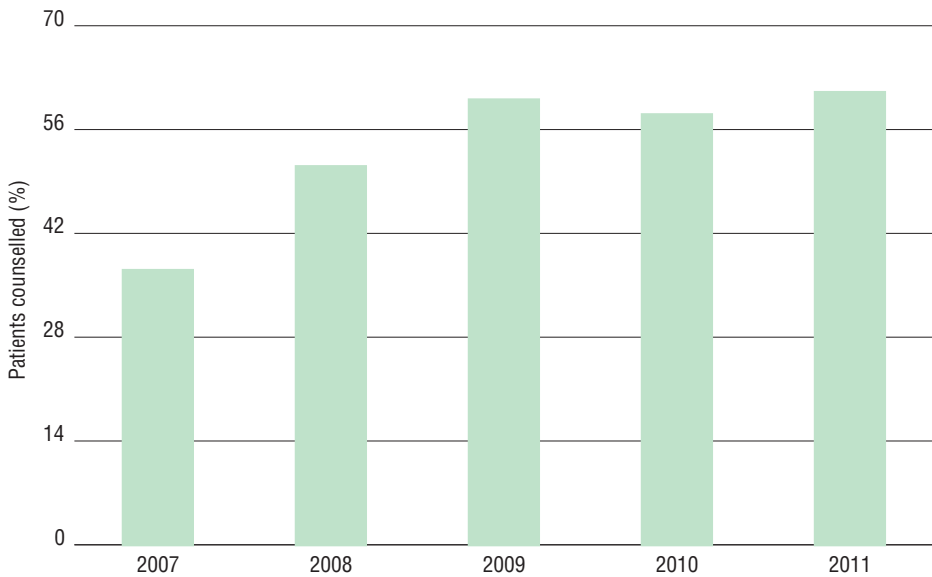
Although in some cases the chronically ill have direct access to specialists, analysis of the effectiveness of primary health care demonstrates strong evidence for a shift from secondary to primary care. This is also linked to the family doctor QBS, a performance payment system that was introduced in 2006 (see also section 3.7.1).

The patients of family physicians who participate in the QBS are better covered by preventive activities and systematic monitoring of chronic illnesses (EHIF, 2012b). As a result, more chronic illnesses are managed in the primary health care setting, with an increased number of primary care consultations and reduced referrals and hospital admissions.

The role of the family nurse has become very important within primary care teams. A shift in responsibility from family doctors to nurses has taken place, for example in managing chronically ill patients, pregnant women and healthy neonates; consequently, the demand for qualified family nurses has increased. In 2007, certain indicators were added to the QBS to assess how a family nurse has counselled patients with diabetes and hypertension. Family nurses can counsel in the early stage of the disease when it has the highest positive effect. This should ensure more efficient monitoring of chronic illnesses and improve treatment results. Fig. 5.2 shows that counselling by family nurses of patients with type 2 diabetes has increased from only 37% of total diabetic patients in 2007 to 61% in 2011.

Fig. 5.2

Coverage of patients with type 2 diabetes counselled by family nurses in 2007–2011

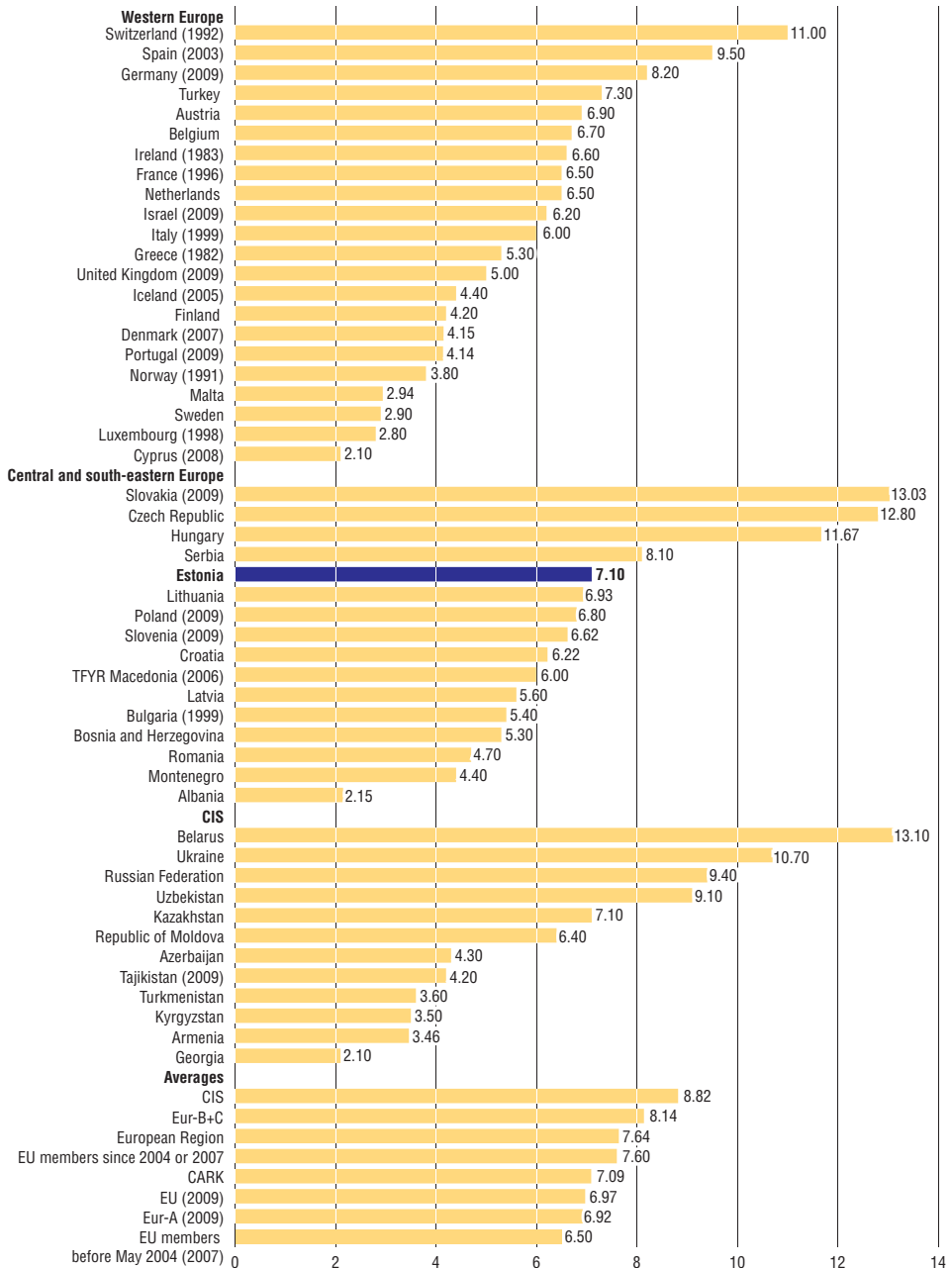


Source: EHIF, 2012b.

Visits to family physicians accounted for 49% of approximately 8.3 million outpatient contacts in Estonia in 2011 (NIHD, 2013). From a European perspective, the number of outpatient contacts per person per year in Estonia (7.1) is between that for the EU15 (6.5) and that for the EU12 (7.6) (Fig. 5.3).

Fig. 5.3

Outpatient contacts per person per year in the WHO European Region,
2010 or latest available year



Source: WHO Regional Office for Europe, 2013.

Notes: CARL: Central Asian Republics and Kazakhstan; CIS: Commonwealth of Independent States; Eur-A,B,C: Regions as in the WHO list of Member States, last available year; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

The challenges for primary health care are related to infrastructure, which is in need of capital investment to bring primary health care centres to a standard that will enable provision of extended primary health care services. This should contribute to achieving a shift from secondary to primary care. However, the biggest challenge, a shortage of human resources, has remained in recent years, with insufficient numbers of family doctors and nurses (see section 4.2), particularly in rural areas, where a lack of incentives complicates attracting health professionals.

5.4 Specialized ambulatory care/inpatient care

Prior to the 1990s, a large-scale network of secondary care institutions (polyclinics) characterized the Estonian health system. The system had a curative focus, with excessive secondary care structures. Since the early 1990s, the delivery of specialized medical care has undergone extensive reform. 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.

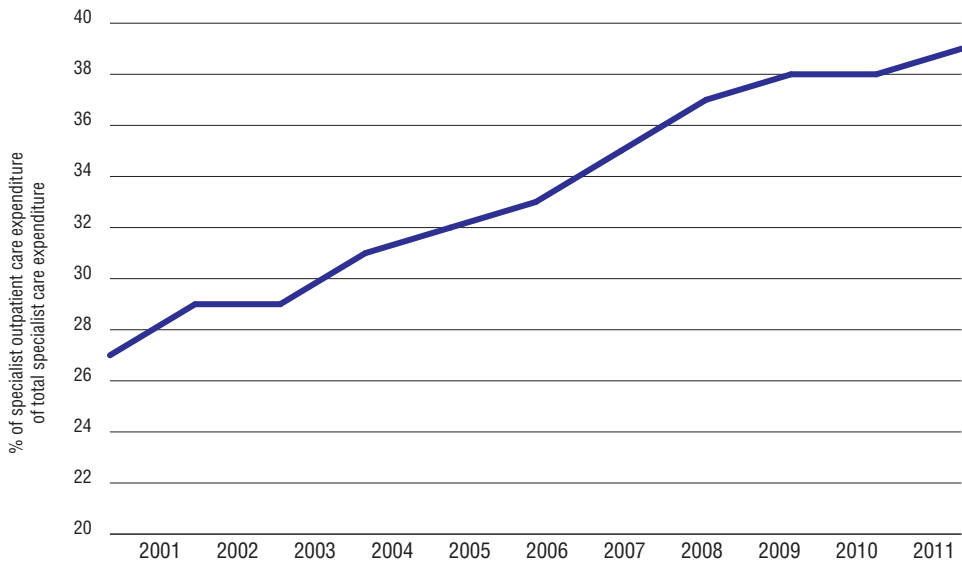
The main drivers of hospital network reform were the overcapacity of acute care hospital beds, low bed occupation rates, a low proportion of outpatient care services (including day care) and a disproportionately high average length of stay in acute inpatient care. The establishment of a hospital licensing system in the mid-1990s, merging of hospitals since 1999 and the adaption of the Hospital Development Plan led to a reduction in acute care beds.

According to EHIF expenditure data for the period 2001–2011, an increase in outpatient care (including day care) expenditure as a proportion of total specialized care expenditure increased from 27% in 2001 to 39% in 2011 (Fig. 5.4). However, more room exists to shift services from inpatient to outpatient care settings (see also section 5.4.1).

Since 2001, the ownership, legal status and governance of hospitals are clearly defined. The hospital sector is dominated by public hospitals, and most hospitals are owned by the state, local governments or public legal bodies. In many instances, hospitals have multiple owners, or the state and municipalities jointly own one hospital. All hospitals are required to operate under private law as joint-stock companies or foundations (see also section 4.1).

Fig. 5.4

Specialized outpatient care as a percentage of total specialized care expenditure, 2001–2011



Sources: EHIF, 2003, 2004, 2005, 2006, 2008, 2010, 2012b.

Hospital management structures were agreed in 2001 and since then a two-tier management model (supervisory and management boards) has been in operation. Hospital owners or founders nominate supervisory board members. The role of the supervisory board is seen as “to protect the public interest” and it is responsible for strategic planning and supervision over the management board. The supervisory board of each hospital often has active politicians representing local government (although recently some politicians have been opting to appoint technical professionals on to hospital boards). The chief executive officer of the management board is appointed by the supervisory board, while the members of the management board are appointed by either the chief executive officer or the supervisory board. The management board is responsible for running the hospital according to supervisory board guidance (Habicht, Habicht & Jesse, 2011).

Hospitals in Estonia are divided into regional, central, general, local, special, rehabilitation care and nursing care hospitals depending on the catchment area, services provided and/or the location of the hospital. The geographical location of hospitals has been chosen to ensure that treatment is available to everyone within 70 km or a drive of 60 minutes. For each type of hospital, there are

special requirements established by the Ministry of Social Affairs, such as the list and scale of services to be provided and standards for the rooms, medical equipment and medical staff.

Regional hospitals provide a full range of health care services. Central hospitals deliver most services; however, some services, such as cardiosurgery, neurosurgery and certain oncological services, are excluded. General hospitals provide 24/7 emergency care as well as intensive care and some surgical and medical specialties. Local hospitals deliver 24-hour doctor-based emergency care but no surgeries.

Ambulatory specialist care is provided by health centres, hospital outpatient departments and specialists practising independently. Specialized outpatient care providers may be joint-stock companies or private entrepreneurs. The relationship between the health care providers and the EHIF is based on contracts, and both public and private providers can hold contracts with the EHIF. The EHIF is allowed to selectively contract health care providers but has to contract all HNNDP hospitals (see also section 3.3.4). The contracts with selected providers are agreed for three years, with HNNDP hospitals for five years. However, the financial appendices of the contracts are negotiated yearly. Personnel in hospital-based outpatient and inpatient care departments are salaried employees.

In 2011, there were 167 different specialized in- or outpatient (including day care) care providers with an EHIF contract (EHIF, 2012b); 165 of these provided ambulatory specialist care, 31 hospital services and 37 day-care services. If health care providers are operating without EHIF contracts, the patient has to pay for any provided health service as OOP payments. Patients generally need a referral to be admitted as a non-emergency inpatient; however, some ambulatory specialties are accessible directly and without referral (see sections 5.2 and 5.3).

Access to care is regulated by a decree of the Minister of Social Affairs. Requirements for accessibility describe the maximum waiting time. Decisions about waiting time targets for ambulatory specialist, day care and inpatient care, which were first made in 2001, were delegated to the EHIF Supervisory Board in 2002 and are revised regularly. The last revision in 2009 increased waiting times as part of a larger cost-containment package implemented because of the economic recession. At the time of writing, the maximum waiting times for specialist care were six 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 for

children up to 18 years, 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. Proper management of waiting lists enhances insured individuals' access to medical care. The EHIF collects provider-level data on waiting times broken down by specialty (in some case by procedure) and reason on a quarterly basis (on a monthly basis for HNDDP). Data on waiting times are monitored by the EHIF regional branches, and the contract volume is adjusted if there are insured individuals who have not been treated within the target limits. At the end of 2006, 2007 and 2011, for example, extra funds were allocated to shorten waiting lists in problem areas and specialties. The effect on waiting time was temporary and had no lasting effect on better access to care: 22% of patients had to wait more than two months to get to a specialist in 2012 compared with 14% in 2011 and 11% in 2010 (EHIF and Ministry of Social Affairs, 2013).

According to a series of EHIF surveys conducted in 2011 and 2012 (EHIF, 2013c), the lack of medical doctors in some specific areas rather than limited financial resources has become the main hindrance to timely access to care. According to a survey conducted in September 2012 (EHIF, 2013c), there were greater access problems in outpatient specialized care for some specialties such as neurology, dermatovenerology, urology and otorhinolaryngology. However, there were large differences between hospitals. As waiting list data are updated regularly, patients are free to move to a shorter queue.

Quality monitoring of health care services and providers is left to professional associations and the Health Board. In addition, the EHIF regularly carries out audits and randomized controls of service provision and clinical practice to assess compliance with relevant legislation, clinical guidelines and best practice. The findings of the audits are discussed with providers and medical professionals in feedback meetings, which also involve representatives of the ministry and other relevant organizations, enabling them to discuss any problems that emerged in the course of the audit in a wider context.

To assess safety and efficiency, hospitals have established working groups with the support of the EHIF. These groups develop measurable indicators that should enable inhouse monitoring as well as comparing results with other Estonian or international hospitals. Member hospitals of the group have participated in the WHO Performance Assessment Tool for Quality Improvement in Hospitals project (EHIF, 2012b).

The EHIF initiated the assessment and updating of the Estonian system for the developing of clinical guidelines in 2010 (see also section 2.8.2).

5.4.1 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 four-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 day-care licence issued by the Health Board. Approximately 70% of day-care cases is related to day surgery (EHIF, 2011a) covering a wide spectrum of surgical procedures 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 and tonsillectomy. Day surgery activities are most advanced in ophthalmology, where most cataract operations are performed in a day-care setting. However, for other specialties, implementation of day care varies according to the preference of a specific service provider. For example, on average, 20% of hernia surgery in 2010 was provided as day surgery, yet between hospitals this share varied between 0 and 100% (EHIF, 2010). In addition to surgical procedures, day care covers some non-surgical procedures such as hemodialysis, chemotherapy and different diagnostic procedures.

Day care is mainly financed through contracts with the EHIF (see section 3.3.4). In some areas, providers have established private practices and are not contracted by the EHIF; consequently their services need to be paid out of pocket by patients. Improvements in surgical techniques and health technology have brought about a widening range of procedures suitable for day care.

The development of day care and day surgery was stimulated in 2002 through separate financing of day-care settings from ambulatory and hospital settings. Strategic purchasing was introduced by the EHIF in 2004 to increase efficiency. The volume of day-care services is agreed in the financial appendix of the contract(s) with health service providers. Over the years, there has been a continuous increase in the volume of day-care services. Between 2004 and 2011, the number of day-care cases almost doubled (increasing by 96%), although it decreased during 2008–2010. In 2011, day care exceeded 30% of total surgeries.

In conclusion, there is still room to transfer surgeries from inpatient settings to day-care settings. For example, it is possible to increase the day-care share of varicose vein operations, different laparoscopic procedures, several orthopaedic and gynaecological surgeries and other procedures. However, this shift cannot happen overnight. Prerequisites for improving day surgery are the

selection of suitable patients, preparation for surgery and patient adherence to recommendations for postoperative treatment. In addition, it is necessary to change the organization of work and the infrastructure of providers, as well as the attitudes and opinions of health care providers and patients.

5.5 Emergency care

In Estonia, ambulance services are 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 ambulance 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, comprise mixed models in which the ambulance has 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 undergone several changes. From the early 1990s through to 1997, services provided by ambulance teams to insured people were financed by regional sickness funds, while services provided to the uninsured were funded from the state budget. In 1997, financing was centralized within the Central Sickness Fund, but coverage was still governed by insurance status. Since 1998, all ambulance services have been financed from the state budget. This ensures that everyone in Estonia (citizens as well as temporary residents) is entitled to receive ambulance services. In 2002, responsibility for purchasing and monitoring ambulance services was shifted from the Ministry of Social Affairs to the Health Board, under the supervision of the Ministry.

The Health Services Organization Act established the regulatory framework for ambulance services. The owner of the ambulance crew must hold a Health Board 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 apart from the provision of emergency medical care. Hospitals are exempted from this rule. In 2011, 50% of the total ambulance crews was owned by hospitals and the rest by other types of legal owner (Health Board, 2012). The government establishes the procedure for cooperation in emergency care between the emergency medical staff, hospitals, the Estonian Rescue Board and the police authorities; the Ministry of Social Affairs determines 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 Health Board is responsible for purchasing and administration of ambulance services and negotiating 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.

An ambulance network covers all of Estonia and provides accessible services to all citizens. In addition, there are emergency medical units in hospitals staffed by specialists in emergency medicine 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. Every call is prioritized depending on the patient status and the time within which an ambulance crew should be sent to the patient. In a life-threatening situation (called D or delta priority), the crew is sent out within one minute. A C (charlie) priority means the patient has a severe health status or there is threat to his/her life and the crew is sent out within four minutes. Calls B (bravo) and A (alpha) have lower priority and the crew has to be sent out within two hours.

Administratively, the call centres belong to the structure of the Estonian Rescue Board, which is a government institution under the Ministry of Internal Affairs. One of the tasks of the call centres is to prioritize received calls according to specified guidelines. The patient pathway in an emergency care episode (stroke) in Estonia is described in Box 5.1.

Box 5.1 Emergency care episode for stroke in Estonia

1. A man with stroke at the weekend or during out-of-office hours calls the Rescue Centre.
2. The call will be answered by a dispatcher, who prioritizes the received call according to specified guidelines.
3. Because of its high priority (stroke), an ambulance crew is sent to the patient's home.
4. The ambulance crew evaluates the situation, diagnoses and provides on-site treatment and takes the patient to the hospital emergency department.
5. In the emergency department, triage is by an emergency medical specialist.
6. Because the stroke requires immediate attention, further treatment is provided directly.

Another possibility is that patient goes (or is taken by his/her family, friends etc.) directly to the emergency room without calling the rescue centre (see section 5.2).

In 2013, a total of 24 ambulance crews are led by a doctor specializing in emergency medicine or intensive care, and 66 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 part of the crew. On some occasions there is an emergency medical care technician instead of a nurse, because of the lack of qualified workforce in rural areas. Furthermore, there are resuscitation (cardiopulmonary) crews located in Tallinn and Tartu, providing ambulance services all over the country. In 1999–2007, the average number of emergency medical care visits per year was approximately 250 000. In recent years, the number of visits has slightly increased, to approximately 273 000 in 2011 and 2012 (Health Board, 2012). Quality monitoring of emergency care services and providers is mainly left to professional association and the Health Board.

A plan to restructure ambulance services was prepared and implementation started early in 2013. The aim was to optimize the accessibility and efficiency of ambulatory services by improving the linking of primary care, hospitals and ambulance services. The plan drew considerable public attention because of the planned changes in the providers' network and a new regional approach to service provision, which would decrease the number of regions from 24 to 10. The reformed ambulance services should be operational in 2014.

5.6 Pharmaceutical care

Medicines of proven quality, safety and efficacy are available to patients in Estonia, and patients' access to prescription drugs is supported by the reimbursement system. Estonia's pharmaceutical sector is very similar to pharmaceutical markets in other EU Member States. Table 5.1 presents some basic statistics on the pharmaceutical sector in Estonia.

Table 5.1

Statistics on the pharmaceutical sector in Estonia

	2000	2005	2010
Wholesalers	56	38	44
Retail pharmacies	430	480	486
Hospital pharmacies	49	29	26
Clinical trials started per year	54	78	75
Adverse reaction reports submitted	41	79	177
Registered products, Estonian authorization	2 565	2 907	4 059
Registered products, European authorization	n/a	2 113	1 520
Percentage registered pharmaceutical products actually marketed	n/a	47	42
Pharmaceutical products reimbursed (packages)	n/a	2 769	1 729
Applications submitted for reimbursement	n/a	116	134
Share of reimbursed medicines covered by reference prices and price agreements	n/a	31	98

Source: SAM, 2011.

Note: n/a: Not available.

Distribution of pharmaceuticals

During the Soviet era, there was one manufacturing pharmaceutical plant in Estonia (Tallinn Pharmaceutical Factory), which produced a wide range of generic medicines, including injections and ointments. In the 1990s, several new production units were built, but since the early 2000s there are only two manufacturers active. The Tallinn Pharmaceutical Factory belongs to the Grindex group and specializes in the production of external semisolid preparations (ointments, creams), and Takeda-Nycomed runs a manufacturing unit in Põlva for packaging different generic pharmaceuticals. Hence, the local pharmaceutical industry produces only a few preparations for the Estonian market.

Subsidiaries of the main international pharmaceutical companies have formed the Association of International Pharmaceutical Manufacturers in Estonia, which strongly lobbies for quicker access to new medicines by expanding the list of reimbursed medicines.

Pharmaceuticals are solely distributed to the public through privately owned pharmacies. Hospital pharmacies can only provide pharmaceuticals for hospital use. The number of pharmacies has increased over the years, despite the fact that since 2005 the foundation of a new pharmacy is related to the size of the population in a community. In 2010, there was one retail pharmacy per 2800 citizens in Estonia (SAM, 2011).

There is a multichannel system for pharmaceutical wholesale activities. In 2010, there were 44 wholesalers licensed, but the three leading wholesalers cover close to 90% of the medicinal products market (SAM, 2011). Wholesalers are organized in the Estonian Association of Pharmaceutical Wholesalers, which seeks to influence policy-makers, mainly on legislative acts, licensing and medicine sales.

Pharmacy chains contain 80% of pharmacies; these chains are tightly controlled by the main wholesalers as there are no effective restrictions regarding the number of pharmacies owned by one legal entity. The pharmacy chains have been successful in lobbying legislators, and Estonian law forecasts a 7–10% margin for wholesalers and 21–25% for pharmacists. Such an implicit guarantee of income is unique in the world, as in all other countries the government acts to control the profits of the respective distributor(s). Since April 2013, pharmacies can also distribute pharmaceuticals through the Internet. Any other pharmaceutical distribution channel, such as through doctors, is not allowed so far, but there are increasing discussions on allowing the sale of over-the-counter products outside pharmacies.

There is a global trend of manufacturers of medicines stopping the production or marketing of medicines within a country once the medicine is authorized, or not making available specific pharmaceutical forms or strengths. For example, only 42% of products authorized were actually marketed in Estonia in 2010 (Table 5.1). This triggers the import and use of medicinal products without marketing authorization. In 2011, there were almost 8000 applications for the use of non-authorized medicinal products, with 110 different active substances, either for the treatment of specific patients or for use within the framework of national programmes against TB and HIV. The non-registered medicinal products account for 2% of the total market of pharmaceuticals in Estonia.

Pharmaceutical utilization

Since the mid-1990s, pharmaceutical utilization has been monitored using anatomic therapeutic chemical and defined daily dose methodology. All wholesalers report their quarterly pharmaceutical sales to the SAM, which publishes these statistics on the SAM web site. The sales data are collected in volumes (defined daily doses/1000 inhabitants per year), in units (packages) and in costs, and this provides detailed data on national drug consumption patterns and trends. In 2010, pharmaceutical sales in Estonia at wholesale prices amounted to €194 million – a 50% increase compared with 2005, and a 169% increase compared with 2000 (SAM, 2011).

There are several reasons for the increase of pharmaceutical costs. First, older pharmaceuticals have been replaced by more effective but more expensive medicines; second, 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; and third, the volume of pharmaceuticals has increased. For example, the availability of modern pharmacotherapies for the treatment of cardiovascular diseases during the period 2001–2010 in Estonia has reached the level in Nordic countries. However, despite the rapid increase also in the use of lipid-lowering drugs, the use of statins in Estonia is still the lowest among the OECD countries (SAM, 2011).

Infections caused by HIV are treated by antiretroviral drugs. The consumption of these drugs has increased 10-fold in Estonia since 2005 (SAM, 2011), while in most European countries it has remained relatively unchanged; it is now twice as high in Estonia as in any of the Nordic countries. This is not unexpected as Estonia continually has had one of the highest rates of HIV incidence in the EU. The epidemic of HIV has now reached a stage where more and more people need antiretroviral treatment. A further increase in the number of patients receiving antiretroviral treatment is expected, as, at the moment, less than half of potential HIV-positive patients consent to and comply with treatment.

One of the recent changes in the pharmaceutical sector in Estonia has been the development and introduction of e-prescriptions since 2010, which includes a digital prescription and retail delivery system of pharmaceuticals. This reform was carried out in close cooperation with other major initiatives on e-health (for more detailed information, see section 2.7).

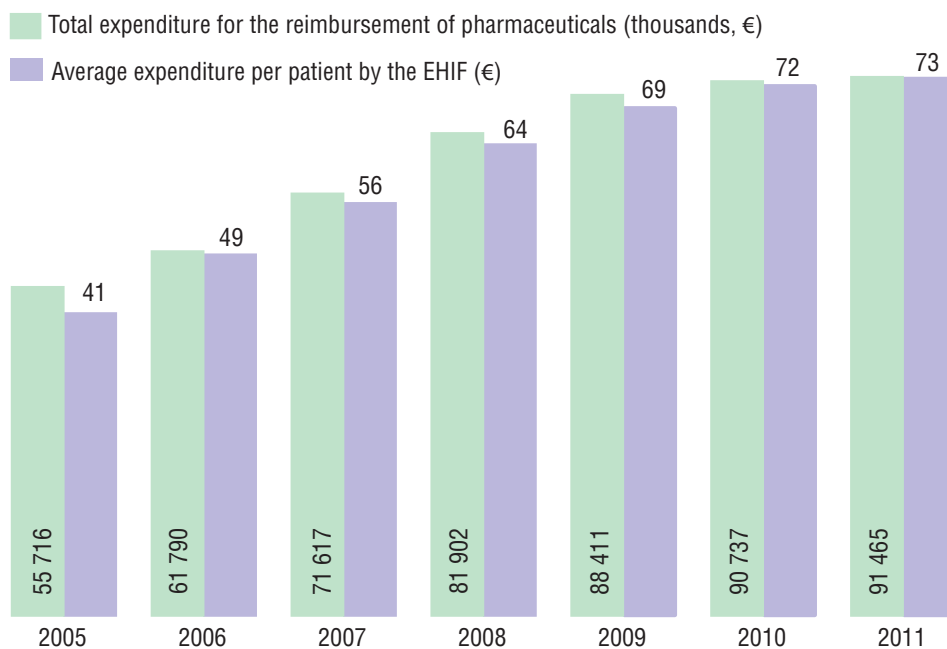
Cost-containment measures

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 the 1990s. Pharmaceutical costs increased faster than any other components of the EHIF budget and exceed the consumer price index in the health care sector considerably. Despite the cost-containment measures implemented in line with the new Health Insurance Act in 2002, pharmaceutical costs have increased every year apart from 2003.

Increasing expenditure on pharmaceutical costs necessitated the implementation of reference pricing in 2003. Although temporary cost-containment was achieved by the EHIF (Fig. 5.5), patient cost-sharing has gradually increased (Table 5.2). The latter disproportionately affects low-income population groups with chronic diseases. Patients in Estonia

Fig. 5.5

Total EHIF expenditure on reimbursed prescription medicines and EHIF expenditure per patient



Source: SAM, 2011.

Table 5.2

Costs and distribution of costs for pharmaceuticals in Estonia

	1995	2000	2005	2010
Turnover of pharmaceuticals in wholesale prices (€, million)	21	72	128	194
Turnover in hospital pharmacies (€, million)	4	14	31	40
Total sales of pharmaceuticals in retail pharmacies (€, million)	23	70	127	189
Over-the-counter products (€, million)	10	22	29	36
Non-reimbursed prescription medicines (€, million)	3	7	10	10
Reimbursed medicines, patient share (€, million)	3	13	32	51
Reimbursed medicines, EHIF share (€, million)	7	28	56	92
Share of patient co-payment on reimbursed medicines (%)	24	30	38	36
Total annual use of medicines (€, per capita)	27	66	115	171
Total pharmaceutical expenditure (% of total health expenditure)	15	26	27	25
OOP expenditure on medicines (% total OOP health expenditure)	n/a	51	63	59

Source: SAM, 2011.

Note: n/a: Not available.

currently cover more than 40% of total costs of prescription medicines, which is the second highest in the EU (Kanavos et al., 2009). Patients' OOP expenses have decreased in Estonia recently: at the end of 2011, insured persons paid 10% less out of pocket per prescription than in 2010, probably because patients chose cheaper pharmaceuticals as a result of the promotion of generic prescribing.

Challenges ahead

Although reform of the pharmaceutical sector in Estonia has largely been accomplished, and the pharmaceutical sector is very similar to those in EU Member States, it needs to evolve continuously to meet changing needs and challenges.

Since pharmaceutical expenditure is increasing faster than economic growth and other health care components (Table 5.2), containing costs poses a continuing challenge for Estonia. Although reference pricing and price negotiations have been introduced, cost-containment has been limited (Fig. 5.5). The fact that the total OOP payments 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.

According to the National Audit Office (2012), the state has not been successful in organizing compensation for medicines. A large number of medicines are prescribed on brand name; medicines are more expensive than in many other countries, and the personal contribution of patients in cost-sharing is among the highest in Europe. The main reasons for this situation are insufficient competition on the pharmaceutical market, the reluctance of doctors to prescribe on the basis of active ingredients and inefficient supervision of the activities of doctors and pharmacists. Other reasons include the limited awareness and purchasing power of patients. Although the EHIF and SAM supervise both doctors and pharmacies, the situation in prescribing has not improved significantly, and medicines with reference prices are not being sold in pharmacies. The Health Board has never inspected prescribing behaviour despite being obliged to do so. Medicines are expensive and the selection is smaller than on other similar markets. Entering medicines in the list of medicines distributed at a discount takes longer than allowed. Generic medicines were included in the list on time. Only 45% of prescriptions were issued as prescriptions based on active ingredients during the audited period (this increased to 68% during the audit). Furthermore, approximately one-third of medicines with widely used active ingredients that are subject to a 75–100% reimbursement are bought for prices higher than the reference price. Many

prescriptions were issued in such a way that patients were unable to buy cheaper medicines; in addition, cheaper medicines were often not even available in pharmacies. Patients pay approximately €7 million more for medicines distributed at a discount than they should.

Changes in the reimbursement system should lead to cost-containment and a decline in OOP expenses; changes should also simplify the system of reimbursement, ensure price controls for all reimbursed pharmaceuticals, and aim to protect certain individuals (e.g. people with chronic conditions, low-income individuals) against high financial risk and access difficulties.

A review by WHO (Kanavos et al., 2009) identified the following areas for improvement in the pharmaceutical sector in Estonia:

- dealing with concerns over increasing and significant OOP expenses for prescription medicines;
- streamlining the process for drug selection for positive list inclusion and subsequent reimbursement;
- stimulating prescribing and dispensing of generics;
- facilitating generic substitution;
- creating market incentives for pharmacies to dispense generics;
- simplifying and reducing co-payments for patients;
- implementing a national programme/system to monitor and improve prescribing and use of medicines;
- monitoring the availability of medicines at pharmacy level;
- ensuring adequate and timely distribution of prescription medicines (both wholesale and retail); and
- reducing VAT on prescription medicines.

At the time of writing, the Ministry of Social Affairs has started the development of a national medicines policy to cope with the challenges ahead.

5.7 Rehabilitation/intermediate care

Rehabilitation care in Estonia is seen as an inseparable part of specialized medical care for the restoration of impaired functions, preservation of restored functions or adjustment to a disability. Rehabilitation care is provided by health care providers licensed by the Health Board. Departments of rehabilitation care

providing outpatient and inpatient rehabilitation care are located in different hospitals or health care centres. In addition, 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.

Rehabilitation care can be provided in different ways (Lukman & Nikitina, 2011). First, early rehabilitation care is delivered at the same time as the treatment of the main disease in the acute care department. This aims to prevent or alleviate complications. Second, intensive rehabilitation care is provided in the rehabilitation care unit within the first six months after illness or trauma. This is a complex activity, with a minimum of three hours of exercise per day at least six days a week. Third, rehabilitation care is also provided to maximize an individual's functional capabilities, to slow down the progression of disability and function loss, and to maintain quality of life. Rehabilitation care is also provided for children with dysfunction of the central nervous system or other serious childhood illnesses or injuries.

Rehabilitation care delivery uses a team-focused approach. The team consists of 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 by a shortage of qualified physiotherapists and occupational therapists.

The 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 larger cities receive about two-thirds more rehabilitation care services than people living in rural areas. 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 access and be more cost-effective than inpatient services.

Rehabilitation services financed by the Social Insurance Board include social services for disabled people to improve their ability to cope and work independently. This service can only be provided to a person after the severity of their disability has been established by the Board. In the course of this process, a rehabilitation plan is drawn up. The Board has contracts with different rehabilitation care providers offering rehabilitation services. The EHIF

funds rehabilitation care that is prescribed by a doctor of physical medicine and rehabilitation, and the necessary care and procedures are carried out by a physiotherapist and other specialist(s) according to the patient's condition and general status requirements.

The further challenges and developments in this area are mainly related to the need to increase the number and proportion of physiotherapists and other specialists working in outpatient settings and rural areas. Furthermore, rehabilitation care services and reimbursement conditions need improving to enable appropriate services in appropriate settings.

5.8 Long-term care

The Nursing Care Network Development Plan 2004–2015 (Ministry of Social Affairs, 2003) was prepared to provide nursing care targets to match the hospital targets set out in the Estonian Hospital Master Plan 2015. The main changes recommended by the Hospital Master Plan were to turn small hospitals into nursing care homes and to develop non-institutional nursing care services that provide home nursing and day-care nursing. Even though the volume of home and day nursing services has risen year by year, these services still do not meet demand. Nursing care is usually provided by health care providers licensed by the Health Board. The main beneficiaries are people, often elderly, with several chronic illnesses who require help with treatment procedures and who cannot cope with the tasks of everyday life, and 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 because of inadequacy of premises and lack of trained personnel (nurses, caregivers). Many nursing hospitals and welfare institutions face an acute shortage of space and there has also been a shortage of nursing care beds. However, the situation has improved in recent years and financial support from the ERDF for the period 2007–2013 has facilitated the development of nursing care facilities (see also section 3.6.2).

The health care and social welfare systems are organized and financed separately, which hampers integrated provision of services based on individual needs. Health care services are funded through the EHIF, while the social welfare system is financed from the state budget and by municipalities but lack of funds limits the accessibility and quality of nursing care services. Many residents in social care homes also need nursing care, but the amount of care provided is constrained by limited municipal budgets or OOP payments. As

the target groups for nursing care and welfare services overlap, integration and better coordination of services are required to respond more effectively to the varying needs of elderly and chronically ill people. Quality requirements for nursing care oblige care managers and providers to use standardized care processes, 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.

The EHIF funds a substantial part of nursing care, including, since 2003, home nursing, geriatric assessment, home care for cancer patients and inpatient nursing care. Home nursing is mostly needed by immobile patients or those with restricted ability to move. The purpose of geriatric assessment is to assess a person's needs and provide them with suitable care services. Home care is also provided for patients suffering from cancer, often in the terminal phase. Inpatient nursing care is defined as 24-hour long-term nursing services provided mainly by nurses. The target group for inpatient long-term nursing care mainly comprises patients with chronic illness who need periodic supervision by health care workers and treatment adjustment.

In 2010, a 15% co-insurance rate for inpatient nursing care was introduced. This plan was proposed to involve patients in its financing, but it proved unpopular and was not implemented until the financial crisis necessitated tough austerity measures. This, in turn, has led to 4% lower expenditure in the planned EHIF budget for inpatient nursing care in 2011. However, in the end, 1% more patients were provided for than planned (EHIF, 2011a).

Strategies to better integrate health care and social welfare are being developed by interdisciplinary working groups, but as of 2013 have yet to be implemented. A successful implementation requires consensus between the different care sectors, along with legislative support from state bodies. However, work is ongoing and legislative amendments have been prepared and discussed between different parties. Changes are also required in financing to share the burden between the EHIF, municipalities and personal resources; changes are also needed at the service organization level, in terms of descriptions of minimum requirements and quality requirements for all nursing and social care.

5.9 Mental health care

The Estonian system of mental health services has improved considerably since the early 1990s when independent Estonia had 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 humane system in which the provided services primarily aim to improve patients' quality of life. 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 several laws and regulations. In addition to the Health Insurance Act and the Health Services Organization Act, the 1997 Psychiatric Care Act (last amendment in 2011) regulates the organization of mental health care and defines the financial obligations of the state and local governments in the organization of such care. The Psychiatric Care Act also defines procedures and conditions for mental health care provision and involuntary treatment. It applies to all psychiatric patients 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. Provision of specialized social care such as 24-hour care with medical surveillance in a social care home is organized on the national level and mostly financed from the state budget. These social care homes are distributed throughout the country.

Mental health care in Estonia is seen as part of specialized medical care and includes the diagnosis, treatment, rehabilitation and prevention of mental disorders. Mental health care is provided mainly by psychiatrists, psychiatric nurses, nurses and psychologists. To access mental health care, a patient may turn directly to a specialist for an outpatient consultation without a family doctor's referral, while for most disease areas family doctors perform a gatekeeping function. Mental health care is provided both in outpatient and inpatient settings; the latter is mostly used in the event of short-term crises or for solving complex differential diagnostic and treatment problems. Based on

the Psychiatric Care Act and the Penal Code, compulsory treatment of a person with a mental disorder is possible in court-ordered cases if all the following circumstances coincide:

- 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; and
- other psychiatric care is not sufficient.

There are no specialized psychiatric hospitals and psychiatric beds are integrated into larger multispecialty hospitals. As part of the overall trend, the number of psychiatric beds decreased from 185.8 per 100 000 population in 1990 to 52.6 in 2004 and has stabilized since. Out of the total number of psychiatric beds in 2010, approximately 6% were specifically for children and about 16% for acute disorder. The average length of hospitalization for mental health problems decreased – from approximately 100 days in the early 1990s to 17 days in 2010. At the same time, treatment was gradually shifted into outpatient settings and in recent years daily follow-up for mental health problems such as mild depression has also been shifted towards primary health care.

Mental health care expenditure is part of the specialized medical care expenditure within the budget of the EHIF. Since the early 2000s, expenditure on mental health care services has been stable at approximately 4–5% of all specialized medical care costs reimbursed by the EHIF. As indicated above, there has been a shift towards outpatient care in mental health, which is supported by changes in financing priorities. In 2011, the total costs of mental health care services amounted to €18.8 million (EHIF, 2012b). Within this figure, the proportion of costs utilized in outpatient mental health care services is increasing each year and reached 28% in 2011 compared with 21% in 2004. This probably also resulted in higher OOP spending on pharmaceuticals.

The number of diagnosed new cases of mental health problems has increased steadily from 189.3 new cases per 100 000 in 1990 to 2191.6 in 2008. It has to be noted, however, that the number of newly diagnosed diseases has increased for almost every disease group. This may be because of better access to health care and, in the case of mental health, also because of reductions in the stigma regarding mental health conditions and the increased activity of family doctors in dealing with mental disorders. At the height of the economic crisis in 2009,

the number of newly diagnosed mental health problems decreased almost 20% compared with 2008 but reached 2057.3 new cases per 100 000 population in 2011 (WHO Regional Office for Europe, 2013).

Finally, it has to be noted that there is no specific mental health plan. However, the NHP (Ministry of Social Affairs, 2008) also covers mental health care and there is a development plan for a psychiatric specialty. A new development is in child mental health, where a plan for integrated provision of different child welfare services is in the planning stages. This is a collaboration of the health and social care sectors of the Ministry of Social Affairs, the Ministry of Education and the Ministry of Justice in the context of grant funding from the Norway and European Economic Area scheme.

Individuals suffering from mental disorders have formed some supporting NGOs. The mission of such 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 so far.

5.10 Dental care

The regulatory framework for dental care provision is laid out in the Health Services Organization Act and the Health Insurance Act. Dental care is one of the specialized medical care specialties in Estonia that may be provided by companies or private entrepreneurs provided they have a licence to provide such care. The facilities and equipment have to meet the requirements established by the Ministry of Social Affairs. As a result, both private health care providers and to some extent publicly owned hospitals deliver dental care.

Initially, since 1991, dental care was part of the benefits package financed by the EHIF. All dental care services were provided for all insured patients free of charge by public providers. Because private providers had the right to charge unlimited co-payments, dentists increasingly decided to practise privately. By the end of the 1990s, less than 30% of total expenditure on dental care was publicly

covered. This led to dental care free of charge being inaccessible, long waiting times, high levels of OOP payments and fragmentation of resources between dental care providers. Moreover, it led to low utilization of dental services.

The 2002 Health Insurance Act aimed to clarify the entitlements to dental care. In a situation of constrained resources, it was decided to prioritize free dental care for children under 19 years (including orthodontics for certain diagnoses). Compensation for adult dental care was changed into a system of cash benefits, with a ceiling corresponding to one preventive visit annually. The patient pays the provider directly for the service and receives reimbursement later, after submitting an application to the EHIF. Higher reimbursement rates were established for some groups, for example pregnant women, mothers of children up to 1 year of age and those having greater need for dental treatment because of a particular condition. Responding to the economic crisis, the EHIF stopped cash benefits for adult dental care in 2009 as part of the austerity package. However, dental care for these groups of greater need remained in the benefit package (see section 3.3.1).

The EHIF also covers emergency dental care for adults but only from EHIF-contracted providers. The services related to abscess incision and/or extraction of teeth are among the ones financed by the EHIF in emergency dental care. 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 of age or who receive an old-age pension. The amount, terms and procedure of payment are determined by a regulation of the Ministry of Social Affairs.

Quality monitoring of dental care services and providers is mainly left to the dentists' professional organization and the Health Board. In addition, the EHIF has initiated and funded several medical audits in recent years (e.g. in 2003, 2004 and 2011). 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 different activities related to oral hygiene education in schools, individual dental consultations, fluoride therapy and so on. The target group for the programmes is children aged 6–12 years. The prices of dental care services funded through the EHIF are set by the same procedure as all other health care services. 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).

6. Principal health reforms

Since the publication of the previous edition of the Health Systems in Transition for Estonia (Koppel et al., 2008), no structural or principal health reforms have taken place in Estonia. That said, there have been many important developments and changes. The main focus of the period since 2008 has been to address the consequences of the financial crisis that started in that year. An austerity package was implemented involving some cuts in benefits and prices, increased cost-sharing for certain services, extended waiting times, increased VAT on medications, promotion of rational use of medicine, a focus on primary and outpatient care, and a reduction in specialized care. Salaries fell because of a fall in available funding. The EHIF used its financial reserves accrued over the growth years to counter this fall in available funding. European structural and social funds were used to offset some of the falls in public health funding and capital investment. The main goal was to ensure financial protection for the population without eroding the benefits package. More recently, discontent about salaries of health personnel, the absence of a collective agreement and high workloads formed the main triggers for a national strike of physicians and nurses in October 2012. They also argued that the government had failed to proceed with necessary structural reforms for many years, such as restructuring the provider network and addressing issues of sustainability of the health system. An agreement to end the strike was reached in December 2012. Several problem areas and actions to ensure health system sustainability were collectively identified and addressed in a roadmap. However, it is too early to predict whether structural reforms will actually follow and what the long-term outcomes of the strike will be.

6.1 Analysis of recent reforms

6.1.1 Measures taken during the economic crisis and recession

During the economic crisis the main achievement was that the financing of health care services was maintained at an adequate level. Although there were slight decreases in service use during the economic crisis, it is difficult to interpret whether these were the result of the economic crisis itself or of changes in supply, such as the decline in hospital care. Interestingly, the volume of different laboratory and diagnostics testing remained the same or increased, which could imply that providers tried to offset falling revenues. Furthermore, the share of patients who reported an unmet need for health care services fell from 9.5% in 2007 to 4.2% in 2009 in specialist care and from 5.7% in 2007 to 2.0% in primary care, which may be the result of fewer people actively seeking access to these services (Statistics Estonia, 2013). Several austerity measures were implemented that were designed to prevent strong service provision reductions and negative health impacts. Some of these measures were planned earlier but the crisis provided a sense of urgency for their implementation. However, no serious structural reforms were implemented during the crisis, partly because effective financial measures made them unnecessary and partly because structural reforms had been carried out as a response to crises a decade previously.

First, in 2009, the government increased general VAT from 18 to 20% and VAT on medicines and medical devices from 5% to 9%; this increased the expenditure of health care institutions and OOP costs for patients, yet harmonization with the overall VAT level was avoided. The very conservative governmental fiscal policies maintained and prioritized public spending on health, and it even increased as a share of total public sector expenditures, although in absolute terms, spending in 2011 was not yet on the pre-crisis level (not taking inflation into account).

Second, the reimbursement price of all health care services were reduced, waiting times for outpatient care were increased, some benefits were cut and a 15% patient co-insurance for inpatient nursing care, which was planned before the crisis, was introduced. The initial reduction of reimbursements was 6% and indirectly resulted in a 5–10% reduction in total salary, mainly from cuts in bonus payments. By 2012, the reimbursement rate cuts were reversed, but in 2011 health service prices were still 5% lower (3% in primary health care) than before the crisis. Waiting times for contracted outpatient specialists increased from 4 to 6 weeks for non-acute conditions. Furthermore, apart from

the increased cost-sharing for nursing care, an increase in cost-sharing per hospital-day (from €1.60 to €2.5 per day) and a fee for ambulatory care visits for chronic conditions (to €5) was planned during the crisis and came into force in 2013. However, co-payments for primary care visits were not implemented despite strong pressure from the Estonian Family Doctors' Association.

Reducing the benefit package (which includes sick leave benefits) has been another important cost-containment approach. First, temporary sick leave benefits were partly shifted to patients and employers. Since July 2009, the first three (previously only the first) days of sickness or injury are without sick leave benefits, employers now cover from the fourth to the eighth day, while the EHIF pays sick leave from the ninth day (previously the second). The benefit was also reduced from 80% to 70% of the sick person's income. These changes amounted to 10% savings in the EHIF budget and helped to keep the reduction in reimbursements for health services at 6%. Second, since 2009, insured persons aged 19–63 years are no longer eligible for the annual dental care benefit of €19.18. Instead, this reimbursement can only be claimed by pregnant women, mothers of children up to 1 year of age, people with a greater need for dental treatment because of a particular condition, those 63 years of age or older, and people with work incapacity. At the same time, health insurance coverage was extended to officially registered unemployed people who are following an active labour market programme. Before, the coverage lasted up to two months of unemployment. Nevertheless, population coverage declined slightly from 96% in 2008 to 94.5% in 2011 (EHIF, 2008, 2012b).

The EHIF used accumulated reserves collected during growth years to smooth over the fall in revenues in 2009 (by 11% compared with 2008) but it was still necessary to make changes in benefits to avoid debt in the longer term. The crisis highlighted the vulnerability of a system relying on payroll taxes in times of high unemployment and an ageing population. As of 2013, it can be said that the EHIF and the Ministry of Social Affairs have weathered the crisis successfully and used it to push through long-standing plans and measures. Most EHIF reserves have remained unused, which still leaves enough capacity to cope with potential future crisis relapses.

Public health programmes and strategies were severely affected by the economic crisis as these are mainly funded from the state budget, which was reduced twice in 2009. Cuts for prevention programmes for communicable diseases and illicit drug use were somewhat less severe: 18% reduction for HIV/AIDS, 26% for illicit drug use, 34% for cardiovascular diseases and 40% for cancer prevention strategies in NIHD compared to 2008 (NIHD and MoSA

staff, personal communication). The key change in 2010 was that a significant share of funding was shifted from the state budget to the ESF programme even though this fund was supposed to be used for complementing existing public health activities with new initiatives. To maintain access to public health services, testing, counselling, harm reduction as well as rehabilitation and treatment services for drug addicts or activities targeting risk groups and young people were prioritized. In addition, funding for central procurement of vaccines, TB and antiretroviral drugs was unaffected. Hence, the main cuts were made in primary prevention, public campaigns and training, while new initiatives were put on hold. At the time of writing, public health funding has not been fully restored to the pre-crisis level.

6.1.2 Measures to improve efficiency and performance

Improving efficiency and performance of the Estonian health system has been a long-standing goal. Among the initiatives since 2008 are several e-solutions (including the e-health system and e-prescriptions), restructuring of ambulance services, a drive towards prescription of generic drugs, primary care strengthening and support for doctors in remote areas, as well as modernization of acute care and nursing care hospital facilities (mainly funded from the EU structural funds). The merger of the Health Inspectorate, the Health Care Board and the Chemicals Notification Centre in 2010 into the Health Board was intended to improve organizational efficiency and collaboration. Furthermore, adoption of treatment guidelines, evidence-based medicine, HTA and improving care quality has been on the agenda.

Strengthening primary health care while increasing efficiency and access to care

Strengthening primary health care by giving it a central role in Estonian health care has been a long-standing priority, especially with regard to chronic disease management, care continuity and access to care. This priority is highlighted in the current government's Coalition Agreement and the adoption of the Primary Health Care Development Plan in 2009. Following this, previous primary health care management functions were centralized from county governors to the national Health Board by an amendment of the Health Care Organization Act that came into force in 2013. It is hoped that this will achieve a better performing primary health care system through needs-based planning and optimized resource use, plus better access to primary health care services in rural areas by introducing incentives. Further, a central substitution system for family doctors and nurses is under preparation to cover personnel shortages caused by holidays or leave.

An amendment to the Health Insurance Act from 2012 seeks to strengthen the gatekeeping function in primary health care by lowering the number of directly accessible specialties. This is also expected to improve the chronic disease management function of family physicians and to reduce waiting times in specialized outpatient care. In addition, the age-adjusted capitation payment scheme was changed in 2012 to motivate family doctors to treat more patients with chronic conditions and improve their management (see Chapter 3).

In 2013, e-consultations and e-referrals for family physicians were introduced and financed by the EHIF. This allows family physicians to consult with specialists through an e-health system and to improve their patient care. In 2013, two specialties, urology and endocrinology, have been integrated into the system and the plan is to extend the list of specialties in the next year. The expected outcome is to increase the role of family physicians in care management and to reduce the number of specialist visits.

The responsibilities of nurses have been expanded in recent years. Since 2010, family nurses can give consultations and counselling to certain groups, for example chronically ill patients, pregnant women and healthy neonates. From 2013, after long discussions between the Ministry of Social Affairs, the EHIF and the Estonian Association of Family Doctors, the EHIF will finance an additional family nurse in family practices. Since 2010, school nurses have provided all school health services including immunizations, while midwives are now allowed to operate an individual practice and prescribe in certain cases. This change is intended to reduce the workload of gynaecologists. One of the future challenges is how to respond to the increased demand for these nursing specialists.

Promoting and enforcing generic prescription

High OOP spending on pharmaceuticals, a long-standing problem, is related to the reimbursement system and the high relative prices for pharmaceuticals in Estonia. The crisis was used as a lever to implement some long-discussed measures and in 2010 the Ministry of Social Affairs amended the decree on drug prescriptions to integrate active prescribing and dispensing of generic prescriptions based on their INN. This amendment requires pharmacies to provide patients with the cheapest generic drug with, consequently, the lowest OOP payment. In parallel, a digital prescription (e-prescription) system was launched in 2010 to replace paper prescriptions, which also simplifies INN prescribing. As a result of these measures, which were supported by a promotion campaign, the share of OOP payments by patients for pharmaceuticals reimbursement by the EHIF decreased from 38% in 2009 to 33% in 2012.

Improving performance of providers and quality of care

There have been no radical reforms in service purchasing, although in 2008, the EHIF collaborated with WHO to investigate pay for performance as a possible tool to increase service provider performance and quality of care (Maynard, 2008). A pilot study on a patient-reported outcome measure followed in 2009 for patients with knee and hip replacement (EHIF, 2011b). The pilot showed that there is no direct way to link a patient-reported outcome measure to financial incentives in the near future. However, there are discussions as to whether patient-reported outcomes could be used to determine expected waiting times in EHIF central knee and hip replacement management systems.

Furthermore, in 2011, the hospital's feedback report presented the first comparable performance indicators at system level for all 19 HNHP hospitals (EHIF, 2011a). This is an important milestone in increasing public accountability and transparency within the hospital sector. Although the report provoked lively discussions in the media and among providers, additional effort is needed to develop meaningful indicators and reporting solutions.

In 2011, the Ministry of Social Affairs introduced care quality standards for cancer care, which included descriptions of patient pathways with standards on waiting times in different phases of treatment. Clinical guidelines, which are one of the key tools in evidence-based medicine, have been updated continuously and an updated version of the clinical guidelines development handbook was published based on best international practice but contextualized for Estonia.

Using e-health solutions to improve efficiency

A nationwide e-health system was launched in Estonia in 2008. This and all other e-health solutions are seen as tools to improve efficient use of health resources by reducing paperwork and duplication, and to improve medical statistics. Use of e-solutions is part of an overall national initiative to develop innovative electronic solutions to provide improved access to public services. In essence, the Estonian e-health system is a platform that incorporates a growing number of e-solutions such as electronic health records, e-prescriptions, digital image archive, patient portal, e-laboratory, e-emergency care solutions and statistics modules enabling information exchange with other e-systems. Patients can access their medical records and digital prescriptions through a patient portal and be better informed (see also section 2.7.1.)

First evaluations of the electronic health record show that providers increasingly supply information on patient contacts. More than 85% of the population has medical documents in the central database. However, the quality of the data is more problematic because information is provided to the

system using conventional summaries of medical records from which data are subsequently extracted using algorithms. This emphasizes the need for further standardization of data input. Directly linked to this issue is the development of technology that in future should automatically generate statistics from these records; these statistics would be usable by patients, doctors, providers, the state and the general public, of course respecting privacy. These data should enable all kinds of in-depth statistical analysis.

6.1.3 Ensuring sustainability of health system financing

The long-term financial sustainability of the Estonian health system was already a concern before the crisis. The population is ageing and health care is largely financed from an earmarked payroll tax paid by a declining proportion of the population. The single-payer system has served well since it was established in the early 1990s. Central revenue collection, national pooling and centrally set prices contribute to efficiency in resource use, while the breadth, scope and depth of coverage result in generally equitable access to primary care and most specialist services. An in-depth analysis by the EHIF, Ministry of Social Affairs and WHO concluded that the revenue base for health insurance needs to be broadened to ensure long-term sustainability from 2009 (Thomson et al., 2010). The report suggested keeping in place key elements of the current system: the earmarked payroll tax for health, national pooling of public funds and the single payer. In the long term, revenues should include non-employment-based taxes on capital, dividends and consumption, as well as government contributions to the EHIF on behalf of pensioners. The report also contains a host of other recommendations ranging from curbing OOP payments, keeping primary care freely accessible, enforcing generic prescribing, improving allocation processes, and cutting excess hospital capacity. The follow-up report (Thomson et al., 2011) assessed the implementation of the recommendations and concluded that there were no concrete policy initiatives to broaden the revenue base.

6.1.4 Challenges for health system governance

The major health policy initiative since the early 2000s was the approval of the NHP in 2008 (Ministry of Social Affairs, 2008; see also section 2.5). Although the NHP envisaged detailed annual action plans linked to the state budget, the overall vision for the health system was somewhat lost in all the detail. Furthermore, a process of integrating specific public health programmes into the NHP is ongoing with the purpose of reducing the administrative burden in the Ministry of Social Affairs and simplifying reporting to the government. This, however, has also resulted in an increased level of detail and complexity.

So far, developing the tools that will enable integrated planning and reporting has been prioritized, but there is still need for more coordinated planning towards intersectorally shared goals. The problem has been recognized yet it remains to be seen how the NHP can be changed from a formal management reporting tool into a strategic planning and evaluation instrument (see also sections 2.5 and 2.6).

Since the approval of the NHP, the government has had few initiatives to implement already existing development plans in the hospital sector, primary or pharmaceutical care. This has been partly because the government has focused mainly on its response to the financial crisis. In the eyes of the health workforce, this inaction was understandable for many years, but it eventually led to a major strike of health professionals in October 2012. Initially the strike was mainly about salary increases, but it increasingly turned into political demands to improve health system governance.

Almost all health care professionals in Estonia are salaried workers in health care organizations that determine their salaries. However, professional associations push the provider associations to negotiate minimum wages. The last agreement dated from 2004 so the 2012 strike was launched to seek higher salaries. In December 2012, a new salary agreement (Estonian Hospital Association, Estonian Emergency Care Association, Estonian Family Doctors' Association, Estonian Medical Association and Estonian Union of Health Care Workers, 2012) was reached, which agreed that the minimum salaries of physicians, nurses and auxiliary support staff should be increased by 11%, 17% and 23%, respectively. However, there is no political will to increase total public spending on health care, and the salary increase will need to arise from efficiency gains of hospitals and other health care organizations, as well as a limited increase in OOP payments.

The budgetary impact of wage increases is not linear, because most health workers are paid more than the minimum salaries. Yet already in early 2013 it was obvious that some hospitals were not able to meet wage demands without cutting running costs. Subsequently, all providers will have to cut investments. In addition to salary increases, the agreement included lowering the workload of health professionals by 15–20%. The technical details of this decrease are to be agreed during 2013 and will have further negative effects on access to care for patients.

The strike also brought the acting Minister of Social Affairs to call on all major state health authorities, associations of health care organizations and health care professionals to develop and sign a cooperation agreement between

the 22 organizations involved. The agreement aimed to satisfy the political demands from both health professionals and the public for improved health system governance.

Although the health professionals withdrew their consent at the last moment, in January 2013 the Cooperation Agreement in Health Care 2013 was signed (Ministry of Social Affairs, 2013). It included nine main objectives with very detailed milestones and deadlines. These objectives covered areas where the specific development plans had been put on hold because of the crisis but also some new goals for the period until 2015: developing patient-centred care, strengthening primary care, improving access to and quality of ambulance services, optimizing the hospital network, increasing the role of nursing care, rapidly increasing the intake of students to be trained as nurses and physicians, developing clinical research, implementing e-health solutions in health care and ensuring sustainability of health financing. It remains to be seen to what extent this document, which has greatly raised the expectations of the medical community, can be put into action.

6.2 Future developments

There are a number of important questions that need to be addressed in the coming years to maintain the momentum of past reforms. The challenges are diverse and include financial sustainability, ensuring an adequate workforce, accountability of different health system stakeholders, OOP levels for lower-income groups, optimizing the hospital network, strengthening primary and patient-centred care, as well as better integration of social and health care. The government plans are laid out in the government programme for 2011–2015 (Government of the Republic of Estonia, 2011a). The programme covers measures to improve access and choice, to increase financing of health care services and to increase user involvement as well as to focus more on prevention. The programme contains a list of very broad and vague priority areas but also outlines very concrete actions such as the drafting of policy documents for alcohol and tobacco control and pharmaceuticals. However, no major reform agenda is foreseen, which is also reflected in the NHP (Ministry of Social Affairs, 2008). One recently launched initiative is the modernization of the outdated Public Health Act. The new act, which is expected in 2014, should define the functions, rights and responsibilities related to public health of all the agencies and levels (state, county, local government and individuals) as well as mechanisms for intersectoral work (i.e. Health in All Policies).

7. Assessment of the health system

This assessment of the Estonian health system takes place against a background of a recovery from a financial crisis of which it may be too early to know its full impact. Life expectancy has been steadily improving since the late 1990s and is nearing the EU average. However, a large 10-year gender gap in favour of women is persisting and slows down the rate of catching up with EU averages. Many other health indicators are also improving fast, most notably infant mortality. 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. While the health behaviour of the population is improving on average, improvements are not uniform in age, gender and socioeconomic groups. With regard to physical activity and dietary habits, this translates into increasing obesity rates in most population groups but especially among younger age groups.

In health care, although volume reductions and austerity programmes were implemented, ironically, the number of people reporting barriers in access to care declined substantially during the crisis. This is likely because people postponed accessing care. While the proportion of OOP payments in health care funding has been falling since 2006, yet the burden of this expenditure is still distributed towards vulnerable groups. Population surveys indicate in parallel that overall satisfaction with Estonian health care has been stable and high. Although satisfaction with care quality has increased significantly, satisfaction with access to care has not increased since 2003.

Findings on efficiency of the health system are mixed. On the one hand, the number of hospitals, hospital beds and average length of stay has decreased to the EU averages. On the other hand, bed occupancy rates are below EU averages and there remains significant variation among service providers,

which indicates further room for improvement. Moreover, the ratio of nurses to physicians has remained stable over the years, also indicating an opportunity to improve efficiency.

Finally, comparative data from OECD countries indicate that life expectancy in Estonia is lower than could be expected from the level of health care expenditure per capita. At the same time, Estonia is nearing a point at which increases in health care expenditure return ever-diminishing increases in life expectancy. Hence, systematic changes in the health system are needed in coming years to sustain the fast gains in life expectancy since the mid-1990s. Possible areas in which to focus these changes are reducing health disparities between different population groups, improving financial protection of vulnerable groups in access and use of health care services, reducing behavioural health risks in the population and further increasing efficiency and service integration in health care.

7.1 Stated objectives of the health system

The objectives of the Estonian health system have not always been explicitly stated. At the start of the 1990s, the broad aims of the reforms were sustainable health care funding, care quality and increased patient choice. However, because of resource constraints, the broad aim of reforms carried out in the late 1990s has been improving health system efficiency. In recent years, there have been a variety of high-level governmental strategic documents that have set several health sector-related objectives and targets. First, government coalition agreements in both 2007 and 2011 stated that one of the main objectives was to achieve positive natural population growth through an increased birth rate, increased life expectancy and improved quality of life, as well as ensuring quality health care. The agreements also identified several reform areas for the coalition government, such as supporting healthy behaviour and combating communicable diseases, smoking, illegal drugs and alcohol use; sustainability of health care financing through diversification of revenue sources and more targeted use of funds; improving patient awareness; and strengthening primary health care. Furthermore, explicit health-related targets, such as healthy life expectancy, financial protection and insurance coverage, long-term sustainability, responsiveness and satisfaction, as well as specific disease-related targets, were set by the *National Reform Programme “Estonia 2020”* competitiveness strategy for achieving the “Europe 2020” objectives (Government of the Republic of Estonia, 2011b) and the four-year state budget strategies (Ministry of Finance, 2010, 2012, 2013).

The main health strategy in Estonia is the NHP (Ministry of Social Affairs, 2008), which is seen as an overarching strategy and policy guideline for the health system. It aims to guide further improvements by requiring public health and health care services to work together with other sectors, as well as focusing on “Health for All” policies. The NHP outlines priorities based on values such as human solidarity, equal opportunity and justice, access to high-quality health care services and empowering civil society. The general objective of the strategy is to increase the number of healthy years of life by reducing mortality and morbidity rates. The strategy’s five thematic areas focus on (1) increasing social cohesion and equal opportunity, (2) ensuring the healthy and safe development of children, (3) developing a health-supportive environment, (4) promoting healthy lifestyles, and (5) securing the sustainability and quality of health care. To monitor progress, performance indicators have been identified and measurable targets defined for four-year cycles leading to 2020.

In addition, measurable targets are set in specific health sector strategies, such as the National HIV and AIDS Strategy 2006–2015 and the National Cancer Strategy 2007–2015. These strategies involve measuring achievements and reporting to stakeholders with the aim of improving both accountability and transparency. The Ministry of Social Affairs also compiles annual action plans of all the activities within the framework of the NHP.

Health insurance principles and objectives are set out in legislation. They include solidarity, and limiting the level of patient cost-sharing, plus providing health services according to need, equal access to treatment and effective and expedient use of funds. To put these aims into practice, the EHIF sets its own objectives in a four-year plan approved by the EHIF Supervisory Board. The EHIF objectives include improving access to and quality of care, organizational development and also enhancing awareness and health behaviour (EHIF, 2013a).

All the aforementioned strategies and policy documents are required to include measurable objectives, and goals and targets have to be specified. These are, however, more-or-less specific to these particular documents and certain sectors and as a result reveal some inconsistencies. Unfortunately, neither the NHP nor any other policy document defines overall objectives for the Estonian health system as a whole on a conceptual or health system framework level.

Lastly, the report *Estonia, Health System Performance Assessment: 2009 Snapshot* (Lai, Veillard & Bevan, 2010), a collaboration between the Ministry of Social Affairs in Estonia and the WHO Regional Office for Europe, defined a health system framework that ties functions of the health system with its goals of health outcome (level and distribution), financial risk protection and consumer satisfaction.

7.2 Financial protection and equity in financing

7.2.1 Financial protection

OOP payments constituted 17.6% of total health expenditure in 2011, down from a peak of 25.1% in 2006 (Statistics Estonia, 2013). Rising OOP payments during 2000–2006 resulted in a higher proportion of households spending more than their capacity to pay. For example, a survey shows that in 2000 and 2006 15% and 27% of households, respectively, after their food expenses were covered, spent more than 10% of the rest on paying for health care (Võrk et al., 2010). Catastrophic payments peaked in 2006 and have fallen since then. In 2010–2011, the situation was similar to the early 2000s. In 2011, about 7.8% of all households spent more than 20% of their ability to pay on health, while another 10% were spending between 10% and 20% of their ability to pay. This means that about 82% of households spent less than 10% of their ability to pay on health. The average share of OOP payments as a proportion of total household expenditures peaked in 2006 at approximately 6% and fell to 4% in 2011. The burden of this expenditure is still distributed towards lower-income households, which spend approximately 70% of their OOP money on pharmaceuticals (national average 55%). Higher burdens are also visible for households with individuals aged 65 years and older or household members with disabilities or chronic diseases (Võrk et al., in press).

7.2.2 Equity in financing

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 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 (51% of all insured people in 2011; see section 3.3.1) covers the expenditure spent on health care for children, pensioners and other non-contributing groups. The share of total health financing from OOP payments was highest in 2006 and overall health care financing became proportional as the progressive social tax offset the regressive OOP system. In 2007, financing was slightly progressive, which meant that households with higher gross income paid more for health care (Võrk et al., 2010). Because the share of OOP payments has declined since 2006, it is plausible that financing has become somewhat more progressive (detailed analyses to be published later in 2013).

The majority of health care funding comes from public sources – approximately three-quarters of the 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 the total expenditure on health care (see Chapter 3). The older generation also contributes to public expenditure through taxes on consumption and property. However, this funding arrangement has raised questions regarding the long-term sustainability of the system and the need to diversify the sources of funding in the years to come (Thomson et al., 2010).

7.3 User experience and equity of access to health care

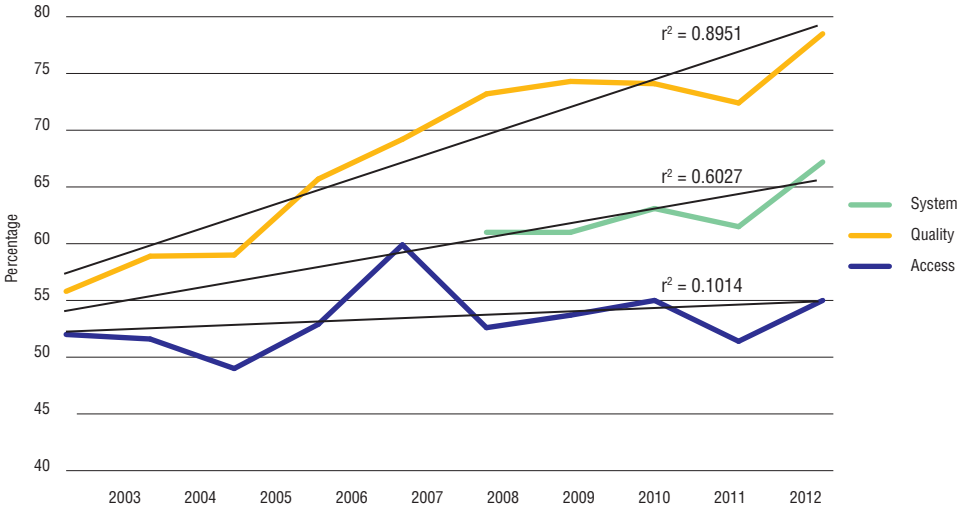
7.3.1 User experience

Satisfaction with the health care system has improved over time, although there is still room for improvement. According to the results of an annual population survey in Estonia, 67% of people were satisfied with the Estonian health care system and rated it as “good” or “reasonably good” in 2012, while the proportion of this group ranged from 61% to 63% in 2008–2011 (Fig. 7.1). More than half (55%) of the people were satisfied with access to health care in 2012, while 79% were satisfied with the quality of care in Estonia in the same year (Fig. 7.1). The level of satisfaction with care access has been stable since 2003 without a clear trend, while the overall trend for satisfaction with care quality and the health care system has been positive, even during the economic downturn. Clearly, the area in need of improvement is access to care, which was highlighted by 45% of respondents of the satisfaction survey as the most negative aspect of the health care system (EHIF and Ministry of Social Affairs, 2013). The Estonian NHP has the target of 68% of the population satisfied with access to care by 2020 (Ministry of Social Affairs, 2008).

Satisfaction with health services delivered in Estonia is high. For example, in 2012 experiences were rated as “good” or “reasonably good” by 92% of primary health care, 88% of specialist outpatient care and 94% of hospital care service users (Fig. 7.2).

Fig. 7.1

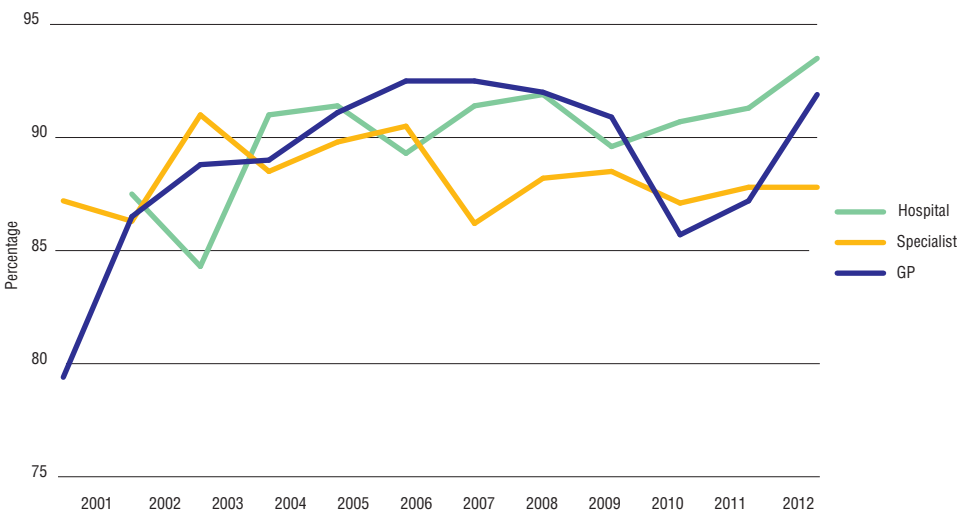
Satisfaction with the health system, quality of care and access to care in Estonia, 2003–2012, among those aged 15–74 years



Source: EHIF and Ministry of Social Affairs, 2013.

Fig. 7.2

Satisfaction with family physician, specialist and hospital services in Estonia, 2003–2012, among those aged 15–74 years



Source: EHIF and Ministry of Social Affairs, 2013.

7.3.2 Equity of access to health care

The health system does not guarantee the same level of access to the entire population. About 95% of the population has health insurance coverage. Although the NHP sets an objective of achieving universal insurance coverage by 2020, the economic crisis halted developments. Uninsured people are entitled to emergency care (covered directly from the state budget) and to some specific health care services provided as part of public health programmes (such as HIV/AIDS, TB). For other health services, the uninsured must usually pay out of pocket, although some municipalities fund a limited range of health services. Access to public health services does not depend on health insurance coverage as these are provided to the whole population.

According to the HNDP, hospital access should be available to everyone, being within a 70 km distance or a drive of 60 minutes. The Primary Care Development Plan 2009–2015 also targets equal accessibility to primary health care services for everybody. These goals are addressed through regional planning of service provision and funding schemes.

During the economic crisis, service volumes were reduced in health care. The reductions were uniform for different users and should have not reduced equity of access to that particular service. In addition, overall income inequity decreased during the economic crisis, as indicated by the rate of relative poverty (19.7% in 2008, 15.8% in 2009 and 17.5% in 2011) (Statistics Estonia, 2013). The number of people reporting an unmet need for care declined substantially in the period 2007–2009: from 5.7% to 2.0% in primary care, from 14% to 5% in dental care and from 9.5% to 4.2% in specialist care (Statistics Estonia, 2013). At the same time, more people reported expenses associated with access to health care as a reason for an unmet need. The reduction of access problems was largest among the poorest income quintile. This can probably be explained by reduced health care funding and increased waiting times in 2009. It seems that people postponed accessing care at the height of the economic downturn. This could have freed up capacity, which led to the sudden drop in reported access problems. Newer data seem to reflect this assessment. In 2012, the number of people reporting an unmet need for care rose to 3.4% in 2012 in primary care, to 8.6% in dental care and to 8.0% in specialist care (Statistics Estonia, 2013).

Equitable regional access to specialized care has been a priority since regaining independence. Overall, more concerns are being voiced in recent years in relation to quality of and access to health services, especially in rural areas. However, on the national level, health service utilization in terms of consultations per insured individual has increased between 2003 and 2011:

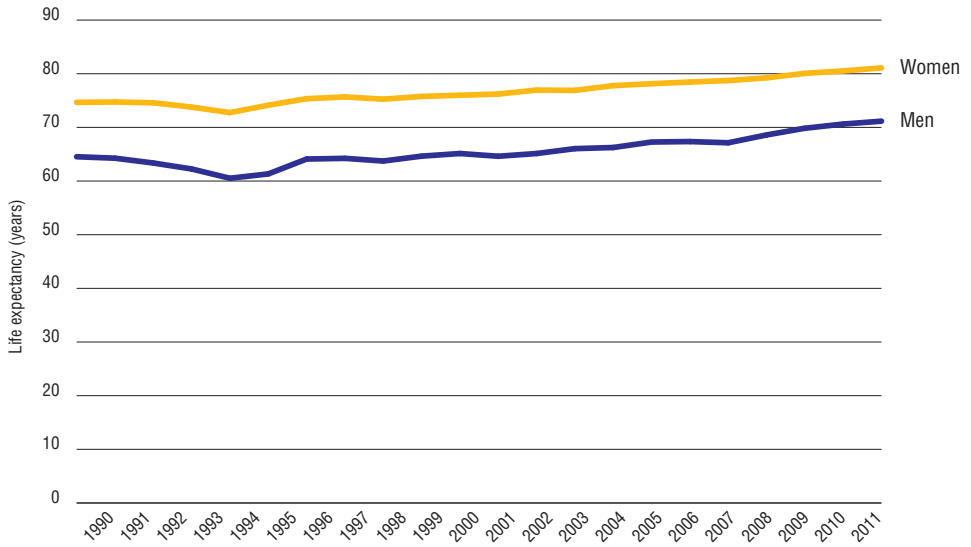
for primary care from 3.1 to 4.2, for outpatient care from 1.8 to 2.3 and for prescriptions from 3.2 to 8.3. The number of hospitalizations has slightly decreased from 0.20 to 0.19 over the same period (EHIF, 2004, 2012b). Based on the latest study, which, however, used 2006 data from the Household Budget Survey, there were significant inequities in service use by income groups: wealthier people used more dental care, day care and phone consultations even when adjusted for need of service use, while poorer people used more primary health care and emergency care, with hospital care use being almost equal (Võrk et al., 2010; Janek Saluse, personal communication of preliminary findings).

7.4 Health outcomes, health service outcomes and quality of care

7.4.1 Population health

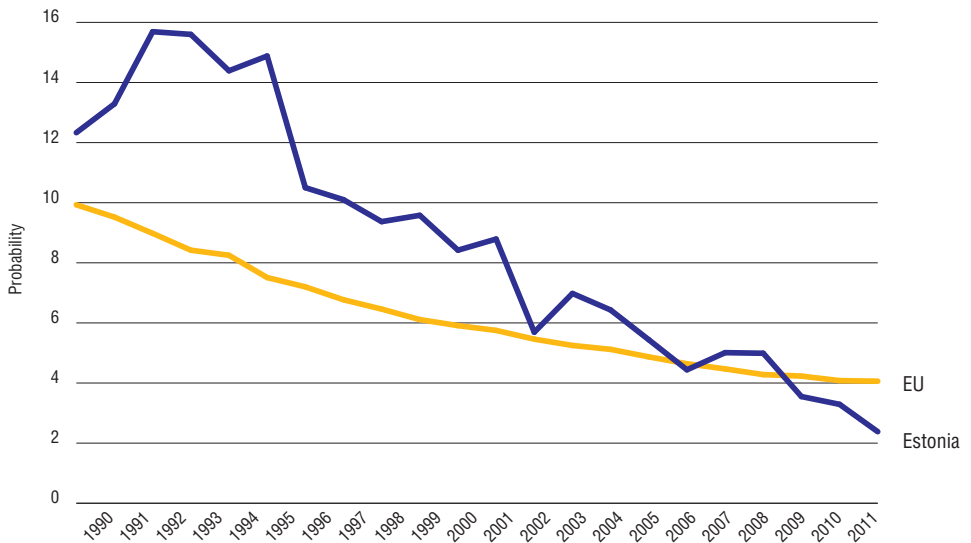
The gap in Estonian health status compared with western European countries still bears the influences of the pre-independence decades 1960–1990, and the political and economic reforms that took place at the beginning of the 1990s, as well as changes in lifestyle and the health system since then. The economic situation and overall well-being have improved over the years but there are still inequalities in health and service utilization. In 2012, Estonians were living longer than ever before, and over the years a steady improvement in life expectancy has been observed. While regional differences in life expectancy have declined, the gender gap in life expectancy is still about 10 years in favour of women (Fig. 7.3). Many other health indicators are also improving, including infant mortality (Fig. 7.4) and the overall proportion of the population that is physically active. Unfortunately, improvements in levels of physical activity and eating habits are not uniform in age, gender and socioeconomic groups. Moreover, while the proportion of moderate physical activity increases, the level of more vigorous physical activities decreases. Overall, all this translates into increasing obesity rates in most population groups (see section 1.4). 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 how to implement public health measures within and outside the core health system in order to improve population health (Lai et al., 2007).

Fig. 7.3
Life expectancy for Estonian men and women, 1990–2011



Source: WHO Regional Office for Europe, 2013.

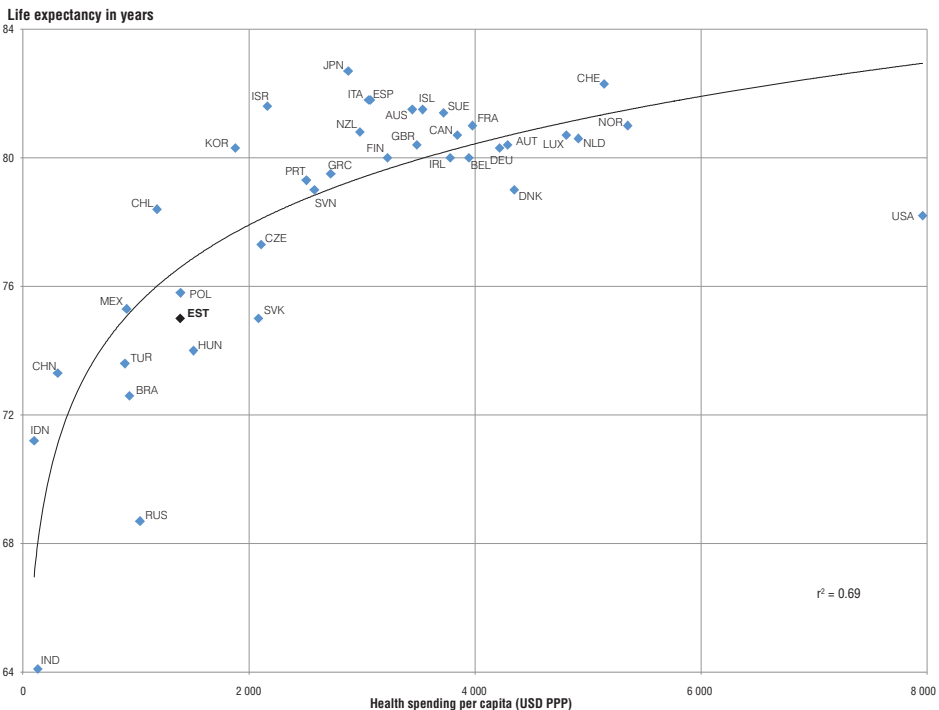
Fig. 7.4
Probability of dying before age 5 years per 1 000 live births in Estonia and the EU, 1990–2011



Source: WHO Regional Office Europe, 2013.

A reduction in avoidable mortality in the period 2000–2010 indicates a strong health system contribution to life expectancy gains over the years through preventive and treatment actions, while data for cardiovascular diseases, cancers and injuries indicate that there is still room for improvement (Lai, 2011). For example, better access to contraceptives and counselling services for adolescents have led to a decline in abortions per 1000 live births from 1527 in 1993 to 448 in 2011; antiulcer 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. Furthermore, health care has made a significant impact on the population’s quality of life, for example through cataract surgery and endoprostheses. In 2013, the health system offers a wider, and still-expanding, range of services than it did at the beginning of the 1990s. However, the increases in expenditure and availability of medicines have not yet produced their full potential in terms of population health, as Estonia still has lower than expected life expectancy for its health care expenditure compared with other OECD countries at a similar economic level (Fig. 7.5).

Fig. 7.5
Life expectancy at birth and health spending per capita, 2009 or nearest year



Source: OECD, 2011.
Notes: PPP: Purchasing power parity; Standard country abbreviations used.

7.4.2 Health service outcomes and quality of care

A number of quality-related initiatives are required by specific legislation, such as registration and licensing (professionals and providers), developing minimum requirements, authorization of pharmaceuticals, implementing population satisfaction surveys, and introducing complaints procedures (Põlluste et al., 2006). These initiatives are carried out by various institutions, such as the Ministry of Social Affairs, the Health Board and other agencies, the EHIF, professional associations and health care providers (see sections 2.5 and 2.8). Since the late 1990s, the annual population satisfaction survey on health care monitors public perception of health care quality and access, as well as satisfaction with family doctors, specialists, dentists and hospitals. Since 2003, there has been a steady increase in perceived quality by the population and in 2012, 79% of the Estonian population was satisfied with the quality of care (see Fig. 7.1). Both the EHIF and the Ministry of Social Affairs have set objectives for improving overall levels of satisfaction with health care quality and access.

Various quality initiatives are carried out at the provider level (e.g. patient satisfaction questionnaires in hospitals) that gather information on developments in quality improvement. Since 2012, the EHIF has published a selection of service quality indicators for every hospital in Estonia. Moreover, the EHIF leads an ongoing process to update treatment guidelines, and a manual on development of treatment guidelines was published in 2012. Furthermore, in 2006, the EHIF introduced the primary health care QBS to improve follow-up and disease management of selected chronic diseases (e.g. diabetes and hypertension) (see Chapter 3). Lastly, the EHIF initiated a pilot of health-related quality of life measures in hip and knee endoprosthesis treatment in 2011 (EHIF, 2011b). Pre- and post-treatment values of patient-reported outcome measures were collected, which can then be integrated into routine treatment procedures for improved treatment outcome monitoring.

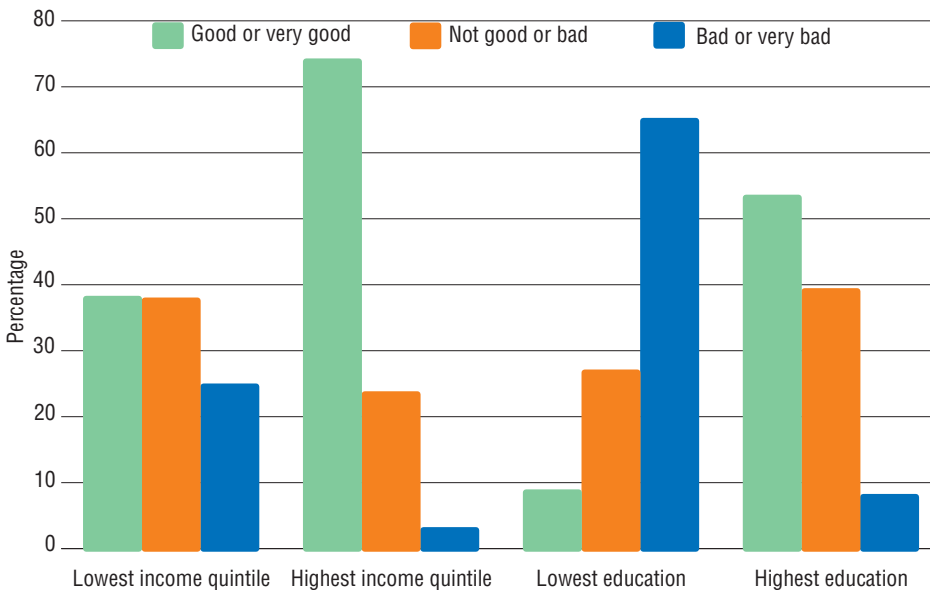
At the time of writing there are no comprehensive studies regarding the extent to which patient rights are respected; however, this topic has increasingly been discussed publicly and the level of awareness of insured people regarding their rights and responsibilities has increased. Population awareness does, however, vary by area: overall knowledge is higher regarding primary care and insurance coverage compared with knowledge on specialized services and access to care.

7.4.3 Equity of outcomes

Socioeconomic factors are extremely relevant in population health. This is evidenced by the fact that in 2009 the proportion of people assessing their health status as good or very good among people in the highest income quintile was twice that of people in the lowest income quintile (Fig. 7.6). Moreover, there have been no major changes from 2005 to 2009, except for the worrying trend that in the lowest income quintile the proportion of people assessing their health as good or very good has actually declined, while the group with average assessment has increased. At the same time, the proportion of people assessing their health as bad or very bad declined in the highest income quintile (calculated from unpublished EU statistics on income, social inclusion and living conditions).

Fig. 7.6

Assessment of own health by income quintile and education level in Estonia, 2009



Source: Calculated from unpublished EU statistics on income, social inclusion and living conditions.

Health outcome differences are even more drastic by education groups, as 65% of people with the lowest education level assessed their health as bad or very bad in 2009 compared with 8% in highest education group. Such differences in health are also tightly linked to differences in healthy behaviour.

There was a 48% smoking prevalence among men with primary or basic education compared with 18% prevalence among men who had graduated from high school. Moreover, people in the lowest income quintile spent 2.3% of their income on tobacco, compared with 1.1% in highest income quintile. Even absolute spending on tobacco was higher among people with primary and basic education compared with university graduates (calculated from unpublished EU statistics on income, social inclusion and living conditions).

Regarding health outcome differences between sexes, it is important to point out that gender-based health differences become almost non-existent when these are further stratified by income and education (Lai, 2010). This clearly indicates that socioeconomic characteristics are much more important sources of health inequalities than sex in Estonia.

While health status and healthy behaviour also have regional variation, a useful measure for describing such differences is life expectancy. The longest life expectancy in 2010 was in Tartu County (77.2 years). Most of the differences in life expectancy between the 15 Estonian counties were statistically insignificant, although one county (Ida-Viru) stands out with a life expectancy of 72.5 years. However, that county had one of the fastest life expectancy increases (8%) during 2000–2010, which was the main contributor to the reduction in regional differences in life expectancy during that period. Indeed, the difference between the best and worst county fell from seven years in 2000 to five years in 2010 (NIHD, Vital Registration Database, raw data). It has to be noted that the main causes of low life expectancy in Ida-Viru County are likely to be correlated with high unemployment and low incomes.

7.5 Health system efficiency

7.5.1 Allocative efficiency

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 patient in rural areas. To build relations in terms of prevention and promotion, the QBS was introduced for family doctors and a number of screening programmes are in place (see Chapter 3). 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 (Koppel et al. 2008; Lai, Veillard & Bevan, 2010).

Financial resource allocation remained stable during 2004–2008 and the main areas of expenditure – prevention, primary care, specialist care and nursing care – all rose steadily. Temporary reduction of funding up to 6% of the inpatient service reimbursement prices was in place during the height of economic downturn in 2008–2011, while primary health care was prioritized and faced smaller reductions. However, these reductions were revoked by 2012 and health care funding is on the rise again. The latest data show that 51% of all expenditure for curative services was allocated to inpatient care and 45% to outpatient care in 2011. The relatively low share of inpatient care as a proportion of total expenditure (27% in 2011) (NIHD, 2013), combined with increased emphasis on ambulatory care, have contributed to increased spending on pharmaceuticals (for more information see Chapter 3 and section 5.6).

However, the main and long-standing challenge is the shortage of doctors and other specialists in selected areas, which is related to free workforce mobility in the EU and an insufficient level of medical graduates since 2000 (see section 4.2). As a result, the average age of doctors is increasing and problems in the provision of services because of workforce shortages are expected to worsen. As a partial solution, providing family nurses and midwives with additional competencies and rights for independent service provision in some special cases (e.g. follow-up of normal pregnancy by midwives) has been implemented. The required increase in enrolment in medical and nursing schools is still being debated.

Since 2006, increased allocations of resources from the state budget, the EHIF and private sources to various public health programmes and activities have been prioritized. However, during the economic downturn that started in 2008 both health care funding and public health funding were reduced. For public health services, state budget funding was in many cases substituted by funding from the ESF. Yet a clear plan for sustainable funding after the end of the ESF programme period in 2013 is still lacking at the time of writing.

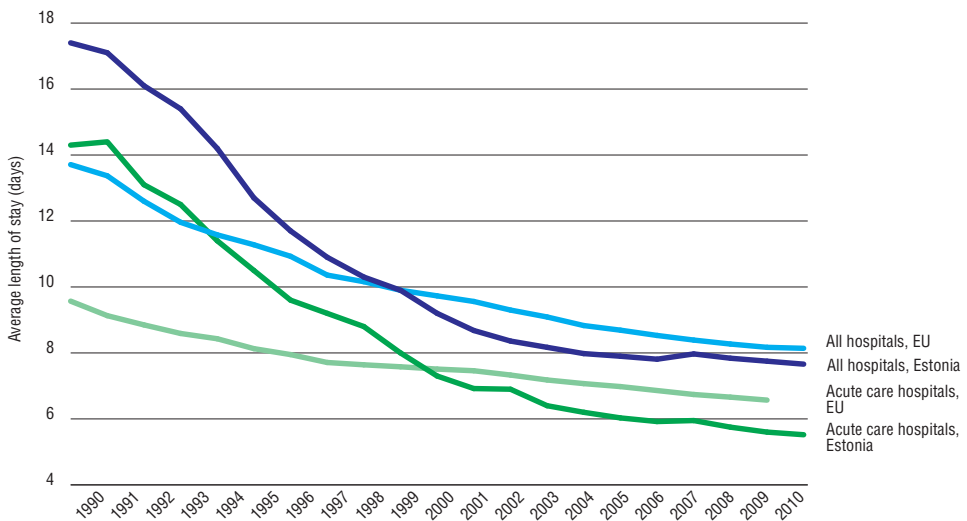
7.5.2 Technical efficiency

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 average length of stay has been heavily influenced by the implementation of the Estonian Hospital Master Plan 2015 (see Chapter 5) and the EHIF's contracting and payment policy. The EHIF has been 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 has suggested that the reform is successful in this respect (Fidler et al., 2007). The average length of stay in hospital decreased to below 8 days in 2004, from 17.4 days in 1990; it was 5.6 days in acute care hospitals and averaged 7.7 days over all hospitals in 2010. The average length of stay in the EU for all hospitals was 8.4 in 2010 and 6.6 in 2009 (latest available data) (Fig. 7.7). At the same time, bed occupancy rates declined quickly until 2000 after which they slightly increased and stabilized at 70%, where they remained in 2010 (75% in EU on average). This indicates potential for further improving efficiency through increased bed occupancy. However, occupancy rates vary considerably between urban and rural hospitals, suggesting that hospitalization patterns should be analysed further to determine appropriate means of increasing efficiency without compromising access to health services in rural areas. The first ever health system performance assessment report in

Fig. 7.7

Average length of stay in all hospitals and acute hospitals in Estonia and the EU, 1990 to latest available year



Source: WHO Regional Office for Europe, 2013.

Estonia also highlighted that, although hospital capacity in terms of number of beds, nurses and other ancillary staff working in hospitals has been reduced, the number of hospital physicians has not declined correspondingly.

Pharmaceutical reimbursement did not always provide good value 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. Efficiency of the pharmaceutical reimbursement system was further increased through the introduction of generic prescribing in 2010. Also recently, the availability of pharmaceuticals has been improved by reducing cost-sharing for pharmaceuticals, through price agreements and by abolishing reimbursement caps for certain drugs (see section 2.8.4).

At the primary care level, the increase in consultations (with family doctors, and family nurses since 2006) and use of evidence-based prescription practices suggest a positive contribution to the system's overall technical efficiency (Atun et al., 2006). Primary health care is still a priority development area in Estonia. Additional cost-efficiency for the system, as well as improved scope and accessibility of the services provided, is sought by increasing solo practice rights for nurses and midwives.

7.6 Transparency and accountability

All national health strategies and policy documents are required to include indicators and targets so that progress in the health system can be measured. In parallel, all these documents are required to include detailed action plans that describe activities, finances and responsible institutions. It has not been sufficient to have a Health in All Policy agenda and ensure constant improvement. There have also been other positive developments as a series of hearings in the parliamentary Social Committee on Health Issues, open to all MPs, have taken place since 2010. However, this has not yet generated sufficient basis for further reforms, as indicated in Chapter 6.

There are also uniform requirements in place for stakeholder involvement and consultations for development of strategic health policy documents, which in the final development stage also allows public participation through an electronic platform. During implementation of a policy document, expert groups and governing bodies are required to involve stakeholders, interest groups and the general public.

A further accountability mechanism is planned in the form of regular health system performance assessments, which will provide information on overall health system progress and challenges that can be used in planning of NHP activities. The first national health system performance assessment report in Estonia was published in 2010 in collaboration between the Ministry of Social Affairs and the WHO European Regional Office (Lai, Veillard & Bevan, 2010).

Giving the EHIF independent status and giving providers' private status (albeit under public ownership) has involved some risk in terms of accountability, particularly in ensuring that these autonomous institutions meet national health policy objectives. During the preparation of legislation that gave the EHIF independent status, careful attention was paid to safeguarding to ensure that the EHIF will be guided by national health policy objectives and is publicly accountable. 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).

8. Conclusions

The Estonian health system was reformed extensively during the early years after regaining independence and the cornerstones of the system are strongly in place. In recent years, only incremental changes have been implemented. The Estonian health system was put to the test when the economic crisis struck in 2008. The main goal was to ensure financial protection of the population without eroding the benefit package. To that end, an austerity package was rolled out involving some cuts in benefits and prices, increased cost-sharing for certain services, extended waiting times, increased VAT on medications, promotion of rational use of medicine, a focus on primary and outpatient care, and a reduction in specialized care. Salaries were not explicitly cut but they fell because of a drop in available funding. The EHIF had also learned from earlier crises and successfully used its financial reserves accrued over the growth years to counter the effects of the crisis. Funding from European structural and social funds was used to offset some of the falls in public health funding and capital investment. In the meantime, some important indicators have improved, including life expectancy, infant mortality and physical activity, as well as smoking and alcohol consumption, although the last two are still at high levels. Unfortunately, improvements in levels of physical activity and eating habits are not uniform in age, gender and socioeconomic groups and translate into increasing obesity rates in most population groups. Furthermore, levels of HIV infections and multidrug-resistant TB remain high. To promote healthy behaviour and prevent injuries, which are the main sources of avoidable ill health, there is a need for stronger, comprehensive and sustained intersectoral action.

The overall trend for population satisfaction with care quality and the health care system has been positive, even during the economic downturn. However, the level of satisfaction with care access has been stable since 2003 without a clear trend.

The Ministry of Social Affairs and the EHIF have managed the downturn quite successfully, although it is hard to predict the longer-term effects of some of these cuts. During these years of austerity, some important reforms were postponed, which created discontent among the workforce. It is evident that there are a number of long-standing challenges that need addressing in the coming years to maintain the momentum of past reforms.

First, the most discussed issue has been the sustainability of health care financing in a system based on payroll taxes. The higher wages and lowering of the workload for health care personnel agreed in December 2012 will only aggravate this situation. Although this dilemma has been well known for many years, there has been no political will to reallocate resources. On the contrary, there have been discussions to reduce the social tax even further, either by implementing ceilings or lowering the contribution rate. This, it is hoped, would lure foreign direct investments through reduced labour cost. Furthermore, since 2005 there have been significant investments from EU structural funds and social funds to modernize acute and nursing care hospitals and to improve capacities and activities in public health. However, it remains to be seen whether the use of these funds has benefited the long-term sustainability of the health system – especially now that the EU programme period ends and capital costs are still not reimbursed from the state budget, although it is mandated by law.

Second, a key issue for the Estonian health system is guaranteeing a sufficient level of human resources. Recent changes have enabled more substitution through increasing the role of nurses and midwives in health system organization. However, there is currently no clear plan for how this avenue will be pursued in coming years. Furthermore, the workforce is ageing and the ratio of nurses to doctors in the health care system has remained approximately 2 to 1 since the 1990s, although a strategy for developing nursing proposed an increase of this ratio to 3 to 1 by 2015. This means that there is a need for more training of health professionals, as well as redesigning financial incentives and increasing accountability.

Third, patient-centred health care and good access to high-quality health services are also health system priorities. Further integration of health and social care services into a comprehensive chronic disease management system would greatly improve patient-centredness. The preconditions are already present: a strong primary health care system (although it can be strengthened further and the delivered services expanded), the increasing role of nursing in primary health care, e-health solutions for information sharing between service providers (e.g. electronic patient record, pilots of e-consultation and e-referral),

first investigations into pay for performance mechanisms, a strong culture of clinical guideline development and so on. This also highlights the larger issue of health system fragmentation and the need for increased integration both on system and service provision levels. Solving such fragmentation would benefit system efficiency greatly.

Fourth, although the level of OOP payments has been decreasing since 2010, partly through changes in pharmaceutical policy, its impact on access to services for lower socioeconomic groups remains a concern, particularly for access to dental care, pharmaceuticals and medical devices.

Lastly, there is a need to enhance provider activity evaluation and monitoring tools across the health system to improve quality and health outcomes. Investments in the e-health system play a critical role here through better exchange of information and increasing accountability.

The *Cooperation Agreement in Health Care* (Ministry of Social Affairs, 2013), which was signed in January 2013, addresses many of these challenges. However, whether these challenges will be met in the future will largely depend on how this document is put into action.

9. Appendices

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9.2 Web sites

National sites

Estonian 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 Agriculture: <http://www.agri.ee>

Ministry of Defence: <http://www.mod.gov.ee>

Ministry of Economic Affairs and Communications: <http://www.mkm.ee>

Ministry of Education and Research: <http://www.hm.ee/>

Ministry of the Environment: <http://www.envir.ee>

Ministry of Finance: <http://www.fin.ee>

Ministry of Internal Affairs: <http://www.siseministeerium.ee>

Ministry of Justice: <http://www.just.ee>

Riigi Teataja (Electronic State Gazette): <http://www.riigiteataja.ee>

Portal for Local Municipalities: <http://portaal.ell.ee>

Estonian National Electoral Committee: <http://www.vvk.ee>

Estonian eHealth Foundation: <http://www.e-tervis.ee>

Estonian Health Insurance Fund: <http://www.haigekassa.ee>

Health Board: <http://www.terviseamet.ee>

National Institute for Health Development: <http://www.tai.ee>

State Agency of Medicines: <http://www.ravimiamet.ee>

Estonian National Social Insurance Board: <http://www.ensib.ee>

Labour Inspectorate: <http://www.ti.ee>

Chancellor of Justice: <http://oiguskantsler.ee/>

Estonian Data Protection Inspectorate: <http://www.aki.ee>

Estonian Tax and Customs Board: <http://www.emta.ee>

National Audit Office of Estonia: <http://www.riigikontroll.ee/>

Police- and Border Guard Board: <http://www.politsei.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 Family Doctors' Association: <http://www.perearstiselts.ee>

Tallinn University of Technology: <http://www.ttu.ee>

Tallinn University: <http://www.tlu.ee>

Tartu University: <http://www.ut.ee>

Estonian Genome Project Foundation: <http://www.geenivaramu.ee>

PRAXIS Centre for Policy Research: <http://www.praxis.ee>

9.3 HiT methodology and production process

HiTs are produced by country experts in collaboration with the Observatory's research directors and staff. They are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The most recent template is available online at: <http://www.euro.who.int/en/home/projects/observatory/publications/health-system-profiles-hits/hit-template-2010>.

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

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

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

A typical HiT consists of nine chapters.

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

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

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

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

One of the authors is also a member of the Observatory staff team and they are responsible for supporting the other authors throughout the writing and production process. They consult closely with each other to ensure that all stages of the process are as effective as possible and that HiTs meet the series standard and can support both national decision-making and comparisons across countries.

9.4 The review process

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

9.5 About the authors

Taavi Lai has been a long-time senior analyst in the Ministry of Social Affairs and a researcher in the Public Health Department of the University of Tartu, both in Estonia. He holds a PhD in Health Care Management from the University of Tartu and has focused mostly on population health and health system performance issues in his research.

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Key

All HiTs are available in English.
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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.