Health Care Systems in Transition

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The European Observatory on Health Systems and Policies is a partnership between the World Health Organization Regional Office for Europe, the governments of Belgium, Finland, Greece, Norway, Spain and Sweden, the European Investment Bank, the Open Society Institute, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine.

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Foreword

The Health Care Systems in Transition (HiT) profiles are country-based reports that provide an analytical description of a health care system and of reform initiatives in progress or under development. The HiTs are a key element of the work of the European Observatory on Health Systems and Policies.

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

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

The HiT profiles are produced by country experts in collaboration with the Observatory's research directors and staff. In order to facilitate comparisons between countries, the profiles are based on a template, which is revised periodically. The template provides the detailed guidelines and specific questions, definitions and examples needed to compile a HiT. This guidance is intended to be flexible to allow authors to take account of their national context.

Compiling the HiT profiles poses a number of methodological problems. In many countries, there is relatively little information available on the health

care 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 WHO Regional Office for Europe health for all database, Organisation for Economic Cooperation and Development (OECD) Health Data and data from the World Bank. Data collection methods and definitions sometimes vary, but typically are consistent within each separate series.

The HiT profiles provide a source of descriptive information on health care systems. They 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 care systems. This series is an ongoing initiative: material is updated at regular intervals. Comments and suggestions for the further development and improvement of the HiT profiles are most welcome and can be sent to info@obs.euro.who.int. HiTs, HiT summaries and a glossary of terms used in the HiTs are available on the Observatory's website at www.observatory.dk.

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The current series of Health Care Systems in Transition profiles has been prepared by the research directors and staff of the European Observatory on Health Systems and Policies. The European Observatory on Health Systems and Policies is a partnership between the WHO Regional Office for Europe, the governments of Belgium, Finland, Greece, Norway, Spain and Sweden, the European Investment Bank, the Open Society Institute, the World Bank, the

London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine.

The Observatory team working on the HiT profiles is led by Josep Figueras, Head of the Secretariat, and research directors Martin McKee, Elias Mossialos and Richard Saltman. Technical coordination is led by Susanne Grosse-Tebbe. The research director for the Estonia HiT was Elias Mossialos.

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The HiT reflects data available in 2004.

Introduction and historical background

Introductory overview

Geography and people

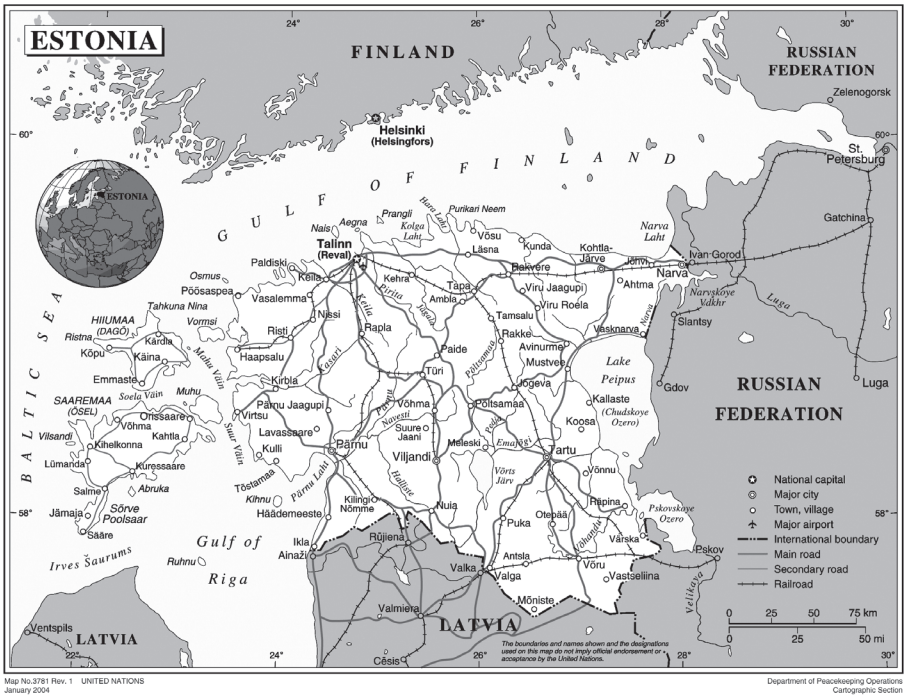
Estonia is the smallest of the Baltic states, the three republics that lie on the east coast of the Baltic Sea. Bordered by the Russian Federation to the east and Latvia to the south, Estonia covers an area of approximately 45 215 km^2.

Estonia has a population of 1 356 045 (as of 1 January 2003), about two thirds of whom live in urban areas (69% in 2000). Since the Soviet occupation at the beginning of the Second World War, there has been a large Russian minority in Estonia (26%). The Russian-speaking population is concentrated in the cities of north-east Estonia, near the Russian border. Other minority groups include Ukrainians (2%) and Belarusians (1%). Since 1989, the population of Estonia has decreased by about 100 000, due to migration to the east and west and to negative natural growth. Although the crude birth rate has increased continuously since 1998, when it was at a low of 8.8 live births per 1000 inhabitants, the increase has not been sufficient to result in positive population growth. In terms of the population's age structure, 16.6% are age 0 to 14 years and 15.9% are age 65 years and older (2003). The age dependency ratio is 48%.

Political context

Estonia is a parliamentary republic. It first gained independence in 1918. In 1940, at the beginning of the Second World War, the country was occupied by the Union of Soviet Socialist Republics (USSR). Independence was restored

Fig. 1. Map of Estonia



Source: United Nations Cartographic Section

Table 1. Demographic indicators, 1970–2003

Indicator	1970	1980	1990	2000	2002	2003
Population, total (millions)	1.365	1.477	1.569	1.370	1.358	1.356[a]
Population, female (% of total)	54.3	53.7	53.0	53.4	53.5	53.9[a]
Population age 0–14 (% of total)	22.0	21.7	22.2	17.7	16.4	16.6[a]
Population age 65 and older (% of total)	11.7	12.5	11.6	14.7	15.0	15.9[a]
Annual population growth (%)	1.1	0.6	6.2	–0.42	–0.44	–
Population density (people per km^2)	–	–	–	32.4	32.1	30.0[a]
Fertility rate, total (births per woman)	2.16	2.02	2.04	1.39[a]	1.37[a]	–
Birth rate, crude (per 1000 population)	15.22	15.50	14.20	9.50	9.6[a]	–
Death rate, crude (per 1000 population)	10.92	12.22	12.50	13.40	13.50[a]	–
Age dependency ratio (ratio of dependants to working-age population)	0.50	0.52	0.51	0.46	0.45	–

Sources: (1), except [a] *(2)*.

on 20 August 1991. (For more information on political developments see the section below on *Historical background*.)

The parliament (*Riigikogu*) consists of one chamber with 101 members. It is elected for a period of 4 years. Since 1992, when the first elections in independent Estonia were held, all governments have been coalition governments of two or three political parties. Although none of the coalitions has governed for a full term, they have been stable enough to launch and implement economic and social reforms.

Estonian political parties tend to be at the centre or to the extreme right of the political spectrum. To date, governments have been on the right, although social democratic values and ideology have become more visible in recent years. The latest parliamentary elections were held in March 2003, resulting in a three-party centre–right coalition. Since coming to power, the coalition has agreed to lower the proportional rate of personal income tax from 26% to 20% over the following three years and to make part of the costs of personal exercise (for example, gym membership) tax deductible in order to encourage health-enhancing behaviour.

The second political layer in Estonia consists of 241 municipalities. Municipalities range in size from about 100 to 100 000 people. The capital city Tallinn, with its 400 000 inhabitants, is the largest municipality. Municipal elections are held every three years. Municipalities have budgetary autonomy and local tax-raising powers. The state is legally obliged to transfer 11.4% of the personal income tax paid by persons living in a particular municipality to that municipality.

Administratively, Estonia is divided into 15 counties, most with populations of 40 000 to 50 000. 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 four counties.

At the beginning of the 1990s, Estonia signed almost 30 of the most important United Nations conventions, includig 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 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).

All monitoring reports and relevant committee reports on compliance with the conventions and charter are publicly available on the web sites of the Ministry of Foreign Affairs and the Ministry of Social Affairs. In general, these reports acknowledge Estonia's efforts to comply with the conventions' obligations. The main concern raised in the reports relates to the high proportion of stateless persons among Estonian residents. These people consist of former Soviet citizens who have not taken up Estonian, Russian or any other citizenship.

According to Transparency International's annual assessments on corruption, Estonia performs well among central and eastern European countries, coming second after Slovenia. Transparency International's Corruption Perception Index ranks Estonia at 33 of 133 countries, with Slovenia at 29, which is also higher than Italy and Greece *(3,4)*.

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

Economic context

Estonia embarked on significant economic reforms at the beginning of the 1990s, and by 1993 it had succeeded in reversing the declining trend of its gross domestic product (GDP). By 2003, real GDP was US$ 10 000 in purchasing power parity (PPP), equal to 34% of the EU-15 average, but higher than in other Baltic countries. (EU-15 refers to the 15 member states of the European Union (EU) prior to the accession of 10 new member states in May 2004.) The inflation rate, which peaked at over 1000% in 1992, had fallen to 10% by 1997 and has been less than 5% in recent years.

Economic reforms have taken their toll on the labour market. The unemployment rate peaked in 2000 at 13.6% and has since been decreasing, falling to 10.3% in 2002. Of the unemployed, 52% are long-term unemployed (people who have been out of work for more than 12 months).

In 1997 the European Union acknowledged Estonia's political, administrative and economic reforms, inviting Estonia to enter into accession negotiations in the first wave of six countries in 1997 and to join the European Union as a full member in May 2004.

Table 2. Macroeconomic indicators, 1994–2002

Indicator	1994	1995	1996	1997	1998	1999	2000	2001	2002
GDP									
In $ PPP (in millions)	9 264	9 738	10 320	11 932	12 437	12 587	14 080	15 515	16 642
Per capita (in constant kroons)	45 012	47 782	50 393	55 959	59 126	59 179	63 779	68 197	72 596
In $ PPP per capita	6 330	6 780	7 290	8 520	8 970	9 150	10 280	11 370	12 260
Contribution to GDP (%)									
Industry	30.88	29.57	28.79	28.03	29.72	27.52	29.01	29.19	29.83
Agriculture	10.73	8.89	8.61	8.07	7.30	6.82	6.23	5.75	5.45
Services	58.38	61.54	62.60	63.89	62.98	65.65	64.76	65.06	64.71
Overall budget balance, including grants (% of GDP)	1.39	–0.57	–0.83	2.55	–5.75	–0.16	0.16	2.55	–
Labour force, total[a]	–	–	–	–	658 700	643 800	645 200	642 100	632 000
Unemployment, total (% of labour force)	8	10	10	10	10	12	14	13.6	10.3[a]
Official exchang e rate (kroon per US $, period average)	12.99	11.46	12.03	13.88	14.07	14.68	16.97	17.48	16.61
Real interest rate (%)	–10.7	–9.4	–6.9	0.4	4.8	6.3	0.7	2.4	2.5
Income inequality (Gini coefficient)[b]	–	–	0.34	0.37	0.38	0.38	0.37	0.38	0.37

Sources: (1), except [a] *(2),* [b] *(5).*

Health status

Trends in health status have not been as positive as economic trends. However, they mirror trends in other Baltic countries. At the end of the 1930s, life expectancy in Estonia matched that of the Scandinavian countries, but the Second World War and the Soviet occupation led to a decrease and then stagnation in life expectancy. By 1950, male life expectancy was still lower than it had been in the late 1930s. Between 1959 and 2000, life expectancy increased overall by about one year for men and about four years for women *(6).*

Prior to the economic transition, average life expectancy at birth was at its highest in 1988 (71.02 years), after which it fell to a low of 66.74 years in 1994. Since then it has risen again, reaching 71.10 in 2002 and finally overtaking the pre-independence and pre-reform peak of 1988 (see Table 3). There is a marked difference in trends in female and male life expectancy. By 1996, female life expectancy had surpassed its pre-reform high and continued rising to 77.00 in 2002. It currently lags four to five years behind the EU-15 and Scandinavian

averages for women. In contrast, male life expectancy in 2002 was 65.00 and still had not equalled its high of 66.52 in 1988. It is currently 10 years lower than the EU-15 and Scandinavian averages for men. Disability-adjusted life expectancy (DALE) was estimated at 64.1 years in 2002; 59.2 years for men and 69.0 years for women *(7)*.

Table 3. Mortality and health indicators, 1970–2002

Indicator	1970	1980	1990	2000	2002
Life expectancy at birth, total (years)	70.0	69.1	69.5	70.1	71.1[a]
Life expectancy at birth, female (years)	74.4	74.2	74.6	76.2	77.0[a]
Life expectancy at birth, male (years)	65.7	64.2	64.6	65.2	65.0[a]
Mortality rate, adult, female (per 1000 female adults)	104.1	109.6	106.1	114.0	–
Mortality rate, adult, male (per 1000 male adults)	250.9	291.0	285.8	316.0	–
Mortality rate, infant (per 1000 live births)	21	21	18	17	10
Mortality rate, under 5 years old (per 1000)	26	24	17	12	12

Sources: (1), except [a] *(2).*

Cardiovascular diseases are the main cause of death in Estonia, accounting for 45.6% of all causes of death among men and 62.2% among women (2000). Cardiovascular diseases are also a significant cause of premature death, with a mortality rate (per 100 000 population in people aged 25 to 64 years) of 411 for men and 126 for women. These figures are more than double the EU-15 and Scandinavian averages for men and women in 2002. The next most important causes of death are cancer (10.5% for men and 17.1% for women) and death due to external causes (17.4% for men).

Infant mortality has fallen steadily in recent years. World Bank figures show a decline from 18.0 in 1990 to 10.0 in 2002 (see Table 3) *(1)*, while national statistics show a greater decline, from 14.8 in 1995 to 5.7 in 2002 (see Table 4). The figure of 5.7 is higher than the EU-15 average, but lower than the central and eastern European average. As in other transition countries, the birth rate has fallen dramatically, to 8.8 per 1000 population in 1998. Since 1998 it has again increased, but demographers do not expect it to reach population replacement levels. The frequency of abortions – a common method of birth control in all former Soviet republics – has declined from almost 1600 abortions per 1000 live births in 1980 to fewer than 900 per 1000 live births currently, but it is still 3.5 times higher than the EU-15 average.

Dealing with the consequences of the outbreak of HIV/AIDS in 2001 has been a major public health and health system challenge in Estonia. The HIV/

Table 4. Infant mortality rates, 1995–2002

	1995	1998	1999	2000	2001	2002
Mortality rate, infant (per 1000 live births)	14.8	9.3	9.5	8.4	8.8	5.7

Source: (2).

AIDS epidemic began among injecting drug users in the north-eastern part of the country, and by 2003 the total number of people diagnosed as HIV-positive was 3600, equal to 0.26% of the population.

The first comprehensive study of inequalities in health in Estonia was initiated by the World Bank in 2002 *(8).* The Estonian Health Insurance Fund (EHIF) has also assessed regional differences in health service utilization. Both studies show large and increasing disparities in health behaviour and status among population groups (distinguished on the basis of income, education level, place of residence and ethnicity/language group). In line with findings from studies published in other countries, higher health status and health-enhancing behaviour were more common in groups with university-level education and greater income. During the 1990s, inequalities in mortality and health behaviour among socioeconomic groups and ethnic/language groups increased. For example, Russian speakers had higher rates of mortality from nearly all causes of death, particularly alcohol poisoning and homicide. The main exception was traffic accidents, which as a cause of death was higher among ethnic Estonians. For further information on health inequalities, see *Public health services*.

Estonia is one of the few central and eastern European countries in which it is possible to comment on the outcome of medical treatment. This is due to the maintenance of a high-quality cancer registry which has participated in international collaborative studies such as the European Cancer Registries Study on Cancer Patients' Survival and Care (EUROCARE). EUROCARE-3, a study of the survival of patients diagnosed with cancer from 1990 to 1994, shows that treatment outcomes in Estonia lag behind outcomes in western European countries *(9)*. For example, the five-year age-standardized survival rate for breast cancer in Estonia was 61.9%, comparable to survival rates in Poland and Slovenia, while the average survival rate for 22 participating European countries and regions was 76.1%. For all cancer sites combined, the Estonian age-standardized five-year survival was 26% for men and 38% for women, while the respective average European survival rates were 40% for men and 51% for women *(9)*. It should be noted that the period studied by EUROCARE-3 was one in which the Estonian economy underwent significant changes and health system restructuring began. Nevertheless, the study serves as a valuable baseline for evaluating the impact of the health system reforms carried out during the 1990s (see *Health care reforms*).

In many areas, the behaviour of the Estonian population has become more health-enhancing. The biggest changes in dietary habits include the replacement of vegetable fats for animal fats in food preparation and a general decrease in the consumption of fats. Whereas at the beginning of the 1990s only 28% of people used vegetable oil as the main fatty substance in food preparation, by 2000 this proportion had increased to 86%. The frequency of daily consumption of fresh fruit and vegetables has also increased since the beginning of the 1990s. In these cases, change has resulted from the significantly improved availability of vegetable oils and fresh fruit and vegetables throughout the year.

The prevalence of daily smoking among the population older than 15 increased from 28.2% in 1990 to 35.8% in 1994, but it has decreased steadily since, reaching 28.9% in 2002 *(10)*. This is similar to the EU-15 average but higher than the Scandinavian average (22.23%). There are more daily smokers among men (45% in 2002); for women, regular daily smoking peaked in 1994 at 23.5%, falling to 17.9% in 2002.

Historical background

Historical political development

Foreign dominance in Estonia began with the invasion of German crusaders at the start of the 13th century. From the 13th to the 18th century, Estonia formed a part of Danish and Swedish kingdoms. In 1721, the Swedish king lost Estonian territory after fighting with the Russian tsar. A strong German presence and influence subsequently remained in Estonia due to the existence of German landowners, until 1918, when Estonia first gained independence in the aftermath of the First World War. A secret German–Soviet pact in 1939 (the Molotov–Ribbentrop Pact), agreeing to a division of European territories between Germany and the USSR, placed Estonia in the Soviet area. Occupation of the Estonian Republic by the USSR followed in 1940, after the outbreak of the Second World War. The long-lasting German and Swedish presence in Estonia was influential in shaping political and cultural behaviour, administrative structures and the development of the health system.

During the course of the 20th century, the Estonian health system experienced several dramatic changes, reflecting changes in its historical and political context. The time can be divided into three periods: before 1940, 1940–1990 and 1990–2002.

Before 1940

Prior to the Soviet occupation in 1940, health system organization in Estonia was comparable to other western European countries. University-level training of doctors and world-level medical science had been carried out in Estonia since the establishment of the University of Tartu in 1632, and by the beginning of the 20th century, a basic system of health care was in place, although there was no social security system as such. The health system was highly decentralized, with services developed and managed locally.

Three types of hospitals provided inpatient care: private hospitals (which supplied 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, tuberculosis dispensaries, sanatoria and institutions for the mentally ill. Most outpatient care was provided by private doctors, with dispensaries owned by sickness funds and schools. Municipal doctors were responsible for caring for poor people. The sickness funds covered employees and were organized on a regional basis. In 1920 and 1921, the sickness funds' activities expanded, the number of doctors increased and physicians' professional associations were founded.

1940–1990

In 1940, the occupation of the Estonian Republic by the USSR interrupted the earlier development of the health system and led to the introduction of the Soviet Semashko system, in which health care was funded from the state budget and directed by the government through central planning. The rapid changes that took place had lasting consequences. For example, a large number of health professionals left Estonia during the Second World War, severely affecting the structure of the health workforce – an effect that is still felt today (see *Human resources*). The preoccupation with quantitative targets led to a substantial over-provision of hospital beds, and by the end of the Soviet era, the regionalization of different sectors within the USSR resulted in overcapacity in surgical specialties. This overcapacity was partly due to the provision of services to people outside Estonia, but also due to the fact that Estonia was considered to be strategically important during the Cold War period.

During the Soviet era there was no private sector involvement in health care. All citizens had nominally free access to health services provided by salaried government employees. The technical level of medical personnel and the basic quality and availability of health services was good, with the exception of access to newer pharmaceuticals. Informal payments in Estonia were not as

widespread as in other parts of the former USSR, although it was common to thank medical personnel on discharge with small gifts such as flowers, sweets, coffee and cognac.

1990–2002

After regaining independence in 1991, health system financing and planning in Estonia underwent almost total reform once again. The reforms that took place during the 1990s aimed to establish financing through social health insurance and to encourage decentralization. They were undertaken partly in response to the changing needs of the Estonian population and partly, given the state of the economy, in response to concerns about financial sustainability. Some of the reforms had been planned even before independence was declared in August 1991. For example, it had already been decided to establish a system of social health insurance by the following year.

The Health Insurance Act of 1991 and the Health Services Organization Act of 1994 provided the legal basis for reforms, and while there have been some amendments in the course of reform – notably a reconsidering of the initial decentralization envisaged and the re-centralization of some tasks – the original plans set out in this legislation have not changed substantially.

More recently, however, there have been further developments. For example, the Health Insurance Fund was transformed into an independent public body in 2000, a new version of the Health Services Organization Act was adopted by the parliament in 2001 and a new Health Insurance Act was adopted in 2002. As a result of these changes, all health service providers have been legally mandated to operate under private law, even though in most cases institutions continue to be publicly owned by the state or municipalities. In addition, the passing of the Law of Obligations (*Võlaõigusseadus*) in 2002 established a new relationship between patients and providers. For the first time, this relationship has been legally defined as a binding agreement with responsibilities on both sides. Finally, the Public Health Act originally passed in 1995 has been amended every year, and the Ministry of Social Affairs is considering drafting new legislation in this area. These more recent changes have been prompted by the lessons learned from the first round of reform implementation, and they are motivated by a desire to improve regulation of new phenomena such as the rising cost of drugs, to introduce strategies to manage decentralized hospital networks, to optimize the planning and pricing of health services and to transform the patient–doctor relationship into a client–service relationship.

For more detailed analysis of health care reforms during this period, see *Organizational structure and management* and *Health care reforms*

Organizational structure and management

Organizational structure of the health care system

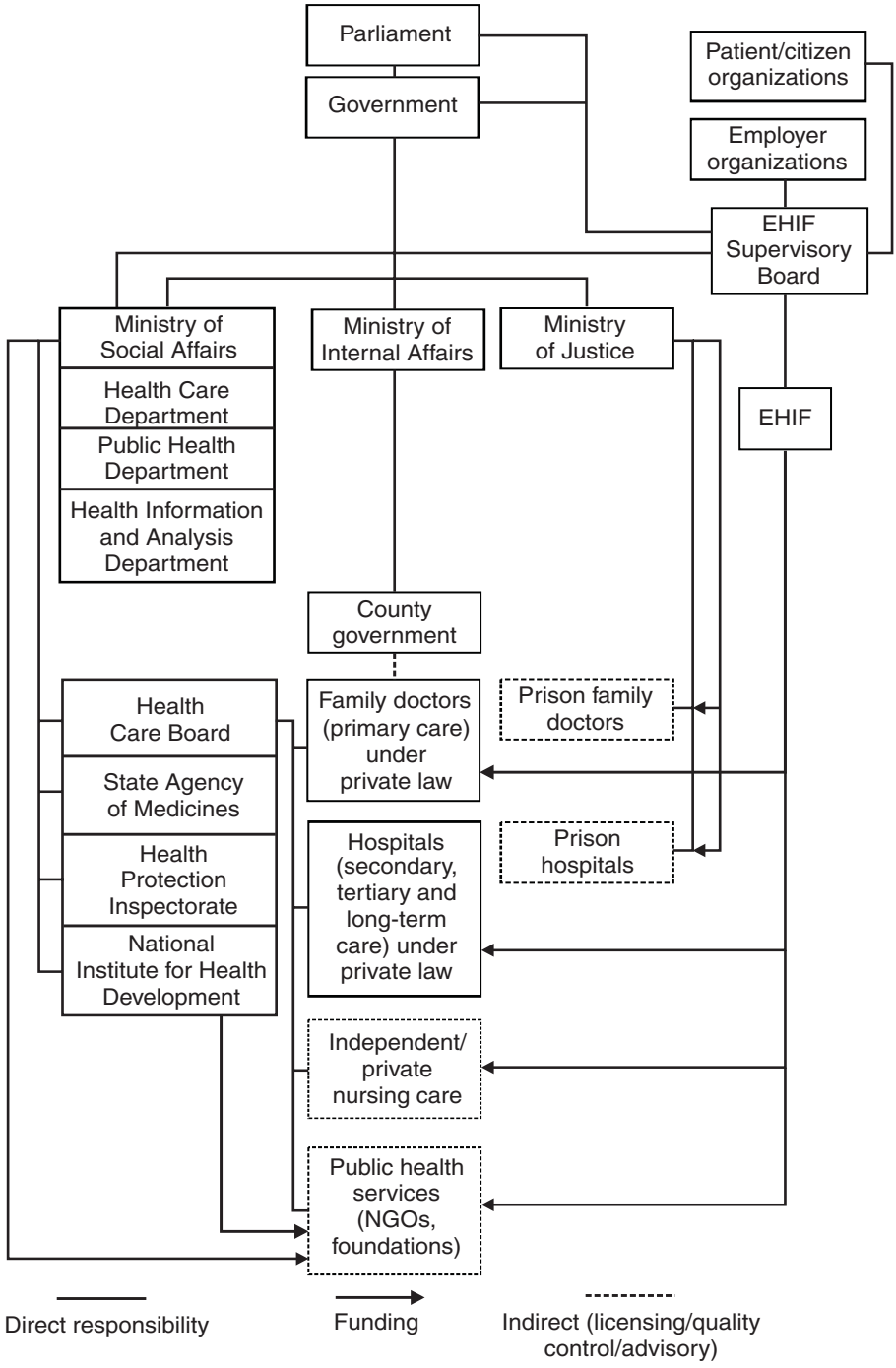
Since regaining independence in 1991, the Estonian health system has undergone two major shifts: first, from a centralized, state-controlled system to a decentralized one; and second, from a system funded by the state budget to one funded through social health insurance contributions. At the same time,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

The restructuring of the health system has taken place in several phases. The beginning of the 1990s saw the introduction of a social health insurance system operated through the Central Sickness Fund and 22 regional sickness funds. In 1994, responsibility for planning health services was partially decentralized to the county level through the 15 county governors and the county doctors. The current organizational and management principles were established between 1999 and 2002 by acts of the parliament intended to re-centralize some health system functions. See below and the section entitled *Health care reforms* for more detailed analysis.

The main bodies responsible for planning, administration, regulation and financing in Estonia are the Ministry of Social Affairs, the Health Care Board, the State Agency of Medicines (SAM), the Health Protection Inspectorate and the Estonian Health Insurance Fund (EHIF).

This section begins with a brief outline of the roles played by the following health system stakeholders: the state and its agencies, the EHIF, the county and municipal governments, health care providers and professional and patient organizations. It then discusses key organizational reforms.

Fig. 2. Organizational structure of the health care system



The role of the state and state agencies

Through the Ministry of Social Affairs and its agencies, the state is responsible for development and implementation of overall health policy, including public health policy, and for 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 of health, social welfare and labour. Consequently, it has three major policy divisions: health care, social services and employment. The health care division is further divided into three policy areas: health care, drugs and public health. Over the last 10 years, the subdivision of these policy areas into separate departments has changed many times, but as of the end of 2003 the health care division has been subdivided into three administrative departments: the Health Care Department, responsible for health care, investment and drug policy; the Public Health Department, responsible for public health policy, prevention programmes and health protection legislation; and the Health Information and Analysis Department.

Day-to-day administrative responsibility lies with the Secretary General/ Chancellor, a civil servant, who reports to the Minister of Social Affairs. The Deputy Secretary/Vice Chancellor in Health heads the health care division. In the autumn of 2003 the coalition government created a new position of Political Assistant Minister. The Minister of Social Affairs nominates the Political Assistant Minister, who reports to the Minister only. At present he or she is responsible for health policy, alongside the Deputy Secretary/Vice Chancellor in Health, but this may change in future.

In the area of health, the ministry's general responsibilities include health policy formulation, monitoring population health and shaping the organization of the national health system by determining the scope of primary, secondary, tertiary and public health services.

Its main health care tasks include the following:

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

In the area of drugs, the ministry's responsibilities increased in 2002, when

the Drug Policy Department was established. However, within a year this department had been merged with the Health Care Department. The ministry's main drug-related tasks include the following:

- preparing legislation;
- analysing and preparing reference prices;
- holding negotiations with pharmaceutical companies over price agreements for drugs to be reimbursed by the EHIF; and
- analysing and proposing margins for pharmacies and wholesalers.

Four subordinate health agencies operate under the ministry. The ministry's health care division coordinates the activities of the Health Care Board, the State Agency of Medicines, the Health Protection Inspectorate and the National Institute for Health Development, although each agency is directly responsible only to the Minister. Occupational health issues also come under the ministry's health care division.

The *Health Care Board* became operational in 2002. Its main functions include licensing health care providers and registering health professionals, controlling the quality of health care provision (mainly by processing patient complaints) and funding and organizing ambulance services. It is also responsible for ensuring adequate standards of hygiene and health protection, but in this it cooperates with other agencies such as the Health Protection Inspectorate.

Responsibility for the registration and quality control of drugs and for regulation of pharmaceutical trade (including imports and marketing) lies with the *State Agency of Medicines (SAM)*. This agency also ensures the safety of donated blood and tissue transplants. It has some responsibility for the registration of medical technology.

The *Health Protection Inspectorate* is the successor to the Soviet sanitary–epidemiological service, with which it shares many similarities, particularly in terms of its organization and main areas of responsibility. It enforces health protection legislation through four regional offices with local branches in each of the 15 counties, and is also responsible for communicable disease surveillance, national and local epidemiological services and implementation of the national immunization programme.

In 2003, the *National Institute for Health Development* was established by merging three smaller public health institutions. The new institute aims to become a centre of excellence in the area of public health, assuming responsibility for applied research and analysis in public health, environmental health and communicable diseases, as well as undertaking public health monitoring and reporting. It is also responsible for implementing national public health programmes and supporting local public health activities, and it has a

training centre offering public health and health management programmes.

Some "parallel" health systems providing health care to the police, railway workers and others were integrated into the national health system in the early 1990s. However, the *Ministry of Justice* continues to be responsible for the health care needs of prisoners. Since 2002, attempts have been made to develop an integrated health system that would encompass the prison as well as the non-prison population, although health care for prisoners would still be funded by the Ministry of Justice. The main ideas have been to introduce the family doctor system for prisoners and to use information technology to share information with the non-prison health system. Already, public health services for the combined population are planned and provided together, with very good results in tuberculosis prevention.

The *Cabinet of Ministers* (referred to as *the government*) plays a planning and regulatory role in approving the development plan for the hospital network, setting health care prices (as the government must approve reference prices and the maximum level of health insurance benefits reimbursed by the EHIF) and approving regulatory acts involving wider public health issues. The government also has the right to nominate one member to the EHIF Supervisory Board (see below), who serves in addition to the board's other four state representatives.

The role of the Estonian Health Insurance Fund (EHIF)

In 2001, the EHIF obtained its present status as a public independent legal body, replacing the Central Sickness Fund and 17 regional sickness funds. Its main role is as an active purchasing agency, and its responsibilities include:

- contracting health care providers
- paying for health services
- reimbursing pharmaceutical expenditure
- paying for some sick leave and maternity benefits.

The EHIF is governed by the 15-member *Supervisory Board* consisting of five representatives each from the state, employers and EHIF members (insured persons). 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. Other state representatives include the Minister of Finance, the Chair of the parliamentary Committee on Social Issues, another member of the parliament appointed by the parliament and a civil servant from the Ministry of Social Affairs appointed by the government. Employer and

member representatives are nominated by their respective associations and appointed by the government. The Supervisory Board approves the EHIF's three-year development plans, annual budget, regular reports and criteria for selecting providers for contracting. It also provides the government with views on health care prices.

Responsibility for operational management lies with the EHIF *Management Board*, which can have three to seven members. Population needs assessments, contracting and claims processing are carried out by the EHIF's four regional departments, which also have smaller county-level offices with smaller areas of responsibility.

The role of county governments, municipal councils and municipal governments

Estonia has two administrative levels: state and municipal. County government represents the state regionally but without any legal power. In terms of health, county governors have responsibilities in primary care, announcing family doctor vacancies and approving their appointments. They also assign the service areas for family doctors within their respective counties. Recently, the role of county governors in organizing health care has been reduced (see below).

As of 2001, municipal governments no longer have any legal responsibility for funding or organizing health care. However, most hospitals belong to municipal governments, which either own them outright as limited companies or manage them through non-profit-making "foundations". These non-profit-making organizations operate under private law, and since their founders can nominate members of their governing bodies, municipal governments continue to play a role in health care through hospital governance structures. Some municipal governments also provide primary care providers with financial support.

The role of health care providers

Health care provision has been almost completely decentralized since the passing of the new Health Services Organization Act in May 2001 (with effect from 2002). The Act defines four types of health care: primary care provided by family doctors, emergency medical care, specialized (secondary and tertiary) medical care and nursing care.

Health care providers are autonomous. Services can only be provided by individuals or institutions operating as private legal entities: a limited liability company, a foundation or a private entrepreneur. Most hospitals are either

limited liability companies owned by municipal governments, or foundations established by the state, municipalities and other public agencies. In this sense they are owned and managed by public institutions, either on a for-profit (limited liability company) or not-for-profit (foundation) basis. Most ambulatory providers are privately owned. All family doctors are private entrepreneurs or salaried employees of private companies; these companies are restricted to providing only primary care services.

The only areas of direct state control include county governors deciding on family doctor service areas within their region and the Ministry of Social Affairs deciding on the number of ambulance units to be financed by the state budget. The state's influence on specialized care and independent nursing care are only through standard-setting and public financing.

Compared to organizations that have public funding or direct state oversight, purely private entities play a larger role in providing outpatient specialist services such as gynaecology, ophthalmology, urology, head-and-neck surgery, psychiatry and orthopaedics. However, they also operate in other specialties where public funding is limited or absent, such as dental care and plastic surgery. In this respect, limited public funding is the key driver of the market for private health care. For more detailed information, see the section on *Health care delivery.*

The role of professional and patient organizations

The most prominent professional group is the *Estonian Medical Association (EMA)*, which represents about half of all Estonian doctors. It was re-established in 1988 and is the main representative association for doctors involved in public negotiations with employers or the Ministry of Social Affairs. Thirty-five main medical specialties defined by the Minister form the basis for planning specialist medical training and standardization of service provision. These specialties all have their own professional associations, and each nominates a representative to negotiate with the Ministry.

The *Estonian Nurses' Union* represents about half of all nurses and has increased in power in the last few years. For example, it is the only organization that has managed to organize a strike. In 2002 its members took strike action to combat the Hospital Association's reluctance to enter into negotiations for a minimum wage. The union has also been active in redefining professional standards in nursing and improving the nurses' training curriculum.

Hospitals have joined together to form the Hospital Association. However, the role of this union is slightly ambiguous as, until recently, hospitals were run by doctors, who belong to the EMA.

There used to be several organizations claiming to represent patients, but recently the oldest of these – the *Estonian Patient Representative Union* (*Eesti Patsientide Esindusüüh*ing, abbreviated in English to *EPRU*) – has become the most accepted organization. The EPRU has been actively involved in mental health policy and in drafting and debating legislation. It is currently involved in most ministerial working groups set up to discuss new policies or strategies – for example, the new project on a national electronic health information system. The Ministry of Social Affairs traditionally provided limited financial support to the EPRU. However, since 2003, the funds for patient representation have been distributed through open competition. Additional support comes from alternative sources on a project basis. Patient groups have also been formed to represent people with specific illnesses or disabilities, such as the Diabetic Society, the Multiple Sclerosis Society and the Heart Association.

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

Organizational reform of the health care system

As noted above, the Estonian health system has undergone significant changes since 1991. This section outlines key aspects of the organizational restructuring, which took place in two waves: the first during the early 1990s and the second from 1999 onwards. While the first wave of reforms introduced a radical new direction for the health system and laid the foundation for the current organizational structure, the second wave focused more on health care providers and involved more incremental developments aimed at clarifying and strengthening regulation, clarifying the functions and responsibilities of the various stakeholders and strengthening public regulatory and purchasing capacity. (See also the section on *Health care reforms*.)

Two laws passed in the first wave of reforms provided the legal basis for the health system's current organizational structure: the Health Insurance Act of 1991 and the Health Services Organization Act of 1994. These laws established a system of social health insurance based on multiple sickness funds and a purchaser–provider split. Parallel health systems of health care delivery were abolished (with the exception of primary care for the armed forces and primary and some secondary care in prisons).

The most important reform to take place in the second wave involved re-centralizing some planning functions in 2000. The planning of specialist care was moved back to the state level, and the planning and supervision of primary care was moved from the municipal to the county level. These functions had originally been decentralized to the municipalities (by the 1994 Health Services Organization Act), but municipalities were not able to carry them out effectively due to their small size and weak revenue base (see below).

A further reform involved changes in the legal status of health care providers. The 1994 Health Services Organization Act had not specified provider status options, giving rise to some uncertainty about legal rights, responsibilities and accountability in relation to hospital management. The new version of the Act, which came into force in 2002, specified that health care providers would operate as private entities under private law, as limited liability joint-stock companies (for profit), foundations (not for profit) or private entrepreneurs (self-employed individuals). However, in the case of institutions, the founders or stock-owners are public, so the strategy can be more accurately described as one of "corporatization" rather than privatization. The aim of this strategy was to create efficiency incentives through increased decision rights at the hospital management level, while maintaining representation of the public interest through having the state and the municipalities appoint members of hospital supervisory boards. The legislation did not cover regulation of public accountability, with the exception of health care licensing. To strengthen licensing of providers, the Health Care Board was established as a separate state agency under the Ministry of Social Affairs (see above), which took over the licensing activities previously carried out by a department in the Ministry.

The health insurance administration also faced changes in 2001. The original Health Insurance Act had not clearly defined the legal status of the Central Sickness Fund and the regional sickness funds, which led to management questions. After considering whether to define the funds as state agencies, foundations or independent public legal entities, the government opted for the last in the hope that it would stimulate administrative efficiency, transparency and responsiveness. The first two options were rejected on the grounds that a state agency might be limited by statutory regulations with respect to organization and management, while a foundation, which would be established by government decree rather than parliamentary legislation, would be insufficiently regulated. In contrast, in being established by parliamentary mandate, an independent public body would be subject to more rigorous regulatory safeguards. In 2001, the Estonian Health Insurance Fund replaced the Central Sickness Fund. At the same time, the 17 county-level regional sickness funds (based in each of the 15 counties and in 2 cities) were consolidated into 7 regional departments of the EHIF (and then, two years later, into 4 regional departments). This organizational

change strengthened the EHIF's purchasing power considerably, and it began the process of negotiating annual contracts with tertiary care providers at the national level by involving all regional directors.

In response to these reforms, providers have stepped up their political activity. Several, including the Chair of the EMA, were elected as members of the parliament in the spring of 2003. The creation of a new post of Political Assistant Minister in the Ministry of Social Affairs later in the year was also seen as a response, by the Minister, to pressure from provider representatives in his own political party who claimed that health care was being sidelined in the new merged Ministry. The Minister opted to appoint a medical doctor to fill the post. Although it is still too early to assess the impact of this particular appointment, many see him as representing provider interests in discussions of health policy and finance.

In public health, the Public Health Act of 1995 states that the general responsibility for health protection, promotion and disease prevention policy lies with the Ministry of Social Affairs, but it also notes that county governors and municipalities have a general obligation to secure public health services for their populations. The Ministry is planning the preparation of a new law, to be ready in 2006, which would make clearer distinctions in the responsibilities of different stakeholders and shift the focus of the Health Protection Inspectorate away from enforcement and control and more toward prevention, monitoring and surveillance. Some efforts were made in the mid-1990s to reorganize the sanitary–epidemiological system established in the Soviet era, but the Ministry is planning further attempts to re-orient the health system in the direction of public health and prevention.

Although some politicians have been critical of the health system, largely due to the existence of waiting lists in ambulatory care and, on a more abstract level, to concerns about the high level of autonomy awarded to providers and the EHIF, no concrete plans for further organizational change have been put forward.

Planning, regulation and management

This section analyses the planning and regulatory approaches taken in the last 10 years, which culminated in the current system of planning and regulation. It also analyses some aspects of provider management.

In the first wave of health care reforms, which took place at the beginning of the 1990s, the government delegated planning and management of primary and

secondary care to municipalities and changed to a system of funding based on EHIF reimbursement of services delivered by EHIF-contracted providers. These reforms were informed by the view that national planning of health services was no longer necessary; instead, providers and county and municipal governments would develop health services in response to patient needs and preferences. The Ministry of Social Affairs retained its regulatory function, licensing health care facilities and private providers and keeping a register of doctors. It carried out the first round of facility licensing in 1994–1995, effectively transforming several small hospitals into nursing homes in the social sector.

However, planning at the municipality and county level did not function as originally envisaged, largely due to the small population size of most municipalities. The representation of local interests at the municipal level tended to focus more on maintaining local providers than attempting to enhance efficiency through cooperation with other municipalities. In terms of county-level prioritization of services and providers, decisions tended to be made by the regional health insurance funds (then called sickness funds) rather than by the municipalities, who were unable to influence the volume of sickness fund contracts.

By the middle of the 1990s, the medical profession began to recognize the need for a general framework for the future development of the health system. Several specialist associations presented their own development plans to the Ministry of Social Affairs, and it was suggested that the Ministry take these plans into account when developing a new licensing policy and planning specialist training positions.

The need for a new, more restrictive licensing policy arose as a result of developments in the legislative system that meant that the legal basis for licensing (which originated in the early 1990s) had become less clear. Changes were also necessary to prepare for European Union (EU) accession and to harmonize regulations facilitating the free movement of health professionals. In 2002, the new Health Services Organization Act came into force, establishing a separate state agency for licensing providers and supervising the health system: the Health Care Board (see above). All doctors, dentists, nurses and midwives must now register with the Board before they can provide health services. At the county level, the county governor's office is responsible for supervising the administration of primary care.

National health planning was re-activated at the end of the 1990s, when the Ministry of Social Affairs commissioned the development of the Hospital Master Plan 2015 to make projections about future hospital capacity. An international tender to prepare the plan was won by a Swedish consultancy and published in April 2000. The plan predicted the need to reduce the number of acute inpatient

beds by two thirds and to concentrate acute inpatient care in 15 larger hospitals, decreasing the total number of hospitals, through mergers and other types of restructuring, by three quarters (from 68 to 15) by 2015. In spite of negative publicity surrounding the plan, the Ministry has used it as a basis for further discussions with local politicians and provider associations. For example, it enabled the Ministry of Social Affairs and Tallinn Municipality to restructure previously separate smaller secondary and tertiary hospitals and polyclinics in Tallinn into four hospital management networks.

The specialist associations were also asked for to evaluate the plan, and to develop separate plans for their own specialty. After a series of consultation and some compromises, a milder version of the original Hospital Master Plan 2015 was approved by the government in April 2003. This version envisaged 21 hospitals (rather than 15) being eligible for long-term contracts with the EHIF and state investment. Fourteen small county-level hospitals received assurances that they would not face reorganization into ambulatory centres or nursing homes. The approved plan, together with the specialist association assessments and development plans, were taken into account in developing criteria for hospital licensing and for regulating the types of services that hospitals at different levels are allowed to provide.

Since 2000, the general long-term planning of specialist care has been carried out by the Ministry of Social Affairs. The EHIF translates the ministry plans into shorter-term contracting policy. Its priority setting and planning focuses on the volume of health services, giving priority to improving the accessibility of ambulatory care (in terms of time and geography) and reducing inpatient waiting times to acceptable levels.

Responsibility for primary care planning is shared by the Ministry of Social Affairs at the national and county levels. The ministry regulates the overall number of family doctors per county based on population numbers and geographical density. The county governor plans the division of geographical areas within the county.

Planning of human resources has been a relatively neglected area. In the early 1990s, the number of medical admissions decreased in an attempt to address the Soviet "overproduction" of medical doctors. Since the mid-1990s, the Ministry of Social Affairs has attempted more long-term analysis of admission rates for medical and nursing training. Currently, it is a hot issue, and recent workforce plans have been drawn up that take into account predictions of professional mobility within the EU.

Overall, the trend towards re-centralizing some planning and regulatory functions was prompted partly by the experience of the 1990s, which showed that decentralized planning did not result in balanced development or efficient

and accessible provision of health services, although in many cases progress was made in trying to be more responsive to patient needs. Also, in the context of declining resources for health care at the end of the 1990s, the EHIF was forced to use the contracting process to prioritize health services and providers, sometimes recommending 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 a sharing of accountability between the EHIF and the Ministry of Social Affairs in 2001.

In terms of management, prior to the implementation in 2002 of the new Health Services Organization Act, which clearly defined the legal status of hospitals and other health care institutions, there had been uncertainty about the autonomy of hospital managers. In the absence of legal requirements, some municipalities established hospitals as non-profit-making nongovernmental organizations (NGOs), some as joint-stock companies and some as municipal agencies. The Ministry of Social Affairs retained direct control of some tertiary and a few secondary hospitals that the municipalities had refused to take ownership of in 1994. These hospitals were legally defined as lower-level state agencies. Consequently, there was variation among hospitals in terms of managerial autonomy and accountability mechanisms. Although hospitals with state or municipal agency status had less managerial freedom than the other hospitals, in practice neither the ministry nor the municipalities were directly involved in managing them, and levels of accountability were low. The new Act clearly defined all providers as private entities operating under private law, with public interests represented through public membership of supervisory boards.

Decentralization of the health care system

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

However, problems arose from the fact that some functions had been decentralized to levels that were unable to ensure efficient performance. Most municipalities were too small and lacked sufficient financial resources to fulfil

their new functions, while at county level there were difficulties in finding appropriate qualified personnel. Lack of coordination among the sickness funds led to the establishment of a Central Sickness Fund in 1994, which was subordinate to the Ministry of Social Affairs and responsible for the activities of the county-based sickness funds.

Towards the end of the 1990s, there were three main trends in decentralization. First, the responsibility for overall health care planning was firmly re-established at the national level under the control of the Ministry of Social Affairs. County- and municipal-level responsibilities for planning and administering health services were reduced (see the sections on *Planning, regulation and management* and *Health care financing*).

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

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

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

Health care financing and expenditure

Main system of financing and coverage

Health care in Estonia is largely financed publicly. Since 1992, earmarked payroll taxes have been the main source of health care finance, accounting for approximately 66% of total expenditure on health care over the last five years. Other public sources of health care finance include state and municipal budgets, accounting for approximately 8% and 2% of total health care expenditure respectively. The public share of health care spending has declined from 80.7% in 1998 to 76.3% in 2002 (see Table 5).

Table 5. Percentage of main sources of health care financing, 1990–2002

Source of financing	1990	1999	2001	2002
Public	**100.0**	**76.9**	**77.8**	**76.3**
Taxes (state and municipal)	100.0	10.9	10.8	10.7
Social health insurance	0.0	66.0	67.0	65.6
Private	**0.0**	**19.6**	**22.2**	**23.7**
Out-of-pocket	0.0	14.0	18.6	19.9
Private health insurance	0.0	0.8	1.1	1.0
Other	0.0	4.8	2.5	2.8
Other	**0.0**	**3.5**	**0.0**	**0.0**
External sources	0.0	3.5	0.0	0.0

Sources: (11,12,13).

In 2002, private sources of health care financing accounted for 23.7% of total expenditure on health care, rising from 13.2% in 1998. It is expected to have risen even further in 2003 after the introduction of capped user charges for ambulatory and inpatient care (see below). Out-of-pocket payments (not including private health insurance) account for 83.9% of private spending on

health care. Such payments have grown steadily since the mid-1990s and are mostly spent on pharmaceuticals and dental care. Private health insurance mainly consists of travel insurance.

External sources of health care financing play a minor role in Estonia and fell to almost 0% of total health care expenditure in 2001. However, levels of external support may rise again in the coming years, mainly due to Estonia's membership of the European Union (EU) (see below).

This section describes the main system of financing and coverage, which is operated by the Estonian Health Insurance Fund (EHIF). It outlines the criteria for entitlement to EHIF coverage and the way in which earmarked payroll taxes are collected by the Taxation Agency and pooled by the EHIF. The section on *Complementary sources of financing* discusses other sources of funding, including state and municipal budgets, out-of-pocket payments, voluntary health insurance and external funding.

Health insurance financing and coverage

The EHIF is the public independent body responsible for health insurance. It operates through four regional branches, each covering two to six counties, and its main responsibilities include pooling funds and paying for health care (including pharmaceuticals) and for some sick leave and maternity benefits.

At the end of 2003, the EHIF covered 94% of the population (1 272 051 people). Entitlement to EHIF coverage is based on residence in Estonia and membership in specific groups defined by law. There is no possibility of opting out. The only group excluded from coverage is the prison population, whose health care is organized and paid for by the Ministry of Justice (see the section on *Organizational structure and management*). Since the end of 2002, some groups who were not previously covered have been able to obtain coverage on a voluntary basis (see below).

Those covered by the EHIF fall into four main categories: those who make their own contributions, those who are covered by contributions from the state, those who are eligible for coverage without contributing and those who are covered on the basis of international agreements. Table 6 outlines these different groups and shows the proportion of insured in each group.

Employees and self-employed people make contributions to the EHIF via an earmarked payroll tax collected by the Taxation Agency. This tax is known as the social tax and covers both health and pension contributions (equal to respectively 13% and 20% of employee wages and of self-employed individuals' earnings). In practice, employers actually make contributions on behalf of employees, so employees do not contribute directly to health insurance. The government

Table 6. EHIF entitlement criteria and % of insured in different entitlement groups, 2003

Group	Contribution/basis of entitlement	% of insured
Insured covered by employer or self	**Employer or individual contribution**	**45.90**
Employees	Employers pay 13% of wages	44.30
Self-employed	Self-employed pay 13% of earnings	1.60
Voluntary membership	13% of the previous year's national average salary	0.02
Insured covered by state contribution	**State contribution**	**3.80**
Persons on parental leave with children younger than 3; one non-working parent of children younger than 8; and one parent in families with three children younger than 19	13% of an amount defined each year	1.70
Registered unemployed	13% of an amount defined each year (entitlement for 270 days)	1.20
Carers of disabled people	13% of an amount defined each year	0.75
Men participating in compulsory military service	13% of an amount defined each year	0.16
Persons exposed to nuclear contamination (mainly related to the Chernobyl catastrophe)	13% of an amount defined each year	0.03
Non-contributing insured	**No contribution**	**49.60**
Children up to 19 years	Residence	23.90
Pensioners	Residence and entitlement to state pension	19.70
Disabled persons entitled to special pensions	Residence and entitlement to disabled persons pension	2.90
Students	Studying (no contributions from students younger than 24 or within the "normal anticipated length of study")	2.80
Non-working spouses of insured persons	Before 2003: all Since 2003: those five years from pensionable age	0.06
Non-working pregnant women from the 12th week of pregnancy	Residence	0.05
Insured based on international agreements		**0.49**
Russian retired military personnel	Contributions paid by the Russian Federation based on the average costs of the insured in the respective age groups	0.30
Other agreements	No contributions paid; costs reimbursed or waived	0.19

Source: (14).

had originally intended health contributions to be shared between employers and employees on a 10%/3% basis, but the plan was never implemented. A minimum social tax contribution for employees and self-employed people is

specified by the government based on the contribution rate for those covered by the state. Previously, there was a ceiling on the social tax contribution for self-employed people, but it has been abolished. The Taxation Agency transfers the health part of the social tax to the EHIF.

Specific groups are covered by contributions from the state budget, including individuals on parental leave with small children (see Table 6), those who have been registered as unemployed (eligible for cover for up to nine months) and those caring for disabled people. The state's contribution for these groups is defined annually at the same time as the state budget is approved (see below). In the first year after it was introduced in 1999, the state's contribution was fixed at 13% of the national minimum wage – an amount agreed to by employer associations and trade unions and approved by the government – but the law changed in the following year, replacing the national minimum wage as the basis for the state contribution with an arbitrary fixed amount to be decided every year. In practice, this has meant that the state contribution per person has remained at the level it was in 1999.

Other groups, including children, pensioners, those receiving a disability pension and students, are eligible for coverage without any contribution from either themselves or the state.

Since the end of 2002, voluntary EHIF coverage has been extended to those who might otherwise remain uninsured. Eligibility for voluntary coverage is restricted to Estonian residents who receive a pension from abroad (usually because they worked abroad and have returned to Estonia to retire) and to people who are not currently eligible for membership but who have been members for at least 12 months in the two years prior to applying for voluntary membership, as well as their dependants. The latter group includes students studying beyond what is considered to be the normal length of study and people temporarily out of work but not registered as unemployed. Voluntary members (212 people in 2003) are entitled to exactly the same benefits as compulsory members. The minimum contract is for one year, and coverage begins a month after the contract has been signed. Voluntary members pay a contribution of 13% of the national average salary of the previous year, as published by the Statistical Office. In 2003 the contribution amounted to about €46 per month. A commercial insurer also offers voluntary coverage to this group, although it provides a lower level of benefits (see below).

People are covered regionally, on the basis of where they live and use health services.

Those commuting between regions due to work or for other reasons can choose the region in which they are registered. The EHIF recommends that they register in the region where their chosen family doctor is located. As the four

regional branches contract with providers outside their regional territories, the insured are not limited to the use of regional providers alone.

Everyone insured with the EHIF was formerly issued a plastic card with a magnetic stripe (paper cards were issued prior to 1998), which he or she was required to present when being treated. Since 1999, providers have been obliged to check that a patient's card is valid, using an online information system that gives providers details of insurance status and family doctor. The online information system also permits the insured to check their own personal data (for example, name, address, employer, insurance validity and family doctor) through state electronic channels (e-state) and Internet banking channels offered by commercial banks. The health insurance card has gradually been replaced by a national identification card introduced in 2001. Patients can show providers any card that confirms their national identification number, such as a driver's licence. European health insurance cards can be issued to those travelling within the EU.

In all, the EHIF covers about 94.0% of the population. However, levels of coverage vary among the four regional branches, from 92.2% in one area to 96.4% in Harjumaa, the region where the capital Tallinn is located. These variations in levels of coverage arise for socioeconomic reasons – for example, due to regional differences in levels of long-term unemployment.

In 2002, the estimated number of people not covered by the EHIF was about 77 000 (6% of the population). Most of them are either the long-term unemployed or those not officially employed and thereby evading taxation. Table 7 shows that those least likely to be covered by the EHIF are men of working age. Emergency care for the uninsured is funded by the state budget (see below). Since 2002, the government has obliged the EHIF to check the validity of claims for emergency care by uninsured people.

Table 7. Per cent of total population that is EHIF-insured, by age group, 2002

Age group	Female	Male	Total
0–19	99	98	99
20–44	93	83	88
45–64	95	89	93
65+	100	100	100
Total	97	91	94

Source: (14).

The EHIF's main source of revenue is contributions, which account for 98–99% of total revenue. Income from interest has accounted for 0.15–0.7% in recent years, and the remaining 0.3–0.8% comes from other sources.

Health insurance reforms and challenges

In 1992 the government established sickness funds in each of the 15 counties and 6 of the cities, with 1 extra fund specifically for seamen (22 sickness funds in all). In order to enhance national coordination, the government set up an Association of Sickness Funds and then, in 1994, a Central Sickness Fund. The Central Sickness Fund was intended to strengthen central functions such as planning, redistribution of revenue among regions and control of financial resources. Originally, the regional sickness funds had been controlled by county councils (which ceased to exist in 1995) and municipal governments, but they now became subordinate to the Central Sickness Fund. By 1995, their number had fallen from 22 to 17 in an attempt to strengthen local management. The populations covered by the different regional sickness funds were uneven in size, ranging from 10 000 to 400 000 inhabitants, with most covering 30 000 to 40 000.

Further centralization took place in 2001, when the EHIF replaced the Central Sickness Fund and the regional sickness funds were merged into seven regional branches. Small EHIF offices remained in every county, but needs assessment, contracting and payment activities took place in the regional branches. The aim of this reform was to broaden the regions' risk base and to strengthen the EHIF's purchasing function. In 2003, the seven regional branches were merged again to form four regional branches, each covering 200 000 to 500 000 insured persons.

The 2001 reform also changed the legal status of health insurance funds; for details, see the sections *Organizational structure and management* and *Health care reforms*.

In recent years the health insurance system has faced two main challenges. The first has involved problems in collecting contributions. Initially, these contributions were collected by the regional sickness funds. However, in order to enforce collection, in 1994 the government gave health and pension contributions (13% and 20% of wages or earnings) the status of taxes and combined them to form what is known as the social tax (33% of wages/earnings). In 1999 responsibility for collection of the social tax was moved from the regional sickness funds and pension funds to the Taxation Agency. Although the change initially resulted in lower revenue for the sickness funds, in the longer term it has made contribution collection more effective. More importantly, the change allowed the sickness funds (and subsequently the EHIF) to focus on developing their purchasing function and on monitoring provider performance without any increase in administrative costs.

The second challenge concerns the decreasing ratio of EHIF contributors to non-contributors. In 1992, the EHIF covered 800 000 employees and 600 000 non-working dependants. By 1997, due to a declining population on one hand and economic restructuring on the other, the ratio of contributors to non-contributors had evened out. This trend has continued. By 2002 only 45% of all those covered were contributing to the system as employees or self-employed persons, with 51% not contributing at all and 4% covered by government contributions.

Since the end of the 1990s, the government has tried to address this issue by revising the coverage entitlement criteria, making contributions for some groups who were previously entitled to cover without contributions and restricting non-contributory entitlement for some groups of working age. For example, in 1999 the state took responsibility for making contributions for groups such as persons on parental leave with very small children and those receiving a disability pension. The revised Health Insurance Act that came into force in October 2002 restricted non-contributory entitlement to EHIF coverage for groups such as non-working spouses of the insured (with the exception of spouses who have less then five years to pensionable age). This reform aimed not only to broaden the contribution base, but also to prevent abuse of the system. There was evidence to suggest that entitlement to EHIF coverage as a spouse had been used to evade tax by some who were actually working and should have been making their own contributions. For students, entitlement to non-contributory EHIF coverage was limited to the "normal" length of study. At the same time, the groups for whom the state makes contributions were broadened to include one non-working parent of children younger than 8 and one parent in families with three children younger than 19.

Although the 2002 amendments have increased the proportion of contributors, the general ratio of less than one contributor to each covered non-contributor prevails, resulting in a decreasing sense of solidarity in the health insurance system, with some contributors complaining about not receiving as much as they contribute. Raising the social tax rate has not seriously been considered and, in general, the dynamics of health insurance, taxation and private expenditure have not generated much political debate, although the EHIF and providers have been drawing attention to the declining share of general tax financing in the health system (see below). Some politicians have suggested introducing individual savings accounts, along the lines of Singapore's medical savings accounts, but no concrete proposals have been put forward. No major changes are expected in the near future.

Health care benefits and rationing

Health care benefits

The health care benefits provided by the EHIF can be divided into two groups: cash benefits (18.5% of expenditure on health insurance benefits) and benefits in kind (81.5%). In the first group (see Table 8), the EHIF provides compensation for temporary health-related incapacity for work, the costs of adult dental care, the additional reimbursement of costs of prescription drugs on the positive list (where cumulative out-of-pocket expenditure is high) and travel expenses incurred while accessing health services (from 2005). Compensation for temporary incapacity for work is paid in case of temporary illness only to those in employment, based on earnings in the previous year, whereas the other cash benefits are available to all who are covered by the EHIF. The second group of benefits covers the provision of preventive and curative health services, drugs and medical devices, which may be subject to cost sharing (see below).

Overall, the range of health care benefits covered by the EHIF is very broad, due in large part to the fact that prior to the introduction of a system of health insurance, the state funded and provided universal, comprehensive health care coverage. The few services excluded include cosmetic surgery, alternative therapies and opticians' services. However, dental care is the main area in which coverage has gradually declined. At the end of 2002, dental care for adults was excluded from the list of benefits in kind and replaced by cash benefits (see Table 8). Conversely, since 2003 the EHIF has introduced cover for long-term care, nursing care and some home care, thereby broadening its benefits package.

Some EHIF benefits in kind are subject to cost sharing, as regulated by the revised Health Insurance Act of 2002. Following claims of underfunding by providers (see below), the new legislation gives them the right to introduce capped fees for specific benefits through a fixed payment per service (a co-payment). Some services, such as in vitro fertilization (IVF) and abortion, have a statutory cost-sharing requirement that has been approved by the government as a fixed proportion of the service price (co-insurance) (see Table 9). Cost-sharing rules apply to all EHIF-contracted providers, regardless of legal status. The Act notes that co-insurance rates cannot exceed 50% of the listed price of a service. It sets out the following criteria for considering co-insurance for non-drug services.

Table 8. Cash benefits provided by the EHIF, 2003

Type	Description	Reimbursement rate (amount in % or €)
Temporary incapacity for work[a]	Sickness benefit[b]	80% of the previous year's income eligible for the social tax Hospitalization and outpatient care up to 182 days (240 for tuberculosis) 80%: temporary relief from employment duties (up to 60 days) 80%: quarantine (up to 7 days) 100%: occupational illness or accidents at work (up to 182 days) 100%: prevention of a criminal offence, protection of national or public interests or saving human life (up to 182 days)
	Maternity benefit	100%: pregnancy and maternity leave (up to 140 days, or 154 days for twins or complicated births)
	Adoption allowance	100%: adoption leave (70 days if child is <10)
	Care allowance	80%: nursing a child <12 in hospital (up to 14 days) 80%: nursing a family member at home (up to 7 days) 80%: caring for a disabled child <16 or child <3 if the carer is ill or receiving obstetric care (up to 10 days) 100%: nursing a child <12 (up to 14 days)
Adult dental care	Persons older than 19	€9.80 per calendar year
	Pregnant women	€28.80 per calendar year
	Mothers of children <1	€19.20 per calendar year
	People with illnesses that affect need for dental care	€19.20 per calendar year
	Dentures for persons aged >63 and persons receiving old age pensions	€127.80 per three calendar years
Additional reimbursement of outpatient drugs	Drugs on the positive list prescribed by ambulatory providers	50% of €383.40–639.00 per calendar year 75% of €639.00–1278.00 per calendar year 0% above €1278.00
Travel expenses	Expenses incurred to access health services	Per calendar year Implemented from 2005

Source: (15).

Notes: [a] The EHIF pays this from the second day after temporary incapacity for work. The benefit per calendar day is calculated according to the average salary of the individual concerned in the last full calendar year (based on the amount of social tax paid in that year).

[b] Available up to a maximum of 250 days per calendar year. Working persons who are older than 65 or who receive a state pension for incapacity for work can obtain this benefit for 60 days per episode of illness, not to total more than 90 days per year.

- The goal of the service can be achieved by other, cheaper methods which do not involve significantly greater risk or have other significant adverse effects on the patient.
- The service aims more at improving quality of life than treating or alleviating a disease.
- Patients are generally prepared to pay for the service themselves, and the decision of an insured person to enter into a contract for the provision of the service depends primarily on the assumption of the EHIF's obligation to pay for the service, or on the extent to which the payment obligation is assumed.

Reimbursement of prescription drugs and medical devices

The first essential drug list was developed in 1992 and was initially used as a guide for drug donations from other countries. Later it was used by hospitals to develop their own drug formularies. It was also used to create a positive list of drugs for reimbursement by the EHIF. In recent years, the main changes in defining drug benefits have included the development of clear guidelines for adding drugs to the positive list, the introduction of reference prices and greater support for generic drugs.

In 1993, a reimbursement system was introduced for prescription drugs purchased from outpatient pharmacies. Individuals made a compulsory co-payment for each purchase. The system was relatively robust, based on three different reimbursement levels for prescription drugs, depending on the disease, and providing higher reimbursement levels for children, the disabled and retired people. In brief, all prescription drugs exceeding a patient co-payment of €2.60 (EEK 40) were covered by at least 50% reimbursement, up to a maximum reimbursement of €12.00 (EEK 200). The co-payment for medicines on a list of drugs used for more serious chronic illnesses was lower – €0.60 (EEK 10) – and reimbursement rates were either 90% or 100%. The essential drug concept was used to compile these lists, and only drugs with proven efficacy for the treatment of a disease were assigned preferred status. However, one weakness of the system was that it did not distinguish between branded and generic products. Even when several generic drugs were available, the price of the branded drug was reimbursed if the branded drug was prescribed.

As drug costs increased much faster than overall health care spending, reform of the reimbursement system was planned and carried out in 2001 and 2002. The legal basis for the new system is the 2002 Health Insurance Act. All drugs provided on an inpatient basis are free. Over-the-counter drugs, vitamin and mineral supplements, herbal remedies etc. are not reimbursed. Most

Table 9. Cost sharing for EHIF benefits provided by EHIF-contracted providers, 2004

Type of service	Fees	Fee exemptions
Primary care/family doctors	Office visit – no co-payment	
	Home visit – co-payment of up to €3.20 (EEK 50)	Children under two years and pregnant women from the 12th week of pregnancy
	Certificates and documentation for driving licences etc. – a "reasonable" co-payment	Prescriptions, sick-leave certificates, documents needed for disabled status or medical care
Outpatient prescription drugs	General drugs – co-payment of €3.20 (EEK 50) per prescription, plus co-insurance of at least 50% of the drug price (minus the co-payment); the EHIF will not reimburse more than €12.00 (EEK 200) per prescription Drugs for chronic illnesses – co-payment of €1.30 (EEK 20) plus co-insurance of 0% or 25% of the drug price (minus the co-payment) (or 10% for those aged 4–16, receiving disability or old age pensions, or older than 63) Drugs for those younger than 4 – co-payment of €1.30	Annual spending on outpatient prescription drugs of €383.40 to €1 278.00 is eligible for additional reimbursement from the EHIF (see Table 8)
Outpatient specialist care	Co-payment of up to €3.20 (EEK 50)	Children under two years and pregnant women from the 12th week of pregnancy
Inpatient care	Co-payment of up to €1.60 (EEK 25) per day, for up to a maximum of 10 days per episode of illness	Children, pregnant women, patients in intensive care units
	Co-payment established by providers for above-standard accommodation (private rooms, television etc.)	
	Co-insurance for specific services, as set out in the price list: • voluntary termination of pregnancy: 30% • rehabilitation (per day): 20% • medical devices: 10% • IVF treatment: 0–30%	Co-insurance should not exceed 50% of the listed price

Sources: (16, 17)].

outpatient prescription drugs are on the positive list and are eligible for partial reimbursement from the EHIF.

Outpatient prescription drugs are now subject to a co-payment of €3.20 (EEK 50) per prescription, plus some of the price of the drug. The general reimbursement rate is 50% of the drug price (minus the co-payment), up to a maximum reimbursement of €12.00 (EEK 200) per prescription. A government regulation lists drugs for chronic illnesses that are subject to a lower co-payment of €1.30 (EEK 20) and can be reimbursed at a rate of 75% or 100%. A

reimbursement rate of 90% is applied to drugs in the 75% category when these are prescribed to persons who are 4–16, receive disability or old age pensions or are older than 63. However, if the drugs listed in these higher reimbursement categories are used for diseases other than those noted in the regulation, the general 50% reimbursement rate applies. From August 2004, total (100%) reimbursement of drugs was re-introduced for children younger than four. Table 8 shows the rate of additional partial reimbursement for patients who spend between €383.40 and €1278.00 a year on prescription drugs.

Medical devices for certain diseases are included in the benefits package, but they are subject to a reimbursement rate of 90% and an annual ceiling on the maximum reimbursement.

Cost sharing for outpatient care

In 1995 a fee of €0.30 (EEK 5) was introduced for initial outpatient visits to public hospitals and health centres, but due to political pressure, large groups such as pensioners, disabled people and children were exempted from the fee a few months later. Independent specialists were allowed to set their own fees, without any regulation, even if they were contracted and reimbursed by the health insurance funds. As the share of private providers increased during the 1990s, the share of out-of-pocket payments grew. Many doctors established their own private practices, particularly in dentistry and other ambulatory specialties. At the same time, some public institutions took advantage of the fact that the legal status of health care institutions was not defined in legislation to operate under private law as foundations or limited liability joint-stock companies, and made use of private providers' rights to set their own fees for ambulatory care. In some hospitals, fees were only introduced for extra services such as a private room.

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

children under two years of age and pregnant women from the 12th week of pregnancy are exempt from co-payments for primary care home visits and specialist ambulatory visits.

Cost sharing for inpatient care

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

Reimbursement of dental care

Since the mid-1990s the EHIF has funded prevention programmes for child dental health, first on a voluntary basis for those providers who were interested in participating, but then through a national programme fully funded by the EHIF. This programme includes oral hygiene education in schools, individual dental consultations, fluoride therapy and the application of protective substances, if indicated.

In 2002, new rules for reimbursement of dental care were included in the revised Health Insurance Act with a view to establishing clear and transparent entitlements for children and adults. The EHIF now guarantees free dental care for children and adolescents up to 19 years of age, including preventive and curative services. Adult dental care must be paid for out-of-pocket, but is subject to partial reimbursement from the EHIF (see Table 8). The reimbursement rate is higher for some groups (see Table 8).

The Act made guaranteeing free dental care for children a priority. In debates leading up to the Act, four options for reimbursing adult dental care were considered:

1. almost free dental care for all insured, with small regulated co-payments;
2. tendering for a limited number of dentists per geographical area to be funded exclusively through EHIF contracts, ensuring access for low-income groups;

3. free choice of provider, accompanied by out-of-pocket payments and later, capped reimbursement by the EHIF; and
4. no public funding of adult dental care.

Eventually, the third option was chosen; the first was considered unaffordable for the public purse, while the other two were not politically acceptable.

Prior to 2002, dental prices were regulated but patient co-payments were not, so about half of all dental care was paid for by patients, including children. Public opinion survey data show that in 1999, 51% of people aged 15 to 74 had visited a dentist, falling to 42% in 2001 and 31% in 2002 *(18)*. Since the introduction of the new reimbursement rules, the number of children who visited a dentist increased slightly from 2002 to 2003. The change did not result in a further drop in the number of patients who visited their dentists, but stayed approximately at the 2002 level. Only a little over half of those who visited a dentist in 2002 applied for EHIF reimbursement, perhaps due to lack of information about eligibility for reimbursement or to the hassle of applying for reimbursement of a relatively small amount of money. Currently, the government regulates the price of dental care for children but not for adults. There is no body responsible for monitoring the prices charged for adult dental care.

Reimbursement of treatment abroad

Treatment abroad, which is a small share of the overall health budget, used to be covered by the EHIF either on the basis of bilateral agreements with some countries (Finland, Sweden, Latvia and Lithuania) or, in the case of rare diseases and/or treatment not available in Estonia, on the basis of prior approval from the EHIF (about 20 cases a year on average). The system of bilateral agreements has changed since Estonia joined the EU.

Defining the EHIF benefits package and rationing

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

Since 2002, there have been clearer and more explicit rules for adding new services to the benefits package and establishing the appropriate level of cost

sharing. (See above for more detailed information on cost sharing.) When the EHIF was established as an independent public body, it was given the main responsibility for defining the benefits package in collaboration with other stakeholders. The benefits package is agreed by the EHIF and the Ministry of Social Affairs, and a final decision is made by the government, which endorses the price list. At the same time, each item in the benefits package is given a price, so the terms "price list" and "benefits package" are used interchangeably in the Estonian system of health insurance. On the basis of the rules outlined below, the EHIF Managerial Board conducts an extensive evaluation process, then puts forward inclusion/exclusion proposals for the EHIF Supervisory Board to evaluate further and then send on to the Ministry of Social Affairs. The Ministry in turn forwards them to the government for approval – usually once a year. However, due to pressure from providers, the government is considering introducing some new form of committee system to build greater consensus among stakeholders and hold negotiations before final decision-making and price-setting take place.

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

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

Based on the application, the supporting documentation and the price, the EHIF Supervisory Board will make a recommendation to the Ministry of Social Affairs, and the Ministry in turn makes a recommendation to the government. Any recommendations will be discussed during the year and processed at the same time as the health care budget for the following year is decided. In both 2002 and 2003, over a hundred applications were processed under these new

regulations, for the inclusion of new services and for price increases for services already in the benefits package. Any services on the price list before the new regulations took effect in 2002 were accepted without any assessment.

During the last few years, there has been some debate about separating the benefits package from the price list, due to recognition that the price list is neither the best mechanism for prioritizing services nor a suitable basis for the benefits package when other prospective payment methods, such as those based on diagnosis-related groups (DRGs) for hospitals, are being developed (see the section on *Financial resource allocation*).

In addition to changes in the benefits package, explicit rationing can take place in other ways, particularly at the health insurance fund. For example, contracts between the EHIF and providers include additional separate agreements about the volume and price of some services to be provided. The use of high-cost interventions is also supervised through the contracting process, and in some cases specific limitations may be noted in the price list or other relevant documents. Recently, the EHIF has introduced health needs assessments in allocating resources to the four regional branches and negotiating contracts, which allows rationing among different types of care and benefits – primary versus secondary care, cash versus in kind etc. (See the section on *Financial resource allocation* for further details of this process). The overuse of services such as electric physiotherapy in rehabilitation, common in the former Soviet Union, was addressed through incentives incorporated into provider payment mechanisms.

Nevertheless, implicit rationing continues to take place at the provider level. The introduction of clinical guidelines at the end of the 1990s has facilitated this at the level of the individual doctor (see *Health care delivery* for further information about clinical guidelines). Waiting lists are also used to ration health care. In 2001, a decree from 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. For detailed information on waiting time targets by sector, see the section on *Health care delivery*. Developing different methods to measure waiting and initiatives to reduce waiting times and increase access to treatment is a growing area. In 2003, the State Audit Office also evaluated waiting time measurement methods and emphasized that providers should take waiting time regulations more seriously, introduce relevant and centralized measurement mechanisms for all types of care and ensure that information on waiting times is available to the public.

Public debates about rationing first emerged in the pages of leading newspapers in 2002. These newspapers highlighted the high costs of leukaemia drugs and cochlear implantations. The EHIF conducted a survey in April 2002 to assess public opinion on how additional resources should be allocated, as part of an attempt to involve the public in decisions about prioritizing health services. People were asked to allocate funds to different options such as cochlear implantation, free dental care for all, free dental care for older people, free dental care for children only, shorter waiting times for joint prostheses, higher salaries for doctors etc. Each option was briefly described along with the cost of providing it. The results showed that a high proportion of respondents were interested in allocating resources to options that were relatively cheap to provide – for example, free dental care for children, rehabilitation services and shorter waiting times for cataract surgery. Options that took up half or more of the total budget were less popular. Also, different population groups had different opinions about what should be prioritized. For example, people with higher levels of education were more interested in health professionals' salary levels, while people with lower levels of education were more interested in providing free dental care to all or at least to pensioners. The responses also varied by age group, with younger people more willing to support more HIV tests for blood donors and free dental care for children. Older people were more likely to support free dental care for pensioners and shorter waiting times for cataract surgery and joint replacement. The survey also canvassed public opinion as to who should make decisions about the benefits package. Most respondents supported the Ministry of Social Affairs, followed by the EHIF and the government. Younger people preferred the EHIF and public decision-making. Older people preferred the Ministry of Social Affairs. Although this survey did not provide sufficient evidence for decision-making due to the small size of its sample, it was a good attempt to stimulate public debate about the issue of rationing. However, similar discussions have not taken place since then, and public interest in the issue appears to have fallen.

Complementary sources of financing

In 2002, state budgets, municipal budgets and private sources of funding accounted for 8.1%, 2.5% and 23.7% of total health care financing respectively (see Table 5). External sources did not contribute to health care funding in 2002. This section discusses each of these complementary sources of financing in turn.

State and municipal budget financing

In recent years the share of state and municipal budget financing for health care has fallen, leading to an overall decline in public expenditure as a proportion of total expenditure on health care (from 80.7% in 1998 to 76.3% in 2002). State and municipal budget financing has not fallen due to any change in government responsibilities or functions, but allocations to health care have not increased at the same rate as overall budget increases.

Table 10. State budget allocations for health care by type of service (% of total) in 2002

Type of service	%
Ambulance services	30
Administration	21
Emergency health services for the uninsured	16
Pharmaceuticals and health aids	11
Capital investment	11
Prevention programmes	7
Other health services	4

Source: (5).

Most of the state health budget goes to ambulance services and administration (excluding EHIF administration). Funding of emergency medical care provided by ambulances is administered by the Health Care Board, which contracts providers of ambulance services. For the uninsured, the state budget funds only emergency care. Originally, counties or municipalities had been responsible for funding emergency medical care and organizing other types of care for the uninsured. In the absence of general guidelines from the Ministry of Social Affairs, and due to large differences in the size of municipal populations, the care available for the uninsured was subject to considerable variation across the country; municipalities defined the scope of emergency medical care differently and relatively broadly. In some areas, county governments had not devolved this responsibility to municipal governments. Since 2002, the Ministry has required the EHIF to check the validity of reimbursement claims for emergency medical care for the uninsured, with the aim of ensuring equal access to emergency medical care across the country, although the state continues to fund this care. The ministry considered the EHIF to be administratively more efficient in checking the validity of reimbursement claims from providers than municipalities or county governments would be. Now people with the same emergency needs receive the same services, and there is no variation based on place of residence.

Various actors – including providers, the EHIF and civil servants in the Ministry of Social Affairs – have called for an increase in the share of health financing that comes from general tax revenues, particularly for capital investment and the provision of primary care services to those who are uninsured. However, although some political parties have expressed support for increased government funding prior to elections, once in power they have taken no action.

Municipal budget funding for health care in 2002 was spent primarily on covering capital costs (56.6% of total municipal budget funding for health care). It was also used to pay for health services (19.8%) and administration (20.6%).

External funding

External funding is not significant. In 1998 it accounted for 1% of total health care expenditure, but by 2001 it had declined to almost nothing. However, external funding is expected to increase in 2004, mainly due to planned investments in hospital infrastructure from EU structural funds, as well as from other sources (see below).

In general, external funding has been used to invest in human resources and technology rather than to cover operating expenses. For example, bilateral programmes have provided medical equipment for hospitals. Some programmes have focused on clinical issues, organizational development (including health information systems and quality assurance) and management training.

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

In 2000, new negotiations began for a third World Bank loan to support hospital and long-term care reforms and the introduction of a new system for capital investment. However, the negotiations were terminated due to a change of government. The new government subsequently sought funding for hospital investment from the EU Regional Development Fund, and from 2004

to 2006 Estonia expects to receive EEK 388.67 million (about €25 million) for investment in five hospitals (regional centres).

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 has been approved to strengthen preventive and educational work among groups at risk and young people, as well as to cover the cost of drugs for HIV-positive persons. This grant can be seen as an exception to the general policy of using external funding for investment rather than operating expenses.

Private expenditure

Private sources of funding health care are generated through formal and informal out-of-pocket payments, voluntary health insurance and some other expenditure. In recent years the share of private funding has increased as a proportion of total expenditure on health care, from 13.2% in 1998 to 22.2% in 2001. It is expected to have risen further in 2003 following the widespread introduction of capped user charges for ambulatory and inpatient care. Voluntary health insurance mainly consists of medical travel insurance.

Out-of-pocket payments

Out-of-pocket payments consist of statutory cost sharing for EHIF benefits, direct payments to providers for services outside the EHIF benefits package or from non-EHIF providers, and informal payments. Since the mid-1990s, out-of-pocket payments have increased steadily as a proportion of total expenditure on health care, largely due to the growth of the private sector. In 2001, they accounted for 19% of total expenditure on health care and were mostly spent on pharmaceuticals and dental care (see Table 11).

Table 11. Out-of-pocket expenditure in Estonia by type of service as % of total, 2001–2002

Type of service	2001	2002
Pharmaceuticals	53.6	50.6
Dental care	25.0	24.1
Other pharmacy expenditure	8.0	7.7
Rehabilitation	3.1	8.0
Ambulatory care	4.2	5.2
Inpatient care	2.3	0.8
Other	3.8	3.6
Total	100.0	100.0

Sources: (5,13).

For an overview of cost sharing for EHIF benefits, see the section on *Health care benefits and rationing* and Table 9. The system of cost sharing in place since the 2002 Health Insurance Act came into force is the result of political compromise with providers, many of whom had long complained that the health system was underfunded. Much of the public debate about cost sharing revolved around arguments about raising revenue to increase professionals' salaries. Arguments were also made for introducing fees to counteract "unnecessary" use of health services. For example, the Association of Family Doctors argued strongly in favour of a co-payment for office visits to reduce the number of what they considered to be unnecessary visits. However, the government was able to uphold the principle of free access to primary care outlined in the Act, introducing co-payments only for home visits. The introduction of a fee per inpatient day was intended to counteract some of the incentives created by reimbursing hospitals on a per diem basis – for example, to constrain providers' incentives to keep people in hospital unnecessarily over the weekend and to increase their incentives to shorten lengths of stay.

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

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

Recently, the government has established rules for queue jumping in order to prevent private patients from gaining faster access to treatment: it 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, nor is it permitted if it may delay the treatment of a person whose care would be funded by the EHIF. Data from the annual health care satisfaction survey show that 4% of those who sought ambulatory specialist care in 2003 considered paying or actually paid to jump the queue. Similar data is not available for inpatient care.

Informal payments have not been common in Estonia and continue to be relatively rare. In 1998 a representative survey commissioned by the health insurance fund found that 1% of those it covered had paid the doctor extra in cash. An 2002 survey financed by the Organisation for Economic Co-operation and Development (OECD) found that fewer than 1% of health service users had made an unofficial payment, and then mainly on the patient's own initiative. The mean value of the payments was €122 (EEK 1903) and the median value was €16 (EEK 250). Those who were more likely to make unofficial payments were people who spoke Russian as their first language and people who wanted to bypass the family doctor gate-keeping system. In all, 49% of the respondents considered making an unofficial payment to a doctor to be corruption (12% had no opinion on it), while 40% were willing to report a doctor demanding an unofficial payment for corruption (10% had no opinion) *(19).*

Voluntary health insurance (VHI)

At the end of 2002, the EHIF and a commercial insurer began to offer voluntary coverage for those not otherwise eligible for EHIF coverage (for example, the non-working spouses of the EHIF-insured). See above for details of the voluntary coverage provided by the EHIF. The substitutive VHI coverage provided by the commercial insurer is significantly more limited than the voluntary coverage provided by the EHIF. First, it is available only to people aged 3 to 60 years, and children aged 3 to 18 years can only be covered if their parents are also covered. Second, five different benefits packages offer a range of health and dental cover up to a specified maximum level of reimbursement (see Table 12). By the end of 2003, there were approximately 200 persons privately insured by the commercial insurer – mainly foreigners in the process of applying for Estonian residency – in addition to the 212 persons voluntarily covered by the EHIF (see above).

Compared to the VHI offered by the EHIF, it is only in the commercial insurer's Primary package that risk-rated premiums are lower for all age groups

Table 12. Benefit packages offered by commercial VHI, 2003

Package	Benefits covered	Maximum reimbursement
Primary	Primary care	€1 000 (EEK 15 000)
General	The above plus ambulatory specialist care	€2 500 (EEK 40 000)
Hospital	All of the above plus inpatient care	€4 500 (EEK 70 000)
Extra	All of the above plus corrective lenses and medical devices	€10 250 (EEK 160 000)
Dental	Dental care	€250 (EEK 4 000)

Source: (20).

than the universal EHIF rates (13% of the previous year's national average salary) (see Table 12). With the General package, those older than 50 have to pay higher rates than they would with the EHIF. For Hospital and Extra packages, rates for all age groups are higher with the commercial insurer than with the EHIF.

Benefits packages offered by commercial VHI are not subject to any regulation. The Primary package coverage of primary care services is similar to that of the EHIF, with the exception of vaccinations against flu and encephalitis. The General and Hospital packages offer shorter waiting times than the EHIF for elective surgery by EHIF-contracted providers, although the new rules governing queue jumping are intended to address this difference (see above). However, the list of commercial coverage exclusions is extensive: treatment of pre-existing conditions, all outpatient drugs, treatment of sexually transmitted diseases including HIV/AIDS, IVF, organ transplants, haemodialysis for renal failure, psychiatric care and a few other services. The contracts are accompanied by waiting periods (during which the insured cannot make any claims) ranging from up to 1 month for most contracts, to up to 11 months for dental care and up to one year for delivery. These maximum waiting periods are regulated by the Law of Obligations (see the section on *Health care reforms*).

Prior to 2002, a commercial market for VHI had not really established itself, largely due to the comprehensive range of benefits covered by the EHIF and the absence of substantial waiting times for treatment. Furthermore, people are not permitted to opt out of the EHIF, and VHI policyholders 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 then available 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.

From time to time some have argued for an expansion of VHI in order to increase funding for health care, but there have never been serious debates about the role of VHI, nor has there been political support for the introduction of tax subsidies for VHI. On the contrary, the existence of a benefits-in-kind tax on employer-paid VHI has discouraged employers from offering VHI to their employees. Commercial insurers have not been active in developing VHI products, partly due to the limited nature of the market and partly due to the complexities of medical underwriting. To date, they have not been active in lobbying the government for tax subsidies either. At present there are no plans to extend the role of VHI in financing health care, although changes to EHIF reimbursement of dental care may encourage the development of a market for dental VHI.

Other private expenditure

Other private expenditure (see Table 5) consists of employer-paid health check-ups for occupational health, but it is mainly (95%) expenditure on pharmaceuticals by foreign visitors and employers.

Health care expenditure

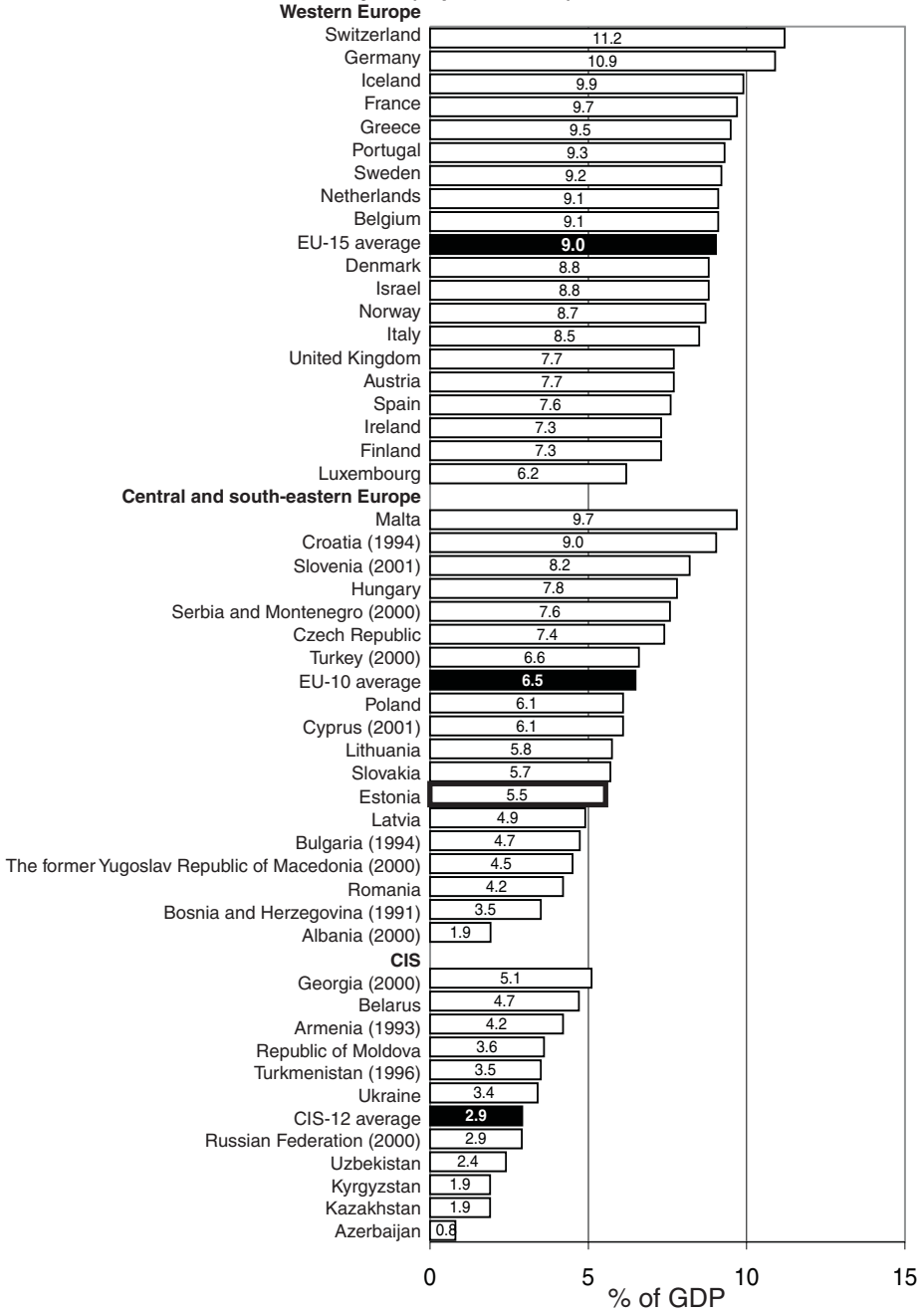
The Ministry of Social Affairs began systematically collecting data on health care expenditure based on OECD National Health Accounts methodology in 1999. The new methodology is slightly different from the old methodology, and pre-1999 data should be interpreted with caution as they may under-represent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

Table 13. Trends in health care expenditure, 1992–2002

Total expenditure on health care	1992	1995	1997	1999	2001	2002
Share of GDP (%)	4.5	5.9	6.0	6.5	5.5	5.5
Public share of total (%)	–	–	87.0	80.4	77.7	76.3

Source: (21).

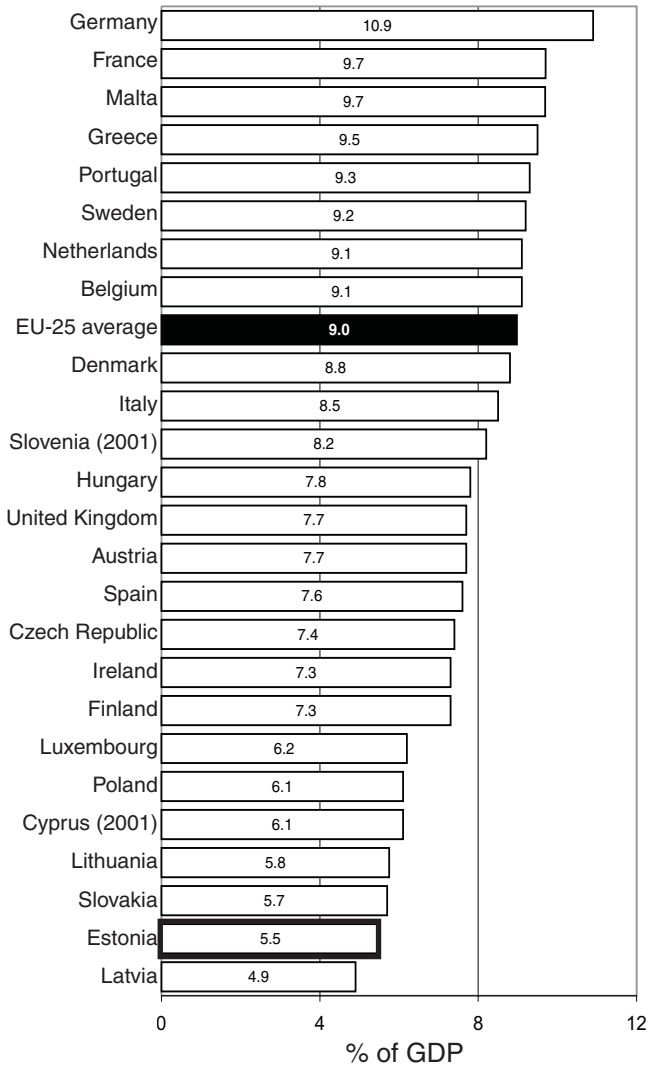
Fig. 3a. Total expenditure on health as a % of GDP in the WHO European Region, 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.

Note: CIS: Commonwealth of independent states; EU: European Union; EU-10 average: for new member states after 1 May 2004; EU-15 average: for member states prior to 1 May 2004. Countries without data not included.

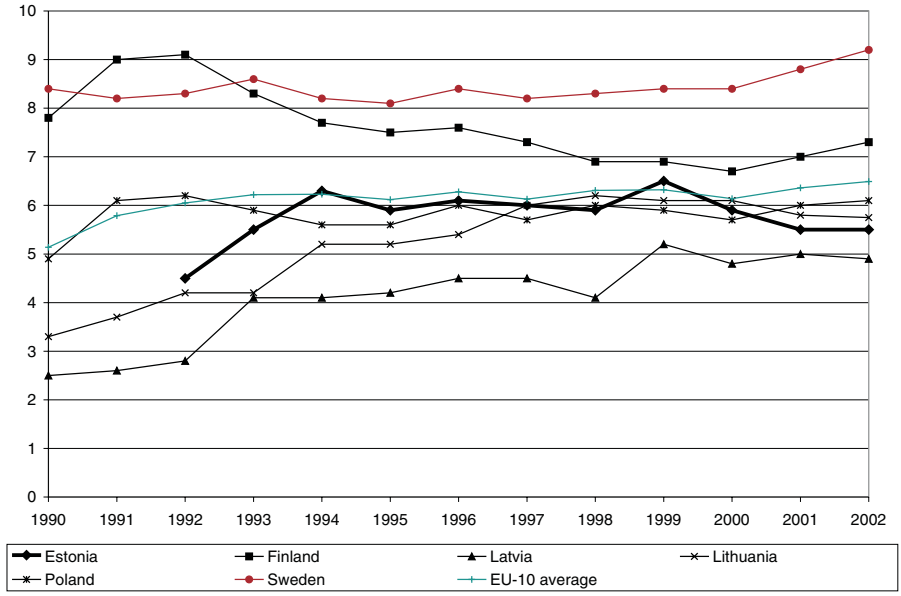
Fig. 3b. Total expenditure on health as a % of GDP in the European Union, 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.
Note: EU: European Union; EU-25 average: all member states. Countries without data not included.

During the 1990s, total expenditure on health care increased from 4.5% of the gross domestic product (GDP) in 1992 to almost 6.0% in the mid-1990s, followed by a decrease to 5.5% in 2000. The government does not set targets for the overall level of health care expenditure as a proportion of GDP, although the Estonian Medical Association (EMA) has called for a target of 7.0–8.0% of

Fig. 4. Trends in total expenditure on health as a % of GDP in Estonia and selected European countries, 1990–2002

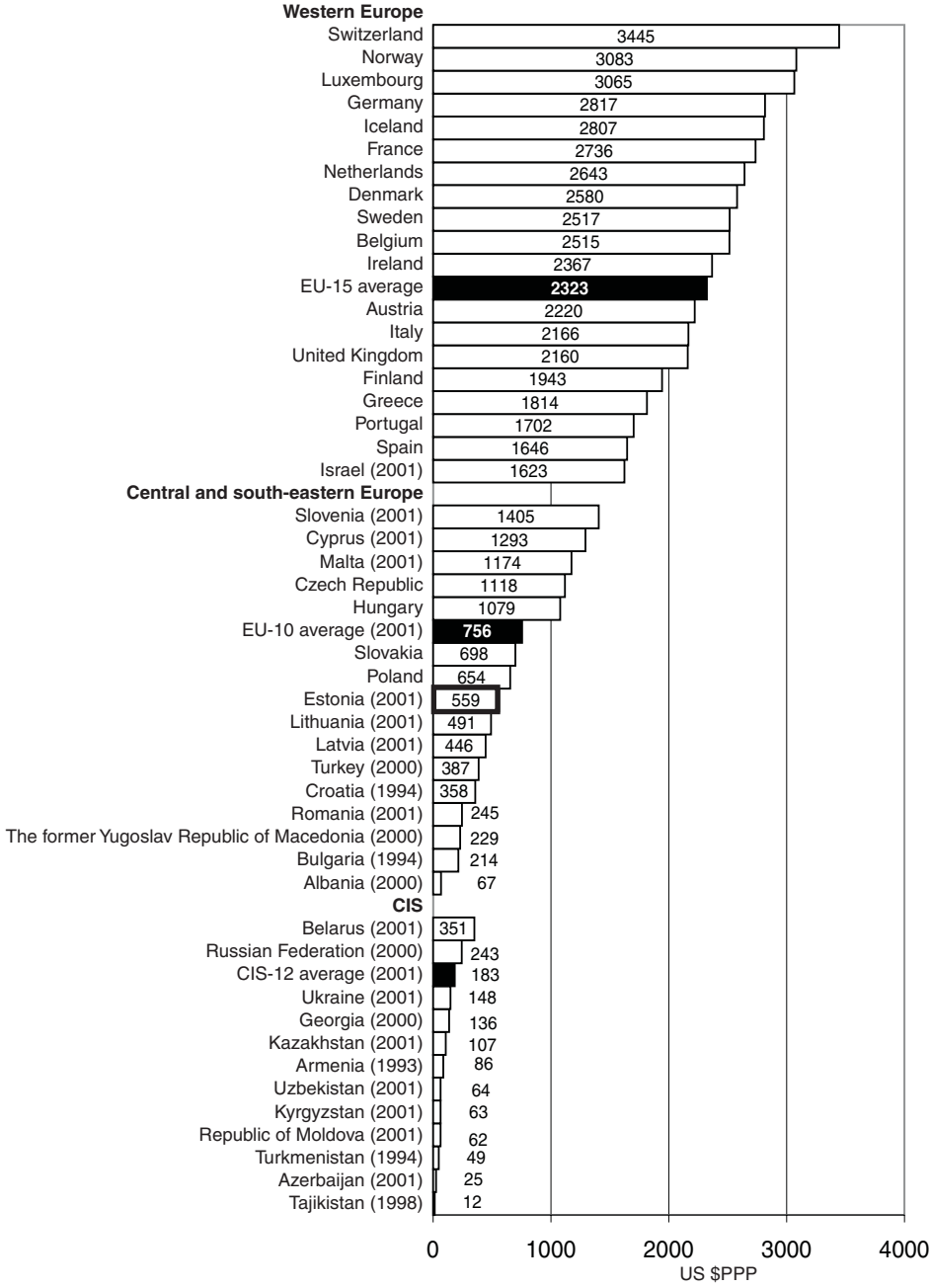


Source: *(21)*.

GDP. Health care expenditure in PPP (purchasing power parity) per capita has increased from a low of US$ 209 in 1993 to US$ 559 in 2001. The 2001 figure is above average for central and eastern European countries and the highest among the Baltic states. However, it is still one fourth of the EU-15 average (the average in the 15 countries that were members of the European Union prior to its expansion on 1 May 2004).

The level of health care expenditure in Estonia is mainly determined by wage levels, which form the basis for EHIF revenues, and rising private expenditure on drugs and dental care. Expenditure on health care rose in line with economic growth until 1998. The 1999 peak in health care expenditure as a proportion of GDP arose due to the economic slow-down caused by the economic crisis in Russia and a global economic downturn. Despite shortfalls in social tax revenues during 1999, the health insurance fund was able to use its reserves to pay providers, which meant that health care expenditure increased as a proportion of GDP. The subsequent fall in health care expenditure to 5.5% of GDP was caused by two factors. First, the EHIF had to use some of its revenue to create new reserves (equal to 0.2% of GDP). Second, state budget spending on health care has not kept up with increases in general tax revenues.

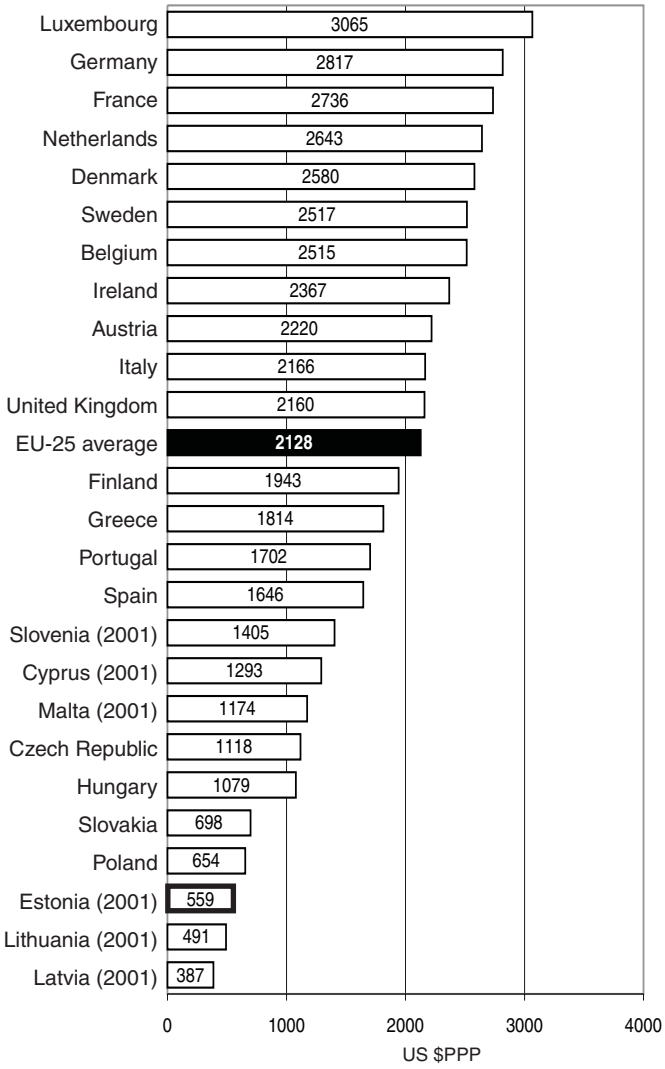
Fig. 5a. Health care expenditure in US $PPP per capita in the WHO European Region, 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.

Note: CIS: Commonwealth of independent states; EU: European Union; EU-10 average: for new member states after 1 May 2004; EU-15 average: for member states prior to 1 May 2004; EU-25 average: for all member states. Countries without data not included.

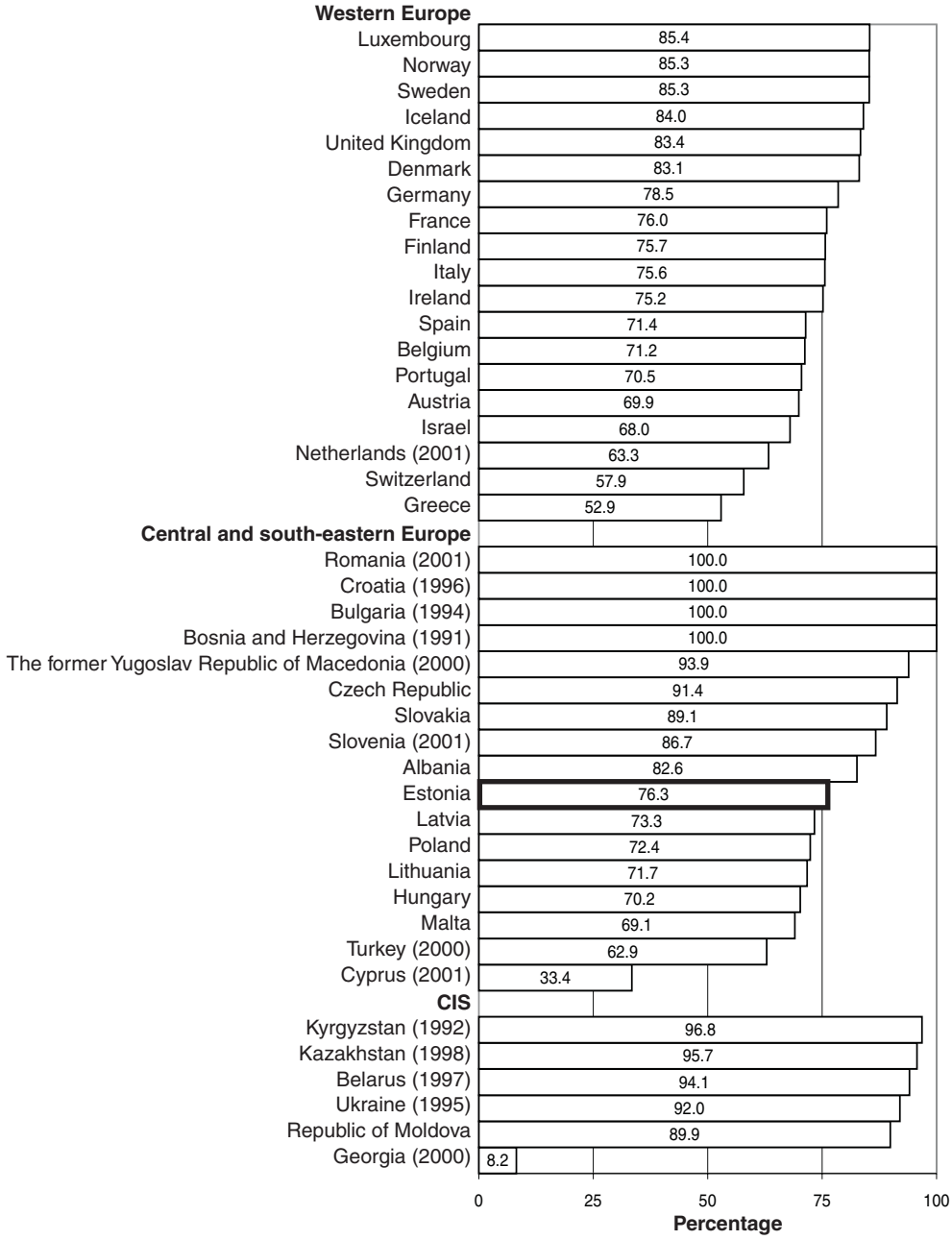
Fig. 5b. Health care expenditure in US $PPP per capita in the European Union, 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.
Note: EU: European Union; EU-25 average: all member states.

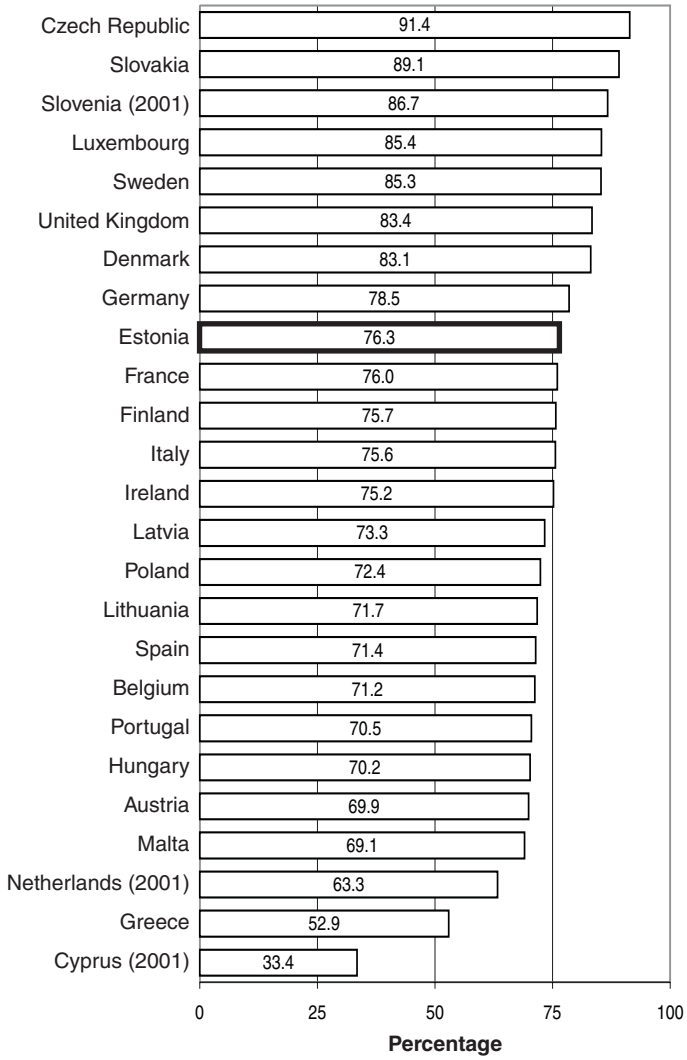
From 2003, health care expenditure as a proportion of GDP was expected to rise due to the introduction of statutory cost sharing for EHIF benefits. By the end of 2003, the EHIF had also fulfilled its reserve requirements, enabling it to spend more money on the provision of health services. In addition, Estonia expects to receive a significant amount of funding from the EU Regional

Fig. 6a. Health care expenditure from public sources as a percentage of total health care expenditure in countries in the WHO European Region, 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.
Note: CIS: Commonwealth of independent states; countries without data not included.

Fig. 6b. Health care expenditure from public sources as a percentage of total health care expenditure in countries in the European Union, 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.
Note: EU: European Union; EU-25 average: for all member states.

Development Fund. As a result, health care expenditure has actually increased. However, adjustments to the way in which GDP is calculated in June 2004 have led to an upward correction of GDP, which may result in a statistically smaller share of health care expenditure as a proportion of GDP for 2003 and 2004,

in spite of increased revenue. After adjustment of the GDP values for recent years, the share of health expenditure is as shown in Table 14.

The public share of total expenditure on health care decreased during the 1990s (see Table 13). Although data are not available for the beginning of the 1990s, the public share of total spending was high. Figures showing public spending in the mid-1990s may have underestimated the level of private spending on health care, but data collected since 1999 are more reliable. The balance between public and private spending has not been subject to political debates or decisions. Private spending has increased proportionately mainly due to rising expenditure on dental care and drugs, which are only partially reimbursed by the EHIF, and due to the introduction of cost sharing for EHIF benefits in kind. In the next few years, however, levels of private spending may decline in relation to public spending, as investments from EU structural funds boost the share of public expenditure. Also, increases in EHIF revenue should be higher than increases in revenue from capped co-payments. At the same time, levels of private expenditure are mainly influenced by pharmaceutical and dental care prices, and drug prices have risen rapidly in the past (see below and in the section on *Pharmaceuticals*).

In terms of international comparison, Estonia's level of public expenditure as a proportion of total expenditure on health is close to the median among central and eastern European countries. The public share of health in expenditure in the Czech Republic, Slovenia and Slovakia is higher, while in Latvia, Lithuania and Hungary it is lower.

Table 14. Health expenditure as % of upward-adjusted GDP, 1999–2003

Total expenditure on health care	1999	2000	2001	2002	2003
Share of GDP (%)	6.1	5.5	5.1	5.1	5.3[a]

Source: (22).

Note: [a] Estimated value.

Inpatient expenditure is low, as a proportion of total expenditure on health care, compared to other European countries, mainly due to stringent cost-containment policies adopted in the hospital sector – for example, close-ended EHIF contracts, reductions in the number of beds and the average length of stay, partial shifting of small long-term care facilities to the social care sector in the early 1990s etc. The pressure for cost containment in the hospital sector arose from growing levels of EHIF spending on the two areas not covered by volume-limited contracts (drugs and sickness benefits), and to maintain access to health services, primary care and ambulatory specialist care were given priority over inpatient care in the allocation of resources.

Public and private spending on drugs has been increasing rapidly, partly due to the improved availability of drugs not available in Estonia before 1990, partly due to the introduction of new drugs and partly due to the absence of policies to support generic drugs. Drug spending may not grow so fast in future as a result of the introduction of generic-based reference prices (see the section on *Pharmaceuticals*).

Table 15. Expenditure by category as a % of total expenditure on health, 1996–2002

Category	1996	1998	2000	2001	2002
Public share	88.0	86.0	76.0	77.7	76.3
Inpatient care	–	–	36.2	29.4	30.5
Pharmaceuticals	17.0	18.7	22.3	25.2	26.3
Investment	4.1	3.2	2.1	1.3	2.3

Sources: (13,23).

In 2002, expenditure on dental care accounted for 8.5% of total expenditure on health, of which 56% was from public sources *(5)*. In 2001, private expenditure accounted for about half of all dental care expenditure.

Investment in infrastructure was low in Estonia during the 1990s, although existing data may not represent total investment as it excludes some investment by the growing number of private providers. Capital investment came under political scrutiny towards the end of the 1990s and is expected to increase from 2004 (see the section on *Financial resource allocation*).

Health care delivery system

Public health services

The 1995 Public Health Act introduced reform of the sanitary–epidemiological public health system from the Soviet era and established the current framework for the financing and provision of public health services in Estonia. Since 2000, the role of public health has increased substantially due to the process of joining the European Union (EU), particularly in the areas of health protection and occupational health.

Public health activities

National level

The main actors involved in public health at the national level are the Ministry of Social Affairs, the Health Protection Inspectorate, the National Institute for Health Development, the Estonian Health Insurance Fund (EHIF), the Labour Inspectorate and the Occupational Health Centre.

Within the *Ministry of Social Affairs*, two departments deal with public health issues: the Public Health Department (PHD) and the Work and Environment Department (WED). In 2001, the public health and health protection departments were merged to form the PHD, which is now responsible for broad areas of public health, including not only public health policy planning, health promotion and disease prevention activities, but also environmental health and communicable disease control. The WED is responsible, with other bodies, for occupational health issues. Current restructuring of the Ministry may result in the PHD taking responsibility for control of toxic chemicals, which was previously shared by the WED and the Ministry of the Environment.

The *National Institute for Health Development* was established in May 2003 through the merger of three smaller government institutions: the Institute of Experimental and Clinical Medicine (established 1973), the National Centre for Health Promotion and Education (NCHPE, established 1994) and the Public Health and Social Training Centre (established 1997). The new institute aims to be a national centre of excellence in public health, with responsibility for applied research and analysis in public health (including environmental health, communicable diseases and health promotion, policy, management, financing and informatics), public health monitoring and reporting, coordination of national public health programmes and training in public health and health management. Its predecessor (NCHPE) introduced a system of health promotion specialists working at the county government level, which created a good foundation for a community-based public health organization. This system, combined with a tradition of strong intersectoral collaboration, provides the basis for coordination of national public health programmes.

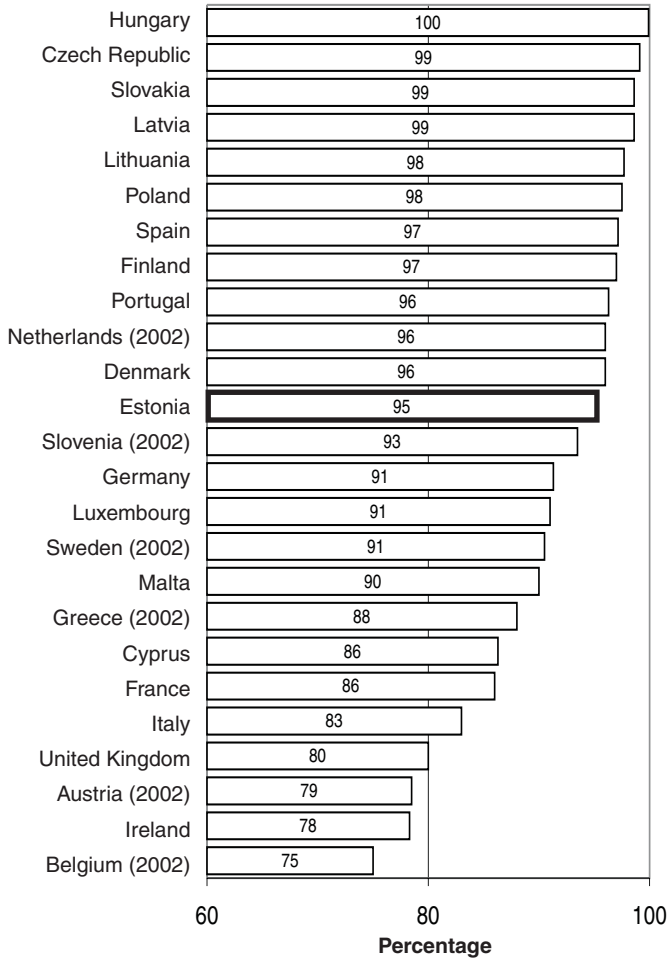
National public health programmes are funded from the state budget and implemented by different government agencies. The government has established programmes to address four key public health challenges: the National HIV/AIDS Prevention Programme 2002–2006, the National Tuberculosis Control Programme 1998–2003, the National Alcohol and Drug Abuse Prevention Programme 1997–2007 and the National Child and Adolescent Health Programme 2000–2005. The National Public Health Research and Development Programme 1999–2009 is a fifth programme that has been approved and funded by the government as an additional tool to support public health research. All these programmes are supervised by the PHD but have been implemented by lower level agencies – and now by the National Institute for Health Development. The Ministry's role involves devising a strategy and approving an annual action plan.

The national immunization programme is defined by the Minister of Social Affairs and implemented by the Health Protection Inspectorate. Immunization is the responsibility of family doctors, although school doctors are also allowed to undertake it. There is continuing debate about the division of public health tasks between family and school doctors, but so far the shift of immunization responsibilities from school to family doctors has not negatively affected levels of immunization coverage. For example, the level of immunization against measles has increased in the last few years, with data supplied to WHO indicating an increase in coverage from 74% to 88% from 1994 to 1998 (see Fig. 7).

Fig. 7a. Levels of immunization for measles in the WHO European Region, 2003 or latest available year (in parentheses)

Source: WHO Regional Office for Europe health for all database, June 2004.
Note: CIS: Commonwealth of independent states; countries without data not included.

Fig. 7b. Levels of immunization for measles in the European Union, 2003 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.
Note: Countries without data not included.

These national programmes are designed to work closely with local institutions and people, mainly through county governors' offices. Partner ministries are also involved in planning and implementing activities through participation in programme committees. However, their position has sometimes been weak, as political responsibility usually lies solely with the Minister of Social Affairs. The involvement of nongovernmental organizations (NGOs) remains an unresolved challenge; experiences to date include both mutually successful partnerships and complete failures.

Aside from the national programmes funded directly from the state budget, about 2% of the EHIF budget, or €4.1 million (EEK 64 million) in 2004, is earmarked for national disease prevention activities. These funds cover preventive services such as screening for hypertension, hypercholesterolaemia, cervical and breast cancer and osteoporosis; youth health counselling; family planning; school health initiatives; additional hepatitis B vaccination for 12- and 13-year-olds; and extra foetal screening. The last two are in addition to routine practice, as defined by the Minister of Social Affairs and funded by the state budget. EHIF funds are also used to finance two screening programmes carried out by the NGO Cancer Foundation: for breast cancer in women aged 45 to 59 years (since 2002) and for cervical cancer in women aged 30 to 40 years (since 2003). Other screening activities are opportunistic or carried out on a voluntary basis, with free testing advertised in the mass media and at health care facilities. However, none of these services is available to uninsured people. All screening programmes are supervised by the EHIF. Indicators and benchmarks are agreed upon with the organization responsible for service provision.

In addition, there is an annual allocation of about €900 000 (EEK 14 million) from the EHIF budget for the support of health promotion activities. Each year an advisory PHD committee at the EHIF evaluates applications for projects. EHIF funding is open to anyone, and application details are published in the newspapers. However, due to EU requirements, the public health projects are now seen as ordinary services and will therefore be subject to public tender from 2005. This will probably leave most smaller-scale community-based activities unfunded until a new funding mechanism is developed. As EHIF public health activities are non-mandatory, there is growing pressure to reduce funds earmarked for public health so that they can be used to fund curative care. Although the EHIF's total budget has increased by 5–6% annually, the health promotion budget has not increased since 2001.

The *Health Protection Inspectorate* is the successor of the Soviet sanitary–epidemiological service, with which it shares many similarities, particularly in terms of organization and main areas of responsibility. It is responsible for inspection and enforcement of health protection legislation through four regional offices and a local branch in each of the 15 counties. However, the Inspectorate is now also responsible for surveillance and control of communicable diseases, national and local epidemiological services, the national immunization programme, the national environmental health programme and the development of an environmental health information system.

Following the passing of the Occupational Health and Safety Act in 1999, the *Occupational Health Centre* was established as a subsidiary of the Ministry of Social Affairs. Initially it carried out more scientifically oriented tasks, such

as applied research and professional training of specialists – largely due to the fact that during the course of reforms, the Ministry had merged the Institute of Occupational Health with the Institute of Experimental and Clinical Medicine (currently within the National Institute for Health Development). However, the Ministry gradually required the centre to be engaged more in organizational rather than research tasks. An 2003 amendment to the Act defines the centre's current responsibilities in organizing and coordinating occupational health activities across the country, implementing national programmes, collecting data, assessing the country's occupational health situation, providing expert advice, registering occupational health providers and providing professional training. The Act was amended in order to broaden the remit of occupational health to all areas of the labour market, including public services, employed prisoners and the military and other special forces. A law on insurance against occupational injury has been under negotiation between the government and the parliament since the early 1990s, but there has not been sufficient political will to introduce a new compulsory earmarked contribution. By May 2004, occupational health legislation had been harmonized with EU requirements.

The *Labour Inspectorate* is the state agency responsible for occupational safety and labour relations. It has the power to conduct investigations, charge fines and initiate criminal investigations. It also registers occupational injuries, approves certain major company restructurings and settles labour disputes.

County level

At the county level, public health services are coordinated by three institutions: the county doctor in the county government, the county office of the Health Protection Inspectorate and the county office of the Labour Inspectorate. These agencies are expected to implement the guidelines and programmes set up by their parent agencies at the national level and to ensure that other institutions follow public health regulations (particularly health protection legislation).

The county doctor, a civil servant employed by the county governor, used to play an innovative role in the Estonian health system, having been responsible for the coordination and integration of health promotion, prevention and curative care. The 1994 Health Services Organization Act and the 1995 Public Health Act gave the county doctor responsibility for the following public health functions: surveillance of population health (environmental hazards, and mortality and morbidity from communicable and noncommunicable diseases); identification of population health needs; and organization of environmental health, occupational health, preventive and health promotion activities. The county doctor was also responsible for planning, managing and evaluating health services. However, the 2001 Health Services Organization Act abolished the

post of county doctor, so at present the only health-related duties of the county governor's office are the appointment of family doctors (see above) and some rather vaguely defined responsibilities for public health activities.

A key issue facing the public health system is that, in spite of efforts to encourage horizontal collaboration between these county-level institutions (county doctors, the county office of the Health Protection Inspectorate and the county office of the Labour Inspectorate), they still represent separate vertical systems without sufficient information exchange, planning or cooperation. The challenge for a second round of public health reform is to integrate the national health promotion network with a well-organized system of health protection; the latter has preserved many positive features of the old sanitary–epidemiological services. The key for success lies in the new public health framework law, preparation of which is planned to start in 2005.

Municipal level

Most public health activities are supposed to be managed at the municipal level. For many years, these activities were carried out by a municipal doctor, whose role was equivalent to that of the county doctor but at the municipal level. Municipal doctors were civil servants employed by municipalities, but many also practised on a part-time basis. Municipal doctors' responsibilities varied according to the size of the municipality. In large cities their role was mainly administrative and sometimes overlapped with the role of the county doctor, whereas in small towns they played a direct role in providing public health services. Since 2002, however, municipal doctors' responsibilities are no longer legally defined. A municipality's only legal responsibility is to provide facilities and equipment for school health services. In larger cities, municipal doctors have continued to operate and now play a substantial role in organizing and promoting public health. At the same time, smaller and poorer municipalities do not engage in any formal public health activities, so the only advocates for public health there are citizens, family doctors and school nurses.

School doctors and nurses used to play a significant role in ensuring high levels of vaccination coverage and regular check-ups for children during the Soviet era and the early 1990s. Their salaries are funded from the EHIF budget, and the facilities and equipment they use are provided by the municipality. School health services are one area in which specially qualified nurses are permitted to run their own practices. As a result of reforms, school health services are no longer clearly defined or adequately funded. At schools that are in large cities or that participate in WHO's Healthy Schools network, health professionals still play an important role, but in most schools their role is marginal. Nevertheless, political support for school health services appears to

be growing; EHIF funding for them doubled in January 2004, and the Ministry of Social Affairs is working on a relevant policy document that is expected to be approved by the end of the year.

Other public health issues

As noted in the *Introductory overview*, the issue of inequalities in health was raised by the publication of a World Bank study in 2002, and it attracted media attention in 2003. However, while all new national health programmes and the Ministry of Social Affairs mission statement highlight the principle of equity, to date no specific actions to reduce health inequalities have been taken or planned.

The social protection system is managed by the Ministry of Social Affairs and implemented by the municipalities. Recent policy involves increasing the role and responsibility of municipalities in this area, but barriers to implementation include low administrative capacity in smaller municipalities and the need to redistribute tax revenues from the state to the municipalities. Previously, only larger cities with a strong revenue base had been able to invest in social housing or other measures specifically aimed at poverty reduction. However, the government has acknowledged that the subsistence benefit (a cash benefit if income per family member falls below a certain level) is not sufficient to cover minimum living costs and plans to increase it in 2005. Another important development is the introduction, from January 2004, of parental benefits amounting to the full salary of a new mother or father to be paid for the first year of a child's life. Parents are eligible for this benefit once the EHIF-funded maternity benefit period comes to an end (see the section on *Health care benefits and rationing*). Unfortunately, this large increase in public spending is likely to support those who are already better off.

Non-health sectors take the lead in areas such as food safety and environmental hazards. The Ministry of Agriculture, together with its Veterinary and Food Agency, is the leading institution for all major legislation and national programmes concerning food, including alcohol. Food safety surveillance is shared among several different government agencies; the Health Protection Inspectorate is responsible for food safety control in retail shops, while the Ministry of Environment and the Environmental Inspectorate are responsible for environmental legislation, monitoring of pollution and national environment programmes, including improvement of the water supply and sanitation. In 2002, about 40% the population drank water of poor quality due to high iron levels. As both food safety and environmental health issues are important parts of the EU's *acquis communitaire*, Estonia's accession to and membership in the

European Union has brought large investments in these areas, to the detriment of other areas affecting public health.

Substantial efforts and increased funds have been targeted towards road safety. National efforts are developed and managed by the State Road Agency under the Ministry of Economic Affairs and Communication. In early 2003, the parliament adopted the National Traffic Safety Programme 2003–2015, with the aim of halving traffic accidents and fatalities over a 10-year period and achieving a level of fewer than 100 traffic fatalities per year. The programme will cost about €3.70 per capita per year for 12 years and is expected to save 1000 lives. Key activities include public education and awareness campaigns, plus stricter control of traffic violations such as drunk driving and speeding.

The 2000 Tobacco Act and its amendments set strict limits on tobacco consumption, for example in places of work. In early 2004, Estonia joined the World Health Organization Framework Convention on Tobacco Control, and currently, new legislation involving stronger regulatory measures and a total ban on tobacco advertising is being prepared by the Ministry of Social Affairs.

Primary care

During the Soviet era, primary care was provided mainly in polyclinics and health centres owned by the municipalities. Any medical school graduate could work in a health centre, without additional or specialist training, and average earnings among primary care doctors and nurses were low in comparison to earnings among specialists. Paediatricians also worked as primary care doctors in special children's polyclinics. It was common for patients to bypass polyclinics and health centres, visiting specialists directly. Consequently, the old system of primary care suffered from lack of motivation among practitioners, poor coordination between primary and secondary levels and limited continuity of care.

Reform of primary care in the 1990s

Reform of primary care began in 1991 with the aim of establishing family medicine as a medical specialty. In 1993, family medicine was designated a medical specialty, and a new three-year postgraduate training programme in family medicine was set up. Also, some specialists already involved in ambulatory care – mainly internists and paediatricians working in polyclinics – were retrained as family doctors. However, due to the absence of incentives

for doctors to practise family medicine, it was only taken up by a few. See the section on *Human resources* for further details about training.

In 1997, the government introduced a new system requiring people to register with a particular family doctor. This was followed in 1998 by the introduction of a new legal status for family doctors (as independent contractors), combined with a new payment scheme involving capitation, fees for service, basic practice payments and additional allowances. The new system is intended to support the family doctors' gate-keeping role and ensure continuity of care.

Although the need for reform of primary care had been recognized in the late 1980s, before independence, the process of reform did not go as smoothly as anticipated. The reforms were introduced without substantial difficulty in most regions except Tallinn and the north-eastern part of the country. In Tallinn, the final transformation took place when the patients of the few remaining district paediatricians were allocated to family doctors. However, municipalities in the north-eastern region showed no interest in allowing their staff to work as independent contractors, so large polyclinics employing salaried district doctors without patient lists continued to operate there until 2002.

The initially slow process of re-educating professionals as family doctors was speeded up by the introduction of a special fee for family doctors in 1998, and the fact that family doctors with a diploma also benefited from additional EHIF funds. By the end of 2001, 557 family doctors had a diploma in family medicine, and by 2003, the number of family doctors was sufficient to cover most of the population.

The old system of first-contact care being provided by primary- and secondary-level practitioners has now been replaced by a new system, in which there is a clear distinction between primary care and ambulatory specialist care and an explicit work description for family doctors. Both types of care are distinguished by their separate legal status and, in some cases, by separate physical locations.

The current system of primary care

The Health Services Organization Act in force since the beginning of 2002 sets out the regulatory framework for family medicine.

Primary care is organized as the first level of contact with the health system. It is provided by independent family doctors contracted by the EHIF. Although family doctors are allowed to work without a contract, there are few reasons for them to operate on a purely private basis: most patients have timely access to EHIF-contracted family doctors, and few patients would be willing or able to pay for primary care.

Each family doctor has a list of registered patients. These lists cannot contain fewer than 1200 or more than 2000 patients (except in specific cases such as occur in some rural areas or on some islands). The average patient list size is 1600. Patients can change their family doctor at any time if they can find a new family doctor to take them on. The EHIF's 2002 health care satisfaction survey shows that 14% of the population changes family doctor within a three-year period. Most changes (35% of them) were due to people moving to a new area, but a fifth were due to dissatisfaction with the previous family doctor.

Family doctors usually operate in rented premises (sometimes in facilities which used to be polyclinics), although some doctors have taken out loans to build new facilities.

The main services provided by family doctors include diagnostic procedures, treatment of general illnesses, health counselling, health promotion and disease prevention. Family doctors control most access to specialist care. Patients need a family doctor's referral in order to see most specialists and to be admitted as a non-emergency inpatient. However, patients are able to access the following specialists directly, without a family doctor's referral: ophthalmologists, dermato-venereologists, gynaecologists, psychiatrists, dentists and, in case of trauma, traumatologists and surgeons. Initially, there was considerable resistance to the requirement for referrals to specialists, from both specialists and patients. This has started to change as specialists have come to understand the role of the family doctor, and after the government introduced regulations concerning specialist visits without family doctor referral. Patients now have to pay out of pocket for any visits to specialists made without referral from their family doctor.

All family doctors are required to work with at least one family nurse, even though there is a shortage of trained family nurses. Minimum practice standards (in terms of size etc.) are also specified by law and monitored by the Health Care Board and, in some cases, by the EHIF and county governments.

As of 2003, every family doctor had a contract with the EHIF or a patient list. The contents of a basic contract are agreed by the EHIF and the Estonian Association of Family Doctors. Before the start of the calendar year, the EHIF branches enter into contractual agreements with family doctors on an individual or group basis. The financial part of the contract is revised twice a year based on changes in patient lists.

The model of primary care organized around family medicine is supported by the way in which family doctors are paid: a combination of a basic monthly allowance, a capitation fee per registered patient per month, some fees for services and additional payments based on distance to the nearest hospital etc. The payment system is designed to provide family doctors with incentives to

take more responsibility for diagnostic services and treatment, as well as to compensate them for the financial risks associated with caring for older patients and working in remote areas. For detailed information on payment of family doctors, see *Financial resource allocation*.

Access and quality of primary care are monitored by the Ministry of Social Affairs and the EHIF. Family doctors are required to have at least 20 visiting hours a week, and practices should be open for at least 8 hours a day. In primary care, patients should be able to see their family doctor on the same day for acute problems; patients with chronic conditions have the right to see their family doctor within three days. Telephone surveys based on random samples of family doctors, including a third of family doctors in each of the four regions, are carried out quarterly by the EHIF. The 2002 results show that all patients with acute problems are able to access their family doctor on the same day, and that 97% of patients with chronic conditions see their family doctor within three days. Of the latter group, 27% see the family doctor the same day, 34% the next day and 39% on the third day. There are small variations among regions and among family doctor practices of different sizes. Half of all patients with chronic conditions in small practices (<1200 patients) are able to see their family doctor on the same day, compared to only one fifth in large practices (>2000 patients). Some longer waiting times were noted for a few weeks in early spring and late autumn.

Since 1999, the EHIF has commissioned regular health care satisfaction surveys and published the results on its web site. According to the most recent survey, carried out in November 2003, over 90% of people living outside Tallinn and 83% living in Tallinn know their family doctor by name, which shows that family doctors are accessible and provide continuity of care *(24)*. Overall, 88% of those who had visited their family doctor are satisfied with the service, and the share of satisfied patients has risen by 6% since 1999 and by 9% since 2001. However, the system of partial gatekeeping is not yet well accepted by the population: only 41% of patients prefer to be referred to a specialist by their family doctor, while almost 37% of patients want to be able to visit specialists directly (although the number of such patients has decreased by 6%), and 21% prefer to find the specialist themselves. Accessibility of family doctors is good: more than 80% of patients are able to see their family doctor on the same day, and only 7% of patients wait for more than five days. Compared to the period 2001–2002, the number of patients seen on the day of first contact with a doctor has decreased, but so has the number of patients waiting for more than five days.

Secondary and tertiary care

In the last 10 years, the delivery of specialist care in Estonia has undergone extensive reform involving re-centralization of highly specialized services and decentralization of ambulatory specialist services. A new Health Services Organization Act came into force in 2002. It regulates the delivery of all specialist care (see *Organizational structure and management* for details), which is divided into two levels: ambulatory specialist care and inpatient care. All providers of specialist care must be licensed by the Health Care Board. Both levels of specialist care will be discussed separately below.

Ambulatory specialist care

Ambulatory specialist care is provided by polyclinics, health centres, hospital outpatient departments (OPDs) and specialists practising independently. In 2002 there were 190 health centres and 50 hospital OPDs. Some independent specialists, particularly dentists, gynaecologists, urologists, ophthalmologists and ear, nose and throat specialists, practise privately, but most other specialists work in hospital OPDs. Both public and private specialists can hold contracts with the EHIF. For detailed information on how these health care professionals are paid, see the section on *Payment of health care professionals*.

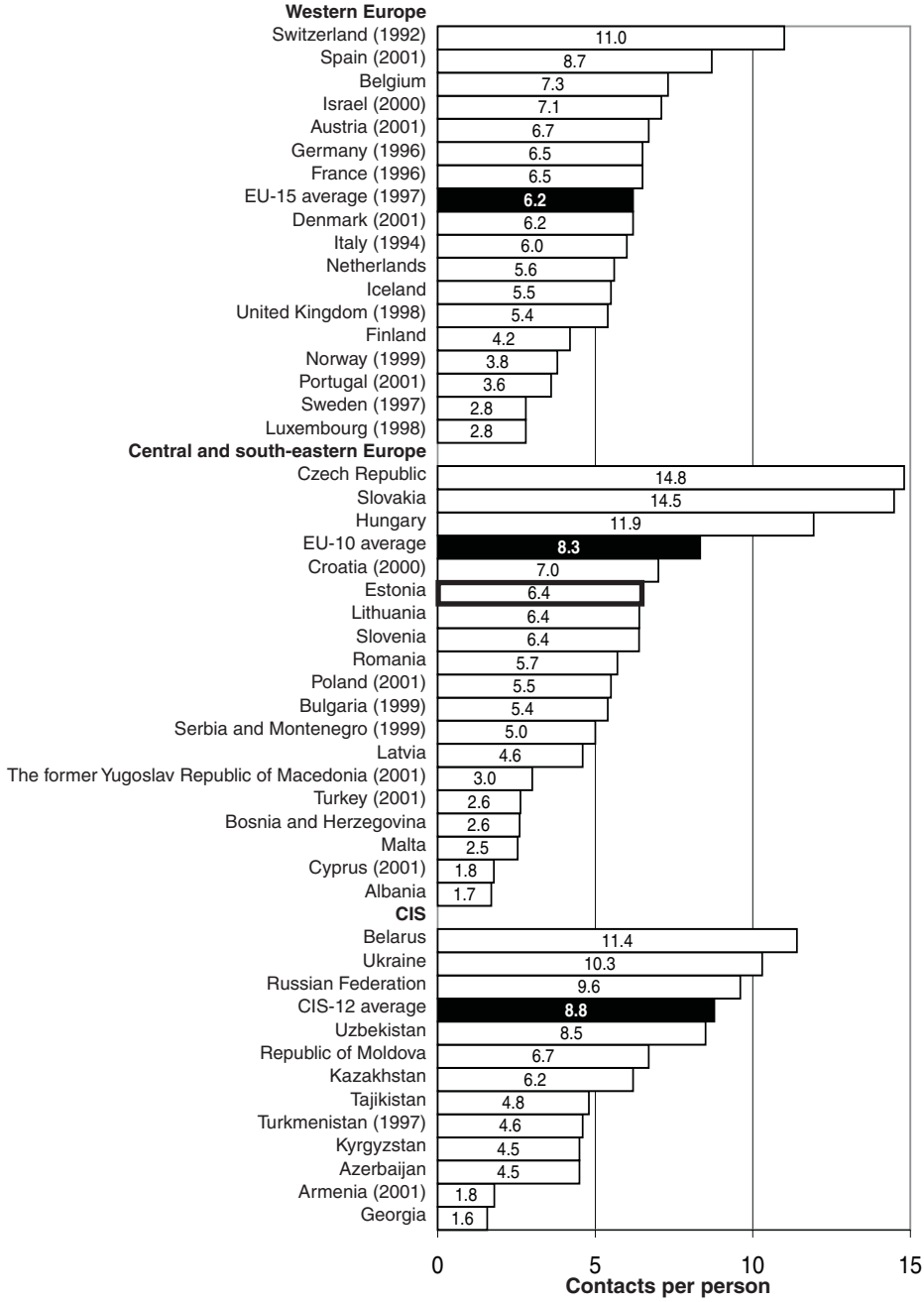
Inpatient care

All hospitals operate under private law as joint-stock companies or non-profit-making foundations and must be licensed by the Health Care Board. The Health Care Board issues licenses – valid for five years – on the basis of minimum standards for hospitals.

The following types of hospitals provide acute care.

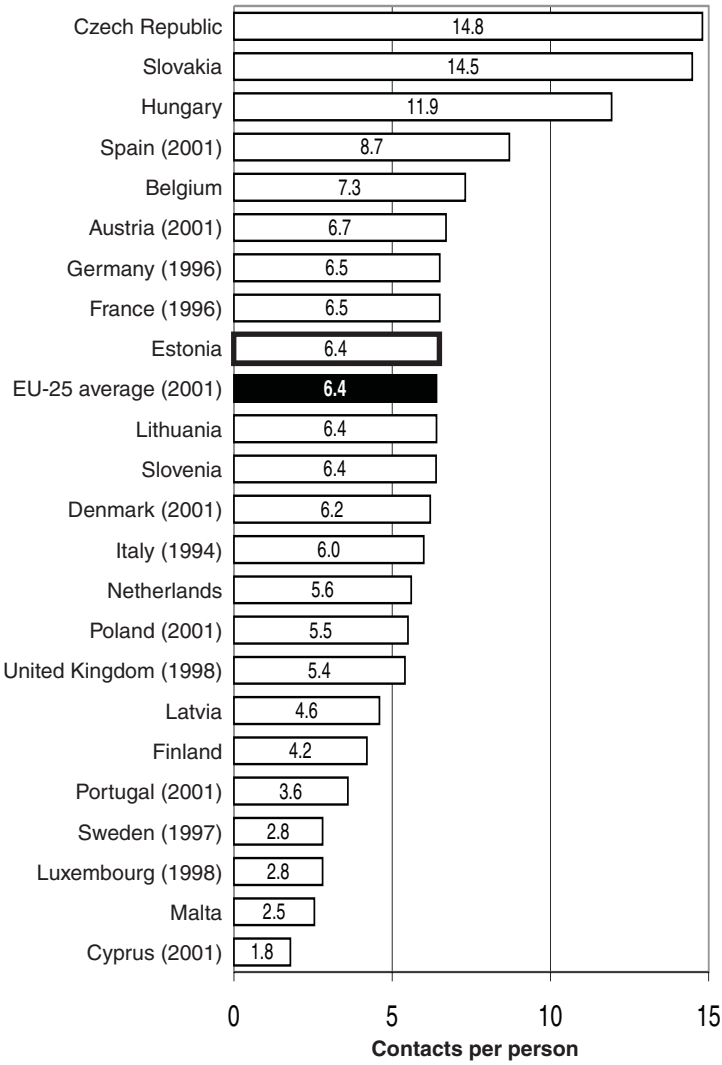
- Two regional hospitals (secondary and tertiary care) each serve an area with about 500 000 people. One of them – the University of Tartu Clinic – covers all specialized services for the southern part of Estonia. However, the North Estonian Regional Hospital in Tallinn does not cover all specialities, as they are historically covered by two central hospitals in the city.
- Four central hospitals (some tertiary but mainly secondary care) each serve an area with about 200 000 people. Two of them are located in Tallinn; the remaining two are located in the north-east and south-west of the country.

Fig. 8a. Outpatient contacts per person in the WHO European Region, 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.
Note: CIS: Commonwealth of independent states; EU: European Union; EU-10 average: for new member states after 1 May 2004; EU-15 average: for member states prior to 1 May 2004; countries without data not included. Outpatient contacts include contact with specialists. Family doctor visits account for slightly under half of all outpatient contacts.

Fig. 8b. Outpatient contacts per person in the European Union, 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.
Note: EU: European Union; EU-25 average: for all member states. Countries without data not included.

- General or local hospitals are in almost every other remaining county. Based on population size, they are either general hospitals offering services in internal medicine, surgery, paediatrics and obstetrics, or local hospitals offering only internal medicine services.

In addition, there are a few hospitals offering specific specialities. The hospital network was planned according to certain criteria including population size and distance.

Most hospitals are owned by municipal governments, although regional hospitals were founded by the state. Private hospitals exist, but only provide specific services such as gynaecology, obstetrics and cardiology, with one exception that provides internal medicine and general surgery services.

Hospitals have considerable autonomy in making decisions about renovation, employment, staff salaries and obtaining loans from financial institutions. These decisions are made by hospital management and supervisory boards. Hospitals can generate income by renting out space to private enterprises – for example, banks and shops in hospital lobbies. Liability in case of payment default follows the general regulations of commercial law and the law governing foundations. Some smaller hospitals have experienced difficulty in paying back the costs of renovation or medical equipment, but so far there have not been any bankruptcies, and the situation is closely monitored by the Ministry of Social Affairs.

In 2000, the Hospital Master Plan 2015 commissioned by the Ministry of Social Affairs made projections about future hospital capacity (see the section on *Planning, regulation and management*). This plan noted that Estonia s geographically decentralized hospital system resulted in excess capacity. 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. By 1995, there were 83 hospitals with about 12 000 beds, and by 2001, there were only 67 hospitals with about 9100 beds. In 2002, many hospitals were merged, and by the beginning of 2003, the number of hospitals had fallen to no more than 40. The Hospital Master Plan 2015 recommends that the number of acute hospitals and beds be further reduced to 21 acute hospitals and 2 acute beds per 1000 population.

The number of inpatient beds per 1000 population has fallen from 9.62 in 1980 to 4.50 in 2002 (see Table 16). Since the licensing system was established, the number of hospitals and acute inpatient beds has continued to fall, mainly because many small hospitals providing predominantly long-term care lost their acute care status and were turned into nursing homes. This trend of turning small hospitals into nursing homes continues today (see below). Other hospitals have been turned into primary care centres providing ambulatory care. In recent years, reduction in the number of acute beds has been due to hospital mergers.

As Table 16 shows, acute care performance has improved over time. While the number of beds has fallen, the number of admissions per 100 population has remained stable and the average length of stay has fallen by six days since

1992. The hospitals aim to increase bed occupancy to 80% and to lower the average length of stay to 4.5 days.

Access and quality of care

Decisions about waiting time targets for ambulatory specialist and inpatient care, which were first made in 2001, were delegated to the EHIF Supervisory Board in 2002 and are made annually. In 2002, the maximum waiting times for specialist care were as follows: four weeks for ambulatory specialist care (one week in case of emergency); one week for urgent inpatient care and six months for non-urgent inpatient care. Some interventions have longer maximum

Table 16. Inpatient utilization and performance in acute hospitals in Estonia, 1980–2002

Indicator	1980	1985	1990	1992	1994	1996	1997	1998	1999	2000	2001	2002
Hospital beds (per 1000 population)	9.62	9.74	9.19	7.62	6.46	6.12	6.31	6.25	5.84	5.55	5.14	4.50
Admissions (per 100 population)	18.5	19.9	17.5	17.1	17.0	17.3	17.7	18.7	19.2	18.7	17.9	17.2
Average length of stay (days)	–	15.0	14.3	13.1	11.4	9.6	9.2	8.8	8.0	7.3	6.9	6.9
Occupancy rate (%)	84.3	84.3	74.2	74.2	76.6	71.9	71.6	74.6	69.3	66.1	62.3	64.6

Source: (23).

waiting times – for example, three years for cataract surgery and large-joint endoprostheses, one year for combined otorhinolaryngeal surgery and eight months for cardiac surgery.

Data on waiting times, broken down by specialty (not procedure) – and from July 2004 by reason for waiting as well – are collected at provider level on a quarterly basis and monitored by the EHIF regional branches. Special efforts are made to assist those who have been waiting for longer than the guaranteed time limits. For example, at the end of 2002, extra funds were allocated to shorten waiting lists in problem areas. Also, each EHIF regional branch uses information on waiting times by specialty when planning future contracts with providers. In the last two years, waiting times have not increased, and at the beginning of 2004, the EHIF Supervisory Board decided to limit outpatient waiting times to just three weeks.

Hospital survey data show that financial constraints are not the primary reason for waiting lists. According to quarterly monitoring data from providers,

Table 17a. Inpatient utilization and performance in acute hospitals in the WHO European Region, 2002 or latest available year

	Hospital beds per 1000 population	Admissions per 100 population	Average length of stay in days	Occupancy rate (%)
Western Europe				
Andorra	2.8	10.1	6.7[c]	70.0[c]
Austria	6.1	28.6	6.0	76.4
Belgium	5.8[a]	16.9[c]	8.0[c]	79.9[d]
Denmark	3.4	17.8*a*	3.8[a]	83.5[b]
EU-15 average	4.1	18.1[c]	7.1[c]	77.9[d]
Finland	2.3	19.9	4.4	74.0[g]
France	4.0	20.4[c]	5.5[c]	77.4[c]
Germany	6.3[a]	20.5[a]	9.3[a]	80.1[a]
Greece	4.0[b]	15.2[d]	–	–
Iceland	3.7[f]	15.3[d]	5.7[d]	–
Ireland	3.0	14.1	6.5	84.4
Israel	2.2	17.6	4.1	94.0
Italy	4.0	15.7[a]	6.9[a]	76.0[a]
Luxembourg	5.6	18.4[h]	7.7[d]	74.3[h]
Monaco	15.5[g]	–	–	–
Netherlands	3.1[a]	8.8[a]	7.4[a]	58.4[a]
Norway	3.1[a]	16.0[a]	5.8[a]	87.2[a]
Portugal	3.3[d]	11.9[d]	7.3[d]	75.5[d]
Spain	3.0[e]	11.5[d]	7.5[d]	76.1[d]
Sweden	2.3	15.1	6.4	77.5[f]
Switzerland	4.0	16.3[d]	9.2	84.6
United Kingdom	2.4	21.4[f]	5.0[f]	80.8[d]
Central and south-eastern Europe				
Albania	2.8	–	–	–
Bosnia and Herzegovina	3.3[d]	7.2[d]	9.8[d]	62.6[c]
Bulgaria	7.6	14.8[f]	10.7[f]	64.1[f]
Croatia	3.7	13.8	8.7	89.6
Cyprus	4.1[a]	8.1[a]	5.5[a]	80.1[a]
Czech Republic	6.3	19.7	8.5	72.1
Estonia	4.5	17.2	6.9	64.6
EU-10 average	6.0	20.1	7.7	72.6
Hungary	5.9	22.9	6.9	77.8
Latvia	5.5	18.0	–	–
Lithuania	6.0	21.7	8.2	73.8
Malta	3.5	11.0	4.3	83.0
Slovakia	6.7	18.1	8.8	66.2
Slovenia	4.1	15.7	6.6	69.0
The former Yugoslav Republic of Macedonia	3.4[a]	8.2[a]	8.0[a]	53.7[a]
Turkey	2.1	7.7	5.4	53.7
CIS				
Armenia	3.8	5.9	8.9	31.6[a]
Azerbaijan	7.7	4.7	15.3	25.6
Belarus	–	–	–	88.7[h]
CIS-12 average	8.2	19.7	12.7	85.4
Georgia	3.6	4.4	7.4	82.0[a]
Kazakhstan	5.1	15.5	10.9	98.5
Kyrgyzstan	4.3	12.2	10.3	86.8
Republic of Moldova	4.7	13.1	9.7	75.1
Russian Federation	9.5	22.2	13.5	86.1
Tajikistan	5.7	9.1	12.0	55.1
Turkmenistan	6.0[e]	12.4	11.1[e]	72.1[e]
Ukraine	7.2	19.2[e]	12.3	89.2
Uzbekistan	–	–	–	84.5

Source: WHO Regional Office for Europe health for all database, June 2004.

Notes: [a] 2001; [b] 2000; [c] 1999; [d] 1998; [e] 1997; [f] 1996; [g] 1995; [h] 1994; CIS: Commonwealth of independent states; EU: European Union; EU-10 average: for new member states after 1 May 2004; EU-15 average: for member states prior to 1 May 2004. Countries without data not included.

Table 17b. Inpatient utilization and performance in acute hospitals in the European Union, 2002 or latest available year

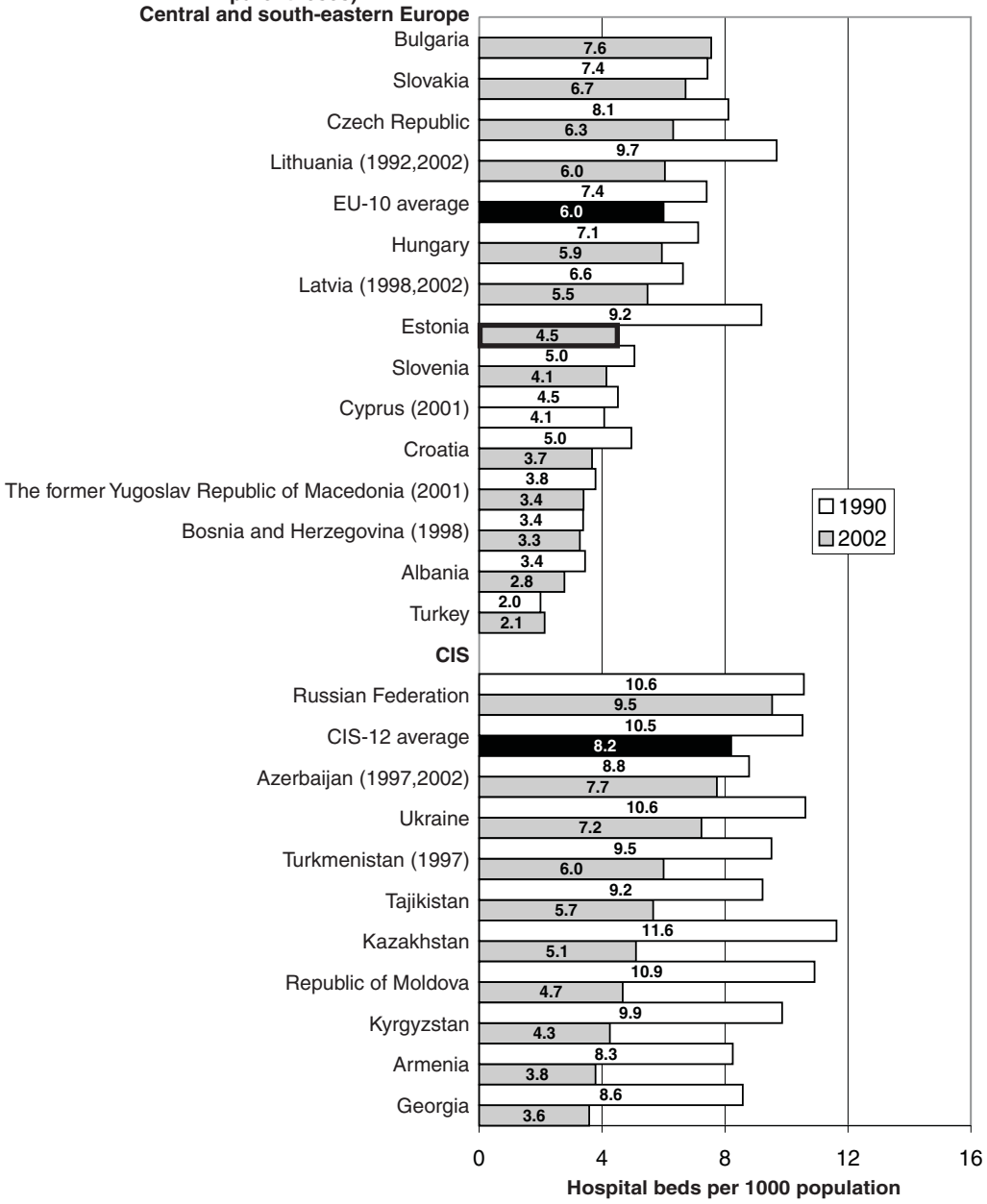
	Hospital beds per 1000 population	Admissions per 100 population	Average length of stay in days	Occupancy rate (%)
Austria	6.1	28.6	6.0	76.4
Belgium	5.8[a]	16.9[c]	8.0[c]	79.9[d]
Cyprus	4.1[a]	8.1[a]	5.5[a]	80.1[a]
Czech Republic	6.3	19.7	8.5	72.1
Denmark	3.4	17.8*a*	3.8[a]	83.5[b]
Estonia	4.5	17.2	6.9	64.6
EU-25 average	4.2	18.1[a]	7.0[a]	77.1[a]
Finland	2.3	19.9	4.4	74.0[g]
France	4.0	20.4[c]	5.5[c]	77.4[c]
Germany	6.3[a]	20.5[a]	9.3[a]	80.1[a]
Greece	4.0[b]	15.2[d]	–	–
Hungary	5.9	22.9	6.9	77.8
Ireland	3.0	14.1	6.5	84.4
Italy	4.0	15.7[a]	6.9[a]	76.0[a]
Latvia	5.5	18.0	–	–
Lithuania	6.0	21.7	8.2	73.8
Luxembourg	5.6	18.4[h]	7.7[d]	74.3[h]
Malta	3.5	11.0	4.3	83.0
Netherlands	3.1[a]	8.8[a]	7.4[a]	58.4[a]
Portugal	3.3[d]	11.9[d]	7.3[d]	75.5[d]
Slovakia	6.7	18.1	8.8	66.2
Slovenia	4.1	15.7	6.6	69.0
Spain	3.0[e]	11.5[d]	7.5[d]	76.1[d]
Sweden	2.3	15.1	6.4	77.5[f]
United Kingdom	2.4	21.4[f]	5.0[f]	80.8[d]

Source: WHO Regional Office for Europe health for all database, June 2004.

Notes: [a] 2001; [b] 2000; [c] 1999; [d] 1998; [e] 1997; [f] 1996; [g] 1995; [h] 1994; EU: European Union; EU-25 average: for all member states. Countries without data not included.

in July 2004, 38% of the persons on waiting lists had to wait for a consultation or procedure beyond the target maximum times (three weeks for ambulatory specialist consultations and procedures, and six months for day surgery and inpatient care); only 3% of the delays were due to financial constraints. The EHIF's midyear report for 2003 notes that due to lack of funding, on average 4% of the insured have to wait for longer than the maximum waiting time for ambulatory care and 1% for inpatient care. Other reasons for higher waiting times include lack of capacity at provider level, lower staffing levels during holiday periods, a patient's wish to see a specific doctor or a later appointment arising from a patient's own choice in elective surgery *(25)*. Waiting lists (as opposed to waiting times) for interventions such as joint replacement and cataract surgery are monitored centrally to assist prioritization of patients. The criteria used to assess need for priority treatment are physical impairment (of visual activity and functional mobility), pain and ability to work, care for

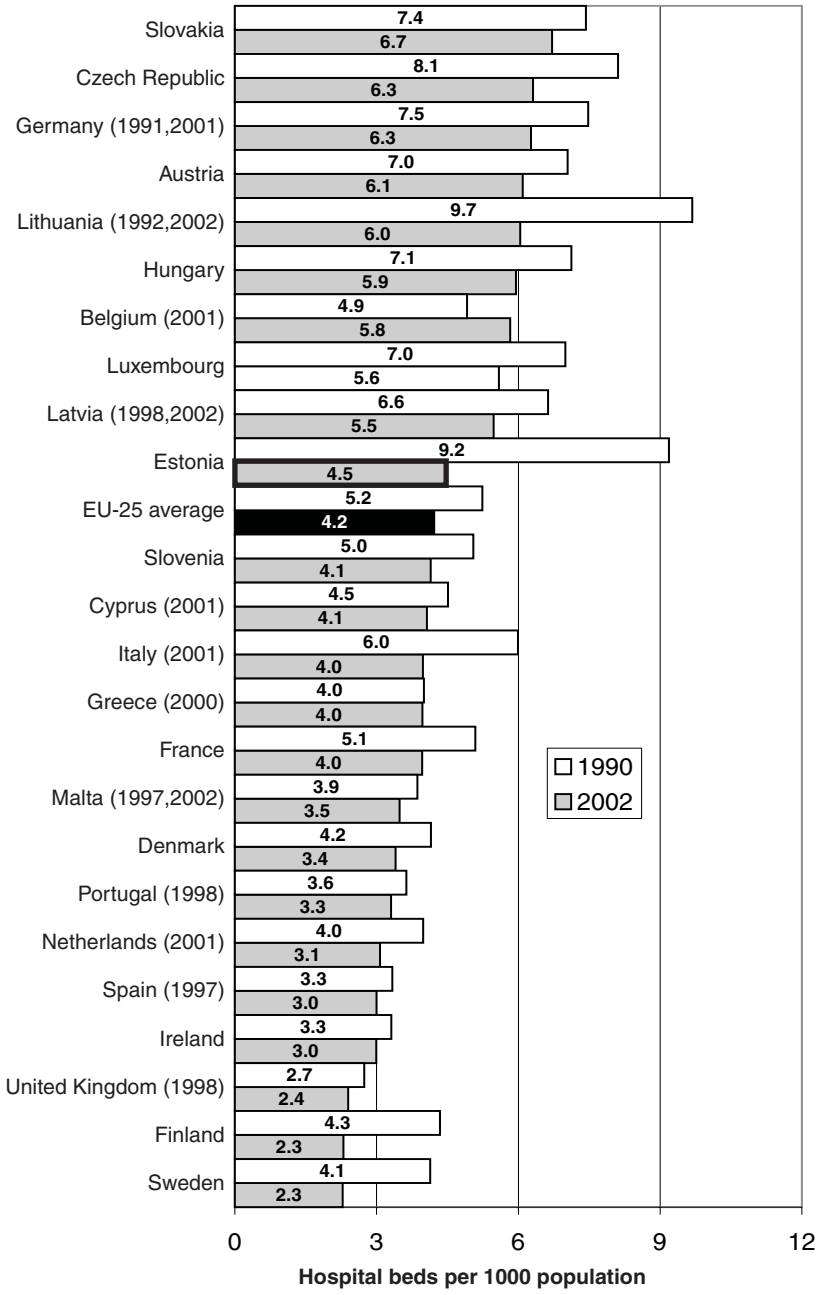
Fig. 9a. Hospital beds in acute hospitals per 1000 population in central and south-eastern Europe and CIS countries, 1990 and 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.

Note: CIS: Commonwealth of independent states; EU: European Union; EU-10 average: for new member states after 1 May 2004; countries without data not included.

Fig. 9b. Hospital beds in acute hospitals per 1000 population in the European Union, 1990 and 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.

Note: EU: European Union; EU-25 average: for all member states; countries without data not included.

dependants and ability to live independently. Those with a higher level of need are treated first. Waiting list data are updated frequently, allowing patients to move from one queue to another on the basis of their need for treatment. There are plans underway to introduce the same needs assessment for cochlear implantation. Although only patients on waiting lists for certain interventions undergo this needs assessment, there is evidence to show that, overall, those with greater need have shorter waiting times, which confirms the existence of implicit rationing at the provider level.

Clinical guidelines were introduced in the late 1990s with the main aim of improving the quality of care. Fewer than a hundred guidelines have been prepared, covering areas in both primary care and specialist care (cardiology, ophthalmology, gynaecology, paediatrics). The guidelines are usually prepared and discussed by professional organizations, although in many cases there is little agreement among different general organizations – for example, primary care, nursing and outpatient care organizations – and specialties about the guidelines. Most guidelines describe best practice rather than providing clear guidance for everyday practice. The EHIF encourages the development and implementation of guidelines and has introduced a clinical guideline approval procedure that includes an assessment of funding feasibility. The latter is still undergoing development, so few of these newer guidelines are actually in use. In clinical audits, the EHIF also monitors the uptake and use of existing clinical guidelines.

By the end of 2004, all hospitals should have established a system of quality control. In cooperation with hospitals, the EHIF has developed a system of performance indicators to be measured on an annual basis, but this system is not yet in routine use.

According to the EHIF-commissioned patient survey carried out in 2003, accessibility is a problem for patients, with only 52% of the general population considering accessibility to be good or quite good *(24)*. Overall satisfaction with health care quality had fallen by 9% since 2001, when 65% of the general population perceived the quality of Estonian health care to be satisfactory, to 56%. At the same time, 84% of those who had actually used health services during the year were satisfied with inpatient care and 91% with ambulatory specialist care. This difference in the opinion of general population and of those who actually had a personal experience can be attributed to the media, which typically highlights problematic and negative cases rather than paying attention to cases where treatment processes and outcomes are satisfactory to patients.

In some regions, patients assigned greater value to access than to quality, but in the larger cities, access and quality were seen to be equally important. More than 65% of those who had wanted to see a doctor said they had experienced

problems in accessing outpatient specialist care, but only 36% had waited for more than a week to see an outpatient specialist.

Ninety-six per cent were satisfied with dental care in 2003, up from 92% in 2002, although only 49% had visited a dentist at least once in 1999 and only 32% in 2003. More dental visits take place among younger age groups – those aged 25 to 34 years – and those who live in smaller towns. The high costs of dental care are the main reason for the low rate of dental visits.

Social care

Independent Estonia inherited a system of social care based on institutional provision. Although health care and social care were strictly separate in theory, in practice many chronically ill people were looked after in social care homes, while many socially disadvantaged groups were kept in hospital for long periods. Physical and mental disability was considered a taboo subject, and most disabled people were taken into institutional care, even when they could have lived in the community with modest assistance.

When the health system was restructured after independence, a new concept of social services was also developed with the intention of reducing and restructuring institutional care and developing a system of open or community care. The 1995 Social Welfare Act defined the objective of social welfare as providing assistance to individuals or families to prevent or reduce difficulties in providing both formal and informal social care, and to assist individuals with special needs in obtaining social security and care and adapting to living in the community. The Act also introduced a system of cash benefits for different social groups, such as disabled people and those who need assistance with daily activities, in order to stimulate the development of appropriate social services. The cash benefits include allowances for daily living, personal assistance etc. and are paid directly to the service user, who then locates an assistant or other service provider. However, this concept has not succeeded in creating new social services, as most people use this financial support for everyday needs rather than purchasing assistance.

There are different forms of social care, both in terms of delivery and financing. The main form consists of general services to assist individuals in need of social support. It is the responsibility of municipal governments but financed by transfers from the state budget. Most of these services continue to be provided in social care homes, although some municipalities have also developed systems of community care – for example, day care centres for older

people, "meals on wheels" and other services providing assistance with daily activities. Services provided specifically for people with mental health problems or disabilities are the responsibility of the state and are managed and financed centrally by the Ministry of Social Affairs and the state budget.

The number of social care institutions for adults has increased from 82 in 1995 to 117 in 2001. General social care institutions have increased from 68 to 97. Municipal governments have established several small institutions with much better living conditions than the older and larger institutions. In 1995, about 2400 people lived in general social care institutions, rising to more than 3500 in 2002. The number of people living in special social care institutions fell from 2635 in 1999 to 2457 in 2002. In 2001 there were 35 special institutions for children (mainly orphans) housing 1800 children.

Another important development in social care has been the establishment of support centres providing vocational training and assistance for disabled people. Special rehabilitation centres for people who need occupational training and counselling (13 centres in 2002) have been set up, and new day care centres (85 in 2002) have been established for older people and people with dementia. Most of these institutions are financed and operated by local governments.

In 2001, €68 million (EEK 1069 million) was spent on social benefits and services (1.1% of the gross domestic product (GDP)). About 23% of this was spent on social services and the rest on cash benefits.

Nursing care

Long-term care for chronically ill people is provided mainly by small hospitals. However, many residents of social care homes also need nursing care, but the amount of care provided is constrained by municipal budgets' limited resources. Consequently, there is no clear border between long-term nursing care and social care that requires nursing care, resulting in unmet needs in both the health and social care sectors. In addition, the EHIF pays for hospital stays that are longer than necessary but are prolonged for social rather than medical reasons.

In 2001, the Ministry of Social Affairs prepared the Nursing Care Master Plan 2015 to provide nursing care targets to match the hospital targets set out in the Hospital Master Plan 2015. The main changes recommended by the Master Plan were to turn small hospitals (mainly owned by municipal governments) into nursing care homes, and to develop non-institutional nursing care services to provide both home nursing and day care nursing in institutions.

The report set the need for nursing care beds at a minimum of 10 per 1000 persons older than 65 – about 2100 beds total. In 2001, there were 26 small

hospitals with fewer than 50 beds in each. The first step involves turning at least 30% of these beds into nursing care beds, but there will still be a significant shortage of nursing care beds. One way of meeting the need for nursing care is to develop non-institutional services. The EHIF has recognized the key role of nursing care in optimizing the efficient use of acute care, and from 2003 it has covered home nursing.

Financing the planned changes has been difficult, and regulation is not fully in place yet. However, the process of regulating nursing care financing has

Table 18. Developments in mental health services, 1975–2000

	1975	1985	1990	1995	2000
Number of psychiatric beds	1 955	2 340	2 450	1 150	1 033
Number of outpatient visits	48 764	63 798	56 669	69 227	94 228
Number of primary psychoses	535	336	191	478	506
% of cases treated in hospital	38	35	33	29	27
Average length of hospitalization	96	88	79	78	24
Number of psychiatric doctor positions	122	170	192	160	171
Number of psychiatrists in outpatient service	48	58	67	54	79
Number of compulsory hospitalizations	–	–	–	224[a]	484

Sources: (26,27).

Note: [a] 1997.

begun, and there is considerable interest in introducing systems to measure the health and social care needs of older people. The EHIF has introduced a system to assess older people's eligibility for health, nursing and social care, which will help to allocate resources based on need rather than health or social status.

Mental health care

During the Soviet era, mental health care, like social care, was mainly based on institutional provision. However, since independence, major changes have taken place (see Table 18).

During the 1990s the number of psychiatric beds decreased from 155.1 to 74.8 per 100 000 population, the average length of hospitalization decreased from 96 to 24 days and the number of outpatient visits increased from 36 to 68 per 1000 population. By 2002, the last figure had increased to as high as 153 per 1000 population. This was achieved without a specific national mental health programme, mainly as a result of financial incentives that the EHIF created by decreasing the payment rate for active care days in hospital and the quantity of services purchased (see the section on *Payment of ambulatory specialist*

care and inpatient care). At the same time, specialists have made efforts to modernize their practices.

More recently, the move towards reducing institutional care has slowed because the outpatient network is not yet able to offer sufficient alternatives. For example, only one modern antipsychotic drug listed for reimbursement by the EHIF is available, and it only since 2001, although new drugs are expected to become available in 2004. An increasing problem is the lack of human resources. The number of psychiatrists (174 in 2002) and psychiatric nurses (113 in 2002) is already inadequate, and the low financial status of health professionals combined with increasing pressure for qualified personnel to work in other EU member states does not bode well for the future.

The 1997 Psychiatric Care Act defines procedures and conditions for mental health care provision and involuntary treatment. It applies to all psychiatric cases and basically follows the 1991 United Nations principles on protecting the rights of those with mental health disorders. Although patients and organizations representing patients have claimed that Estonia lags behind western European countries in protecting the rights of people with mental illnesses, this is largely due to shortcomings in education and information sharing among different professional groups – for example, the judiciary – and among patients and their representatives. It has been shown that mental health services are highly unevenly distributed across the country. The distribution is skewed in favour of larger cities and against areas mainly populated by Russian speakers.

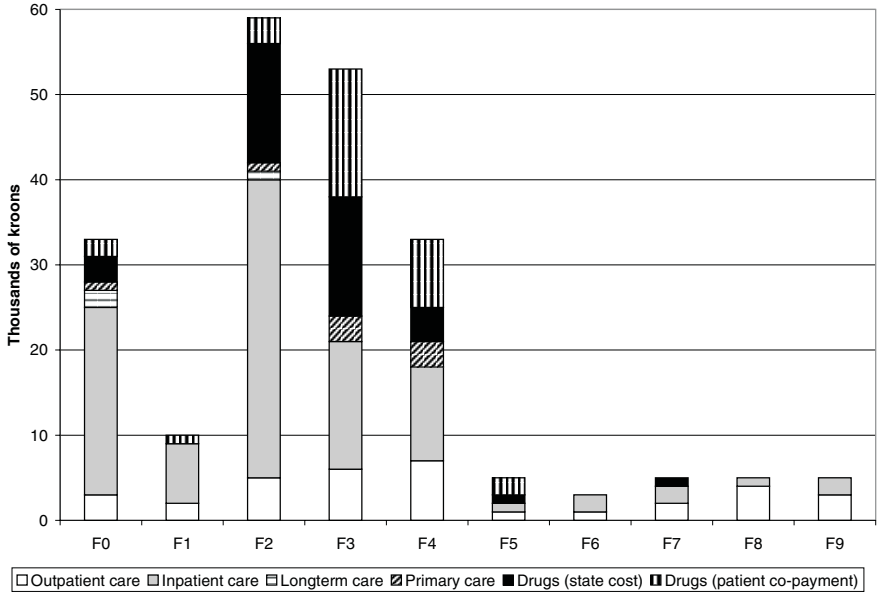
In 2003, the government approved a Mental Health Policy Framework Document *(28).* This document is the result of considerable multidisciplinary work led by the NGO sector and involving almost 1000 people over the course of a year. Experts and patients participated in drafting and discussing the document via an electronic mailing list, which proved to be an effective and efficient mode of operation. However, after initial government support for mental health issues, momentum has been lost due to a change of government following parliamentary elections, and the original plan for concerted action backed by state funding has fallen from the government's list of priorities. The Ministry of Social Affairs is currently preparing a national policy document, but it will not discuss any allocation of specific funds.

Recent data show that mental health care accounts for about 4% (€7.73 million) of all health care costs reimbursed by the EHIF *(29).* About a quarter of these funds are spent on outpatient treatment, where the greatest costs are related to neurotic, stress-related and somatoform disorders (Category F4 in the *Tenth revision of the international statistical classification of diseases and related health problems* (ICD-10)). The F4 disorders account for about a quarter of total outpatient care costs, followed by mood affective disorders

(F3) and schizophrenia, schizotypal and delusional disorders (F2). The highest costs of inpatient care are associated with F2 diagnoses (41%), followed by F3 diagnoses (17%) and F1 diagnoses (15%). Primary care plays a visible role in the treatment of mood and anxiety disorders, as 47% of all antidepressants are prescribed by family doctors, although family doctors only account for 7.4% of total mental health care costs. Long-term or nursing care is a growing area in general, and in 2002, long-term care accounted for about 2% of total mental health care costs, the same as its share of the general health care budget.

Drugs used to treat mental health problems account for 4% of the EHIF's total reimbursement of drugs. Most of these drugs are prescribed to treat schizophrenia, schizotypal and delusional disorders and mood affective disorders. However, while the EHIF reimbursement of drugs for mental illnesses has increased significantly, patients continue to contribute substantially through cost sharing; about 48% of the cost of reimbursed drugs for mental health illnesses comes from patients, rising to 62% of the cost of reimbursed antipsychotic drugs. Consequently, access to this type of mental health care is largely determined by ability to pay.

Fig. 10. The distribution of mental health care costs by ICD-10 category, 2002



Source: (29).

EHIF-funded mental health care tends to favour a bio-medical approach, so services such as psychotherapy are usually available only privately and are paid for out of pocket. The same is true of treatment of drug and alcohol addiction; with the exception of emergency detoxification treatment, all other such treatment must be funded out of pocket. As the number of drug addicts has grown, the state has tried to make available services funded by donor money, but such funds have only been sufficient to fund single beds. Municipal systems for treatment of drug addiction do not exist.

Figure 10 shows the overall distribution of mental health care costs by different diagnostic groups.

Dental care

With the exception of a few public dentists at the University of Tartu Clinic and in municipal dental polyclinics in Tallinn, most dentists are private. During the 1990s, dentists were quick to open private practices, and the proportion of public dentists fell rapidly. The geographical distribution of dentists across the country is uneven. In 2000 the average dentist:population ratio was 1:1100, but in the north-east it was as high as 1:3030.

Estonia does not have a national policy document or strategy for dental care. In 2000, dentists prepared a dental care development plan, similar to the development plans prepared by other specialties (see the section on *Planning, regulation and management*). The plan contains some assessment of the need for dental care and dental professionals through 2015.

Quality control is left to professional organizations and mainly consists of continuing education. In 2003, the EHIF initiated and funded a medical audit of dental care and compared dental costs for children and adolescents based on medical records *(30)*. The audit concluded that the quality of dental care for children is generally satisfactory.

Table 19. Health care personnel in Estonia per 1000 population, 1970–2002

	1970	1980	1990	1995	1996	1997	1998	2000	2002
Active doctors	2.37	2.93	3.50	3.09	3.03	2.99	2.97	3.22	3.09
Active dentists	0.33	0.40	0.48	0.58	0.63	0.66	0.68	0.74	0.79
Certified nurses	4.22	4.40	5.58	6.52	6.29	6.30	6.25	6.34	6.40
Midwives	0.48	0.48	0.62	0.46	0.44	0.39	0.37	–	–
Active pharmacists	0.44	0.48	0.59	0.49	0.49	0.52	0.53	–	–

Sources: (23,31).

Human resources

Human resources and training

Human resources has been one of the most neglected aspects of Estonian health system planning, and the quantity and quality of health care professionals is a key issue. After independence, underinvestment in health facilities and human resources was a major source of cost savings, resulting in low salaries and poor morale among doctors and nurses. More recently, the prospect of the free movement of medical professionals within the European Union has put further pressure on this part of the health system.

When health care reforms began to take place in the early 1990s, it was assumed that there was an oversupply of doctors, particularly in certain specialties. At the same time, there was – and still is – a shortage of nursing personnel and an uneven distribution of specialist services around the country. Between 1991 and 2000, the number of doctors fell by 24%, from 5500 to 4190, and the number of nurses by 14%, from 9900 to 8500 *(31).* Although the number of doctors and nurses continued to decrease after 1998, the ratio per 1000 inhabitants has remained more or less the same due to a parallel fall in the size of the population (see Table 19). However, taking into consideration the current age distribution of doctors, a further fall of 12%, or about 500 doctors, is expected by 2010 *(32).* The number of dentists has increased by 40% since 1990, while the number of pharmacists has not changed much.

The University of Tartu Faculty of Medicine is the only academic medical training institution in Estonia. It is responsible for undergraduate medical training (medicine, pharmacy and dentistry), postgraduate specialization and master's- and doctoral-level training (for all areas including nursing and public health). Estonia's three nursing schools (in Tallinn, Tartu and Kohtla-Jarve) are recognized as vocational higher education institutions for basic (*põhiõpe*) and special (*tasemeõpe*) training for nurses and midwives. They also offer a health protection programme and train other lower- and mid-level health specialists.

Admission quotas for publicly funded undergraduate or postgraduate medical training positions are set by the Ministry of Education based on proposals put forward by the Faculty of Medicine and agreed to by the Ministry of Social Affairs and the professional associations. However, the University of Tartu and the Faculty of Medicine can admit additional students for medical training who pay for their own education. These students have the right to continue their training in publicly funded positions if some become available during the course of their studies. The University of Tartu has used this option for up to 10% of the total number of admitted students and has also admitted up to 20

students (20%) from abroad (mainly Finland). The quota for different specialist training programmes within the overall government-specified total is set by the University of Tartu, in discussion with the professional associations.

As yet there is no long-term national health workforce plan setting out the country's need for different health care professionals, but several baseline studies have been carried out and others are currently under way.

Physicians

Since 1997, medical training has been carried out in line with the minimum standards of the European Union, and training programmes were evaluated and approved by the European Commission in 2002. Undergraduate training takes six years, including six months of clinical practice. Passing the final-year exams entitles medical students to the degree of medical doctor and gives them the right to work as a general doctor, but not as an independent provider. General doctors can work only under the supervision of a specialist.

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

All residency programmes come under the auspices of the University of Tartu Faculty of Medicine. During the Soviet era and until 2002, a mandatory postgraduate three-category accreditation system was used to guarantee the level of professional qualification. Each category entitled the doctor to a particular salary scale and, subsequently, the right to practise privately. Peer commissions led by the Ministry of Social Affairs developed accreditation criteria for each of the categories and specialties, including requirements for continuing education. Professional associations were responsible for repeating the procedure for each doctor every five years.

In 2002, the accreditation system was abolished in line with EU directives but against the will of many of the professional associations. Currently, continuing professional education is unregulated, although the Ministry of Social Affairs and the professional associations are trying to develop an appropriate

voluntary system of continuing professional education and peer-led monitoring and management of professional quality control. It has turned out to be more difficult than expected, as there is substantial variation in the capacity of different professional associations, some of which are very small (such as those for pulmonologists and nephrologists). Each professional association negotiates directly with the Ministry of Social Affairs. Moreover, it seems that the Estonian Medical Association, which represents individual doctors and operates more as a trade union, is not keen on taking on the role of umbrella professional body. In this respect, nurses and dentists are in a more favourable position and their professional development better managed.

The professional development of specialists relies heavily on the University of Tartu academic departments. However, there are two problems with it. First, only 22 of 45 professorial posts are filled due to a shortage of distinguished specialists with appropriate academic backgrounds. It is difficult to recruit clinical specialists because hospital positions are more attractive than academic posts. Second, this shortage of people with adequate skills and experience has in some cases created a situation where a single person is responsible for a profession's administrative affairs in hospital, its faculty's scientific interests and its overall development in Estonia. Obviously, it is difficult to execute these different responsibilities with equally high motivation and concentration, as well as make rational compromises between sometimes-conflicting interests.

Between 1991 and 2000, the number of doctors fell by 24% *(31)*, although their concentration has remained more or less stable – just over 3 per 1000 population – due to a parallel drop in population. The decline in the number of doctors can be attributed to several factors. First, the size of the population decreased by 7% during the first 10 years of independence, mainly due to re-emigration to the former USSR. Second, there have been large numbers of medical graduates and young doctors leaving clinical medicine to work in better-paid positions in new health-related fields – for example, in health administration, at pharmaceutical companies or even outside the health sector. There were a few years in the early and mid-1990s when fewer than 40% of medical graduates continued in medicine. Third, the official government policy to reduce the number of admissions to the Faculty of Medicine was widely supported by doctors themselves, as it was assumed that there was an oversupply of doctors. The Ministry of Education reduced the number of students admitted from 200 per year in the 1980s to 70 in 1995. In the last three years it has increased it again to 100 per year.

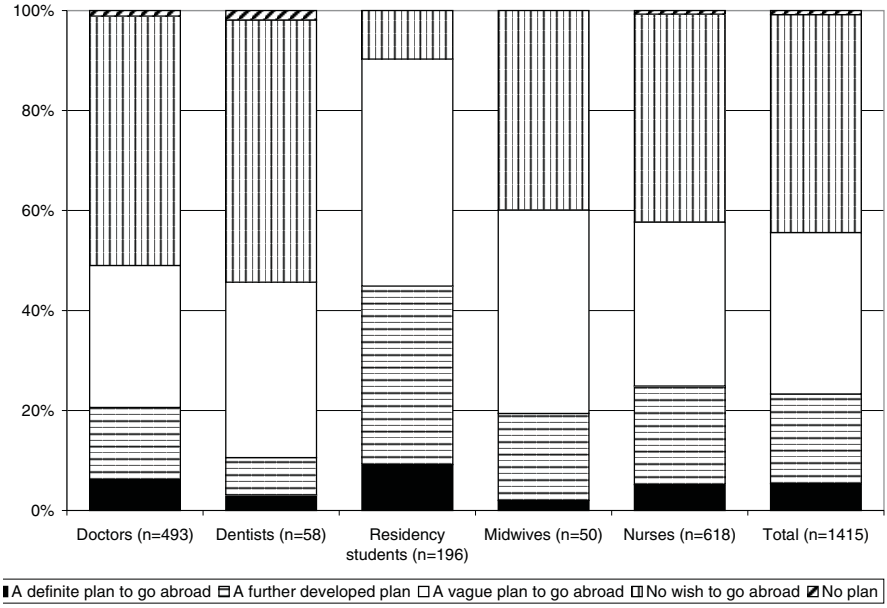
The Ministry of Social Affairs considers 3 doctors per 1000 population to be the optimal rate for the next 10 to 15 years and is planning to continue to fund the admission of 100 to 110 new medical students and 90 to 100 new medical

residents every year. However, the current plan does not account for a reduction in the number of doctors due to retirement or leaving to work abroad.

Taking into consideration the current age distribution of doctors, a further decline in the number of doctors of 12% (about 500 doctors) is expected by 2010 [32]. The mean age of doctors is 47.2 ± 11.5 (44.7 ± 12.9 for dentists). Forty-one per cent of active doctors and 35% of active dentists are 50 years or older, with 34.7% of doctors and 28.5% of dentists 50 to 64 years old, and 6.3% of doctors and 6.8% of dentists older than 65.

To make a prognosis on the mobility of health professionals within EU, a survey was carried out in late 2003 among representative samples of Estonian medical doctors, residency programme doctors, final year medical students, dentists, nurses and midwives on their plans and reasons for migration. Results show that about half (56%) of Estonian health care professionals would like to work abroad, either permanently or temporarily, and around 5% (about 700–800 health care workers) have definite plans to go (see Fig. 11). According to the researchers, the latter is most likely to be the extent of the emigration that the Estonian health sector has to face during the next few years. But the finding that half of the health sector workers want to work abroad is a warning signal. Active recruitment by Scandinavian health care institutions (especially from

Fig. 11. Per cent of health care workers wishing to work abroad, rated according to the concreteness of their intention to move, 2003



Source: (33).

Finland, with its geographical and linguistic proximity) that provide information and cover traveling and language learning costs may significantly increase the number of health care professionals leaving Estonia. As many young doctors speak English, the United Kingdom and Ireland are also popular destinations. The most important reason that health care workers state for why they plan to work abroad is better wages, but the wish to gain experience in other countries is also important among younger professionals.

The distribution of Estonian physicians among specialties and levels of care has seen a number of remarkable changes in recent years. First, the reform of primary care is successfully nearing completion. The training and introduction of family doctors was central to this reform. The retraining of doctors in family medicine began in 1991, the field was declared an official specialty in 1993 and a residency programme was initiated in 1995. About half of the doctors on the retraining courses had previously worked in rural health centres as non-specialized (general) doctors, while the remainder were mostly internists or paediatricians working in polyclinics.

The total number of family doctor patient lists, as declared by county governors, is 807. By September 2003, there were 868 certified family doctors in Estonia, of which 34 had graduated from the residency programme and 834 had passed a two-year retraining course. Currently, there are 54 family medicine residents in training. In 2004, 15 of them will graduate and 25 new ones will start residency training. By the end of 2003 there were contracts with family doctors for every patient list, one year earlier than planned. This process also largely explains the drop in the number of paediatricians and internists employed in primary care, as they have been the biggest source of retrained family doctors.

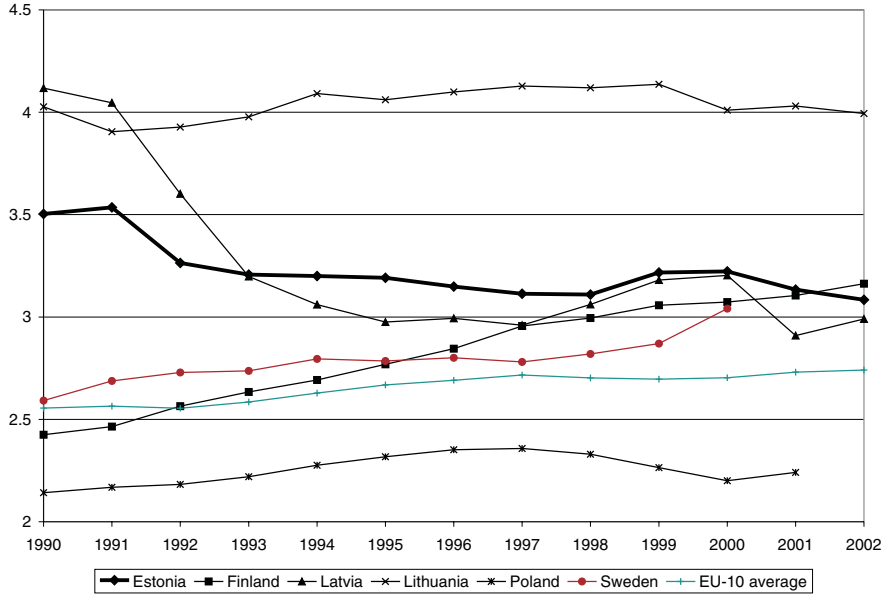
There are already more qualified family doctors than available positions. The Estonian Association of Family Doctors estimates that two thirds of the 34 residency graduates have their own patient list and a contract with the EHIF. However, that means that a third of these young doctors, who have the most professional training in family medicine, are working as assistant doctors to primary list-holders. The current policy that only one doctor can manage a patient list means that young family medicine residency graduates may have to work as assistant doctors to another family doctor for 15 to 20 years before having responsibility for their own list. Anecdotally, it is estimated that a further 100 family doctors are needed to fill in for existing family doctors during vacations and periods of professional training, even though officially no more family doctors are required. The quick rise in the popularity of family medicine could evaporate, and some young family doctors may leave for Finland and Sweden, where the need for such specialists is great.

In 1997 and 1998, graduates of the family medicine retraining programme were surveyed about their working conditions and job satisfaction. The results showed that family doctors were significantly more motivated than district doctors (the non-specialized general doctors who had been working in the polyclinics since the Soviet era), mainly due to increased responsibility and autonomy, better incomes, improved working conditions and higher job satisfaction *(34)*. At the same time, more than 50% of patients were satisfied with almost all aspects of the family doctor service, although satisfaction was significantly higher in settings where the reform had been managed with more care, and where patients were better informed and had been able to choose their own family doctor *(35,36)*.

The second major change in the medical workforce involves the shift from purely ambulatory specialist care to specialist care in both ambulatory and inpatient settings (hospitals and hospital outpatient departments). From 1996 to 2002, the percentage of doctors employed in hospitals increased from 41% to 50%, increasing from 1800 to 2100. This increase was due to hospital reforms in Tallinn, where polyclinics were merged with hospitals, which meant that all staff members were counted as hospital employees.

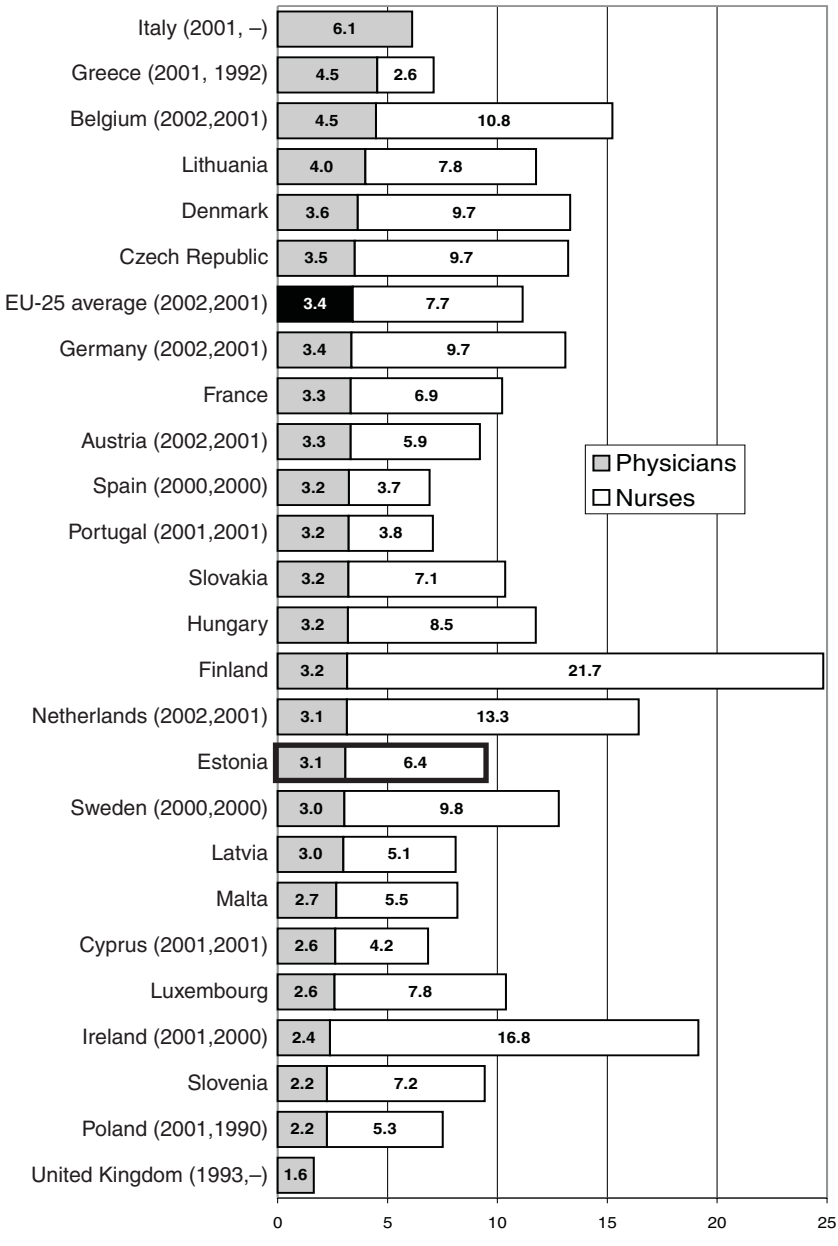
Hospital reforms are likely to have a large impact on future trends in human resources. Currently, doctors are benefiting from the reforms, as there has been

Fig. 12. Doctors per 1000 population, Estonia and selected European countries, 1990–2002



Source: (21).

Fig. 13. Number of physicians and nurses per 1000 population in the European Union, 2002 or latest available year (in parentheses)



Source: WHO Regional Office for Europe health for all database, June 2004.
Note: EU: European Union; EU-25 average: for all member states.

a considerable redistribution of doctors among hospitals. However, in future, when the number of hospitals has fallen to 13, doctors may not be in such a strong negotiating position in relation to hospital management. Today, the foundations that own the country's two largest hospitals – the University of Tartu Clinic Foundation and the Northern Estonian Regional Hospital Foundation – already employ more than a third of all hospital doctors and 44% of all doctors providing inpatient care.

Nursing personnel

In 1990, there were about 9900 nurses in Estonia, but by 1994 there were 8500. The total number of nursing personnel, including midwives and feldshers was 10 400 in 1998. There is no formal position for feldshers in the present health system; they are basically treated as nurses. The greatest shortage of nurses is in specialist areas, such as surgical nurses. Reasons for the shortfall include poor salaries, high levels of work-related stress, low job satisfaction and low professional status.

There are about two qualified nurses employed per doctor. Fifty-seven per cent of nurses work in hospitals. The poor ratio of nurses to doctors was inherited from the Soviet era and has not changed since independence. The present ratio of nurses to doctors is considered to be too low, and the officially declared aim is to raise the ratio to 4:1.

Nurses' professional associations have been working to standardize the different nursing specialties. In one important move, the Ministry of Education approved their standards in 2003. These standards and terms of reference are compatible with similar requirements elsewhere in the European Union, thus enabling the free movement of nursing professionals within the EU.

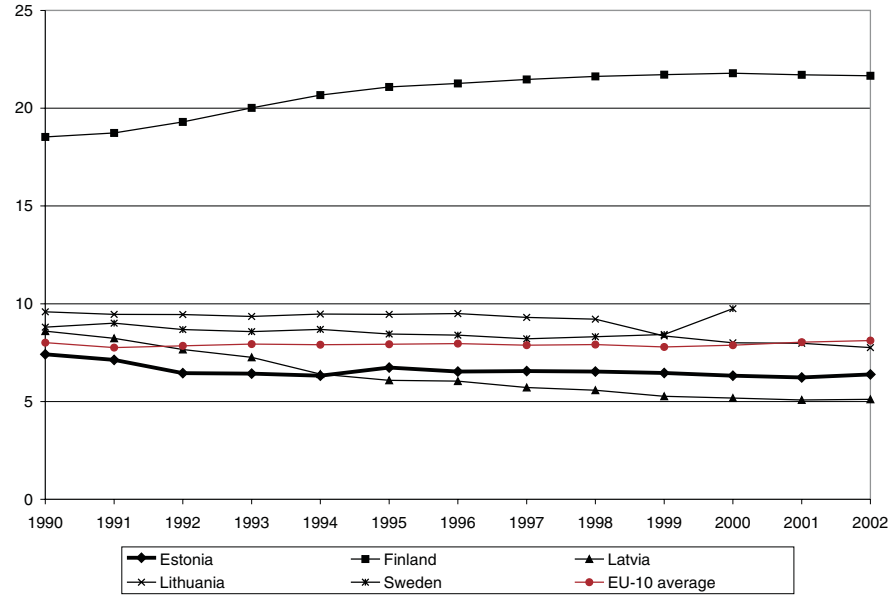
Nursing schools and their curricula have been developed to meet the standards of vocational high school and a bachelor's degree. Besides basic nursing training, Estonian medical schools also offer higher vocational training for midwives, optometrists, pharmacists, mid-level health protection specialists, radiology technicians, physiotherapists, dental technicians and lab technicians, as well as vocational-level training for long-term nursing specialists. Such training generally takes three and a half years (four and half years for midwives). Nurse training is offered in Estonian and Russian.

The Ministry of Social Affairs recognizes that the increasing shortage of nurses threatens the further implementation of hospital reforms, which include major increases in long-term and nursing care capacity. In 2004, it put forward a proposal to the Ministry of Education to fund training for 500 basic nurses plus 200 specialist nurses and 40 midwives. The proposal is based on the goal

of training 7000 new nurses by 2015 to meet the target of 10 nurses per 1000 inhabitants. The extra training is needed due to the fact that 28% of nurses are 50 years or older.

However, while there is political will to increase the number of nurses being trained, there seems to be a lack of training capacity, mainly due to inadequate numbers of teaching staff. In 1991, a master's course in nursing was established at the University of Tartu Faculty of Medicine for nurses with some work experience. By 1998, there were 52 graduates from this course. Forty new

Fig. 14. Nurses per 1000 population, Estonia and selected European countries, 1990–2002



Source: (21).

master's-level students are expected in 2004. These graduates are seen as the main resource for further training of basic and specialist nurses.

Some efforts have been made to raise the status of nurses by increasing their responsibilities and introducing continuing education to the profession. The new Health Services Organization Act gives nursing care a legally well-defined status on a par with primary, specialist and emergency care. In hospitals, nurses and nursing are increasingly being acknowledged independently, by doctors as well as by patients.

Other personnel issues

There is a trend towards separating health service and management responsibilities in Estonian hospitals by appointing hospital managers alongside head doctors. The lack of management skills in the health care field and the need to improve the administration of health care institutions have been acknowledged and tackled with some success. The best example is the continuing professional education courses conducted by the National Institute for Health Development (formerly the Public Health and Social Training Centre), where 100-hour courses for mid-level health care managers have been offered since 2002, funded by donor support (project HOPE).

However, top-level health managers do not have sufficient professional development opportunities within Estonia. The only source of degree-level training is the two-year master's degree and PhD programmes in public health at the University of Tartu. Unfortunately, many young people are offered work in mid-level positions before they can complete their studies. Very few people have postgraduate degrees from foreign universities, and most of those who do, hold positions in the public sector. The absence of postgraduate health management qualifications among top health sector managers may also be due to politicized recruitment systems.

Public health specialists were not trained in Estonia during the Soviet era. Since 2002, nursing schools have offered training with diploma accreditation to mid-level health protection specialists, and the University of Tartu has offered applied two-year short-course MPH programmes, with a specialization in health protection, for mid-career professionals. The MPH programmes may address the lack of people with modern public health expertise in the health system. There have been a few international efforts to raise the professional competence of public health and health management specialists in Estonia. From 1993 to 2003, the Baltic Rim Partnership for Public Health (BRIMHEALTH) project, coordinated by the Nordic School of Public Health in Sweden, offered several short courses in modern public health in the Baltic states, Sweden and Russia. At least 40 Estonians participated, but by the time the project stopped in 2003, only three MPH degree had been awarded in Estonia. In 2003, another initiative – the Baltic Sea Public Health Training Network – began. Its secretariat is in Estonia, and the first courses are being taught in 2004.

Pharmaceuticals

The pharmaceutical sector was reformed during the 1990s with the aims of establishing drug regulatory authorities, creating a legislative framework,

introducing a system for reimbursing drugs and privatizing pharmaceutical services. Generally, these aims have been achieved. Medicines of proven quality, safety and efficacy are available on the pharmaceutical market, and patients' access to prescription drugs is supported by the reimbursement system. Estonia's pharmaceutical sector looks very similar to pharmaceutical sectors in other EU member states.

Regulation

Legislation concerning the quality, safety and efficacy of pharmaceuticals and governmental control of pharmaceutical activities is based on the Medicinal Products Act of 1995 and on numerous governmental and ministerial decrees providing detailed regulations and guidance. The legislation on pharmaceuticals for human and veterinary use has also been harmonized with EU directives.

The State Agency of Medicines (SAM) is fully responsible for the control of all pharmaceutical activities, including veterinary products. From 2000 it has also been the competent authority for medical devices. All pharmaceutical activities, including manufacturing, wholesale and retail, import/export and hospital pharmacy services, are licensed by the Licensing Board at the Ministry of Social Affairs. Pharmaceutical services are subject to inspections by the SAM, and the GMP (good manufacturing practice) standard is obligatory in the production of pharmaceuticals. The SAM also provides market authorization based on proven quality, safety and efficacy; approves clinical trials; regulates advertising and promotion of pharmaceuticals; and has responsibility for pharmacovigilance activities.

Market statistics

Drug statistics based on wholesale and retail sales data are collected by the SAM's Bureau of Drug Statistics. The WHO-endorsed ATC/DDD (Anatomical Therapeutic Chemical classification system with Defined Daily Dose) methodology is used for analysing volume data. Summary annual reports (in defined daily doses per 1000 inhabitants per day) are available from the SAM web site.

Table 20. Wholesale drug turnover, 1999–2003

	1999	2000	Change	2001	Change	2002	Change	2003	Change
Turnover in wholesale prices (millions of kroons)	888	1 126	+26.8%	1 296	+15.1	1 473	+13.7	1 595	+8.28
Turnover in wholesale prices (millions of €)	56.7	71.9	+26.8%	82.8	+15.1	94.1	+13.7	101.9	+8.28

Source: (37).

Table 21. Market share (%) of top six wholesalers, 2000–2003

Wholesaler	2000	2001	2002	2003
Magnum Medical AS	38.0	43.3	48.0	48.0
Tamro Eesti AS	33.0	31.8	30.9	30.0
TopMed AS	7.9	7.1	4.7	4.4
Oriola AS	4.5	3.6	3.4	5.0
Pharmac MS AS	3.9	3.8	3.2	3.2
Armila Eesti OÜ	3.6	2.9	2.5	3.1

Source: (37).

Table 22. Wholesale turnover of the top ten drug companies in thousands of kroons, 2002–2003

Manufacturer	2002	2003
Astra	74 392	97 403
Glaxo Wellcome	73 882	83 756
Nycomed	72 719	82 081
MSD	88 239	70 153
Roche	50 125	66 480
BMS	53 824	56 889
Aventis	–[a]	56 020
Berlin Chemie	48 618	55 843
Pfizer	69 939	50 580
Pharmacia & Upjohn	46 176	49 576

Source: (37).

Note: [a] Merged in 2002.

Tables 20 to 23 present key pharmaceutical market statistics. Local production covers approximately 7% of the market value of pharmaceuticals. In 2002, there were eight licensed manufacturers (of mainly generic products) in Estonia. All drug manufacturers and wholesalers in Estonia are private companies. There are 38 enterprises with wholesale licences, but 6 major wholesalers provide over 90% of the turnover (see Table 21). These wholesalers have excellent facilities, computerized logistical systems and well-functioning distribution networks.

Retail drug sales are only permitted in pharmacies. In 2003, there were 310 main and 158 branch pharmacies in Estonia. The number of retail pharmacies

Table 23. Drug sales in retail pharmacies, in millions of € and kroons, 1997–2001

	1997	Change	1998	Change	1999	Change	2000	Change	2001	Change
Human medicines (millions of €)	39	+36%	52	+30%	61	+17%	73	+20%	86	+17%
Human medicines (millions of kroons)	628	+36%	817	+30%	954	+17%	1 147	+20%	1 345	+17%
Prescription medicines	391	+48%	515	+32%	615	+19%	762	+24%	950	+25%
Reimbursed products	310	+61%	427	+38%	527	+23%	649	+23%	912	+41%
EHIF share	230	+61%	316	+37%	366	+16%	438	+20%	621	+42%
Patient share	80	+63%	111	+39%	161	+45%	211	+31%	291	+38%
Over-the-counter medicines	237	+20%	302	+27%	339	+12%	385	+14%	395	+3%
Veterinary medicines	5	0%	6	+20%	5	–17%	6	+20%	7	+17%
All medicines	633	+36%	823	+30%	958	+16%	1 153	+20%	1 352	+17%

Source: (37).

has been stable over the last five years. Growth in the number of pharmacies can be seen in bigger towns, while some rural pharmacies have closed. More recently, retail chains have developed. One pharmacy chain is closely connected to the largest wholesaler and includes about 40% of all pharmacies. Legally, the wholesale companies cannot directly own pharmacies, and sophisticated ownership schemes are in use. The 29 hospital pharmacies provide drugs only to hospitals and are not allowed to sell drugs to the public.

In monetary terms, the sale of pharmaceuticals has increased by 15–20% in the last few years. Per capita annual consumption of pharmaceuticals, including prescription medicines, over-the-counter drugs and hospital medicines, was estimated to be €70.30 (EEK 1100) in 2001. In volume (doses per capita), the amount of prescription medicines consumed in Estonia in 2001 is estimated to be approximately 25–30% of the amount consumed in the Scandinavian countries.

Manufacturers are free to set their own prices for non-reimbursed pharmaceuticals. The regressive cost-plus (profit margin) system is used for wholesalers and pharmacies, fixing the maximum mark-ups for both reimbursed and non-reimbursed pharmaceuticals, including over-the-counter drugs (see Table 24).

Table 24. Mark-up limits in EEK and € for pharmaceuticals (wholesale and retail), 2002

Type	Purchase price of one package (EEK)	Purchase price of one package (€)	Mark-up limit (%)	Fixed mark-up (EEK)	Fixed mark-up (€)
Wholesale	<24.00	<1.59	20	0.0	0.00
	25.01–45.00	1.60–2.80	15	0.0	0.00
	45.01–100.00	2.81–6.30	10	0.0	0.00
	100.01–200.00	6.31–12.80	5	0.0	0.00
	>200.00	>12.80	3	0.0	0.00
Retail	<9.99	<0.62	0	6.0	0.38
	10.01–20.00	0.64–1.27	40	6.0	0.38
	20.01–30.00	1.28–1.91	35	0.0	0.00
	30.01–40.00	1.92–2.55	30	0.0	0.00
	40.01–50.00	2.56–3.19	25	0.0	0.00
	50.01–100.00	3.20–6.30	20	0.0	0.00
	100.01–700.00	6.31–44.70	15	0.0	0.00
	>700.00	>44.70	0	80.0	5.10

Source: (37).

Reimbursement and expenditure

Since 2002, applications by manufacturers for EHIF reimbursement must be accompanied by formal pharmaco-economic analysis, following the common Baltic guidelines for pharmaco-economic analyses, available in English from the EHIF web site. The application, accompanied by clinical and pharmaco-economic data, must be submitted to the Ministry of Social Affairs. The clinical data are then evaluated by the SAM, while the economic data are assessed by the EHIF. Both provide a written report to the ministerial committee that makes recommendations to the Minister on reimbursement decisions. After a positive opinion from the committee, the price is negotiated between the manufacturer and the Drug Policy Unit of the Ministry.

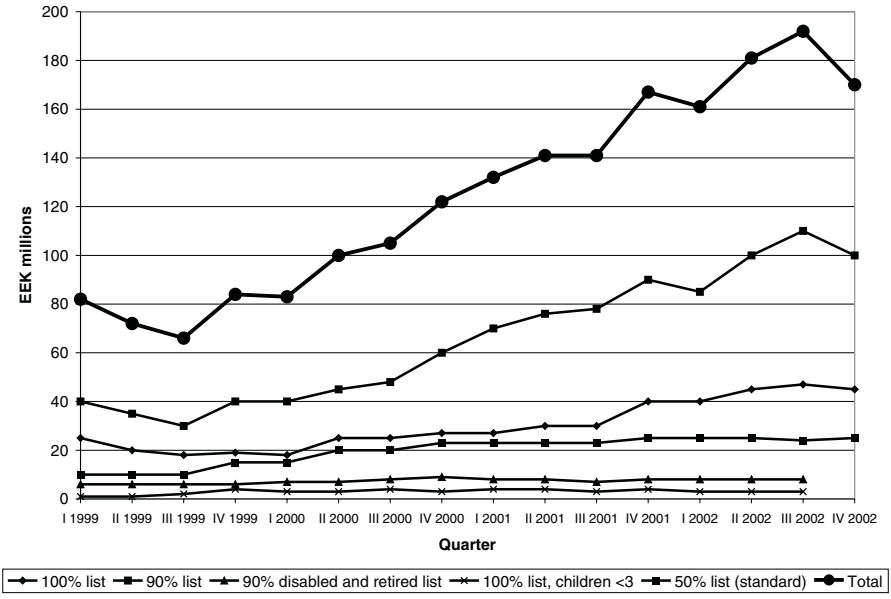
When a generic product become available, a reference price based on the active substance(s) is calculated as the average of the second and third cheapest product; from January 2005, it will be based on the second cheapest product. Reimbursement proportions of 75%, 90% and 100% are calculated from the reference price when the actual price is higher. Exemptions from the reference price are possible when there is proven therapeutic value in using a specific formulation – for example, a modified-release instead of an immediate-release pill.

Table 25. EHIF pharmaceutical expenditure as a % of EHIF expenditure on health services and total annual revenue, 1992–2004

Year	% of spending on health services	% of total annual revenue
1992	2	1
1993	8	5
1994	10	6
1995	8	5
1996	8	6
1997	12	8
1998	14	10
1999	13	10
2000	17	11
2001	24	15
2002	26	15
2003	19	12
2004	19	13

Sources: (30,38).

Fig. 15. EHIF spending on pharmaceuticals per quarter (in EEK millions), 1999–2002



Sources: (30,38).

Information and rational use of drugs

Information about medicines that is directed to either prescribers or consumers is controlled by the SAM through the market authorization process, and national language summaries of product characteristics (SmPCs) are published in the annual compendium *Pharmaca Estica* and on the SAM web site. Advertising of pharmaceuticals must be in line with the approved SmPCs.

The first edition of a national formulary for medical doctors, similar to the *British national formulary*, was published in 1995. This handbook promotes the use of products with established efficacy and high benefit-to-cost ratios. The SAM distributes the bimonthly *Drug information bulletin [Ravimiinfo Bülletään]* free of charge to the majority of medical doctors and to all pharmacies. The bulletin is independent of the drug industry and compiled by specialists in the University of Tartu Faculty of Medicine, providing non-commercial reviews and comparisons of existing treatment alternatives and critical evaluations of new medicinal products.

In recent years, several treatment guidelines have been developed and implemented, in both primary and specialist care. However, it is recognized that there is a need for further work in this area, so until now national policies on the use of pharmaceuticals and new equipment have been limited to information and guidance.

A recent legislative proposal for obligatory generic substitution at the pharmacy level was opposed and eventually rejected by both doctors and pharmacists, the former fearing the loss of their decision-making power and the latter fearing increased responsibility. The regulation has been implemented from October 2004 in a milder form, in which doctors have been generally required to prescribe by active substance, though they are also allowed to prescribe by brand name if they provide a written justification for doing so in a patient's medical notes.

Possible future changes

The regulatory system for pharmaceuticals has achieved stability, and no major reforms are foreseen in this area. The distribution system faces the growth of pharmacy chains closely linked to wholesalers. This development has not been welcomed by pharmacists or patients, and legislative proposals to limit the maximum market share of chains are under way. Regarding the reimbursement system, the first results of the reforms have been controversial, with some decrease in the rate of growth in drug spending, but a drop in the number of prescriptions purchased as well. As the long-term effects become evident,

further fine-tuning of the system is possible – for example, the introduction of therapeutic group-based reference prices for specific drug groups and the introduction of compulsory generic substitution to protect patients from the economic consequences of heavy brand-marketing.

Health care technology assessment

Estonia has no systematic programme of health technology assessment (HTA). The main activities in this field are assessing new services to be added to the benefit package, evaluating the need for high-cost technologies and ensuring the safety of medical equipment.

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

In 1999, the Medical Devices Department of the SAM was set up to deal with medical devices entering the Estonian market. However, it does not assess services and introduce regulations for medical devices so much as register products and assess their conformity to the requirements. Thus, the department assures quality control of medical devices rather than engaging in health technology assessment.

The Committee on Medical Technology was restructured in 2001 to include representatives from the Ministry of Social Affairs, the EHIF, the medical specialties and the SAM Medical Devices Department. The Committee is now responsible for regulating medical technology as well as high-cost equipment. Applications for technology procurement are assessed according to several criteria, such as the need for the equipment, the actual patient pool, optimality and sustainability.

Due to growing pressure from providers' management boards and increased competition among providers, there are strong incentives to introduce high-cost technology where there is no assessment of value for money. One of the ways to overcome this problem is to use capped cost and volume contracts between

insurer and provider, which limit activities in general terms. The drawback is that some technology expenses could still be covered by the municipalities, leading to oversupply. There remains a need to develop a clear national medical equipment policy and to create a national plan for use of high-technology equipment to ensure financial feasibility. The latest ideas are to develop a list of equipment subject to national planning and to require support from the Committee on Medical Technology before purchasing, thus moving the system from cost limitation to an explicit positive list.

At the end of 2002, new rules were introduced on how new procedures, treatment methods etc. should be introduced into the EHIF benefit package. See the section on *Health care benefits and rationing* for more detailed information on this process. A key issue is the lack of trained human resources and research institutions in this area. Adapting technology assessments and evidence from other countries also presents a challenge to the scientific community and civil servants in Estonia. Methods for adapting and applying evidence-based research need to be developed.

Financial resource allocation

Third-party budget setting and resource allocation

Most health care resources – about 70% of total expenditure on health – are channelled through the Estonian Health Insurance Fund (EHIF). The state budget has funded approximately 8% of care, mostly through the Ministry of Social Affairs.

The main change to have taken place in recent years concerns EHIF budget allocations. Before 2001, the EHIF budget was approved by the parliament at the same time as it approved the state budget for health. In order to allow flexibility, the budget allocation was not detailed, so while the parliament approved the overall budget, allocations to different sectors were made at the discretion of the EHIF. Since 2001, when the EHIF achieved autonomous status, its budget has been approved by its Supervisory Board, which is comprised of representatives from the state, employers and employees. The new system involves a much more detailed and transparent budget approval process; the budget is now accompanied by 40 pages of notes rather than the 3-page-maximum annex previously appended to the state budget.

The EHIF budget has always been determined by the amount of revenue generated by the part of the social tax earmarked for health, collected by the Taxation Agency and transferred to the EHIF. Table 26 shows how the EHIF budget is allocated. Some of the budget is allocated on the basis of open-ended legislative obligations – for example, reimbursement of outpatient drugs, payment for sick leave and maternity benefits. The rest is allocated according to priorities determined by the EHIF. Between 1998 and 2002, allocations to primary care grew at a faster rate than allocations to specialist care (including inpatient care).

Table 26. Breakdown of EHIF expenditure by category, 2003

Category	Expenditure (thousands of €)	Expenditure (% of budget)
Health services	233 234	64.13
Specialist care	178 620	49.12
Primary care	29 060	7.99
Dental care	14 902	4.10
Long-term care	4 795	1.32
Rehabilitation	2 946	0.81
Prevention	2 911	0.80
Sickness cash benefits	59 050	16.24
Pharmaceuticals	43 783	12.04
Compulsory reserves	19 897	5.47
Administration costs	5 536	1.52
Medical devices	1 193	0.33
Health promotion	882	0.24
Emergency care abroad (bilateral agreements)	91	0.03
TOTAL	363 666	100.00

Source: (30).

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

In terms of the state budget, budgetary ceilings for each ministry are set by the Ministry of Finance based on legislative obligations and government priorities. The state budget for the health sector is prepared by the Ministry of Social Affairs, which receives budget proposals from organizations funded fully or partially by the state budget. As the Ministry is responsible for health, social security and employment, there is competition for funds from each sector.

The Ministry of Social Affairs administers about 93% of the state budget allocation for health care. 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. In 2003, the state budget allocation for health care to the Ministry of Social Affairs funded the following services:

- ambulance services
- emergency care for uninsured people
- national disease prevention programmes
- administration (all non-EHIF administrative costs)
- some health care development programmes.

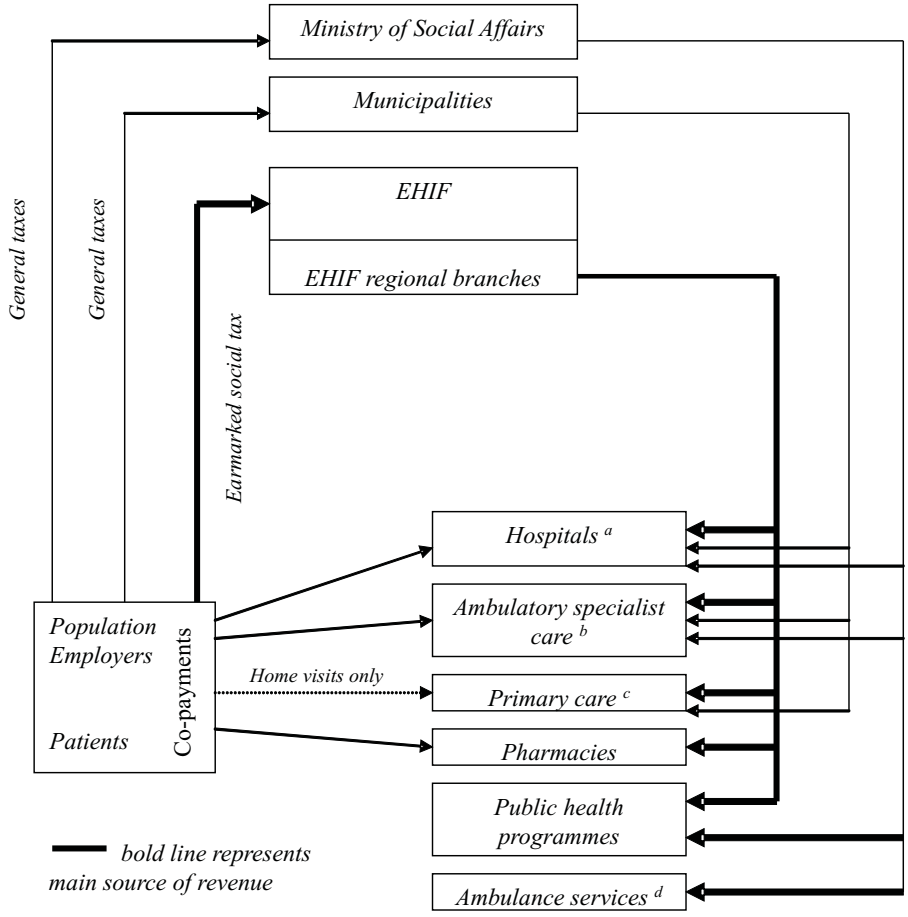
Capital investment has been a problematic area. Prior to 2000, these costs were the responsibility of hospital owners – usually the state or the municipalities. However, as capital funding competed with other claims on state and municipal budget spending, it was not easy to access. Also, the allocations made in consecutive budgets were not sufficient, causing delays in investment projects. Due to the problems of accessing budget resources, growing numbers of providers started to take out bank loans to finance renovations, repaying them with their income from the EHIF. This resulted in a loss of central control over capital investment.

The problem of not having a systematic approach to capital investment was acknowledged by the government, and in 2000/2001 a new system for capital investment was established. Its main principles were that:

- investments should be the responsibility of the autonomous institutional providers
- the EHIF price list should cover capital costs
- a capital charge should balance the providers' different starting positions
- capital investment decisions in public hospitals need to come under central control.

Due to a change of government the new system was not completely implemented. The only step taken, in July 2003, was to transfer responsibility for capital investment to providers by stipulating that the EHIF price list was to cover all the costs of providing health services, including the costs of capital investment. At the same time, the EHIF increased allocations for specialist care by 8–9%, with increases in reimbursement prices on the price list ranging from an average increase of 22% in the per diem payment, 2% for operations, 12% for the price of a visit and 5% for case-based payments. The allocation for a family doctor's basic allowance was increased by 21%.

Fig. 16. Financing flow chart, 2004



Notes: [a] fees for services + daily rate + some per-case payments; from April 2004, 10% of each case is reimbursed using prices based on diagnosis-related groups (DRGs); contracts are close-ended case-volume contracts; [b] fee-for-service; close-ended case-volume contracts; [c] weighted capitation + fee-for-service + additional fixed payments; [d] fixed payment per provider unit.

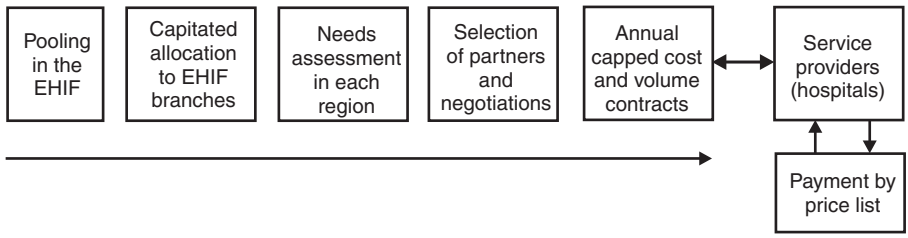
Payment of ambulatory specialist care and inpatient care

The payment of ambulatory specialist care and inpatient care providers is based on contracts with the EHIF which are agreed on the basis of the volume and average cost of cases treated in each specialty. Since 2001, the EHIF has tried competitive tendering through the process of selecting providers in some specialties – mainly ambulatory specialties such as cardiology, gynaecology and dentistry. Payment is based on service prices set out in the price list, which is similar for all outpatient and inpatient providers (see below). All providers are paid the same prices; there is no adjustment for hospital characteristics such as teaching status. In addition, EHIF-contracted providers can charge patients for ambulatory specialist visits, a limited number of inpatient days and above-standard inpatient accommodation (see below). These patient charges are defined and capped by legislation. Providers who do not have contracts with the EHIF are free to charge patients "reasonable" fees subject to a defined maximum. For detailed information on patient charges, see the section on *Health care benefits and rationing*.

The contracting process

At the beginning of each year the EHIF negotiates capped cost and volume contracts with hospitals. The contracts stipulate the range and volume of services to be purchased in each specialty and include a total cap on payments. In some cases the ceiling may be renegotiated during the year. Fig. 17 shows the contracting process and links to payment mechanisms.

Fig. 17. EHIF contracting process



Standard contract conditions for all providers are agreed upon with the Hospital Association, which represents the hospitals outlined in the Hospital Master Plan 2015 (see the section on *Planning, regulation and management*);

from 2003, the list of hospitals eligible for long-term investment and contracts with the EHIF is agreed to by the government. Also from 2003, the standard conditions have been agreed upon for a 5-year period, although the contracts specify details for one year. The aim of strategic purchasing is to restructure the supply of health care services by reducing the number of acute inpatient beds and developing long-term care facilities (see the section on *Health care delivery*).

Until the mid-1990s, contracts were mainly based on historical patterns of service utilization. Since then, they have increasingly included some form of needs assessment. Needs assessment includes additional data about waiting times, accessibility, information about local needs. Needs assessments cover all types of care, allowing rationing among different types of benefits and sectors. A matrix involving several variables (including an assessment of other benefits provided by the EHIF) is used to adjust risk among the four regional branches; in doing so, the assumption of equal need calculated in the late 1990s does not hold (see above). Needs assessment results are organized by case and noted in provider contracts, enabling a clear link to be made between need and strategic purchasing.

Elements of competition among providers were introduced in 2003. Each provider makes a bid for funds based on criteria set out in the 2002 Health Insurance Act. This process is aimed at giving insured people free choice of provider. The only limitation is that contracts should make accurate projections of the number of insured people from other regions to whom they intend to provide services. During contract negotiations, historical utilization data and needs assessment data are used to estimate potential patient movement, and the numbers are finalized at the end of the budgetary year. Providers can also agree to prices that are lower than those set out in the price list, enabling a degree of price competition. During and after contract negotiations, contracts are approved by the EHIF Management Board.

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 (see above). Capital costs have been added to the price list for ambulatory specialist visits, operations, provider per diems and complex prices. Capital costs 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. Additional capital investment in the hospital sector is currently being planned. See the section on *Complementary sources of financing* for further details.

Hospitals submit invoices to the EHIF. These include data on diagnosis and procedures undertaken (based on the price list) – a valuable source of information for analysis and planning. Financial transfers are made after each invoice has been scrutinized and should take place within a month of receiving the invoice.

A system of contract follow-up has been introduced to control and monitor hospitals' financial performance. The system is intended to enhance active purchasing by evaluating hospitals' performance to ensure that they are fulfilling their contractual requirements. Every month, information on each provider, based on submitted invoices, is used to monitor and negotiate the over- and underprovision of services in different hospitals and specialties.

The price list and provider payment

Adapted from the German health system, the price list was established at the beginning of the 1990s by the Health Care Services and Investigations Price Committee at the Ministry of Social Affairs; the Committee included representatives from the Estonian Medical Association (EMA), the sickness funds and, more recently, the Hospital Association. The original aim of the price list was to pay providers based on a per diem for inpatient stays, and on a fee per ambulatory visit and per procedure for certain expensive services. The payments were adapted to the Estonian system, based on the best available cost data for outpatient visits and some procedures and extended to other services on a proportional basis. However, by 1994 it was clear that the German point-based system was not applicable to the Estonian system due to significant differences in costs and procedures. This led to further development, including the addition of services to the price list, the use of different methods for paying hospitals (per diem, per visit and per procedure) and the definition of clear prices for each service.

In 2001, the Committee was disbanded, and responsibility for management of the price list was shifted to the EHIF. The rules for inclusion and exclusion of services from the price list are defined in legislation, and since 2002, efforts have been made to assess services on the basis of medical efficacy, cost–effectiveness and average costs (see the section on *Health care benefits and rationing*).

Prior to 2001, the price list was approved by a decree from the Minister of Social Affairs. Since then, it has been approved by the government in order to increase public accountability and to make it less vulnerable to provider influence, as it had been when changes to the price list could be made purely on the basis of decisions by the Minister of Social Affairs.

The price list contains about 1800 different items in total. Some prices are set on a fee-for-service basis, while others are complex prices for specific procedures. There is no system of bonus payments. The list of services and prices is updated at least once a year.

Fee-for-service payment involves per diem and individual units. The per diem unit includes basic examination, diagnosis and treatment planning, nursing, meals, simple medical procedures, laboratory tests and drugs. It varies according to specialty and length of stay. If an admission lasts for more than the set length, additional days are reimbursed at a lower rate (the price of a long-term bed day). This has encouraged the reduction in the average length of stay, which fell from 14.2 days in 1994 to 8.4 days in 2002 (for all beds). In some specialties the reduction in the average length of stay has been even larger; for example, from 17.4 in 1994 to 6.8 in 2002 for rheumatology. Additional procedures, including operations and laboratory tests, are paid per individual item.

During the late 1990s, there was a move away from a detailed fee-for-service payment system to a case payment system to tackle some of the perverse incentives created by the former, particularly overtreatment, but also undertreatment and selection of patients. Complex prices were introduced in 1998 for several well-defined surgical diagnoses, such as appendectomies, hip and knee replacements and normal deliveries. Currently, there are 49 complex prices, although the percentage of total inpatient reimbursement due to complex prices is still small compared to what is due to per diem and individual fee-for-service payments, as shown in Table 27. The combination of different payment methods does not result in significant risk sharing on the part of providers. The gradual introduction of financing based on diagnosis-based groups (DRGs), from 2004, aims to address this issue (see below).

The main payment methods used in outpatient care are fee-per-visit (including activities such as anamnesis, diagnosis, counselling, injections and some laboratory tests) and fee-for-service (laboratory tests, radiology etc.) (see Table 27).

Table 27. Price list expenditures for different types of care, 2001

Payment method	Price list items (end of 2002)	Outpatient care (% of total, or €)	Inpatient care (% of total, or €)	Specialist care (% of total, or €)
Fee-for-service	1 520	52%	38%	42%
Complex prices	49	9%	14%	13%
Bed days	44	0%	48%	34%
Visits	16	39%	0%	11%
Total	1 629	€36 631 827	€97 465 255	€134 097 081

Source:(38).

As of 2003, the prices shown in the price list are actually maximum reimbursement levels, which allows the EHIF and providers to negotiate contracts on the basis of lower prices. The price list also incorporates patient cost sharing, so providers are not allowed to charge patients for services that are totally reimbursed by the EHIF. Patient co-insurance is permitted for specific procedures such as abortion without medical cause (at a rate of 30%), in vitro fertilization (IVF) (30%) and rehabilitation bed days for some illnesses (20%).

A new era in provider payment began with the introduction, in 2004, of a DRG payment system for inpatient services. The system is entirely new and is not based on the system of complex prices used previously. In 2001, the EHIF began work on adapting the Nordic DRG system (NordDRG) by identifying areas of variation in activity between Estonian and Scandinavian hospitals, calculating prices for reimbursement in Estonia and providing hospitals with feedback on their activity by NordDRG group. The use of a DRG system has been facilitated by the high level of detailed diagnostic data available to the EHIF through the invoicing system in place (see above). In 2003, all primary classifications were implemented, and from 2004, the NordDRG system is set up to be fully operational from an administrative point of view.

In addition to its use as a payment mechanism, the DRG system was also introduced as a classification mechanism that allows an overview of hospital activity, the benchmarking of providers and resource allocation, with the aim of increasing productivity based on cases rather than individual procedures. In terms of reimbursement, the DRG system is used in combination with other payment methods already in place, so the price of a case will be calculated based on the price list and NordDRG groups and reimbursed proportionally. In 2004, the reimbursement balance will be 10% based on NordDRG groups and 90% based on the price list, shifting to 30–50% NordDRG groups and 50–70% price list in 2005. This gradual process of implementation will permit analysis of changes in clinical practice and monitoring of quality. It will also permit flexibility in payment for different specialties, particularly in specialties such as psychiatry and oncology, where DRGs are not yet able to classify clinical and cost groups homogeneously. How best to balance the new payment mechanism with existing mechanisms remains a major challenge for years ahead.

This section has described payment to providers of ambulatory specialist care and inpatient care. In both cases the actual payment to doctors and other professionals is determined by managerial structures in provider institutions (see below).

Payment of health care professionals

During the Soviet era, health care professionals were similar to civil servants, working as salaried employees in hospitals owned by the state or municipalities. Salary levels were determined centrally. Since the beginning of the 1990s, the situation of health care professionals has changed considerably, mainly because health care legislation allowed individual providers to work privately for the first time and gave institutional providers more autonomy under a different legal status. Greater autonomy has included the freedom to set salaries, so although many institutions are still controlled by the state or municipalities, the level of salaries is fixed through negotiations between employers and employees.

Health care professionals' salaries are determined by the minimum amount of cases contracted by the EHIF from the provider. On average, salaries account for about 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 Nurses' Union negotiate levels of the minimum hourly salary for their respective professions with the Hospital Association. The Ministry of Social Affairs and the EHIF are sometimes also involved in these negotiations.

In primary care, family doctors and nurses contracted by the EHIF are paid via a combination of capitation and three other types of payment that make up each practice's budget (see Table 28). The capitation payment is weighted according to the age structure of a patient list, with different amounts paid for children younger than 2, people aged 2 to 70 and those aged 70 and older. Fees-for-service can be earned for a maximum of 18.4% of the capitation payment. The procedures reimbursed by fees-for-service are agreed upon by the EHIF and the Association of Family Doctors and included in the price list. These procedures have changed over time as family doctors have become more experienced. Finally, a basic monthly allowance is also provided to cover the costs of investment in the practice, and additional payments are made to compensate family doctors who work more than a specified distance from the nearest hospital, to reward doctors with a diploma in family medicine and to ensure continuing education. A family doctor's income depends on not only the size of his or her patient list but also on performance, so that any money spent on unnecessary analyses and procedures will diminish his or her income. Overall, 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.

Table 28. Payment of family doctors in kroons and euros, 1999–2003

Cost category	1999–2000		2001		2002		2003	
	EEK	€	EEK	€	EEK	€	EEK	€
Capitation per person per month								
0 to 2 years	20.00	1.28	20.80	1.33	23.90	1.53	27.55	1.76
2 to 70 years	16.00	1.02	16.60	1.06	19.10	1.22	21.05	1.35
older than 70 years	18.00	1.15	18.70	1.20	21.50	1.37	24.60	1.57
Fees-for-service (maximum % of the capitation sum)	18.0%	18.0%	18.0%	18.0%	18.4%	18.4%	18.4%	18.4%
Basic monthly allowance	5 000.00	319.60	5 000.00	319.60	5 290.00	338.10	5 290.00	338.10
Additional monthly payments								
Working 20–40 km from a county hospital	700.00	44.70	700.00	44.70	700.00	44.70	700.00	44.70
Working more than 40 km from a county hospital	1 400.00	89.50	1 400.00	89.50	1 400.00	89.50	1 400.00	89.50
Family doctor training	1 000.00	63.90	1 000.00	63.90	1 000.00	63.90	1 000.00	63.90

Source: (38).

Ambulatory specialist care is provided by polyclinics and health centres, hospital outpatient departments (OPDs) and specialists practising independently. Independent specialists contracted by the EHIF are paid on a fee-for-service basis up to a maximum amount specified in the contract. Some independent specialists, particularly dentists, gynaecologists, urologists, ophthalmologists and ear, nose and throat specialists, practise privately. Private independent specialists may have contracts with the EHIF, in which case they are reimbursed according to the price list and are subject to the general cost-sharing regulations. Prior to October 2002 they were allowed to charge patients additional amounts (see the section on *Complementary sources of financing*).

Health care professionals who provide outpatient and inpatient care in hospitals are usually salaried employees. Due to the hospital mergers that have taken place in the last few years, it is assumed that some professionals from narrow specialities have been able to negotiate increased salary levels.

Other health care professionals, including pharmacists, have regular or contract salaries that depend only on the budget of the provider or pharmacy.

Although health care providers are private entities, the Ministry of Social Affairs monitors their financial status and overall salary levels through statistical accounts and an annual salary survey. There are doubts, however, about providers' incentives to pass all data on to the Ministry. Moreover, the data mainly reflect average base salaries (see Table 29). Additional payments

are excluded, and the personnel of some regional hospitals may actually earn up to two or three times the average base salary.

Table 29. Average hourly and monthly wages of hospital doctors (in €), 2002–2004

	Average hourly wages			Average monthly salary		
Type of hospital	31 May 2002	31 March 2003	31 March 2004	31 May 2002	31 March 2003	31 March 2004
Regional hospitals	4.93	5.55	5.69	785.15	890.23	903.65
Central hospitals	3.55	4.25	5.17	574.57	693.95	841.40
Specialized hospitals	3.30	3.84	5.38	522.48	604.35	887.48
General hospitals	3.26	3.66	4.22	530.21	595.27	689.22
Rehabilitation hospitals	3.11	4.31	3.96	522.03	690.25	640.20
Long-term care hospitals (before 2003)	2.35	2.15	–	392.80	355.67	–
Nursing care hospitals (since 2003)	–	–	3.10	–	–	503.82
Day care centres	–	–	3.29	–	–	543.95
Total/weighted average salary	3.88	4.49	5.07	624.80	726.29	818.07

Source: (39).

Health care reforms

Aims and objectives

The Estonian health system has undergone significant changes since independence in 1991. Reforms took place in two waves: a first wave of "big bang" reforms introduced major changes during the early 1990s, while a second wave introduced more incremental developments during the late 1990s.

Reforms in the first wave focused on improving health care financing and increasing the health system's responsiveness to patients. The government introduced a system of funding health care through earmarked contributions for health insurance that were collected and pooled by sickness funds. It also introduced a purchaser–provider split, setting up a system of contracts between sickness funds and providers based on fee-for-service reimbursement. Health care institutions were given more autonomy in terms of management decisions, including decisions about salary levels and investment. In practice, these reforms resulted in a total restructuring of the Semashko health system established during the Soviet era.

In the second wave, reforms were mainly aimed at increasing efficiency and protecting the public interest through closer and more transparent regulation of health care providers and the health insurance system. Primary care and hospital reforms aimed to increase efficiency and accountability in service delivery by clearly establishing the legal status of providers, making providers share some financial risk and ensuring quality of care. At the same time, the government sought to strengthen its planning and regulatory capacity and strengthen the purchasing power of the Estonian Health Insurance Fund (EHIF). The second wave also included pharmaceutical reimbursement reform aimed at increasing efficiency through the introduction of a reference price system.

Content of reforms and legislation

This section outlines the principal reforms that took place in the first and second waves. Table 30 provides an overview of key health legislation passed between 1991 and 2003.

Table 30. Overview of key health legislation, 1991–2003

Legislative act	Preparation period[a]	Approval by the parliament	Implementation	Current status
Health Insurance Act	1989–1991	June 1991	April 1992	Amended 1994 and 1998; replaced by 2002 Health Insurance Act
Health Services Organization Act	1993–1994	March 1994	April 1994	Replaced by 2002 Health Services Organization Act
Public Health Act	1993–1995	June 1995	July 1995	In force; multiple later amendments due to EU accession
Medicinal Products Act	1993–1995	December 1995	1996	In force, with several amendments; revised draft law presented to the parliament in 2004
Psychiatric Care Act		February 1997	March 1997	In force, with later amendments
Protection of the Embryo and Artificial Fertilization Act		June 1997	July 1997	In force, with later amendments
Termination of Pregnancy and Sterilization Act		November 1998	1999	In force
Occupational Health and Safety Act		June 1999	July 1999	In force, with later amendments
Health Insurance Fund Act	1999–2000	April 2000	January 2001	In force
Tobacco Act	Mid-1990s, presented to the parliament in October 1999	June 2000	January 2001	In force; revised draft law presented to the parliament in 2004
Health Services Organization Act	1999–2001	May 2001	January 2002	In force; replaced the 1994 Health Services Organization Act
Law of Obligations		September 2001	July 2002	In force

Legislative act	Preparation period[a]	Approval by the parliament	Implementation	Current status
Transplantation of Organs and Tissues Act		January 2002	June 2002	In force
Health Insurance Act	2000–2002	June 2002	October 2002	In force, replaced the 1992 Health Insurance Act
Communicable Diseases Prevention and Control Act	1998–2003	Feb 2003	November 2003	In force
Primary Care Act	1993–1995 (not presented to the parliament)	na	na	Key elements contained in a 1997 ministerial decree on primary care reform; now covered by the Health Services Organization Act
Law on Patient Rights	1993–2004	na	na	Draft form; regulation of the patient–provider relationship included in the 2001 Law of Obligations

[a] Includes parliamentary proceedings.

The first wave of reforms (1989–1995): reform of the health insurance system, decentralization of health care planning and regulation of the pharmaceutical market

This section describes the legislative reforms that embodied and implemented the principles of the new health system during the early 1990s.

1991 Health Insurance Act

This act replaced the Soviet-style health system with a mandatory and universal system of health insurance administered by regionally organized, non-competing sickness funds *(haigekassa)*. The first draft of this act was prepared in 1989 and approved in the parliament before political independence had been achieved. Although amendments were made to it in 1994, the basic principles it established remain, as well as the original contribution rate of 13% of salary or earnings. In spring 1994, the main amendments to the Act involved setting up the Central Sickness Fund as a central planning organization for the health insurance system and coordinator and supervisor of the regional sickness funds, and introducing a system of per capita redistribution of financial resources among regions, which allowed the health insurance system to operate on a more equitable basis across the country. With the 1998 amendments, responsibility for collecting contributions was given to the Taxation Agency, with effect from 1999.

1994 Health Services Organization Act

This act regulated the responsibilities of different administrative levels, decentralizing planning and organization of primary and secondary care to the municipal level and triggering a process of transferring ownership of health care institutions from the state to municipalities. The Act set out the responsibilities of the state and municipalities for funding maintenance of and capital investment in their health care institutions. At the county level, the position of county doctor was created to supervise providers. However, the Act remained superficial, the planning system it established was too diffuse and its system of regulation and licensing was poorly specified.

1994–1997: regulation of primary care

As the Health Services Organization Act was more of a framework piece of legislation, attempts to introduce more detailed regulation of primary care were made by family doctors who prepared a draft Family Practice Act in 1994–1995. This draft law was subsequently extended to cover the whole area of primary care and retitled the Primary Care Act. The revised draft stipulated the financial and organizational responsibilities, functions and rights of the various stakeholders involved in delivering primary care. However, this bill was never presented to the parliament, and primary care reform was eventually launched through a ministerial decree in April 1997. The reforms only became law in 2002 after the passing of the revised Health Services Organization Act.

1995 Public Health Act

The reorganization of the public health system began with the passing of the Public Health Act. This act established the status, structure, functions and financing of the public health network in Estonia. The Act has been amended several times in order to comply with EU accession requirements. See also the sections on *Organizational reform of the health care system* and *Public health services*.

1995 Medicinal Products Act

The regulation of the developing pharmaceutical market was undertaken rapidly. A draft law on medicinal products was prepared in 1993–1994 and presented to the government and the parliament. However, it was not approved until December 1995, taking much longer to obtain approval than the other first-wave reforms due to the conflicting interests of different stakeholders. Before the law was approved, the pharmaceutical market was regulated by ministerial decrees.

1993–2004: draft of Law on Patient Rights

The first draft of a law on patient rights was prepared in 1993, presented to the government in 1994 and then passed on to the parliament. However, its passage in the parliament was blocked by the health care professional lobby, which requested the simultaneous preparation and adoption of a law on the protection of medical personnel. Several subsequent drafts have been prepared by the Ministry of Social Affairs over the years, in collaboration with representatives from patient organizations and health care professional associations. Some of these drafts made their way to The parliament, but none have been approved.

Since 2002, the patient–doctor relationship has been regulated by a separate chapter of the general Law of Obligations, which regulates all contractual relationships in the economy. The current position expressed by officials at the Ministry of Social Affairs is to observe current regulations under the Law of Obligations and then decide on the necessity of a law that specifically regulates patient rights. Meanwhile, a draft Law on Patient Rights proposed by a former Minister of Social Affairs (now in the opposition party) is still being scrutinized by the parliament.

The second wave of reforms (1996–2004): regulation of various sectors, re-centralizing planning, enhancing service delivery, defining financing responsibilities, strengthening regulatory functions and purchasing power and legalizing provider autonomy

During the early part of this period, legislation regulating more specific fields of health care was adopted by the parliament. Towards the end of this period, key existing legislation was revised, partly to address its deficiencies, partly to enhance further policy goals such as efficiency and partly due to EU accession requirements and changes to the legal system. In some cases it was easier to draft new laws rather than amend existing ones, due to the extent of incremental changes needed as well as to account for changes to the legal system.

1997 Psychiatric Care Act

This act defines the procedures and conditions for mental health care provision and involuntary treatment. It applies to all psychiatric cases and basically follows the 1991 United Nations principles on protecting the rights of those with mental health disorders. See also the section on *Mental health care.*

1997 Protection of the Embryo and Artificial Fertilization Act
This act comprehensively regulates the medical and legal aspects of egg and sperm donations, requiring them to be voluntary, setting out the requirements and rights of donors, and regulating issues involved in donor information and in parenting children born from donated eggs. The Act defines artificial fertilization, its indications and its contraindications, as well as the legal situation of human embryos created through artificial fertilization.

1998 Termination of Pregnancy and Sterilization Act
This act regulates issues relating to the termination of pregnancy and sterilization, including counselling and obligations for written consent. According to the Act, pregnancy can ordinarily be terminated only up to the 11th week of pregnancy. Termination of pregnancy up to the 21st week is only allowed in certain exceptional cases: if the pregnancy is a threat to the health of the woman, if a disease or health problem would hinder raising the child, if the child would have a severe mental or physical impairment, and if the pregnant woman is younger than 15 years or older than 45. In the first three of these exceptional cases, a consensus of at least three doctors is required. The Act also states that a doctor cannot be obliged to perform terminations of pregnancy.

1999 Occupational Health and Safety Act
The Act regulates requirements for occupational health and safety, the obligations of employers and employees to create a safe work environment and the organization of occupational health services at workplace and state levels. The Act sets out procedures for settling disagreements and addressing non-compliance.

2000 Health Insurance Fund Act
This act established the EHIF as a public independent body managed by a supervisory board consisting of state, employer and employee representatives. It is intended to strengthen the purchasing power, organizational efficiency and public accountability of the health insurance system. The Act and the corresponding government-approved EHIF statute set out detailed regulation of EHIF functions and lines of accountability. See also the section on *Organizational reform of the health care system*.

2001 Health Services Organization Act
The key changes set out in this act included re-centralizing planning functions at the national level, establishing a new licensing system for doctors and

institutional providers, defining the legal status of providers as private entities and explicitly defining the financing responsibilities of different sources of funding. For example, responsibility for paying for emergency medical care for the uninsured lies with the state budget administered by the Ministry of Social Affairs, while the Ministry of Justice is responsible for funding health services for prisoners and forensic medicine and expertise. No specific funding responsibilities were allocated to the municipalities. For further details, see the section on *Organizational reform of the health care system.*

2001 Law of Obligations

This law was prepared by the Ministry of Justice and aims to regulate all contractual relations in the different sectors, including those between insurer and insured in private health insurance, and between patient and health care provider in health service provision.

The section on health service provision contracts and agreements regulates the relationship between patient and provider, establishing requirements for patient information and informed consent prior to treatment, privacy and provider accountability for malpractice. The law also establishes that if health services are not paid for by a third party or compulsory health insurance, the patient must pay the "established, agreed or usual fee or, in the absence of such, a reasonable fee". This section of the law is currently the only existing general regulation of patients' rights, supplementing the rights established in specific legislation mentioned elsewhere in this section. However, as the law was based on German legislation, and as the Ministry of Social Affairs was not involved in its preparation, some parts of it remain unclear.

The section on health insurance sets out minimum requirements for qualification periods in different types of health insurance, conditions for changing premiums etc. However, in this section not much effort was taken to adapt the regulation to the current Estonian situation, so some parts of it are not directly relevant – for example, the regulation of health insurance continuation upon retirement and of health insurance for children is superfluous, as both pensioners and children are covered by the EHIF.

2002 Health Insurance Act

This act is intended to establish clearer regulation of all aspects of the health insurance system, including validity periods, benefits, reimbursement lists and levels for health services and drugs, maximum levels of cost sharing for insured people and contractual relationships between the EHIF and providers.

2003 Communicable Diseases Prevention and Control Act

This act was passed in 2003 after 5 years of preparation. It regulates the organization of the prevention and control of communicable diseases, as well as treatment of persons with communicable diseases, setting out the obligations of the state and local governments, legal persons and individuals, including health care providers. The Act covers the full range of routine communicable disease control, from immunization to hospital infection control and laboratory licensing to compulsory treatment for serious communicable diseases. In the case of the latter, the Act sets out conditions for treatment based on a court ruling if a person will not give consent. The Act defines serious diseases as plague, cholera, yellow fever, viral haemorrhagic diseases and tuberculosis. In the case of hospital infections, the Act defines requirements for health care providers to monitor and prevent hospital infections as well as inform the relevant authorities in case of infection.

2004: draft of revised Medicinal Products Act

This major draft law still remains in the parliament. A revised version of the 1995 Medicinal Products Act, regulating all aspects of the pharmaceutical market, it was presented to the parliament in April 2004, after three or four years of preparation and consultation with different interest groups. Heated debate is expected over the issues of whether pharmacy chains should be permitted to operate in Estonia, and whether the right to own a pharmacy should be restricted to professional pharmacists, as well as issues concerning mark-up policies and the sale of over-the-counter products outside pharmacies.

2004: other draft legislation

At present, the attitude of the civil servants in the Ministry of Social Affairs towards future legislative initiatives is fairly conservative, focusing more on regulation of narrow but still not sufficiently regulated issues – such as the draft laws on medical equipment and blood services, which have been in the parliament since spring 2004 – and on fine-tuning the main existing legislative regulations. Politically, no significant changes to the current system or reforms in progress have been proposed.

1995–2004: health for all policy

The government's only national health policy statement dates back to March 1995. It describes the country's major health problems but does not set targets for tackling them. From 1997 to 2003, several comprehensive health policy documents were developed by civil servants in the Ministry of Social Affairs, but none of these succeeded in reaching government-level discussion, partly

due to changes in government and new incumbents wanting to initiate their own policy development process.

In recent years, the political leadership of the Ministry of Social Affairs has not considered a framework health policy statement to be a necessary tool, preferring work on concrete plans or programmes in narrower fields such as HIV/AIDS prevention or cardiovascular disease prevention to discussing and setting objectives for overall health policy in a comprehensive health policy document. However, in 2004 a Ministry statute specified some "strategic objectives" for the health system such as increasing healthy behaviour and decreasing chronic and communicable diseases (see *Conclusions*) *(40)*.

These broad objectives are specified through 14 shorter-term "strategic objectives"

Some narrower health policy documents have been approved by the government. For example, the *Estonian health care quality policy document* (1997) defined health care quality and actions that all stakeholders should take to enhance quality. In 2003, the *Mental health policy framework document* was discussed and approved by the government, but the translation of policy into action has been delayed beyond the original deadlines.

Reform implementation

Many of the health care reforms described above have been characterized by relatively short preparation periods and implementation deadlines, particularly those in the first wave. Reforms such as the introduction of a health insurance system were not prepared down to the last detail, leaving considerable space for fine-tuning and regional innovation in implementation. However, due to the small size of the country, this did not result in unmanageable chaos; rather, it created opportunities to learn from best practice when developing uniform national procedures from 1994 onwards. Later reforms, such as primary care and hospital reform, were planned more centrally and in greater detail.

Over the years, the roles of key interest groups in the reform process have changed. The first wave of reforms, such as the introduction of health insurance, can be said to have been initiated by health care professionals. Doctors from the re-established Estonian Medical Association (EMA) left clinical practice to become involved in politics. However, this does not mean that health policy-making was controlled by the interests of providers. Efforts to increase efficiency and protect the public interest prevailed during the reforms of the mid- and late 1990s, when leadership role in the health care reform process was conferred upon the Ministry of Social Affairs. Providers' influence in setting the reform

agenda probably also decreased due to the absence of a specific health ministry from 1993 onwards. It is worth noting that since 1992, the main health care reform legislation has been passed and implemented during periods when the Minister of Social Affairs did not have a background in medicine.

While the EMA and the Hospital Association have been involved in reform preparation as the Ministry's negotiating partners, the Ministry has also involved other stakeholders and interest groups in reform preparation, either by assigning representatives to working groups or by including them at the consultation stage during the drafting of legislation.

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

International organizations have also played a role in the health care reform process. The Estonian experience suggests that fruitful and mutually satisfactory cooperation with international organizations and experts can only arise when a vision of and commitment to reforms exists within the country itself. It is only then that international expertise can be effectively used. A good example of effective cooperation was the support of the WHO Regional Office for Europe in developing the details of the primary care reforms and providing international comparisons, once the Minister of Social Affairs had issued a ministerial decree.

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

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

As described in previous sections, Estonia has been fairly successful in implementing the main planned reforms. Although problems have been encountered during the implementation phase, these have not been sufficiently large to stop or delay significantly the reform process.

In the first wave of reforms, the low level of training of health insurance system personnel could be highlighted as a potential threat to successful implementation. However, the introduction of the health insurance system took place in the context of other major social, economic and political changes, including the rebuilding of a newly independent country, the reintroduction of democracy and the establishment of a market economy. Consequently, the whole country was involved in a kind of "on-the-job" training programme, not just the new health insurance system. In fact, many regional sickness funds recruited directors from outside the health sector, and it could be argued that the creation of new institutions to manage health care finances succeeded in introducing thinking about efficiency and sustainability and new management styles to the health sector more quickly than a process of retraining existing medically qualified regional health administrators in health economics and management would have done.

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

Conclusions

Assessment of the health system

This section attempts to assess the health system against its stated objectives and a range of evaluative criteria.

Health system objectives

The objectives of the Estonian health system and health care reforms that took place during the 1990s have not always been explicitly stated. At the start of the 1990s, the broad aims of reforms were to secure and sustain health care funding through the establishment of an earmarked revenue base, to enhance quality of care (in part by catching up on technology used in western European health systems), and to provide more patient choice. However, due to resource constraints, the broad aim of reforms carried out towards the end of the 1990s has been to improve health system efficiency. This was the primary purpose of hospital, provider payment and pharmaceutical reimbursement reforms.

Currently, health system objectives are not stated in an overall national health policy, but they can be found in the mission statements and objectives of stakeholder institutions such as the Ministry of Social Affairs and the EHIF. The Ministry has defined its broad health-related objectives in a statute as ensuring a stable and trustworthy system of social insurance that provides social protection and guarantees a sufficient income for individuals; ensuring individuals' employment and long-term ability to work; valuing health and a health-enhancing living environment; and ensuring access to health services and pharmaceuticals *(40)*.

These broad objectives are specified through 14 shorter-term "strategic objectives" such as increasing healthy behaviour and decreasing chronic

diseases, increasing the proportion of people involved in sports and fitness activities to 31%, and reducing premature mortality from cardiovascular diseases and reducing the incidence of daily smoking among men to 43% (from 45% in 2002). There are also specific objectives related to the incidence and prevalence of communicable diseases. Health system objectives and measures are less specific but include better access to and quality of health services and better access to drugs. Benchmarks for measuring the success of these objectives are achieving patient satisfaction with access (54%) and health care quality (67%) and increasing the proportion of generic drugs to 35% of EHIF-funded drugs.

Health insurance principles and objectives are set in legislation. They include solidarity and limiting the level of patient cost sharing, based on the principles of providing health services according to need, equal access to treatment regardless of place of residence and effective and expedient use of funds. The EHIF sets its own objectives in a three-year plan approved by the EHIF Supervisory Board. EHIF objectives include improving access and quality (for example, through the development of clinical guidelines), organizational development and customer service.

The distribution of health system costs and benefits across the population

The majority of health care funding comes from public sources – roughly three quarters of total expenditure on health care. Most of this public revenue is raised from the working population and employers through an earmarked payroll tax equal to 13% of wages, which accounts for two thirds of total expenditure on health care. The older generation also contributes to public expenditure through taxes on consumption and property. Although there are no studies assessing the overall distribution of health system costs across population groups, the fact that the health system is predominantly financed through a proportional payroll tax suggests that it broadly adheres to the principle of horizontal and vertical equity. The proportional 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. In 2002, 51% of total EHIF revenue was spent on health care for children, pensioners and other non-contributing groups.

However, the health system does not guarantee the same level of access to the entire population. There are differences between the rights of the insured – about 94% of the population – and the uninsured. The former are all entitled to the same health services, with some variation based on age and effectiveness

criteria – for example, there are different reimbursement levels for adult and child dental care and age limits for in vitro fertilization (IVF) treatment. The uninsured are only guaranteed access to emergency medical services, funded by the state. For other health services, they must usually pay out of pocket, although some municipalities fund a limited range of health services.

The per capita allocation of resources to regional budgets and the system of contracting based on the principle of money following the patient should, in theory, ensure equal access to health services for groups living in different regions. The actual distribution of benefits among regions and income groups has been studied based on data from 1994, 1999 and 2000 *(8)*. The study found that in 1999, among people aged 25 to 74, those living in rural areas made more use of telephone consultations with a doctor and visits to family doctors but less use of specialists and dentists compared to those living in the capital, Tallinn. Hospitalization rates were the same for all groups. However, it should be noted that primary care reforms were in their early stages in Tallinn in 1999, so that residents of Tallinn still had direct access to specialists, while those living in other areas were subject to a gate-keeping system. With the completion of the primary care reforms, differences in visits to family doctors and specialists should have decreased. Also, waiting lists for ambulatory specialist visits have developed in Tallinn and at the University of Tartu Clinic, which means that access to some types of specialists is better in other urban centres. Regarding utilization by income group, only small differences were observable in visits to family doctors, while those in lower income groups in all age groups and in all areas were more likely to have been hospitalized in the last year. These differences have remained stable since 1994. Large inequalities were observed in visits to specialists and dentists, with almost twice as many people in the highest income group having visited a specialist or a dentist as in the lowest income group. However, reliable trends over time for these indicators are not available.

Co-payments introduced in 2002 and 2003 may have contributed to widening the gap in specialist visits. However, it is difficult to assess, due to the completion of the primary care reforms establishing gate-keeping and due to the development of waiting lists for specialists in Tallinn and Tartu. Changes in reimbursement of adult dental care are likely to have exacerbated the inequalities in access to dental care that existed in 1999.

Efficiency of health care resource allocation

Primary care services are equitably distributed across the country, with financial incentives in place to encourage family doctors to work in rural areas. The

Soviet legacy means that secondary care services are also equitably distributed, although some county hospitals are too large to suit a more modern health care delivery system focusing on outpatient care.

Financial resource allocation has remained stable in the last four years. The main areas of expenditure – prevention, primary care, specialist care and dental care – have all risen by 43–49% as a proportion of the EHIF budget, while long-term care has increased by 99%. Expenditure on inpatient care has been in the range of 30% to 36% of total expenditure on health care *(21)*. The relatively low share of inpatient care in total expenditure, combined with an increased emphasis on ambulatory care, has contributed to increased spending on drugs, which rose from 2% of the EHIF budget in 1992 to 19% in 2003.

Technical efficiency in the delivery of health care

Health care expenditure has been constrained by the limits of revenue raised through the earmarked payroll tax and annual state budget allocations, prompting efforts to increase efficiency in the delivery of health care. The decline in the average length of hospital stays has been heavily influenced by the EHIF's contracting and payment policy. The EHIF has been active in using the contracting system to set targets for greater use of outpatient care and day-care surgery. Transforming hospitals into networks in the three largest urban centres in 2001 was intended to increase efficiency, and early evidence suggests that the reform has been successful in this respect *(41)*. Pharmaceutical reimbursement was relatively inefficient until 2002, when legislative changes were introduced to permit reimbursement based on the price of generic drugs, resulting in a drop of 13% in EHIF spending on drugs in the following year.

Accountability of payers and providers

The EHIF's annual health care satisfaction survey monitors public perceptions of health care quality and access, as well as satisfaction with family doctors, specialists, dentists and hospitals. Results of the survey are posted on the EHIF web site. The 2003 survey showed that only 52% of respondents considered access to health care to be good or very good, while 56% considered health care quality to be good or very good *(24)*. At the same time, levels of satisfaction were higher among those who had actually visited a doctor that year – over 85% of respondents considered their contact with doctors to be very or mainly satisfactory. Both the EHIF and the Ministry of Social Affairs have set objectives for improving overall levels of satisfaction with health care quality and access.

Giving the EHIF independent status and giving providers private status has involved some risk in terms of accountability, particularly in terms of ensuring that these autonomous institutions heed national health policy objectives. During the preparation of the legislation that gave the EHIF independent status, careful attention was paid to safeguarding public accountability. For example, the Minister of Social Affairs automatically chairs the EHIF Supervisory Board, and there are strong requirements for the EHIF to make information about its operation publicly available. However, the same cannot be said about the accountability procedures in place for public hospitals.

At present there are no studies regarding the extent to which patient rights are respected.

The contribution of the health system to health improvement

The current health status of the population has been influenced by the political and economic reforms that took place at the beginning of the 1990s, changes in lifestyle and health system changes. Political and economic changes have contributed to widening inequalities in health. However, health and health system indicators are better in Estonia than in other areas that were formerly part of the USSR. Life expectancy for women had surpassed its pre-reform peak by 1996, and male life expectancy is expected to reach its pre-reform peak in 2004–2005, whereas life expectancy in many former Soviet states remains well below levels from the late 1980s and is in some cases even decreasing. Changes in lifestyle have been analysed by researchers *(42)*; see also *Introductory overview.*

Health system changes have contributed to the population's improving health status, largely through the improved availability of drugs. For example, better availability of contraceptives and the provision of counselling services for adolescents has led to a 69% decline in abortions among all women and a 50% decline among those younger than 20; better availability of drugs for mental health problems has enabled more treatment on an outpatient basis; and a 700% increase in the uptake of modern anti-ulcer drugs between 1993 and1995 caused a 33% decrease in ulcer surgery within two years *(43)*. Multiple increases in expenditure on cardiovascular drugs has, however, failed to produce a corresponding decrease in morbidity and mortality. Health care has also made an important impact on quality of life, for example through cataract surgery and endoprostheses. In 2004, the health system offers a wider range of services than it did at the beginning of the 1990s.

Conclusions

The health system has demonstrated financial sustainability throughout the 1990s, although the share of the gross domestic product (GDP) spent on health is modest – around 5.5% in the last few years. However, private expenditure has increased over time and now accounts for just under a quarter of total expenditure on health.

Caps on public expenditure have stimulated reforms to increase efficiency in health service delivery – including strengthening primary care, introducing gate-keeping and changing provider payment methods – while maintaining access and quality. It is expected that the introduction of new payment methods, greater autonomy for managers and mergers in larger urban centres has increased efficiency in the delivery of inpatient care.

The importance of national-level planning of service provision and the health workforce was neglected in the early 1990s, and the health system was not equipped to deal with the degree of decentralization that took place in the early stages of health reforms. However, towards the end of the 1990s, the Ministry of Social Affairs was able to re-establish its role in creating a national framework for health service provision.

A number of challenges remain. They include designing specific policies to reduce inequities in health status and health behaviour; gaining control of and responding to the consequences of the HIV epidemic; improving regulation of autonomous hospitals to ensure better public accountability; and boosting health expenditure as a proportion of GDP. The last challenge is particularly important in the face of rising patient expectations and pressure to increase provider salaries, for if solidarity and equity are to be maintained, higher spending must be generated from public sources of revenue.

List of abbreviations

Abbreviation	Definition
ATC/DDD	Anatomical Therapeutic Chemical classification system with Defined Daily Dose
DALE	Disability-adjusted life expectancy
DRG	diagnosis-related group
EEK	Estonian kroons
EHIF	Estonian Health Insurance Fund
EMA	Estonian Medical Association
EPRU	Estonian Patient Representative Union (Eesti Patsientide Esindusühing)
EU	European Union
EU-15	The 15 member states of the European Union prior to accession of 10 new member states in 2004
GATS	General Agreement on Trade in Services
GDP	gross domestic product
GMP	Good manufacturing practice
IVF	in vitro fertilization
NCHPE	National Centre for Health Promotion and Education
NGO	nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
OPD	outpatient department
PHD	Public Health Department
PPP	purchasing power parity
SAM	State Agency of Medicines
SmPC	summary of product characteristics
USSR	Union of Soviet Socialist Republics
US$	United States dollars
VHI	voluntary health insurance
WED	Work and Environment Department
WHO	World Health Organization

Useful web sites

Estonian Health Insurance Fund (EHIF)	http://www.haigekassa.ee
Estonian Medical Association (EMA)	http://www.arstideliit.ee
Estonian Society of Family Doctors	http://www.meremed.mp.cut.ee/eps
Ministry of Education	http://www.hm.ee
Ministry of Foreign Affairs	http://www.vm.ee
Ministry of Social Affairs	http://www.sm.ee
State Agency of Medicines (SAM)	http://www.sam.ee
Statistical Office of Estonia	http://www.stat.ee
University of Tartu	http://www.ut.ee

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