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Iceland

Health system review

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Anna Maresso (Editor), Sarah Thomson and Ewout van Ginneken (Series editors) were responsible for this HiT

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Health Systems in Transition

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Iceland:

Health System Review 2014

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Preface

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

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

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

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

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

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

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

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

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The HiT was edited by Anna Maresso with the support of Sarah Thomson as the Research Director of the Observatory's team at the London School of Economics and Political Science and Ewout van Ginneken of the Observatory's team at the Berlin University of Technology. This edition builds on the previous HiT on Iceland, which was published in 2003 and written by Matthias Halldorsson and edited by Vaida Bankauskaite.

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List of abbreviations

ACAMI	Association of Complementary and Alternative Medicine in Iceland
A&E	Accident and Emergency Department
ALA	Association of Local Authorities
ALOS	Average length of stay
AMC	Alternative Medical Care
ANCR	Association of Nordic Cancer Registries
AOSH	Administration of Occupational Safety and Health in Iceland
BCG	Boston Consulting Group
BSc	Bachelor of Science
CAM	Complementary and alternative medicine
CCSE	Comprehensive Clinical Science Examination
CEO	Chief Executive Officer
COPD	Chronic obstructive pulmonary disease
CP	Centralised procedure
CPHCCA	Centre for Primary Health Care of the Capital Area
CT	Computed tomography (scanner)
DDD	Defined daily dose
DH	Directorate of Health
EA	Environment Agency
EACP	Atlas of Palliative Care in Europe
EEA	European Economic Area
EFTA	European Free Trade Association
EHR	Electronic health record
EMA	European Medicines Agency
EMT	Emergency Medical Technician
ER	Emergency room
ESPAD	European School Survey Project on Alcohol and Other Drugs
EU	European Union
EU15	European Union of 15 Countries
EVS	European Values Study

FVA	Food and Veterinary Authority
GAO	Government Accounting Office
GDP	Gross Domestic Product
GFA	Government Financial Authority
GP	General Practitioner
GRE	Government Real Estate
HBSC	Health Behaviour of School-aged Children
HCO	Health-care organization
HLY	Healthy life years
HMA	Heads of Medicines Agencies
HTA	Health Technology Assessment
IATCP	The Icelandic Association of Tuberculosis and Chest Patients
ICD-9	International Classification of Diseases and Related Health Problems (9th edition)
ICD-10	International Classification of Diseases and Related Health Problems (10th edition)
ICG	Icelandic Coast Guard
ICS	Icelandic Cancer Society
IES	Institute of Economic Studies
IFVA	The Icelandic Food and Veterinary Authority
IHA	Icelandic Heart Association
IHARI	Icelandic Heart Association Research Institute
IHI	Icelandic Health Insurance
IMA	Icelandic Medicines Agency
IMF	International Monetary Fund
IMJ	Icelandic Medical Journal
IMPRC	Icelandic Medicine Pricing and Reimbursement Committee
INA	Icelandic Nurses' Association
INAA	Icelandic Nurse's Assistant Association
INAO	Icelandic National Audit Office
IP	Independence Party
IRC	Icelandic Red Cross
IRSA	Icelandic Radiation Safety Authority
ISK	Icelandic Króna
ISLF	Icelandic Student Loan Fund
LCP	Liverpool Care Pathway
LGM	Left Green Movement
LHC	Local Health Committees
LSH	Lanspitali University Hospital
MHSS	Ministry of Health and Social Security
MoF	Ministry of Finance
MoH	Ministry of Health
MoW	Ministry of Welfare

MPC	Medicinal Products Committee
MR	Magnetic resonance imaging
NATO	North Atlantic Treaty Organization
NCCD	National Committee on Communicable Diseases
NGO	Non-governmental organization
NICE	National Institute of Clinical Excellence
NOMESCO	Nordic Medico Statistical Committee
NR	National Registry
ODI	Organization of Disabled in Iceland
OECD	Organisation for Economic Cooperation and Development (aka Office of Economic Cooperation and Development)
OOP	Out of pocket
OT	Occupational therapy
OTC	Over the counter
PC	Primary care
PCC	Primary Care Centre
PHI	Public Health Institute
POM	Prescription drugs
PPP	Purchasing power parity
PTC	Pharmaceutical and Therapeutic Committee
RAI	Residents Assessment Instrument
RUGs	Resource Utility Group
SÁÁ	The National Centre of Addiction Medicine (*Samtök áhugafólks um áfengisvandann*)
SBA	Stand-by arrangement
SDA	Social Democratic Alliance
SPC	Summary of product characteristics
SSF	Social Security Fund
SSI	Social Security Institute
STATICE	Statistics Iceland
STC	State Trading Centre
STD	Sexual transmitted diseases
UI	University of Iceland
UN	United Nations
UNDP	United Nation Development Programme
VHI	Voluntary health Insurance
WB	World Bank
WHO	World Health Organization

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Abstract

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

Life expectancy at birth is high and Icelandic men and women enjoy longer life in good health than the average European. However, Icelanders are putting on weight (more than half of adult Icelanders were overweight or obese in 2004) and total consumption of alcohol has increased considerably since 1970.

The health-care system is a small, state-centred, publicly funded system with universal coverage, and an integrated purchaser–provider relationship in which the state as payer is also the owner of most organizations providing health-care services. The country's centre of clinical excellence is the University Hospital, Landspitali, in the capital Reykjavik, which alone accounts for 70% of the total national budget for general hospital services. However, since 1990, the health system has become increasingly characterized by a mixed economy of care and service provision, in which the number and scope of private non-profit and private for-profit providers has increased.

While Iceland's health outcomes are some of the best among OECD countries, the health-care system faces challenges involving the financial sustainability of the current system in the context of an ageing population, new public health challenges (such as obesity) and the continued impact of the country's financial collapse in 2008. The most important challenge is to change the pattern of health-care utilization to steer it away from the most expensive end of the health services spectrum towards more cost-efficient and effective alternatives. To a large degree, this will involve renewed attempts to prioritize primary care as the first port of call for patients, and possibly to introduce a gatekeeping function for GPs in order to moderate the use of specialist services.

Executive summary

Introduction

Iceland is an island in the middle of the North Atlantic Ocean with a very small population of about 320 000; it is the most sparsely populated country in Europe. The population is relatively young and at roughly the replacement rate of 2.1 births per woman, the birth rate is high (the EU average is 1.58) but increasing life expectancy and growing economic prosperity mean that its demographic profile is gradually ageing. Until the mid-20th century Iceland was among the poorest countries in Western Europe. In the latter half of the century Iceland's economy went through a steep economic development curve, drawing on its rich natural resources such as cold-water fishing and abundant energy sources and it is now one of the world's richest countries. However, Iceland was hit especially hard by the global financial crises in 2008, with the near collapse of the country's financial system (requiring capital controls that are still in place) and one of the largest falls in GDP of any OECD country as a result of the financial crisis; the consequent pressure on public finances continues.

In 1946, Iceland introduced a universal social security system, modelled on the Beveridge system but with major emphasis on means testing of benefits, accompanied by comprehensive publicly financed and publicly provided hospital services. The health status of women and men in general is good compared to other European countries. Life expectancy at birth is high and Icelandic men and women enjoy longer life in good health than the average European; in 2012, an Icelandic baby boy could expect to live 70.4 years in good health and an Icelandic baby girl 68 years, while the EU-28 averages were 61.3 and 61.9 years respectively. However, Icelanders are putting on weight; more than half of adult Icelanders were overweight or obese in 2004. Total consumption of alcohol has increased considerably since 1970; in 1980, 4 litres of alcohol was consumed per person, while in 2007 this figure was 7.5 litres (though this remains below the EU average of 10 litres per person).

Organization and governance

The health-care system is a state-centred, publicly funded system with universal coverage. The main bodies responsible for policy, financing, planning and regulation are Parliament, central government via the Ministry of Welfare (MoW) and Ministry of Finance (MoF), and a mix of public and private service providers, although publicly provided care is predominant. The MoW has major policy-making and executive authority and its agencies – the Directorate of Health (DH), Icelandic Health Insurance (IHI), the Icelandic Medicines Agency (IMA), the Icelandic Medicine Pricing and Reimbursement Committee (IMPRC) and the Icelandic Radiation Safety Authority (IRSA) – are responsible for health policy, administration and supervision. Though the country is divided into seven regions for health-care organization purposes, these regions have no administrative authority or separate revenue streams.

The country's centre of clinical excellence is the University Hospital, Landspitali, in Reykjavik, which alone accounts for 70% of the total national budget for general hospital services. Compared to public-sector providers, regulation of privately supplied services is less restrictive. With no general practitioner (GP) led gatekeeping in place (despite several attempts to introduce it), medical specialists have been able to set up private clinics and enter into contract-based fee-for-service schemes. Professional organizations are powerful and influential in policy and in the organization of service delivery. Patient groups have an increasing role in the system. Patients have the legal right to choose between providers of care and to make a complaint.

Financing

The health-care system has two main sources of financing. Public sources (mainly central government taxes) made up 80.4% of total health-care spending in 2012, with private spending, mostly in the form of out-of-pocket (OOP) payments (18.2%), accounting for 19.6%. In 2012 total health expenditure amounted to 8.9% of GDP (down slightly from 9.6% following the global financial crisis in 2008, and slightly below the EU average of 9.6% of GDP) while per capita spending (in US$ PPP) is roughly equal to the European Union average.

National health insurance with universal coverage is a fundamental part of the social security system. Entitlement is based on residence in the country and the system automatically covers everyone who has been legally residing in

Iceland for six months, regardless of nationality. Everyone covered by the IHI receives the health-care services that they require regardless of how much they contribute to the system. The IHI pays part or all of the costs of health care for the insured, with co-payments applying to primary care visits, outpatient care and pharmaceuticals (with reductions or exemptions for vulnerable groups), though the impact of co-payments still falls disproportionately on the poorest households. Inpatient care is free of charge, as are all tests and medications required during hospitalization.

The health-care system is small and predominantly publicly owned, with an integrated purchaser–provider relationship in which the state as payer is also the owner of most organizations providing health-care services. However, since 1990, the health system has become increasingly characterized by a mixed economy of care and service provision, in which the number and scope of private non-profit and private for-profit providers has increased. All hospitals and primary care centres in the public system are financed via global budgets. Doctors working in public hospitals and in general practices receive salaries from the state (with some fee-for-service payments to GPs for out-of-hours work) as do other professionals, while private practitioners, such as medical specialists who provide outpatient care outside of hospitals, physiotherapists, dentist and psychologists are paid on a fee-for-service basis. Private ambulatory care, such as medical specialists, dental care, physiotherapy, occupational and speech therapy may be publicly reimbursed on a fee-for-service basis, if there is a contract in place with the IHI.

Physical and human resources

Each of Iceland's seven health regions has at least one main regional hospital, which varies in terms of size and combination of functions. The number of hospital beds has been decreasing for the last two decades (falling to 332 beds per 100 000 in 2011, compared to an EU average of 542) and some of the acute hospital beds around the country have been converted to long-term nursing beds. Average length of stay in all hospitals has also been decreasing since 1990, and at 6.11 days is well below the EU average of 9.07. In general, the health-care system is well equipped with medical technology. In addition, the same information system (the Saga system) is used in all public health-care organizations, and all public primary care centres and hospitals have clinical information systems. Patient information is shared among public primary care physician clinics within each of the seven health regions but not yet across

health regions. The connection of electronic health record systems across different health-care regions is currently being planned. Moreover, a majority of physicians have access to e-prescription and all pharmacies are connected to the e-prescription Health Network.

In 2012, individuals employed in health and social care services made up about 11.4% of the total working population (similarly to the European Union average of 11.8%). Thirty-three different health professional groups are licensed through the Directorate of Health to work in the health-care system. Since 1990, there has been a steady increase in the number of practising physicians (to 355.8 per 100 000 people, slightly above the EU average of 345.8; however, about a third of Icelandic doctors work outside Iceland and most doctors go abroad for specialist training. Compared to other Nordic countries, Iceland has proportionately more specialists, which has resulted in relatively high rates of visits to specialists compared to visits to GPs. As a consequence, signs of overconsumption are evident; for example, for cataract surgery, Iceland is well above Sweden with 98.3 surgeries per 1000 inhabitants compared with 70.1 per 1000 inhabitants in Sweden.

Iceland also has a relatively high number of nurses and auxiliary nurses, both in absolute terms (with 1596 nurses per 100 000 people, compared to an EU average of 836) and in proportion to the number of doctors, with roughly four nurses and auxiliary nurses per physician.

Provision of services

The Public Health Institute (PHI) merged with the DH in 2011. Since its establishment in 2003 the PHI has focused on various risk factors in relation to public health, such as nutrition and exercise, obesity, tobacco and substance abuse.

Primary health care, in principle designated as patients' first point of contact with the health-care system, is provided in public primary care centres throughout the country and a few private primary health-care clinics and private GPs operating in the capital region. Most primary health-care clinics are able to offer the required services but small clinics in rural areas often cannot and their patients are referred to larger clinics in the health region or to the nearest hospital. Nurses play an important role in primary care centres and can be the first point of contact for patients. However in practice, in the absence of a GP referral system, the first point of contact for patients is often a private practising medical specialist (many of whom also have posts within public hospitals).

All hospitals providing inpatient and ambulatory care are public hospitals. Regional hospitals provide general medical care in outpatient as well as inpatient departments 24 hours a day but availability of specialist care varies. Some of these hospitals provide day care for patients undergoing surgical treatment ending with discharge on the same day. Various types of day surgery are also provided at special ambulatory clinics that are privately owned by medical specialists.

For pharmaceutical care, Iceland is a very small market with restricted profitability; for this reason, the supply of drugs is small compared to other Nordic countries. According to a 2011 report prepared for the Icelandic Parliament, there were approximately 3000 drugs available in Iceland, compared to 8000 in Norway, 9000 in Denmark and 10 700 in Sweden. There are also fewer generic drugs and less competition among pharmaceutical companies. The pharmacy market is different from other retail markets because the cost of medicines is fixed: the IMA determines the maximum price and the maximum discount that can be given.

The MoW and local authorities share responsibility for the organization and provision of long-term care services. Admission to institutional care is regulated by the MoW and care is provided on the basis of an aged care pre-admission scheme administered by regional aged care admission committees. Older people in Iceland are living at home longer than was previously the case and when admitted to nursing homes they are in poorer health and length of stay is shorter.

Palliative care is well established, especially in Reykjavik and the surrounding areas. Responsibility for the organization and provision of services for people with mental health conditions or disabilities lies with local authorities, which support a stronger move towards community-based services for this population. Patients bear the majority of the cost for dental health care and care is provided by private practising dentists on a fee-for-service basis. A new contract that came into effect in 2013 makes dental care for children under 18 almost free of charge.

Principal health reforms

Since 1970, the health-care system has been undergoing a series of reforms in the areas of financing, provision and regulation. The overall health-care system trend since 1970 has been towards increased state stewardship;

however, chronological analysis highlights a more complex picture – from decentralization in the 1970s to centralization in the late 1980s, and back to more decentralization in the 1990s in which the state still plays a key role.

Some major supply-side reforms were implemented in the 1990s and 2000s, such as reconfiguring the organization and supply of primary care services, hospital mergers (particularly in the capital Reykjavik), and measures to reduce public expenditure on pharmaceuticals. Attempts have been made at demand-side reform, specifically the introduction of gatekeeping, but with no success.

Assessment of the health system

The population of Iceland enjoys good health status. Life expectancy at birth is high (81.93 years, compared to the EU average of 79.85) and the gender gap in life expectancy is much smaller than generally is the case elsewhere (the EU average is half as much again). Evidence suggests that income influences an Icelander's health status to a smaller extent than reported for other countries.

There is a trend towards state centralization in regulation, financing and provision of health care, although the share of private provision has been increasing. Countervailing influences and incentives are operating within the health-care system, which hinder government efforts to improve health system efficiency. In particular, the cost-sharing mechanism in place does not seem to provide strong enough incentives to direct patients to GP services, rather than directly seeking specialist medical care. With rising levels of ambulatory and outpatient care, increasingly provided by the private sector and spurred on by more advanced medical technology and hospital restructuring, the cost of health care has been shifting steadily from the public to the private, resulting in increased private expenditure, of which household expenditure forms the largest part.

Thus, while in principle, health care benefits are available to all residents, one of the main barriers to access is the growing burden of health-care costs on household budgets. Evidence shows that the publicly stated objectives of equal access to health care, regardless of ability to pay, may be in jeopardy. Increasingly, people report unmet needs for medical examinations due to cost, distance to travel and waiting time; and lower income groups report higher rates of unmet needs than the population as a whole. In addition, evidence shows that postponement or cancellation of medical care is fairly common among adults (one survey found that 22% of respondents had postponed or cancelled a

physician visit they thought they needed in the previous six months). Evidence on health utilization shows that people of lower socioeconomic status, measured by level of education and income, are not necessarily the largest primary care users; rather, people of higher socioeconomic status use proportionally more services.

Conclusion

The main characteristics of the Icelandic health-care system are, on the one hand, a relatively high level of health-care supply and demand, and on the other, good health-care outcomes. While Iceland's health outcomes are some of the best among OECD countries, these outcomes have been delivered at a relatively high price. The system is characterized by high levels of health-care resources and utilization, an increasing trend towards shifting costs from public coverage to private households, and a rapid growth in private specialist care at the expense of more developed (and publicly provided) primary care services.

The health-care system faces some immediate and long-term challenges involving the financial sustainability of the current system. A rapidly ageing population, new public health challenges (such as obesity) and the continued impact of the country's financial collapse in 2008 are shaping the context in which the Icelandic government will have to lay out its reform strategy. The most important challenge is to change the pattern of health-care utilization to steer it away from the most expensive end of the health services spectrum towards more cost-efficient and effective alternatives. To a large degree, this will involve renewed attempts to prioritize primary care as the first port of call for patients, and possibly to introduce a gatekeeping function for GPs in order to moderate the use of specialist services. Overall, policy-makers are faced with the major challenge of improving cost-efficiency while ensuring equal access to affordable, quality care without the risk of eroding the social solidarity principle behind the tax financed health-care system.

1. Introduction

Iceland is an island in the middle of the North Atlantic Ocean with a very small population of about 320 000. The population is relatively young and the birth rate is high compared to other European countries but life expectancy and growing economic prosperity is gradually changing its demographic profile. Until the mid-20th century Iceland was among the poorest countries in Western Europe. In the latter half of the century Iceland's economy went through a steep economic development curve and it is now one of the world's richest countries.

In 1946 Iceland introduced a universal social security system, modelled on the Beveridge system but with major emphasis on means testing of benefits. This was joined with comprehensive publicly financed and publicly provided hospital services. By 1950 Iceland had most of the Scandinavian-type welfare state features prevailing at the time. The health status of women and men in general is good compared to other European countries. Life expectancy at birth is high and Icelandic men and women enjoy longer life in good health than the average European. Diseases of the circulatory system are by far the most common cause of premature death, of which ischaemic heart disease forms the largest part, with an average of 77.4 deaths per 100 000 population in 2009, followed by malignant neoplasms, of which lung cancer and colon cancer have the highest death rates, at 36.5 and 16.6 per 100 000 population respectively.

1.1 Geography and sociodemography

Iceland is an island with an area of 103 000 km^2, located in the North Atlantic Ocean, northwest of the British Isles and close to the Arctic Circle (Fig. 1.1). The shortest distances to other countries are 286 km to Greenland in the west, 420 km to the Faroe Islands, 795 km to Scotland and 950 km to Norway. With its small population of 321 857 (Statistics Iceland, 2013a), it is the most

Fig. 1.1
Map of Iceland

Source: www.maps.com.

sparsely populated country in Europe, averaging 3.0 inhabitants per km^2. Of the surface area, 63% is wasteland, more than 11% glaciers and 2.5% lakes. Only about 22% is covered by vegetation. The population is limited to a narrow coastal belt, valleys and lowland plains mostly in the south and south-west. The coastline where most settlements are situated is about 6000 km, punctuated by many fjords. The island's interior, the Highlands of Iceland, is a cold and uninhabitable combination of sand and mountains. A panorama of naked mountains, hills and fields without trees characterize a landscape carved by rivers, waterfalls and hundreds of volcanoes and steam from geothermal areas, which provide the population with ample cold water, hot water and electricity for industrial production and domestic use. The warm North Atlantic Current, the Gulf Stream, ensures that Iceland has a relatively mild coastal climate. Reykjavik and the Capital Region in the south-west enjoys a relatively warm climate for its northerly location, with average July temperatures of 10.6°C and average January temperatures at just around freezing. However, there are some variations in the climate between different parts of the island with the south-west being generally warmer, wetter and windier than the north and north-east.

Literary evidence dating from the settlement period indicates that the original population of Iceland was of Nordic and Gaelic origin. Later scientific studies including blood type genetic analyses seem to support this literary evidence (Helgason et al., 2000). Icelandic is the official written and spoken language. English and Danish are mandatory subjects in school and are widely understood and spoken. The literacy rate in Iceland was 99% according to the latest United Nation Development Programme Report (United Nations, 2010).

Table 1.1

Trends in population/demographic indicators, 1980–2012

	1980	1990	1995	2000	2005	2009	2010	2012
Total population[a]	228 160	254 800	268 380	281 150	295 860	319 250	318 014	319 180
Population, female (% of total)[b]	49.6	49.8	49.9	49.9	49.8	48.8	49.6	49.9
Population aged 0–14 (% of total)[a]	27.1	25	24.1	23.3	22.45	20.9	20.9	20.7
Population aged 65 and above (% of total)[a]	9.9	10.6	11.4	11.6	11.7	11.7	12.1	12.6
Population aged 80 and above (% of total)[b]	2.2	2.5	2.6	2.7	3.1	3.2	3.3	3.5
Population density (people per km^2)	2.3	2.5	2.7	2.8	3.0	3.2	3.2	3.2
Foreign citizens (% of total population)[c]	1.4	1.9	1.8	2.6	3.6	7.6	6.8	6.6
Fertility rate, total (births per woman)[a]	2.0	2.3	2.1	2.1	2.1	2.2	2.2	2.0
Birth rate, crude (per 1 000 people)[b]	20	19	16	14	14	16	15	14
Death rate, crude (per 1 000 people)[d]	6.7	6.7	7.1	6.8	6.2	6.3	6.4	6.2[e]
Age dependency ratio[d] (population 0–14/15–64 years)	43.9	38.7	37.9	35.7	33.3	31.5	31.3	31.0
Age dependency ratio[d] (population 65+/15–64 years)	15.7	16.5	17.5	17.8	17.7	17.9	18.1	18.8

Sources: [a]OECD Health Data, 2013; [b]Eurostat, 2013a,b; [c]Statistics Iceland, 2012a; [d]World Bank, 2014.
Note: [e]Data from 2011.

In 2013, 301 464 of the total population lived in urban areas (Statistics Iceland, 2013a). About two-thirds of the population lives in and around the Capital Region in the south-west. Reykjavik is the capital and the biggest town, with 119 764 inhabitants. The second largest town is Kópavogur (31 726), followed by Hafnarfjörður (26 808), both located in the south-west. Since 1980 the population has increased by approximately 40% (Table 1.1). The Icelandic population is homogeneous although the proportion of foreign citizens has been growing, especially since 2000. The population is also relatively young, with 21% of the population aged between 0 and 14 years in 2012, falling from 27% in 1980. Although young by European comparison, the population is gradually

ageing with 12.6% of the population aged 65 and older in 2012, rising from 10% in 1980, and the share of the population aged 80 and above increasing from 2.2% in 1980 to 3.5% in 2012. The fertility rate has remained unchanged since 1980 and is quite high hovering around the replacement rate of 2.1 births per woman. Although the crude birth rate has gone down since 1980 it remains the same as in 2000, i.e. 14 births per 1000 population. The crude death rate, on the other hand, went up from 6.7 in 1980 to 7.1 in 1995 but has come down to 6.2 in 2012. These population trends have led to a rising old-age dependency ratio since 1980 and it currently stands at 18.8; in contrast, the young-age dependency ratio has been falling over this period and currently is 31 per 100 people of working age.

1.2 Economic context

Until the mid-20th century Iceland was among the poorest countries in Western Europe. The second half of the 20th century was characterized by rapid economic growth. At the end of the century Iceland had become a highly developed economy. In 2007/2008 it was ranked first, together with Norway, in the United Nations' Human Development Index report (UNDP, 2007/2008); in 2011 the country was ranked 17th (UNDP, 2011). At the beginning of the 20th century, two-thirds of the labour force was in agriculture but this has been declining gradually as the dominant economic activity because manufacturing, commerce and services have been increasing their share in the economy (Table 1.2). In 1990, marine products made up 56% of total exports, aluminium and ferro-silicone 10%, and tourism and other services 26%. In 2009, these figures had reached 27%, 24% and 35% respectively. The country is rich in natural resources; in particular, cold-water fishing has been the backbone of the economy for decades although it is vulnerable to fluctuations. Hydroelectric power and geothermal energy have been abundant and make up an increasing share of export value through energy intensive aluminium processing.

The early 1960s marked a shift in which the economy moved towards a liberal mixed economy and progressed rapidly through the 1980s. This was a period of very high growth rates in an egalitarian society (Ólafsson, 2008). In the early 1990s Iceland's economy underwent severe economic recession. Since 1991, Iceland has been adapting liberal economic policies combined with conservative fiscal policy and a simple taxation system. It is reasonably simple with relatively low rates, broad tax bases and few favourable treatments or

Table 1.2
Macroeconomic indicators, 1980–2012

	1980	1990	1995	2000	2005	2010	2012
GDP (millions in national currency)	15 982	371 437	454 013	683 747	1 025 740	1 539 511	1 698.5
GDP, PPP (current US$)	2 735	5 426	6 206	8 108	10 362	11 481	12 545
GDP per capita, PPP (current international US$)	11 989	21 296	23 212	28 840	35 025	36 103	37 569
GDP average annual growth rate for the last 10 years (%)	5.0	1.2	0.1	4.3	7.5	-4.0	1.5
Public expenditure (% of GDP)[a]	34.1	41.4	42.5	41.9	42.2	51.5	47.4
Cash surplus/deficit (financial balance, % of GDP)[a]	1.3	-3.3	-3.0	1.7	4.9	-10.1	-3.8
Tax burden (total tax revenue % of GDP)[b]	29.6	30.9	31.2	37.2	40.6	35.2	36.0
Value added in industry (% of GDP)[c]	36.09	30.83	28.85	26.14	24.35	27.3	n/a
Value added in agriculture (% of GDP)[c]	12.75	11.75	11.55	9.05	6.3	6.37	n/a
Value added in services (% of GDP)[c]	51.16	57.41	59.59	64.8	69.34	66.32	n/a
Labour force (total in thousands)	127	151	160	173	179	179	178
Unemployment, total (% of labour force)	0.3	1.8	5.0	2.3	2.6	7.6	6.0
Poverty rate[a,d]	n/a	n/a	n/a	n/a	9.7	9.8	7.9
Income or wealth inequality (Gini coefficient)[a]	n/a	n/a	n/a	n/a	25.1	25.8	24
Real interest rate (CBI interest rates at end of year)[e]	n/a	n/a	6.5	11.4	10.5	4.5	6.0

Sources: OECD, 2013b; [a]Statistics Iceland, 2013b; [b]2011 figures; [c]2008 figures; [e]Central Bank of Iceland, 2012.
Notes: [d]At-risk-of-poverty rate is the rate of individuals that fall under the at-risk-of-poverty threshold defined as 60% of the median equalized disposable income; n/a: Data not available.

opportunities for tax arbitrage or avoidance (IMF, 2010). In the aftermath of the global financial crisis the taxation system was changed to shift the burden towards higher income groups.

Iceland introduced a universal social security system in 1946. The system is modelled on the Beveridge system but with major emphasis on income testing of benefits. This was joined with comprehensive publicly financed and publicly provided hospital services and educational institutions at all levels. Thus, already by 1950 Iceland had most of the Scandinavian-type welfare state features prevailing at the time and was spending a similar proportion of GDP on welfare and health as the other Nordic countries. Today, Iceland has a similar emphasis on publicly financed and publicly provided welfare services as the other Nordic countries but, as mentioned above, it is less generous on the benefits side of the welfare system and thus more closely resembles the Anglo-Saxon systems in that respect, especially with regard to the extensive use of income testing (Ólafsson, 1999).

The country has enjoyed mainly economic prosperity and in 1980 it had already reached the rank of being among the richest countries in the world as measured by GDP per capita in US$ PPP. In 2010 its GDP was US$ 36 103 per capita (OECD Health Data, 2011a). From 1995 to 2007, income and wealth inequality surged, mainly due to a growing share of capital income and also due to government policies that shifted the tax burden to the bottom half of the income distribution. In 1995 the Gini coefficient of disposable income, including capital gains, was 0.26; by 2000 it was 0.31, and in 2007 it had reached 0.44. As capital gains collapsed after 2008, the Gini fell back to 0.34 by 2009 (Ólafsson & Kristjánsson, 2010); 79% of growing inequality before tax is explained by increasing capital income following the rise of the financial sector in this period. Most of the rise of inequality happened in the share of the top few percentiles of the distribution as they rushed away from the rest.

Over the period 1990 to 1999 Iceland's real GDP average growth rate was 2.3%, 4.1% in the period 2000 to 2008, peaking at 7.7% and 7.5% in 2004 and 2005 (OECD Factbook, 2010) when the economic boom was gaining speed. It reached bottom in 2010, falling to -4%, leaving the country's financial balance at -10.1% of GDP in 2010 (Table 1.2). Iceland has been hit especially hard by the current financial and economic crisis. In September 2008, the size of the three biggest Icelandic banks was ten times the country's GDP. In October 2008, the Icelandic parliament passed emergency legislation in an attempt to minimize the impact of the financial crisis on the rest of the national economy as the three banks, representing 85% of the banking system, collapsed one after the other within a week. The following month, the government agreed a comprehensive programme Stand-By Arrangement (SBA) with the International Monetary Fund (IMF) to overcome the economic problems left in the wake of the collapse of the banks. The programme's strategy consisted of restoring the financial sector to health, returning public finances to sustainable levels, preventing capital flight by capital controls, and rebuilding monetary policy credibility by stabilizing inflation at low levels. Automatic stabilizers were allowed to work before fiscal consolidation measures were enforced, so, in effect, the crisis in the public sector was postponed by one year. In August 2011, Iceland had fulfilled the main conditions in each of its IMF SBA reviews, and the SBA was completed (IMF, 2008).

The real GDP decline following the financial crisis in 2008 was one of the largest in the OECD and the largest in Iceland in recent decades. The increase in unemployment has been large (Table 1.2) but the unemployment rate stabilized to just below 8% in 2011, which is a very high rate by Icelandic standards, and

fell to around 6% by the end of 2012 (OECD StatExtracts, 2013). Long-term unemployment, which had increased markedly and was concentrated among the low skilled (OECD, 2011a), had reached 1.8% at the end of 2012 (OECD, 2013a). Traditionally, job participation and employment rates have been rather high in Iceland; in 2005, the share of people of working age (15–64 years) in employment was 84.4% while at the end of 2012 this rate had fallen to 79.7% (OECD StatExtracts, 2013).

The government has made progress in cutting the large budget deficit left by the financial crisis but much consolidation is still required to put public finances on a sustainable path. To date, the focus of fiscal consolidation has been on revenue increases and cuts in public investment instead of current expenditure. The general government budget deficit (excluding one-off transactions) fell by 3.5% of GDP to 6.5% in 2010, came down to 5% in 2011, 3.8% in 2012 and was estimated to be around 2.7% of GDP in 2013 and 1.8% in 2014 (IMF, 2013a). The government plan was to achieve a primary budget surplus of at least 3% of GDP in 2013 and to increase it gradually in the following years (IMF, 2012; OECD StatExtracts, 2013). The implication of this plan is that there are further cuts in public expenditure to come, including cuts in the health-care budget (see Chapter 6).

Iceland still has a long way to go to recover fully from the effects of the financial crisis. With public debt remaining high and with major liquid offshore currency (Icelandic krona) overhang after the financial collapse in 2008, the capital controls on outflow implemented at that time are still in place. A new government coalition formed in May 2013 has stated its policy priorities: creating an investment-friendly environment, including through tax cuts and providing further household debt relief. Apart from bringing down public debt one of the biggest economic challenges of the new government is an orderly lifting of the capital controls without a sharp fall of the currency. The latter would have a knock-on effect on consumer price indexed loans and mortgages of firms and households in the country and thus destabilize the whole economy (IMF, 2013a; see also Sigurgeirsdóttir & Wade, 2014).

1.3 Political context

The constitutional arrangement in Iceland has been described as a parliamentary democracy with a semi-presidential constitution (Kristjánsson, 2003). The present day parliament, *Alþingi* (Althing), was founded in 1845 as an advisory

body to the Danish monarch. The Icelandic republic has a written constitution that was approved when Iceland declared independence from the Danish Monarchy in 1944.

The republic of Iceland has a multi-party system in which every four years the electorate chooses, by secret ballot, 63 representatives to sit in parliament. Following each election, the President gives the leader of a political party the authority to form a government, usually beginning with the leader of the largest party. As stipulated in the Constitution, the Icelandic parliament and the President jointly exercise legislative power in the country. All legislation passed by the parliament must receive the consent of the President before it becomes law. The President has the right to refer legislation to a national referendum. In the Constitution, the judiciary is entrusted with judicial power that lies with the Supreme Court and the district courts.

Officially, the President holds the supreme executive power according to the Constitution, but in practice it is the government (Prime Minister and ministers, who are also parliamentarians) that holds the supreme executive power on behalf of the President. In practice, ministers in the government exercise the powers ascribed to the President in the Constitution. The President, who is supposed to be a non-party political figure, is elected by direct popular vote for a term of four years, with no term limit. The current President of Iceland is Mr Ólafur Ragnar Grímsson. He has been in office since 1996 and was re-elected for his fifth term in 2012. Three main features characterize the workings of government in Iceland. Firstly, the separation of power between the parliament and the Executive (Prime Minister and ministers) remains unclear. Secondly, individual ministers are highly independent (Helgason, 2006, 2010) and finally, the civil service has a low degree of autonomy (Kristjánsson, 2003).

There are two levels of government – the central government and local governments. However, administratively the country is divided into regions, constituencies, counties and municipalities. The regions (8) are mainly used for national-level statistical purposes. The counties (23) are historical divisions in which a top civil servant (a magistrate) represents central government in various capacities. The counties are mainly district court jurisdictions but are also used for other administrative purposes such as tax collection, administering bankruptcy declarations and social security. Municipalities (76) are governed by local governments.[1] Since 1950, the number of municipalities has decreased by 134 as a result of mergers.

[1] In this HiT the term 'government' refers to central government. Municipalities are governed by 'local governments', which delegate or share some of their responsibilities with local bodies and these are referred to here as 'local authorities'.

Iceland has no Army or military power but it became a member of NATO in March 1949. Between 1949 and 2006, the US Navy had a US Air Force Base located in Keflavik, the same location as the country's current main international airport. Iceland has been a member of the European Council since 1950, the Nordic Council, an intergovernmental cooperation between the Nordic countries since 1952, and EFTA since 1970. It joined the European Economic Area (EEA) in 1993. The country has been a member of the United Nations (UN) since November 1946 and also most of UN's specialized organizations such as International Monetary Fund, the World Bank (WB) and World Health Organization (WHO). Accession talks on Iceland's membership to the European Union (EU) started in 2010 but since the election of a new government in April 2013, the application has been suspended pending a referendum on whether to continue the negotiations.

1.4 Health status

The health status of women and men in Iceland in general is good compared to other European countries. Life expectancy at birth is high, 81.6 years for men in 2012 and 84.3 for women (Eurostat, 2014) (see also trends in Table 1.3 – OECD Health Data, 2011b). As measured in healthy life years (HLY) Icelandic men and women enjoy longer life in good health than the average European. In 2012, an Icelandic baby boy could expect to live 70.4 years in good health and an Icelandic baby girl 68 years, while the EU-28 averages were 61.3 and 61.9 years respectively (Eurostat, 2014). However, since 2007, HLY for both men and women has dropped as a consequence of more people now surviving from an episode of cancer or cardiovascular treatment and thus living on with chronic conditions. That is, overall, in the period 1980–2008, the incidence of cancer per 100 000 population increased by 50% for men and 43% for women but total mortality rates fell from 897.2 to 572.1 for men and from 539.2 to 402.7 for women. Therefore, Icelandic men and women are living longer in spite of being diagnosed with cancer but it is more likely that they will have to spend more years in a chronic state of poorer health. The rapid improvements in life expectancy after the Second World War are due to a number of factors, including general economic prosperity, ample job opportunities, food and clean water, better housing and sanitation, high literacy rate and expanding welfare policies. In addition, the smallness of the population facilitated a comprehensive approach to the prevention of infectious diseases and health promotion initiatives.

Table 1.3
Mortality and health indicators, 1980–2011

	1980	1990	1995	2000	2005	2009	2010	2011
Life expectancy at birth, total	76.7	78.0	78.0	80.1	81.2	81.5	82.0	82.4
Life expectancy at birth, male	73.5	75.5	76.0	77.8	79.6	79.8	79.8	80.7
Life expectancy at birth, female	80.4	80.7	80.1	81.6	83.5	83.8	84.1	84.1
Total mortality rate, adult, male[a]	140.5	116.6	100.8	98.8	68.9	73.2	70.5	n/a
Total mortality rate, adult, female[b]	71.0	78.0	71.5	59.1	48.7	39.9	36.3	n/a
Infant mortality rate (death per 1 000 live births)	7.7	5.9	6.1	3.0	2.3	1.8	2.2	n/a
Perinatal mortality rate	8.8	6.3	6.3	5.3	3.3	3.2	2.8	n/a
Neonatal mortality rate	6.0	4.0	4.4	2.5	1.6	1.0	1.2	n/a

Source: OECD Health Data, 2013.
Notes: [a]Per 1 000 males; [b]Per 1 000 females; n/a: Data not available.

Trends in health status are somewhat mixed but positive overall. In 2009, the total death rate had dropped by 32% compared to 1980. Icelandic women have always had lower death rates than Icelandic men (Table 1.3). In 2010, the total death rate was 36.3 per 1000 women and 70.5 per 1000 men but these figures have been converging as the death rates for men have dropped more. The infant mortality rate, as well as the death rate within 28 days (neonatal mortality) rate, is very low in Iceland, the lowest in the OECD (Table 1.3). The quality of infant health measured by low birth weight is also very good as Iceland has the lowest rate of low-weight infants (4.1 per 1000 births) in 2009 (OECD Health Data, 2013b).

Diseases of the circulatory system are by far the most common cause of premature death, of which ischaemic heart disease forms the biggest part. In 1980, the total death rate from Ischaemic heart disease was 224.5 per 100 000 population (men: 325.1; women: 136.7) while in 2009, the latest year for which data is available for Iceland, it had fallen to 77.4, 109.5 for men and 50.4 for women (OECD Health Data, 2013a) (Table 1.4). While the figure has been constantly dropping for men over this period it had been dropping for women until 2007 when it came down to 45.6 but since then it has been rising again.

Lung cancer and colon cancer have the highest death rates, with total rates in 2009 of 36.5 per 100 000 population (36.9 for men, 35.8 for women) and 16.6 (23.7 for men, 10.8 for women) respectively. The death rate due to lung cancer for men peaked in 2005 at 49.8 but peaked for women in 2008 at 40. Lung cancer is mainly and almost entirely caused by smoking. National experts infer from the trends in the rates of smoking in the past that the death rate due

Table 1.4

Main causes of death, per 100 000 population, selected years

	1980		1990		1995		2000		2005		2009	
Causes of death (ICD-10 classification)	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Communicable diseases												
All infectious and parasitic diseases (A00-B99)												
Tuberculosis (A15-A19)	5.1	5.5	4.4	7.5	4.4	10.5	5.9	6.6	3.8	1.3	1.8	3.7
Sexually transmitted infections (A50-A64)												
HIV/AIDS (B20-B24)	n/a	n/a	0.9	3.0	0.0	1.9	n/a	0.5	n/a	n/a	n/a	0.5
Noncommunicable diseases												
Circulatory diseases (I00-I99)	243.5	448.3	214.8	350.1	196.9	367.9	175.1	260.4	135.2	207.9	121.4	206.0
Malignant neoplasms (C00-C97)	140.3	191.8	162.9	216.8	161.9	194.3	158.7	182.7	126.1	187.5	129.4	176.9
Colon cancer (C18)	19.4	18.6	19.5	15.4	17.1	18.1	16.9	18.1	12.6	16.1	10.8	23.7
Cancer of larynx, trachea, bronchus and lung (C32-C34)	29.7	24.5	29.3	44.3	28.6	41.9	37.0	39.1	34.2	49.8	35.8	36.9
Breast cancer (C50)	15.9		35.5		47.0		18.9		18.7		19.7	
Cervical cancer (C53)	4.8		2.3		2.9		2.4		0.6		1.3	
Diabetes (E10-E14)	1.0	3.3	1.4	3.6	3.4	3.8	4.6	7.0	5.3	5.8	5.3	9.2
Mental and behavioural disorder (F00-F99)	0.0	1.0	1.6	1.4	1.3	0.8	17.7	15.0	13.8	16.2	9.8	11.9
Ischaemic heart diseases (I20-I25)	136.7	325.1	114.2	226.7	94.8	219.9	83.3	156.9	60.2	120.7	50.4	109.5
Cerebrovascular diseases (I60-I69)	67.0	67.0	54.8	77.4	56.8	86.0	52.8	50.8	34.9	39.3	29.8	40.8
Chronic respiratory diseases (J00-J99)	58.8	83.9	63.3	75	80.2	76.2	49.5	43.9	38.1	52.1	43.2	38.2
Digestive diseases (K00-K93)	17.6	10.0	12.8	7.6	15.2	12.1	14.9	15.5	11.9	18.0	14.6	13.4
External causes												
Transport accidents (V01-V99)	2.8	17.1	6.7	15.7	7.6	12.7	7.1	16.5	3.0	7.9	0.5	5.7
Suicide (X60-X84)	9.6	12.9	4.4	27.3	3.5	16.7	5.5	30.3	5.4	15.3	3.9	16.6
Ill-defined and unknown causes of mortality (R95-R99)	5.7	9.9	7.2	12.9	3.5	3.6	2.1	8.6	2.5	5.0	2.5	6.4

Source: OECD Health Data, 2013.
Note: n/a: Data not available.

to lung cancer in Iceland has reached its apex and is likely to decrease from now on. The total death rate caused by cancer of the colon dropped by 25.1% between 1980 and 2005 but only by 14.9% between 1980 and 2009 mainly due to a striking increase in the death rate among men between 2005 and 2009 or an increase of 47.2%.

Finally, it is worth pointing out that the sharp drop in the death rate due to chronic respiratory disease (pneumonia) between 1995 and 2000 and the sharp increase in the death rate due to mental health conditions in the same period is a result of the classification changes made in the transition from ICD9 to ICD10. Under IDC10 dementia became a disease and not merely a symptom and is thus registered as a cause of death.

Health behaviour of children and adolescents

A 2010 report commissioned by the Minister of Health mapped health care and the health of young people in Iceland and provides an overview of the current situation (MoW, 2011a). UNICEF also published a report on the condition of children in Iceland in 2011 as part of its annual publication on the State of the World's Children (Unicef, 2011). Consumption of fruit among young people decreases by age; however, although young people eat more sweets as they age they still consume more fruit than sweets (Bjarnason et al., 2006). Physical exercise also decreases by age and girls exercise less than boys. Over the period 1995–1995, smoking and consumption of alcohol fell among young people in their last year of compulsory school (16 years) and among young people in their first years in upper-secondary school (17–18 years) (over the period 2000–2010). However, consumption of alcohol increases considerably in the first years of upper-secondary school (Kristjánsson et al., 2008).[2] Compared with their European peers, Icelandic teenagers drink much less alcohol. When alcohol consumption is measured over the last 30 days, a study showed that the lowest rates were in Iceland (31%), then Armenia (35%), Norway (42%), Sweden (44%) and Finland (48%). Girls are more likely to drink than boys (Bjarnason et al., 2006). The same holds for smoking; Icelandic teenagers smoke much less than their European peers (16%) but as in most other European countries there is not much difference between boys and girls. The use of cannabis among young people increased between 1995 and 1999 but decreased in the period 1999–2007. Nearly 20% of young people aged 15 were overweight in 2008 (Currie et al., 2008)[3] and a national study also shows that 21% of children aged 6–15 are overweight; however, when changes between the periods 2004–2005 and

[2] Unicef reporting data from the HBSC, ESPAD and a national study conducted by Kristjánsson et al. (2008).

[3] Ministry of Welfare report in 2010 quoting WHO HBSC report (2008).

2008–2009 are compared, the rate of overweight children remained the same whereas the rate of obese children increased from 4.7% to 5.5% (Jónsson & Héðinsdóttir, 2010).[4]

Compared to other Nordic countries, Icelandic children have poor dental health (Public Health Institute, 2007). They have twice as many damaged teeth (in 2005, 2.1 DMFT (decay/missed/filled teeth) in 12 year olds) than their peers in other Nordic countries (Ágústsdóttir et al., 2010). Children of foreign origin have poorer dental health than native children (MoH, 2010a).

Health behaviour of adults

The majority of Icelanders consider themselves to be in good health: about 80% reported their health as very good or good in 2009 (Eurostat, 2011). However, Icelanders are putting on weight. More than half of adult Icelanders were overweight or obese in 2004 but the risk is halved among those who exercise at least five days per week, compared to those who exercise less frequently. A sedentary lifestyle is more common amongst Icelanders than in neighbouring countries. Research evidence from 2004 has shown that 50.4% of women aged 30–45 and 68.2% of men aged 50–65 were overweight or obese. Mean fat mass was highest in the 70–85 age group (women 38% and men 27%) (Guðmundsdóttir et al., 2004). However, trends in weight gain show that lower age groups are becoming more overweight, particularly men (Iceland Nutritional Council, 2002a; Valdimarsdóttir et al., 2009).

One study showed that four Icelandic men and one in five women do not participate in regular physical activity (Guðmundsdóttir et al., 2004). Other national data on physical exercise show that when looking at the total population over 15 years of age who do not exercise, there is not much difference between men and women. Participation in exercise and the number of hours spent doing physical exercise tends to decrease with age for both women and men (Icelandic Nutritional Council, 2002b).

The percentages of daily smokers among 15–79 year olds fell between 1987 and 2010 from 35.6% to 14.5% for men and from 30.5% to 14.1% for women. Daily smoking is highest among men aged 50–59 and for women aged 40–49. Taking up the daily habit of smoking begins later in 2010 than was the case in 1995, in particular among women in the 15–19 and 20–29 age groups (Statistics Iceland, 2011a). A recent population-based, prospective cohort study based on a mail survey examining the associations between the 2008 economic collapse in Iceland and smoking behaviour at the national and individual levels found

[4] Unicef reporting a national study by Jónsson & Héðinsdóttir (2010).

that the national prevalence of smoking in Iceland declined following the 2008 economic crisis. Although the authors suggest these findings may simply reflect a continuation of trends already in place prior to the crisis an individual-level analysis showed that former smokers who experienced a decline in income were less likely to relapse; and conversely, an increase in income raises the risk (McClure et al., 2012).

In contrast to smoking, total consumption of alcohol has increased considerably since 1970. On the other hand, the proportion of non-drinkers has decreased over this period. In 1980, 4 l of alcohol was consumed per person, while in 2007 this figure was 7.5 l. After the sale of beer was legalized in Iceland in 1989, consumption of stronger drinks fell as the share in beer consumption grew. Weekly consumption of alcohol has increased both for men and women, with men drinking more than women (Public Health Institute, 2009).

The teenage birth rate has been falling since 2000 although it remains very high compared to other Nordic countries but lower than in the UK (OECD StatExtracts, 2011). Abortions are performed under the Abortions Act (No.25/1975), which allows termination of pregnancy on the basis of medical and social conditions as long as it takes place before the end of the 12th week except in the case of special medical conditions when this time limit can be extended. The rate of abortions per 1000 women aged 15–44 in 2009 (14.3) has remained constant since 1996 (14) (DH, 2010a).

The rate of sexually transmitted diseases is very low, except for chlamydia, which is the most common sexually transmitted disease in Iceland: the number of cases per 1000 population rose from 647 in 2000 to 695 in 2010. The rate of chlamydia among women is much higher than among men (Statistics Iceland, 2011b). Screening for HIV started in 1986: in 2010 the HIV incidence was 7.5 per 100 000 population, 10.6 for men and 4.4 for women.

A recent study examining the effects of economic recessions on dental health behaviour and care utilization found that the financial collapse in 2008 did not have drastic negative effects on dental health behaviours of the population (McClure & Sæmundsson, 2014).

2. Organization and governance

The health-care system is a state-centred, publicly funded system with universal coverage. The main bodies responsible for policy, financing, planning and regulation are Parliament, central government via the Ministry of Welfare (MoW) and Ministry of Finance (MoF) and a mix of public and private service providers, although publicly provided care is predominant. The MoW has major policy-making and executive authority and its agencies – the Directorate of Health (DH), the Icelandic Health Insurance (IHI), the Icelandic Medicines Agency (IMA), the Icelandic Medicine Pricing and Reimbursement Committee (IMPRC) and the Icelandic Radiation Safety Authority (IRSA) – are responsible for health policy, administration and supervision. Local governments have a minor and rather voluntary role in the organization and provision of care. Seven health-care regions operate as organizational and planning devices with limited administrative responsibilities locally.

The country's centre of clinical excellence is the University Hospital, Landspitali. Compared to public-sector providers, regulation of privately supplied services is less restrictive. With no GP-led gatekeeping in place, medical specialists have been able to set up private clinics and enter into contract-based fee-for-service schemes. Professional organizations are powerful and influential in policy and in the organization of service delivery. Patient groups have an increasing role in the system. Patients have the legal right to choose between providers of care and to make a complaint.

2.1 Overview of the health system

The Icelandic health-care system is a centralized publicly financed system. The ultimate responsibility for financing, provision and regulation of health-care services rests with the Minister of Health, who is responsible for health-care

policy within the MoW.[5] The health system is financed through the annual national budget. Two major pieces of legislation set out the financing and organizational structure of the health-care system – in particular, the Health Care Act (Act No. 40/2007) stipulating the organization and provision of health care and the Health Insurance Act (Act No. 112/2008) stipulating the funding of services based on residential rights and entitlements.

Apart from the ministry itself, five government agencies that operate within the jurisdiction of the MoW and report to the minister are the main governing bodies in the health-care system. Firstly, the DH – a government agency headed by the Medical Director of Health – which is responsible for a wide range of functions within the system. This includes the overall inspection and monitoring of all types of health-care services, regulation and licensing of health-care professionals, setting standards of health-care quality and clinical guidelines, organizing public health measures and sponsoring health promotion initiatives, collecting and processing data on health and health-care services, promoting research and handling complaints from health-care users (DH, 2013a). Secondly, the IHI administers the health insurance and occupational injury insurance schemes. This agency has a commissioning role in the health system as it negotiates contracts, purchases and pays for health-care services that are not financed through global budgets but provided by public as well as independent service providers. Thirdly, the IMA is responsible for assessing the quality and safety of medicinal products, inspection, providing information to health professionals and the public and ensuring consumer protection (IMA web site, 2012). Fourthly, the IRSA is responsible for the implementation of safety measures against radiation from radioactive substances and radiological equipment (Act No.44/2002). Finally, there is the five-member IMPRC that makes decisions on reimbursements, wholesale pricing, joint applications, reimbursement and price, and retail pharmacy mark-ups. The committee is also responsible for the Icelandic drug price catalogue, published every month and which includes information on the maximum wholesale price, the wholesale discount price, reference price and maximum retail price (IMPRC, 2013).

[5] The ministry responsible for health policy was the Ministry of Health and Social Affairs (MHSS) from 1970 to 2008, the Ministry of Health (MoH) from 2008 to 2011 and finally the Ministry of Welfare (MoW) from January 2011. While referring to the minister in this review, the term 'Minister of Health' will be used throughout.

2.2 Historical background

The Icelandic health-care system dates back to the 18th century when the first medical doctor, the 'national physician', was appointed by the Danish king in 1760. Later a Directorate of Public Health was made responsible for implementing and coordinating public health policies and for services provided by district doctors and midwives. The first hospital was established in Reykjavik in 1866 and a medical school, established in 1876, became part of the University of Iceland when the University was founded in 1911. In the first years of the 20th century medical care was rudimentary. Only one hospital, owned and operated by a Catholic order, provided hospital services in Reykjavik. Gradually, the state assumed responsibility for hospital services, building up various specialized hospitals until the opening of the first public general hospital in Iceland, Landspitali, in 1930. State-provided health-care services were further extended by law in 1936 (Jónsson, 2001). The development of the Icelandic welfare system, including organized health care and planning, intersected with the construction of the nation state and independence in the post-war era. The role of the state was central (Jónsson, 2001) but it is still quite idiosyncratic in that before 1970 health policy issues within the government were dealt with by less than a handful of people in a single office inside the Ministry of Justice and Ecclesiastical Affairs.

Voluntary health insurance funds were introduced at the beginning of the 20th century. The take-up was very low (3%) and did not reach considerable coverage until public health insurance was introduced by parliament in 1936. After 1945, when health insurance funds for those on low incomes had been established in almost all municipalities around the country, about 50% of the population was covered. But health insurance funds were small in size and numerous, with 245 in total scattered around the country. These were financed partly by contributions from the insured, whose income was below a certain minimum, and partly by local governments. Those who earned income above the minimum level were not eligible to join. In 1972, these district health insurance funds were merged and thus reduced in number, resulting in 40 funds, financed 80% through the state and 20% by local governments. Individual contributions were abolished and the funds became the administrative responsibility of bigger municipalities around the country. Health insurance coverage continued to increase and in 1975 the whole population was covered through municipal public insurance funds (Ólafsson, 1999; Jónsson, 2001). In 1970 the Ministry of Health and Social Security (MHSS) was established as a distinct government department (Guðmundsson, 1992; Halldórsson, 2003). The

establishment of the MHSS marked the beginning of a period of organizational and institutional development and expansion of comprehensive health-care services around the country.

1970–1990

In the 1970s and the early 1980s, the executive branch of the MHSS was heavily engaged in the process of modernization and health policy expansion. However, politically, the ministry was weak compared to other government departments. Until 1985, when the role of a full-time Minister of Health and Social Security was established, the ministry was led by a minister who was also responsible for another government portfolio. The evolution of the health-care system in this period is marked by two major pieces of legislation that involved key institutional and organizational reforms. These are a new Social Security Act (Act No. 67/1971) and the Health Care Act (Act No. 56/1973). With the passage of the Social Security Act the whole of the population became covered by a single public health insurance scheme.

With the Health Care Act, which came into force in January 1974, all Icelandic citizens were formally accorded access to the best available health-care services for the protection of their mental, physical and social health. Modern and well-equipped primary care centres (PCCs) were built around the country, staffed by educated health-care professionals and enabled easy access to primary health care. Capital investment involved constructing PCCs, refurbishing of facilities, purchasing of technology, with the cost of maintenance shared between central government (85%) and local governments (15%). Central government covered the cost of the medical doctors, nurses, midwives and physiotherapists employed at PCCs whereas local governments covered general running costs and the cost of other staff. Capital investment in hospital facilities and technology was also shared between central government and local governments, 85% and 15% respectively, while central government and the country's new single health insurance fund financed the running cost of the hospitals. However, private financing in the form of out-of-pocket (OOP) payments continued to exist but these were mostly confined to particular sectors, such as pharmaceuticals, outpatient care and dental health care.

Staff and local governments nominated representatives to the boards of PCCs. Similarly, board members of municipality hospitals around the country (other than private hospitals), the City Hospital owned by Reykjavik municipality and hospitals owned by the state were also nominated by local governments

and staff members. Five regional health councils were also established, the members of which were nominated locally and appointed by the minister, to whom the councils reported directly.

After a period of rapid expansion of the health-care system from 1970 to the late 1980s, a new period of reforms began at the beginning of the 1990s characterized by policies of retrenchment and rationalization. The period prior to 1990 was characterised by major political instability when several weak coalition governments struggled to create coherent and sustainable economic policy while inflation was rocketing and approaching three digits. In 1990 total health expenditure dropped from to 8.0 % of GDP (compared to 8.5% in 1989) and a period of stagnation set in until 1998 when it rose again to 8.6% of GDP, and increased rapidly to 9.9% in 2002 (OECD Health Data, 2004).

1990–2005

It was not until the enactment of the new Health Care Act in 1990 (Act No. 97/1990), prompted by other legislation, namely Changes in the Division of Tasks between the State and Municipalities Act in 1989 (Act No. 87/1989), that major institutional changes took place and the state became represented on the boards of PCCs and municipality hospitals around the country (with the exception of the City Hospital in Reykjavik). The Changes in the Division of Tasks between the State and Municipalities Act was a ground-breaking piece of legislation for the organization of the health-care system and contributed to tackling tasks and responsibilities that required administrative and financial inputs that were beyond the capacity of many of the smaller municipalities in the country. The 1989 legislation was a step towards an increased role of the state in financing, provision and regulation of health care; the new Health Care Act of 1990 institutionalized this enhanced role.[6]

The Health Care Act and later amendments in the 1990s and in 2000 onwards gradually centralized the power to regulate the provision of health-care services in the hands of the Minister of Health and Social Security. In 1996 the Measures in Public Finances Act (No. 140/1996) allowed the minister, in consultation with local authorities, to merge PCCs and hospitals around the country, which resulted in the formation of regionally-based health-care institutions and an increased centralization of administrative responsibilities at local level. The regional health councils, which were established by the 1973 Health Care Act were abolished in 2002, leaving the boards of health institutions to report directly to the minister. Further legislative amendments in 2003 abolished the

[6] On the other hand, financing, provision and regulation of social services became the responsibility of the municipalities after passage of the Social Services Act in 1991 (Act No. 40/1991).

15% statutory financial share of local governments to new hospital buildings and hospital technology. Subsequently, the boards of health institutions were abolished and the chief executive of health institutions and hospitals around the country were made to report directly to the Minister of Health, who now was accorded authority to merge and reconfigure health-care services without having to consult local governments.

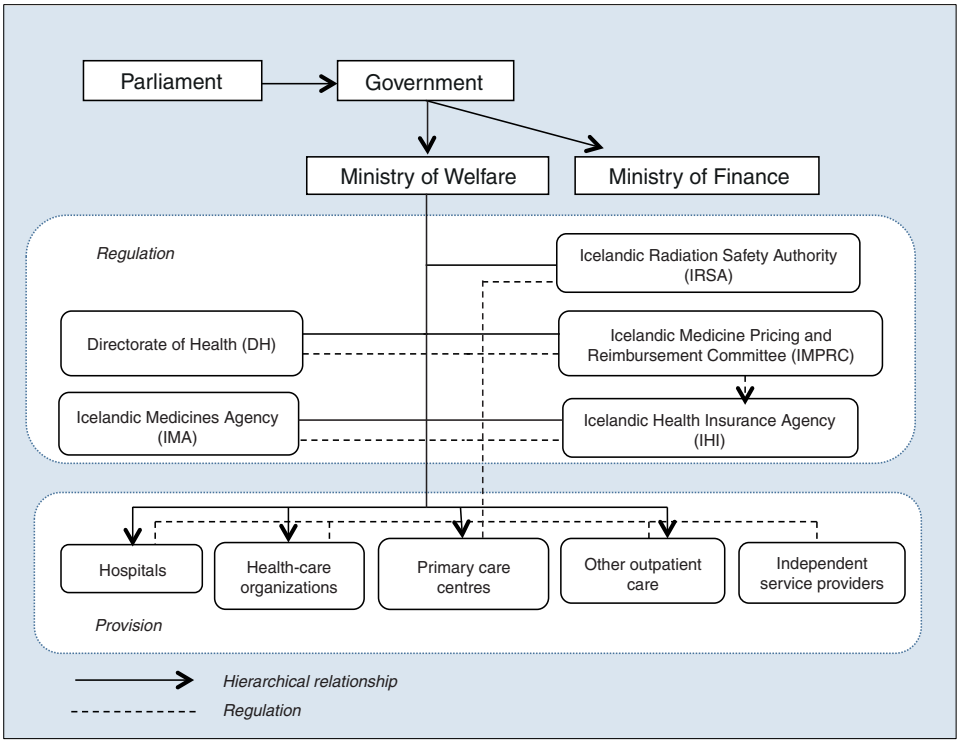
Within this legal framework in which the Minister of Health had acquired greater policy-making and executive authority, and within the context of the government's wider economic and administrative reforms in the early 1990s, two other major reforms took place. Following the passage of a new Pharmaceutical Act in 1994 (Act No. 93/1994), a reform of pharmaceutical services was implemented in 1997 (see Chapter 5). In 1998, a major hospital reform was implemented in Reykjavik when the state bought the municipality hospital in Reykjavik, which in 1995 had merged with the only private acute care hospital in the country – Landakot hospital in Reykjavik. After the take-over, the two remaining hospitals in the city – the University Hospital, Landspitali, and Reykjavik Hospital – were merged in February 2000 (Sigurgeirsdóttir, 2006) (see also Chapter 6).

2.3 Organization

The current organizational and administrative principles of the health-care system were established in 1970 when new legislation on government offices came into force (Act No. 73/1969). From then on, health policy and various health-care functions were centralized in and within the jurisdiction of the then MHSS. The main bodies responsible for policy, financing, planning, administration and regulation are Parliament, the Government, the MoW, the MoF, the DH, the IMA, the IRSA, the IMPRC and the IHI.

There is a single administrative tier in the governance of health care in which policy, administration and regulation are centralized at the level of the state (Fig. 2.1). The planning of health-care services and public health, including the management of communicable diseases, takes place centrally but is based on seven health-care regions in the country. The regions are planning devices with no administrative authority or separate revenue streams. The administration and coordination of policy delivery and health-care provision is concentrated locally within the regions in one or two main health-care organizations that are publicly financed state organizations.

Fig. 2.1
Structure of the Icelandic health-care system



2.3.1 The role of the state and state agencies

The Parliament has the role of approving policy direction by passing legislation and deciding on the national budget. Government operates within a parliamentary majority and thus is accountable to Parliament. The Minister of Health is a cabinet minister and as such is politically accountable to the Government, and legally and politically accountable to Parliament. One of the parliament's Standing Committees, The Welfare Committee, deals with the broader issues of welfare including health, social care and social security. Its main role in the legislative process is to assess and consult on legislative drafts, to oversee implementation and to hold the Minister of Health to account. Since the 2013 parliamentary elections, the Welfare Committee has been chaired by an elected MP from one of the opposition parties.

The MoW, which was established on 1 January 2011 following the merger of the Ministry of Social Affairs and Social Security and the Ministry of Health, has responsibility for the administration and policy-making in social affairs, health and social security. This includes, more precisely, the responsibility for policy-making and regulation in the areas of social welfare, family affairs, social services provided in municipalities, refugees and immigrants, gender equality, employment and disability affairs. In the health sector, the MoW is responsible for the development and implementation of overall policy, including public health policy and the supervision of health-care services. This includes public health, patient rights, operation of hospitals, health centres and other health service providers, pharmaceutical affairs and health insurance. Administrative responsibility within the MoW lies with the Permanent Secretary of Welfare – the most senior civil servant who reports directly to the minister.

The MoW is organized into three policy departments and two mainstream technical support services departments. The policy departments are the Department of Welfare Services, the Department of Quality and Prevention and the Department of Social and Labour Market Affairs. Health policy, administration and regulation of health-care services fall within the Department of Welfare Services and since the merger a more integrated approach to health and social services has been applied.

The five main agencies in health care – the DH, IMA, IRSA, IMPRC and IHI – operate under the authority of the MoW, which co-ordinates their roles and activities. However, these agencies and their directors report directly only to the Minister of Health.

The DH is the administrative successor of the historical 'national physician' function that later became a Directorate of Public Health, responsible for implementing and coordinating public health policies and for the services provided by district doctors and midwives in the early days of organized health care in Iceland. The DH is headed by the Medical Director of Health who is appointed by the minister for a period of five years and reports directly to the minister. This role corresponds to the Chief Medical Officer in the UK in that the Director serves as adviser to the minister and to the Government on everything concerning health. Moreover, the Medical Director of Health supervises the activities and the working facilities of health professionals, collects statistical reports and is in charge of publishing the country's health statistics in cooperation with the MoW. The DH deals with complaints arising from relations between the general public and the health services.

In accordance with new legislation that came into force in May 2011 (Act No. 28/2011), the Public Health Institute (PHI) was incorporated into the DH (see Chapter 6). The role of the PHI, as stipulated at its inception, was to promote and coordinate work on public health, carry out public education on health and health improvement, and to support the work of agencies and voluntary organizations to promote public health. Four expert councils functioned within it: Alcohol and Drug Abuse Prevention Council, Nutrition Council, Accident Prevention Council and Tobacco Control Council. After the merger all these functions and responsibilities were absorbed by the DH, and today the latter's main functions include: to advise the Minister of Health and other government bodies, health professionals and the public on matters concerning health, disease prevention and health promotion; sponsor and organize public health initiatives; promote improvements in health-care quality; inspect health-care services and monitor health-care workers; monitor prescription medicines and promote their rational use; collect and process data on health and health-care services and promote research; handle complaints from health-care users; and issue licences to practise to certified health-care professionals and ensure that their education meets requirements (see section 2.8.2).

In addition to these functions, one of the DH's main roles is control of communicable diseases (Health Security and Communicable Diseases Act, No. 19/1997). The Chief Epidemiologist for Iceland, appointed by the Medical Director of Health and operating within the DH, is responsible for health security and public measures against communicable diseases and other threats to health. Other principal responsibilities are to organize and coordinate communicable disease control and prevention and immunizations throughout the country, e.g. by publishing guidelines on how epidemics should be handled, maintain a register of communicable diseases in order to monitor their spread (through collecting diagnostic data from laboratories, hospitals and physicians), keeping a register of human use of antimicrobial drugs that may cause resistance to those drugs, disseminating information on the spread of communicable diseases, within Iceland and abroad, to physicians and other health workers, providing advice to physicians and others on communicable disease control, and supervising communicable disease prevention (e.g. through information and education).

The Minister of Health appoints a committee of seven, the National Committee on Communicable Diseases (NCCD), for a period of four years at a time. The committee includes specialists in the fields of communicable diseases, bacteriology, virology, sexually transmitted diseases and epidemiology/hygiene, and a community health physician and a nurse with specialist knowledge in

infectious disease control. When dealing with matters within the scope of the Environmental Agency, the Radiation Agency or the Agriculture Authority, representatives of these bodies attend the meetings of the NCCD, with a right to speak and to propose motions. In line with its legislative remit, the NCCD creates policy on measures against communicable diseases and advises health authorities on measures to prevent their spread (Act No. 19/1997).

The IHI Agency is a commissioning or purchasing agency established in September 2008. It had previously been part of a larger Social Security Institute (SSI) but since the separation of the two agencies, the SSI is responsible for the administration of cash benefits, such as old age and disability pensions, while the IHI is responsible for benefits in kind. The IHI's role is to negotiate, purchase and pay for health-care services from public as well as independent health-care providers and thus establish a contractual relationship with such providers. The IHI's director is appointed by the minister and the minister also appoints five members of the IHI's board, which has the remit to follow up on the minister's policy priorities regarding commissioning of health-care services, advise on long-term policy and to oversee policy implementation and the general operation of the agency.

Important policy goals in the IHI's contracting function are to (a) improve the effectiveness of service delivery through a more explicit and transparent specification of the type, quantity and quality of services provided, and (b) to improve cost-efficiency through a process of comprehensive and systematic activity-based cost analyses as a foundation for activity-based financing of health-care services. In this respect, the IHI was designed as a government tool to achieve these policy goals. It negotiates agreements with health-care professionals, such as medical specialists and paramedical personnel, and hospitals, clinics, rehabilitation centres and research laboratories for reimbursement mostly on a fee-for-service basis. In addition, IHI negotiates agreements with hospitals in other countries to provide services for insured individuals who are unable to receive suitable care or treatment in Iceland. It manages the health-care cost-sharing system and reimburses patients for health-care services.

The Icelandic Medicine Pricing and Reimbursement Committee (IMPRC) is a government body that consists of five members, the Chairman, appointed by the Minister of Health and one member each from the DH, IHI and IMA. The fifth member is appointed by the Ministry of Finance. The IMPRC makes decisions on reimbursements (including cost-sharing), wholesale pricing, joint applications, reimbursement and price, and retail pharmacy mark-up. When

making general decisions regarding wholesale and retail pricing, representatives from the respective companies or organizations also participate. The IMPRC's decisions cannot be altered by the minister and any disputes have to be taken up in a court of law. The IMPRC is required to keep track of the manufacturing and import costs of drugs and sets maximum prices accordingly. The IMPRC is also responsible for the Icelandic drug price catalogue, published every month, and which includes information on the maximum wholesale price, the wholesale discount price, reference price and maximum retail price (IMPRC web site).

The Icelandic Medicines Agency (IMA) is responsible for assessing the quality and safety of medicinal products, inspection to confirm that regulatory requirements are fulfilled, providing information to health professionals and the public and ensuring consumer protection. It makes decisions on the registration and deregistration of pharmaceuticals. The five-member Medicinal Products Committee (MPC) is an IMA advisory committee on issues concerning medicinal products. The minister appoints the director of the IMA, its chair and other members of the MPC in consultation with the chair. The IMA levies an annual inspection fee on the parties subject to its regular inspection, which covers the agency's inspection costs.

The Icelandic Radiation Safety Authority (IRSA) is an institute under the auspices of the MoW. The institute's role is to undertake safety measures against radiation from radioactive substances and radiological equipment. The minister appoints the director of IRSA for a term of five years at a time. The minister also appoints the Radiation Protection Council, which is a professional advisory body for the IRSA. The council consists of three people with expertise in the institute's field of work.

One or two health-care organizations (HCOs) operate in each of the seven health-care regions and coordinate the planning and provision of services locally. These organizations have limited administrative roles at regional and local level as a result of a process of deconcentration in which planning and coordinating authority has been transferred from central to local levels (see section 2.4). In the Capital Region, this planning and coordinating authority has been transferred to the Centre for Primary Health Care of the Capital Area (CPHCCA) and the National University Hospital, Landspitali, the country's main hospital, and the only one in the Capital Region (see section 5.4). CPHCCA was formed after the minister decided to create a strategic administrative umbrella for all public PCCs in the Capital Region in 2005 including a central administration for some services (e.g. home nursing) (see section 6.1). Prior to

that decision, fifteen PPCs reported directly to the MoW. The minister appoints the Chief Executives (CEO) of the HCOs, the CPHCCA and Landspitali, who report directly to the minister.

A board of executive directors operates within the HCOs, consisting of the CEO who chairs the board and two chief professional staff, the chief medical doctor and the chief nurse. One or more PPCs operate in each of the regions and in recent years PCCs have merged administratively with the HCOs in the regions (Reg. 785/2007).[7] No gatekeeping of primary care physicians or GPs is in place in Iceland but, as stipulated in the Health Care Act, planning and provision of health services should aim to provide services at the most appropriate level of care and PCCs in general should be the first point of contact for patients.

2.3.2 The role of the private sector

Independent private sector providers have traditionally featured prominently in Icelandic health care. In the last 20 years, as health-care provision has become increasingly more diverse and fragmented, governance of the system and delivery has become ever more challenging. While public health-care provision has been highly regulated, entry to the private services market has been much less regulated. Moreover, medical staff can move across from one sector to the other. As a result, health-care provision has become characterized by a mixed economy of care. In the absence of a GP-led gatekeeping system medical specialists were able to set up private clinics and enter into contract-based fee-for-service payments with the IHI's predecessor, the SSI. This policy development started in the early 1980s and after two unsuccessful attempts at introducing a referral system – in the mid-1980s and in 1995 (Reg. 82/1995) – this trend gained pace in the late 1990s, at the same time as the occurrence of enforced hospital mergers in Reykjavik. This development is confined to the Capital Region since only this area can sustain a big enough market for more specialized medical care and most private practising medical specialists usually also hold clinical part-time posts at Landspitali. The growing size of the independent private sector, including both private-for-profit and private-non-profit charitable or third sector providers, has created powerful interest groups with considerable policy-making influence (Sigurgeirsdóttir, 2006).

[7] And subsequent amendments to this regulation.

2.3.3 The role of professional associations and patients groups

The Health Care Act (Act No. 40/2007) provides professional staff with a formal role in the management of HCOs, PCCs and hospitals. Traditionally, the two most influential professional groups are the medical profession and nurses and these groups have a defined and institutionalized role in the administrative structure of the health-care system. Medical doctors are organized under one professional association, the Icelandic Medical Association, which is an umbrella organization with many regional and sub-specialty divisions. Nurses also are organized under a single professional association, the Icelandic Nurses' Association. The health-care administrative system is often referred to as a two-tiered system in which health-care organizations are managed by these two professional groups, which are administratively independent of each other.[8] Not only have these two professional groups been formally and informally powerful in the management of the health-care system, they have also been the most influential policy actors shaping the system. The nursing profession, whose two unions merged in 1994, has now developed a more cohesive and stronger professional leadership in a period when the medical profession has become more and more diversified in terms of interests and thus less cohesive as an interest group. However, the concentration of academic medicine in Landspitali after the hospital mergers in the 1990s has institutionalized a cohesive policy venue in which professional leadership in medicine has gained a powerful policy-making role (Sigurgeirsdóttir, 2006).

Over the past 20 years the number of patient groups and organizations has been growing. Approximately 70 different patient groups are listed at the DH. Their activities mainly focus on raising awareness about the particular conditions and needs of people suffering from the respective diseases. Patient groups have also been engaged in fundraising to finance new technology with specific relevance for that patient group. Investment in technology as a result of this type of fundraising can sometimes have organizational consequences since it may affect the allocation of financial resources. Some of the bigger patient groups have been well established and organized for years and have developed a level of administrative capacity to enter into a contracting relationship with the authorities and operate extensive service programmes for their members. The Organization of Disabled People in Iceland is a good example. It was

[8] In Iceland, nurses are not a subordinate group of professionals reporting to medical doctors. In 1978, nurses received clinical autonomy, meaning that they only report to a more senior person in their own professional group. See Health Care Act No.57/1978, article 29. In a recent reform in Landspitali, nursing and medical administrator positions were merged into a single clinical administrator (whether a nurse or a physician by training) for each clinical area within the hospital. Also, the current Minister of Health plans to merge administrator positions within the community health centres (primary care centres) in a similar fashion.

founded in 1961 and operates as an umbrella organization for 33 member associations. The Icelandic Association of Tuberculosis and Chest Patients is another big organization, established in 1938 at a time when tuberculosis was a major challenge for health care in Iceland, and SÁÁ – the National Centre for Addiction Medicine – is a more recent organization, established in 1977, which runs hospital and detoxification clinics and various support services for people with alcohol and drug additions (see Chapter 5).

2.4 Decentralization and centralization

The dominant policy trend in Iceland over the past 40 years has been towards increased state centralization of health care. However, this trend is underscored by a more complex picture of moving from decentralization in the 1970s to centralization in 1980s, and back to decentralization in the 1990s, in which the state plays a key role. The process of centralization and decentralization also differs with regard to the functions being transferred (Table 2.1) and which tiers of government have responsibilities in financing, provision and regulation at a given time. The 1970s can be characterized by decentralization of provision to central and local governments along with the private sector, the 1980s by centralization of financing into central government hands, and the 1990s and beyond by state centralization of regulation and further decentralization of provision. Decentralization in the 1990s and beyond saw a change in the balance between the public and private sectors with the trend moving in the direction of private provision but leaving critical policy functions still in the hands of central government.

Table 2.1
Responsibility for policy functions (centralization/decentralization) 1970 and 2013

	Financing		Provision		Regulation	
EEA	–	–	–	–	–	2013
State	1970	2013	1970	2013	1970	2013
Local government	1970	–	1970	–	1970	–
Private	1970	2013	1970	2013	–	–

The enactment of the Health Care Act in 1973 set the stage for the comprehensive provision of public health care for all citizens and the foundation of health-care infrastructure across the country. The idea was to give local people and their representatives a greater say in the shaping and controlling of local health services. As mentioned in section 2.2, the Changes in the Division

of Tasks between the State and Municipalities Act in 1989 made state financing the main source of health-care funding, while the Health Care Act in 1990 gave central government full responsibility for the provision and financing of all health care services and thus, also, a key role in regulation (see also section 2.8).

On one hand, the 1990s and 2000s have seen a process of increased centralization in which executive and policy-making authority in health care has been consolidated in the hands of the Minister of Health, with the result that the power of the state to regulate the health-care system has been increased in most areas. On the other hand, adoption of supra-national directives following membership of the EEA in 1993 has put some restrictions on the state's policy-making authority, and the courts and market principles have entered policy areas in health care that were previously subject to central planning and state regulation. The period between 1970 and 2010 also saw a concentration of authority in the hands of regional health organizations to coordinate public health, primary and secondary care services. A further analysis of these reform trends appears in Chapter 6.

2.5 Planning

The overall planning of health-care services in the country is in the hands of the Minister of Health who provides policy direction. The guiding organizational principle stated in the Health Care Act (Act No. 40/2007) emphasizes that services should be provided at the most appropriate level of care and that the point of entry to the health-care system should be PCCs. Planning takes the form of short-term planning and long-term planning of service provision. Short-term planning is organized and determined by the budgetary process and administered by staff working in the MoW's Department of Economic Analysis and Budget. During the budget planning phase, needs are determined via a simple population model for each region and specific local characteristics, such as demographic changes as a result of migration or seasonal variations due to a concentration of summer houses within a region. Long-term planning takes the form of national health planning, which is overseen by the MoW. A *National Health Plan 2001–2010*, prepared by a committee of politicians, senior civil servants and national experts and approved by parliament, was published in 2001 (MHSS, 2001). The plan is based on *Health21 – Health for all in the 21st Century*, the WHO European Region's Health for All policy framework, adopted at the 51st World Health Assembly in May 1998. Iceland's National Health Plan 2001–2010 fleshed out national health policy objectives in seven

priority areas: alcohol, other drugs and tobacco, children and adolescents, older adults, mental health, cardiovascular disease and stroke, cancer, and accidents. These objectives were evaluated and reconsidered in 2005–2007 (MoW 2011b). In most areas the objectives had either been achieved or were approaching the stated objectives, but in some areas conditions had moved away from stated objectives. A new *Health Plan 2020* has been formulated by the MoW and was presented to Parliament in November 2012; at the time of writing it is still awaiting parliamentary approval (MoW, 2012a).

Since the early 1990s, the organization of hospital services in the country has been under constant review (MHSS 1991, 1993, 1996, 1998). No particular hospital plan has ever been published but in line with the various reviews, developments in this area have mainly focused on incorporating advancements in medical technology, improving national transport and communication networks to enhance access and taking account of demographic changes as a result of urbanization and economic development. In particular, specialized high-tech medical services, whether ambulatory services or hospital services, have become concentrated mostly in Reykjavik and in the northern town of Akureyri (Iceland's second largest urban area). In contrast, minimum-level acute and emergency services are still maintained in smaller district hospitals in the regions. Demand for improvements in the quality of specialized medical care has largely driven the trend towards concentrating such services in the two largest urban centres, particularly the Capital Region, and the process has been facilitated through the allocation of financial resources in the annual budgeting process as well as through hospital mergers. In other areas around the country hospital beds have been transformed into long-term nursing care beds.

According to an independently commissioned government report on human resource planning that estimated the future need in four professions (doctors, nurses, auxiliary nurses and physiotherapists) from 2005 to 2020 (MHSS, 2006), shortages of nurses and auxiliary nurses will be by far the most serious human resource problem facing the health-care system (see Chapter 4 for a fuller discussion of human resources).

In terms of quality assurance, in 2007 a new quality assurance programme was published incorporating existing government policy on health-care quality and the National Health Plan 2001–2010. The quality assurance programme encourages all health-care providers to develop their own quality assurance programmes. In addition, one of the measurable policy objectives of the programme was for a 90% target for health-care recipients being pleased with the care they received (MHSS and DH, 2007). This quality assurance

framework was incorporated into the new Medical Director of Health Act, which was passed in Parliament in 2007 (Act No. 41/2007) (see section 2.8.2 and Chapter 6)

Civil Protection and Emergency Management in Iceland falls under the Ministry of the Interior in accordance with the Civil Protection Act (Act No. 82/2008). This legislation covers coordinated civil protection measures intended to tackle the consequences of emergency situations that may threaten the life and health of the general public, the environment and/or property. Government policy is drawn up by the Civil Protection and Security Council for periods of three years at a time. The council contains representatives from across government ministries and agencies. The health-care system is represented by the Minister of Health, the Permanent Secretary at the MoW, the Medical Director of Health and the Chief Epidemiological Officer from the DH, and the Director of IRSA.

2.6 Intersectorality

Measures and mechanisms on intersectoral or cross-sectoral planning and implementation are provided in the Health Security and Communicable Diseases Act (Act No. 19/1997), Civil Protection Act (Act No. 82/2008), Public Health and Environmental Protection Act (Act No. 7/1998), Food Safety Act (Act No. 93/1995), Tobacco Control Act (Act No. 6/2002.), Medicinal Products Act (Act No. 93/1994) and Toxic Chemicals and Radio-nuclear Substances Act (Act No. 52/1988).

Four government agencies and municipal health inspectorates are key agencies in the intersectoral and cross-sectoral planning and implementation prescribed in the above-mentioned legislation: the Chief Epidemiologist within the DH, the Civil Protection Agency under the National Commissioner of Police, the Icelandic Food and Veterinary Authority (IFVA) and the Environment Agency (EA). The EA, which falls under the Ministry for the Environment, is responsible for the coordination of municipal health inspectorates' operation locally. Municipal health inspectorates supervise the implementation of measures stipulated in the acts on public health and environmental protection, food safety, tobacco control and toxic chemicals and radionuclear substances. The Chief Epidemiologist and health officers of local health inspectorates jointly play a central role in protecting and safeguarding the health of the public. Health officers are required to inform the relevant Chief Physician of a local Health Care Centre, or Chief Epidemiologist immediately if they

become aware of a risk of infection or health threat due to toxic chemicals or radionuclear substances. Similarly, the Chief Physician of a Health Care Centre, or the Chief Epidemiologist is required to inform the relevant health committee or veterinarians and the IFVA, the EA and IRSA, as applicable, as soon as they become aware of a similar risk. The Chief Epidemiologist provides necessary information and advice to the health committees, and supervises the implementation of necessary measures. In the event of a risk situation identified by the Chief Epidemiologist, the minister is responsible for appointing a special collaborative committee to gather all necessary information and supervise the necessary measures for assessment and eradication of the threat.

Finally, Civil Protection and Emergency Management falls under the Ministry of the Interior. The National Commissioner of Police and the Chief Epidemiologist are jointly responsible for planning and implementing the National Contingency Plan in cases of a global influenza epidemic (Civic Protection in Iceland 2008) and the Contingency Plan in cases of emergency (Civic Protection in Iceland 2010).

2.7 Health information management

Health records have been kept for a long time in Iceland and some date back as far as a century or more. Health-care statistics have been published annually since 1896.

2.7.1 Information systems

The DH is responsible for organizing and maintaining national registers on health, diseases, accidents, prescriptions, births, health-care utilization, the performance of the health service, admissions to health-care facilities and user contacts with PCCs and self-employed specialist physicians. The purpose of the registers is to gather information on health and the health service to aid planning and policy formulation, to monitor the health service, to ensure its quality and assess its performance. The registers are also used to steer quality improvements in the health service and in scientific research. The data in these registers is not personally identifiable. Health-care facilities, practitioners and others, public or private, who supply health services are required to provide the DH with the information required to maintain the health registers. Other bodies that are under the aegis of the MoW and which gather data, such as the IMA and IHI, are also required to provide the DH with access to such data.

Data on health services, resources and health status are provided directly by health services providers. For example, deaths and causes of death are recorded and the data goes to the National Registry (NR), the DH and to Statistics Iceland (STATICE). All health databases are collected and organized in line with European and international standards. By law, all health-care facilities, self-employed health-care practitioners and others who provide health services are required to maintain a register of unforeseen incidents for the purpose of finding explanations for the incidents and seeking ways of avoiding their recurrence.[9] The DH maintains a constantly updated register of unforeseen incidents and sends the minister an annual summary, findings of investigations and results of cases.

Health statistics are one of the main areas in which official statistics are collected. The purpose is to collect statistics on health and health-related indicators as well as on the activities of health institutions, and to store them and disseminate them nationally and internationally. In the area of long-term care, information systems based on the Residents Assessment Instrument (RAI) methodology or on the RAI minimum data set were developed to monitor the quality of care in nursing homes during the 1990s; and since 2003 such data have served as a basis for funding institutional care, i.e. using Resource Utility Groups (RUGs). Two non-governmental organizations keep records for research and development on the two main categories of diseases in Iceland. The Icelandic Cancer Society (ICS) has been running the Icelandic Cancer Registry, a population-based data bank on cancer since 1955. The Icelandic Heart Association Research Institute (IHARI) keeps a database on the main risk factors in cardiovascular diseases. Its epidemiological research on identifying the main risk factors in cardiovascular diseases has been ongoing for nearly 40 years and has involved more than 30 000 Icelanders (IHARI, 2012 web site).

Electronic health record systems are currently being introduced in Iceland (see section 4.1.4).

On the other hand a considerable limitation in the area of information systems in Iceland has been lack of resources allocated to analysing and utilizing collected data, particularly to inform health policy and programme development and to assess implications (intended or unintended consequences) of policy, via programme or policy evaluation.

[9] An unforeseen incident is defined as an accident, error, negligence or other incident that has harmed or could have harmed a patient.

2.7.2 Health technology assessment

Health technology assessment (HTA) is not, to a large extent, carried out in Iceland. However, to support decisions when introducing new technology and pharmaceuticals into the health system, the Minister of Health will consider HTAs performed in other Nordic countries, especially Denmark and Norway and from the UK's National Institute for Clinical Excellence (NICE).

2.8 Regulation

Since 1970, almost all aspects of the health-care system have been closely regulated. Financing, funding policies and remuneration methods, conditions for service provision, licensing of health-care professionals and coverage are defined by the state (see section 2.2). The following sections describe the current state of seven regulatory functions and areas of governance and briefly account for any major changes in the respective areas since 1990.

2.8.1 Regulation and governance of third-party payers

The dominant feature of the health-care system is that it is a single payer system with an integrated purchaser–provider relationship in which the payer is also the owner of organizations providing health-care services (see section 3.3.4). Since 1990, the health system has become increasingly characterized by a mixed economy of care and service provision, in which the number and scope of private non-profit and private for-profit providers has increased. However, the health-care system is a small and predominantly publicly owned system and thus competition is limited. As described in section 2.3 above, a commissioning and purchasing agency, the IHI, was established in September 2008. The funding of the IHI is one of two main financial streams allocated by the Parliament (see Fig. 3.6). The Minister of Health sets policy for the provision and organization of health-care services in line with the Health Care Act, which states the overall policy objectives of the health-care system. The minister also defines the benefit package in line with the Health Insurance Act, which stipulates the entitlements of the insured. Thus, the IHI's commissioning priorities and responsibilities are right-based, i.e. guided by the rights of the insured to access services and tightly governed by the authorities.

2.8.2 Regulation and governance of providers

Three ministries share responsibilities for the governance of providers in the health system. Although the responsibility for all aspects of health care in the country falls within the jurisdiction of the MoW, the minister shares responsibility regarding finance and budgeting of health care with the Minister of Finance and responsibility for the provision of health care to prisoners with the Minister of the Interior.

In terms of financial probity, information about the financial standing of each state-owned provider is supplied by the organizations themselves and each director monitors the performance of their organization closely. The MoW is required to monitor each provider and only intervenes if its annual expenses are more than 4% in excess of the annual plan. However, this ceiling is only a guideline and does not mean that agencies can operate above their approved budget. It is also the duty of the MoW to investigate the reasons for any budget overruns by requesting and evaluating information from the director. In the event that directors are negligent or if attempts by the MoW to control the situation are not successful, interventions can range from issuing a formal warning to relieving a director of his or her duties, either temporarily or permanently. Although allocated budgets are 'soft' in the sense that they are not legally binding and do not incur specific sanctions if targets are not achieved, persistent failure to maintain expenditures within allocated budgets may result in the replacement of directors.

Under the Minister of Health's remit to formulate health policy, including the organization of health services, he or she has the power to merge health-care facilities within a health region (after consultation with the relevant local authorities and the Association of Local Authorities). Health-care services are by and large provided at three levels of care: primary health in PCCs, secondary health care in general hospitals and nursing homes, and specialized tertiary care provided at the Landspitali in Reykjavik, the hospital in Akureyri and in other specialized health and medical care organizations and clinics. Whether provided by public or private providers, health care at all levels is subject to the Minister's regulation enforced either by the MoW, or its agencies entrusted with regulatory responsibilities, with the DH being the most powerful of these (see Fig. 2.1). All health service providers require accreditation by the DH in order to operate and provide care. In the case of registering new day-care centres or institutions for the elderly the accreditation process includes documentation on financing, the financial status of the owners, the proposed facility's operating

budget, its board of directors, staff, operational arrangements and the number of residents that it will serve. The DH also sets quality and safety standards, and issues clinical guidelines.

Licensing of all health professional groups and registering of health specialists is the responsibility of the DH. EU Directive 2005/36/EC on the mutual recognition of professional qualifications in other EEA states was ratified by the Icelandic authorities in 2011. Access to health-care education is regulated by the respective departments at the University of Iceland by the limited number of intakes of new students and by use of *numerus clausus*. Chapter 4 gives more detail on the training of health professionals.

The DH has the central role in regulating the activities of health professionals. Minimum professional standards apply to the operation of health services in individual fields. Should the DH become aware that a health-care practitioner has neglected professional duties, exceeded professional boundaries, or violated the provisions of health-care legislation, it can take appropriate action such as imposing a directive to rectify the situation or reprimand the practitioner. In the event of non-compliance the DH can revoke a licence to practise, temporarily or permanently (Act No. 41/2007).

For most health professionals and health service providers – other than privately practising medical specialists, dentists, diagnostic research services and pharmacies – access to the health-care market in Iceland is relatively closed due to state regulation. More specifically, the health market outside hospitals is unregulated in the sense that as long as medical specialists have completed their training and received their professional licence from the DH, they are able to open their own private clinic, enter into a contract with the IHI and start treating patients. In contrast, the activities of GPs and hospital doctors are heavily regulated by the state through the way that the MoW determines the number of acute care hospital beds and the number and location of PCCs. After joining the EEA in 1993, the 1990s saw market mechanisms and the courts enter some policy areas in health care that previously had been regulated by the state. Diagnostic and research centres and pharmaceutical retailing in Iceland are now largely regulated by market mechanisms and competition.

Quality monitoring is also supervised by the DH. Its national quality development plan for the health service aims to enhance the quality and safety of health services. Health-care facilities and health-care practitioners also develop their own quality management systems, on a voluntary basis, in line with the national quality development plan (see section 2.5). The DH assesses quality and performance within the health service with respect to quality indicators

laid down by the minister in Regulations and comparable findings are published in health reports. RAI quality indicators are used under the supervision of the DH to monitor and manage quality of care in nursing homes (see Chapter 5).

2.8.3 Regulation and governance of pharmaceuticals

Five bodies regulate the pharmaceutical sector. The MoW issues ministerial regulations to guide government policy and implementation of statutory instruments, the IMA is responsible for licensing, authorization and inspection, the IMPRC regulates prices and reimbursement of medicines, the DH is responsible for monitoring physician prescription behaviour and the IHI is responsible for the enforcement of measures to ensure cost-effective use and purchase of pharmaceutical drugs.

Medicinal products are authorized by IMA and the European Medicines Agency (EMA). Then they are submitted to the IMPRC for pricing and reimbursement procedures. The IMPRC uses three cost–effectiveness criteria to determine whether a medicinal product will be reimbursed: (1) value-best pricing; (2) relevance to clinical efficacy; and (3) budget impact. Retail pharmacies and hospitals dispense medicines to outpatients. The pricing of over-the-counter (OTC) medicines is not regulated.

Apart from licensing and market authorization (which includes some quality assessment activities such as monitoring production, distribution, sale and promotion of pharmaceuticals), IMA is responsible for assessing the quality and safety of all medicinal products, whether manufactured in the country or imported, and for inspections to confirm that regulatory requirements are fulfilled (e.g. rules on advertising). The IMA is also responsible for consumer protection and operates as a source of information for health professionals and the public. In its legislative enforcement, IMA applies and follows all the rules of quality assurance presented as good manufacturing practice (GMP), good distribution practice (GDP), good pharmacy practice (GPP), good clinical practice (GCLP) and good pharmacovigilance practice (GVP) (IMA, 2012).

IMA issues licences to sell pharmaceutical drugs exclusively to pharmacists, who are the only health professionals authorised to sell medicinal products. Anyone else who wants to establish a pharmacy must meet the following conditions: (1) he or she must employ a pharmacist licensed to practise in Iceland, in accordance with the Health Care Practitioners Act (No. 34/2012) and (2) the pharmacist must have worked as a pharmacist for three years. The IMA consults with the local authority regarding applications to set up a new

pharmacy. Decisions take into account, among other things, the number of inhabitants to be served by the pharmacy and its distance from other pharmacies (Act No. 93/1994).

Rules on sale of medicinal products by mail order apply to holders of pharmacy licenses (Reg. No. 1065/2008). In 2011 Iceland signed the Council of Europe Medicrime Convention on the counterfeiting of medical products and similar crimes involving threats to public health.[10] Advertising and promotion of prescription drugs is allowed in Iceland but only in specialized journals read by health professionals who are licensed to prescribe pharmaceutical drugs, i.e. journals for medical doctors and those who sell medicinal products. Advertising of OTC drugs is allowed only in newspapers and magazines, not on television.

Generic substitution has been enforced in Iceland since 1995. There are financial incentives for generic substitution as the patient generally has to pay more if a more expensive originator is prescribed.

The IHI administrates MoW's cost-sharing policies in pharmaceutical drugs and implements policies to improve the cost-effective use and purchase of pharmaceuticals. Medicines are provided free of charge in hospitals and in outpatient settings under IHI coverage. In 2009, the funding of high-cost medicines (S-medicines) prescribed inside hospitals was transferred to the IHI. The Pharmaceutical and Therapeutic Committee (PTC), based at Landspitali, assesses new and expensive hospital drugs for inpatient and outpatient care that will be covered by the IHI, and part of its assessment is based on their budgetary impact. Another committee – a special working group composed of the CEOs of Landspitali and two other major hospitals – assesses health outcomes and also take account of assessments from the United Kingdom and other Nordic countries, especially Norway and Denmark. The result of this process is that positive and negative lists have emerged.

The IMPRC regulates prices and reimbursement for all prescription drugs (POM) and hospital drugs. The IMPRC sets a maximum POM wholesale and retail price. Discounts can be given on the retail price but not on the wholesale price. A reference pricing system has been in force since 1993. POM prices are comparable to prices in Denmark, Finland, Norway and Sweden. Hospital prices are comparable to the lowest price in four comparable counties. The IMPRC uses two different reference pricing approaches. Firstly, an external price referencing criteria is applied in which the price of general drugs is calculated and based on a Nordic average price; however, the price of S-medicines is

[10] Ministry of Welfare, June 2012, personal communication.

calculated on the basis of the lowest price in Nordic countries. Secondly, an internal price referencing is used in which the price of the cheapest generic drug containing the same active substance sets the level.

2.8.4 Regulation of medical devices and aids

The purchase and procurement of medical devices and aids is planned and administered by individual hospitals and health-care organizations, ensuring that prices do not exceed the annual budget. Major investment in medical devices needs to be approved by the MoW and/or Parliament and budgeted for in advance; they are also subject to tender in line with the Public Procurement Act (Act No. 84/2007) and rules set out by the State Trading Centre (STC). The IMA is responsible for monitoring the safety of medical devices put on the market in line with Medical Devices Act (No. 16/2001), and their proper maintenance and use.

2.8.5 Regulation of capital investment

The MoW determines the density of PCCs, acute hospitals and long-term care beds. The number of health-care regions, the distribution of health-care organizations within them and the number, type and location of hospitals is stipulated in the Health Care Act. Moreover, any major capital investment in maintenance is subject to the minister's decision. Building of hospitals, PCCs, residential and nursing homes and any other facilities planned to provide health-care services require MoW approval and thus become subject to a formal consultation and approval process. The DH provides the MoW with a professional needs assessment on any request to establish new health-care services or any major capital investment in health care. The DH keeps a register (Register of Admissions to Health Care Facilities) on which to base strategic decisions regarding the number and distribution of nursing beds and residential care homes. In the case of day-care centres or institutions for the elderly (which need a building licence as well as an operating licence from the MoW) a report and a needs analysis are required from the service council for the elderly in the area in which the institution will be located.

2.9 Patient empowerment

2.9.1 Patient information

In general, given the existence of a universal health system and access to whatever care is needed, there is good knowledge among the population on what services are available. Concerns are mainly about how different cost-sharing and reimbursement policies apply to different health and medical care services. However, a study published in 2001 showed that insufficient knowledge about providers and services was one reason for postponement and cancellation of necessary care and also one reason why patients often use resources/providers inefficiently, e.g. underuse community health centres (Vilhjálmsson et al., 2001). Another study (Þórarinsson et al., 2000) suggests that health-care services are integrated into the social network of people with higher education in that this group is more likely to be in personal contact with nurses and doctors and thus receive advice concerning health and treatments. However, all the participants in the study were generally satisfied with the Icelandic health-care system and seemed to have good access to it. In any event, information directed to the public on entitlement to health and medical care services, coverage, information about cost-sharing and reimbursement policies and eligibility procedures are provided on the IHI website.

While the DH keeps a register of medical misconduct and medical errors, these data are not systematically published; however, incidences of medical error or medical misconduct often enter the media either via coverage of a particular court case or as a result of freedom of information applications (Act No. 50/1996). The Health Records Act (Act No. 55, 2009) requires that all information necessary to the patient's treatment be systematically entered into a patient's health record. Patients have the right to access their own health records in whole or in part and to be given copies on request. Where health data has been acquired from a source other than the patient himself/herself or from health-care practitioners, the consent of the information source needs to be elicited before the record is shown to the patient. If consent is withheld on unreasonable grounds, the patient may appeal to the DH to decide if access may be granted.

2.9.2 Patient choice

In Iceland, a patient's right to choose their own medical doctor has been a central issue in public debate, especially whenever the possible introduction of a GP referral system re-enters the political agenda (Sigurgeirsdóttir, 2006).

Formally, this right is currently enjoyed by all Icelandic residents, who can seek treatment from any practitioner, health-care centre or other facility in the country that is most convenient to them. Having said this, the ability to choose health-care providers outside the Capital Region is restricted due to the limited numbers of providers in other areas. In the Capital Region the number of health and medical outpatient services, public and private, offers patients ample choice. Patients have unrestricted access to medical specialists outside hospitals and can choose their own GP irrespective of where they live in the Capital Region. Nevertheless, patient choice is restricted by shortages of GPs (see section 5.3) and waiting times for various types of elective surgery (see section 5.4); moreover, for people with little disposable income, visits to a specialized practitioner (MD, psychologist or even physiotherapist) may be restricted. In practice, the ability to choose inpatient care, such as hospital and nursing home services, is restricted due to the limited number of hospitals and nursing homes in each health-care region. The Capital Region, however, offers a choice of nursing homes and residential care homes for the elderly. In addition, under the Patients' Rights Act (Act No. 74/1997) patients have the right to seek the opinion of another physician regarding their diagnosis, treatment, condition and prognosis. The same applies to other health-care practitioners.

2.9.3 Patient rights

The WHO patient rights framework (outlined in the WHO Declaration of Patients' Rights in Europe) was transferred into law in Iceland in 1997. The objective of the Patients' Rights Act is to ensure specific rights for patients in accordance with general human rights and human dignity, and thus to strengthen patients' legal status vis-à-vis the health service and to support the confidential relationship between patients and health-care practitioners. Under this legislation, it is prohibited to discriminate against patients on grounds of gender, religion, beliefs, nationality, race, skin colour, financial status, family relationship or status. The act includes special rules on sick children. The Patients' Rights Act also accords patients the right to the best health service available for their condition. Moreover, patients have the right to continuity of service and cooperation between all health-care practitioners and institutions involved in their treatment. The MoW is responsible for ensuring that information on patients' rights, patients' associations and health insurance is accessible to patients; it is made available at health-care facilities and at the premises of self-employed health-care practitioners.

In terms of physical access to health facilities, Iceland's building and planning regulations – Building Act (Act No. 160/2010) and Regulation on Planning (No. 400/1998) – stipulate that access to public places must be ensured for everyone, including children, the elderly and disabled people. In practice these provisions mean that people with a disease, disability or physical impairment should not be discriminated against when it comes to physical access to public buildings.

2.9.4 Complaints procedures (mediation, claims)

The Patients' Rights Act accords patients the right to comment on the services provided to them and to make a complaint. Comments regarding the service of a health facility should be directed to the management of the institution concerned. Should a patient wish to make a complaint about treatment, he/she may direct the complaint to the DH (Act No. 41/2007). Complaints should be in writing and written replies should be received as soon as possible. The patient can appeal the DH's response to the minister but only on the basis of the handling of the complaint not the content of the response. Patients can also directly lodge a complaint with the Parliamentary Ombudsman who will refer the case to the formal procedures under the DH. Staff of health institutions must provide guidance to a patient, or a relative, who wishes to put forward comments or make a complaint. Furthermore, the management of a health institution is obliged to investigate notifications from staff who believe that the rights of patients are being infringed.

Patients who suffer physical or mental damage in connection with examination or medical treatment in a hospital, health-care centre or other health institution, during medical transport or in the care of a self-employed health service worker are entitled to compensation (Act No. 11/2000 on Patient Insurance). More recently (May 2014) in the sphere of medical misconduct or malpractice, the state prosecutor brought charges against Landspitali hospital and one of its health-care professionals in intensive care for an incident that took place in 2012, which has been defined as involuntary manslaughter. This is the first time an incident in a health-care setting has been brought into the realm of the criminal justice system and its repercussions will be closely monitored.

3. Financing

The health-care system has two main sources of financing. The first and main source is general taxes levied by the central government and the second source of revenue comes from OOP payments. The health-care system is small and predominantly publicly owned. Its dominant feature is the integrated purchaser–provider relationship in which the payer is also the owner of most organizations providing health-care services. In 2012 total health expenditure amounted to 8.9% of GDP while per capita spending (in US$ PPP) is roughly equal to the European Union average. Public sources made up 80.4% of total health-care spending, with private spending, mostly in the form of OOP payments (18.2%), accounting for 19.6%.

National health insurance with universal coverage is a fundamental part of the social security system. Entitlement is based on residence in the country and the system automatically covers everyone who has been legally residing in Iceland for six months, regardless of nationality. Everyone covered by Icelandic Health Insurance (IHI) receives all the health-care services that they require irrespective of how much they contribute to the system. The standard benefit package has remained relatively unchanged for a long time. The IHI pays part or all of the costs of health care for the insured, with co-payments applying to primary care visits, outpatient care and pharmaceuticals. Inpatient care is free of charge and so are all tests and medications required during hospitalization. Co-payment levels vary according to user groups and type of health-care service provided.

All hospitals and primary care centres in the public system are financed via global budgets. Private ambulatory care professionals, such as medical specialists, and those working in dental care, physiotherapy, occupational therapy and speech therapy, are reimbursed on a fee-for-service basis through

the IHI. Doctors working in public hospitals and in general practices receive salaries from the state (with some fee-for-service payments to GPs for out-of-hours work) as do other professionals working in public facilities.

3.1 Health expenditure

The health-care system is mainly financed through general taxation and partly by user charges. As in other western European countries, health expenditure has been growing in Iceland as a result of a growing economy, rising public expectations, advances in medical technology and ageing of the population. Moreover, while forecasts have estimated that the proportion of older people in Iceland will double over the next 50 years, the population is relatively young in comparison to other industrialized countries (mainly due to the relatively high birth rate) (Hall & Jóhannsdóttir, 2003). A recently revised projection for the years 2012–2061 highlights that the age structure of the population will change and the number of inhabitants aged 65 years and over will increase proportionally more than the working age population, while the number of young people will decrease (Statistics Iceland, 2012a).

Total health expenditure has seesawed in the last few years and estimates vary slightly depending on the data source. Using national data, in 2012 it amounted to approximately ISK 110.4 billion (EUR 696 million)[11] representing 8.9% of GDP for that year, a decrease since 2009 (Table 3.1). In 2011, following the severe economic downturn that occurred in the wake of the global financial crisis in 2008 and the collapse of Iceland's three biggest banks, total health expenditure on health was still 9% of GDP, slightly below the OECD average of 9.3% (OECD, 2013b) and lower than the EU-15 average of 10.4% for that year (Fig. 3.1). Fig. 3.2 shows how Iceland's health expenditure as a share of GDP compares to other Nordic countries and the United Kingdom. As can be seen, Iceland, along with Norway and Denmark, was among the top three spenders of this group until 2008, after which health expenditure as a share of GDP dipped below that of the other countries.

The total health expenditure-to-GDP ratio for Iceland was highest in 2003 (10.4%), having exceeded the 10% barrier in 2002–2003, when economic growth was slow (Statistics Iceland, 2011c). However, GDP growth in real terms increased significantly, by roughly 25%, from 2004 to 2007 (Statistics Iceland, 2011c) but has fallen considerably since then: -1.2% in 2007–2008 and -6.9%

[11] The exchange rate EUR 158.58 (31 July 2013) is used throughout this review.

Table 3.1
Trends in health expenditure in Iceland, 1995 to latest available year (2012)

Expenditure	1995	2000	2005	2009	2010	2011	2012
Total expenditure on health (1995 prices) in million ISK	37 856	51 829	69 671	98 077	102 178	104 753	110 536
Total health expenditure in US$ PPP per capita (1995 prices)	1 935.42	2 376.81	2 439.56	2 093.45	1 771.38	1 731.42	1 749.54
Total health expenditure as % of GDP	8.30	9.50	9.40	9.60	9.30	9.00	8.90
Mean annual real growth rate in total health expenditure[a]	3.60	15.50	4.50	2.40	-4.10	-3.40	-5.20
Mean annual real growth rate in GDP[b]	0.10	4.30	7.20	-6.60	-4.10	2.90	1.60
Public expenditure on health as % of total expenditure on health	82.60	81.05	81.36	81.98	80.41	80.38	80.35
Private expenditure on health as % of total expenditure on health	17.40	18.95	18.64	18.02	19.59	19.62	19.65
Government health spending as % of total government spending	15.40	20.00	19.83	16.51	15.43	16.40	16.46
Government health spending as % of GDP	6.89	7.70	7.68	7.91	7.46	7.26	7.17
OOP payments as % of total expenditure on health	17.40	18.95	18.64	16.62	18.19	18.24	n/a
OOP payments as % of private expenditure on health	100.00	100.00	92.54	92.25	92.92	92.93	n/a
Non-profit institutions serving households as % of private expenditure on health	0.00	0.00	7.46	7.75	7.08	7.07	n/a

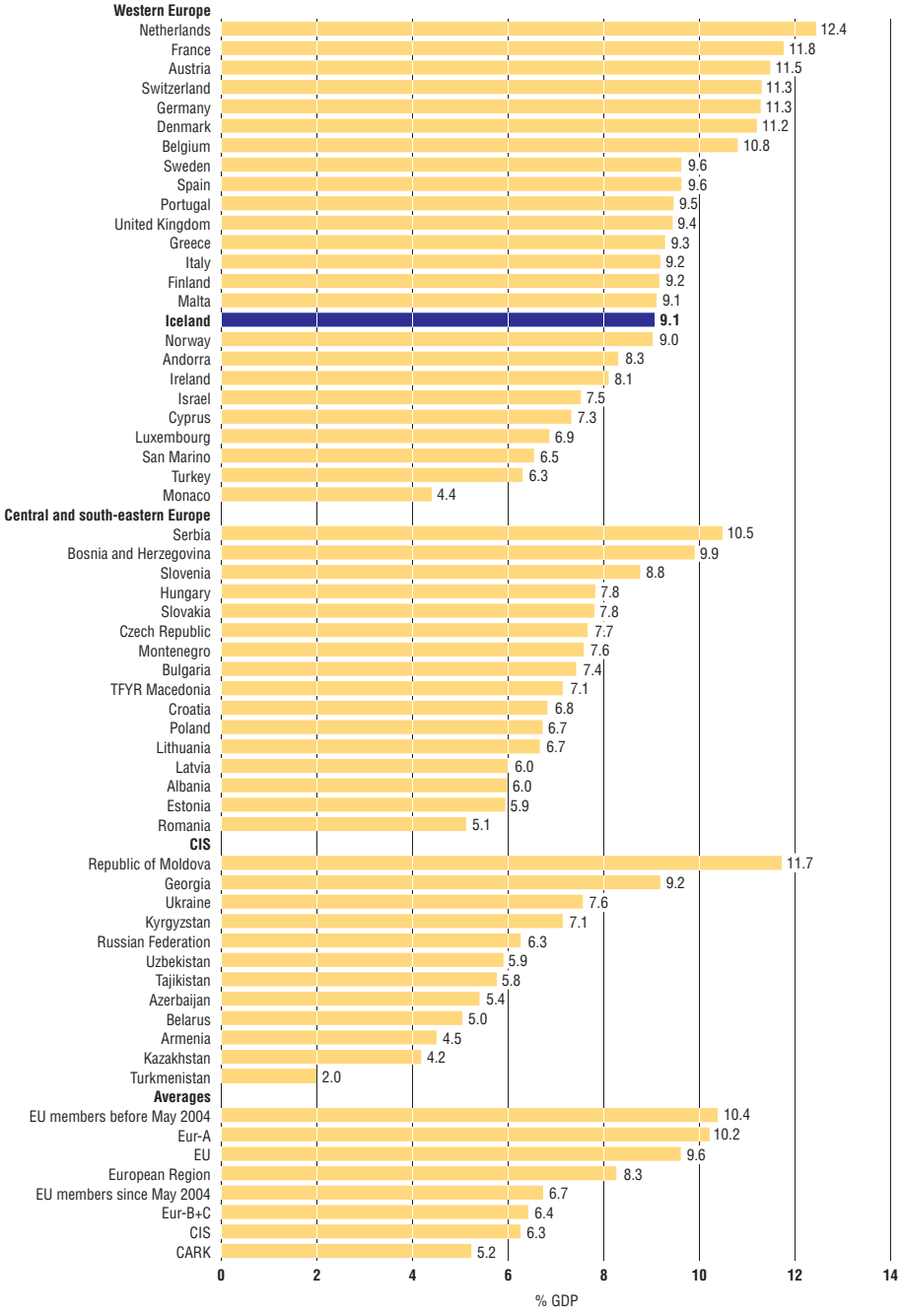
Source: Statistics Iceland, 2013.
Notes: [a]Mean annual growth rate from previous 5 years, GDP at 1995 prices; [b]Mean annual real growth rate from previous 5 years; n/a: Data not available.

in 2008–2009 (OECD, 2011b). In comparison, the OECD average for these two time periods was 0.3% and -4.6%, respectively. In addition, the public share of total health expenditure in Iceland fell by -0.8% in 2007–2008 and by -2.1% in 2008–2009. This decrease illustrates the impact of economic contractions resulting from the financial crisis in 2008. As highlighted in section 1.2, the public deficit in 2010 had fallen to -10.1% of GDP (Table 1.2).

While total expenditure on health almost tripled in size between 1995 and 2012, total health expenditure per capita (calculated in US$ PPP at 1995 prices) has decreased since 2008 (with a slight increase in 2012) (Table 3.1). In 2012, total health expenditure per capita was 9.6% less than it was in 1995. Historically, per capita health spending (in US$ PPP) in Iceland has been well above the WHO European Region average and roughly equal to the European Union average (Fig. 3.3). In terms of comparisons with other OECD countries, on average, health spending per capita calculated in real terms increased across OECD countries by 3.8% in 2007–2008 and by 3.5% in 2008–2009 but in Iceland per capita spending fell by -0.9% and by -1.4% during the two periods respectively (OECD Health Data, 2011c).

Fig. 3.1

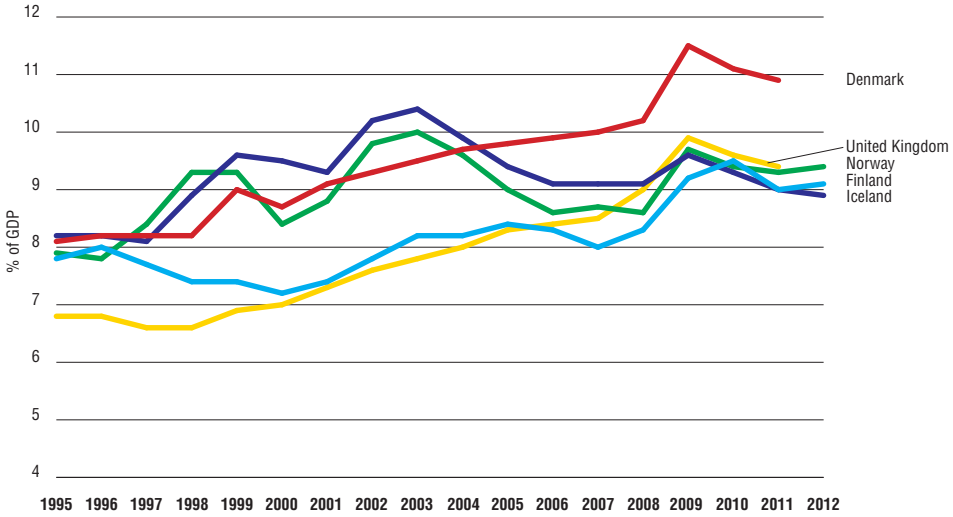
Health expenditure as a share (%) of GDP in the WHO European Region, 2012 or latest available year



Source: WHO Health for All Database, 2014.
Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Fig. 3.2

Trends in health expenditure as a share (%) of GDP in Iceland and selected countries, 1995 to 2012 or latest available year



Source: WHO Health for All, 2014.

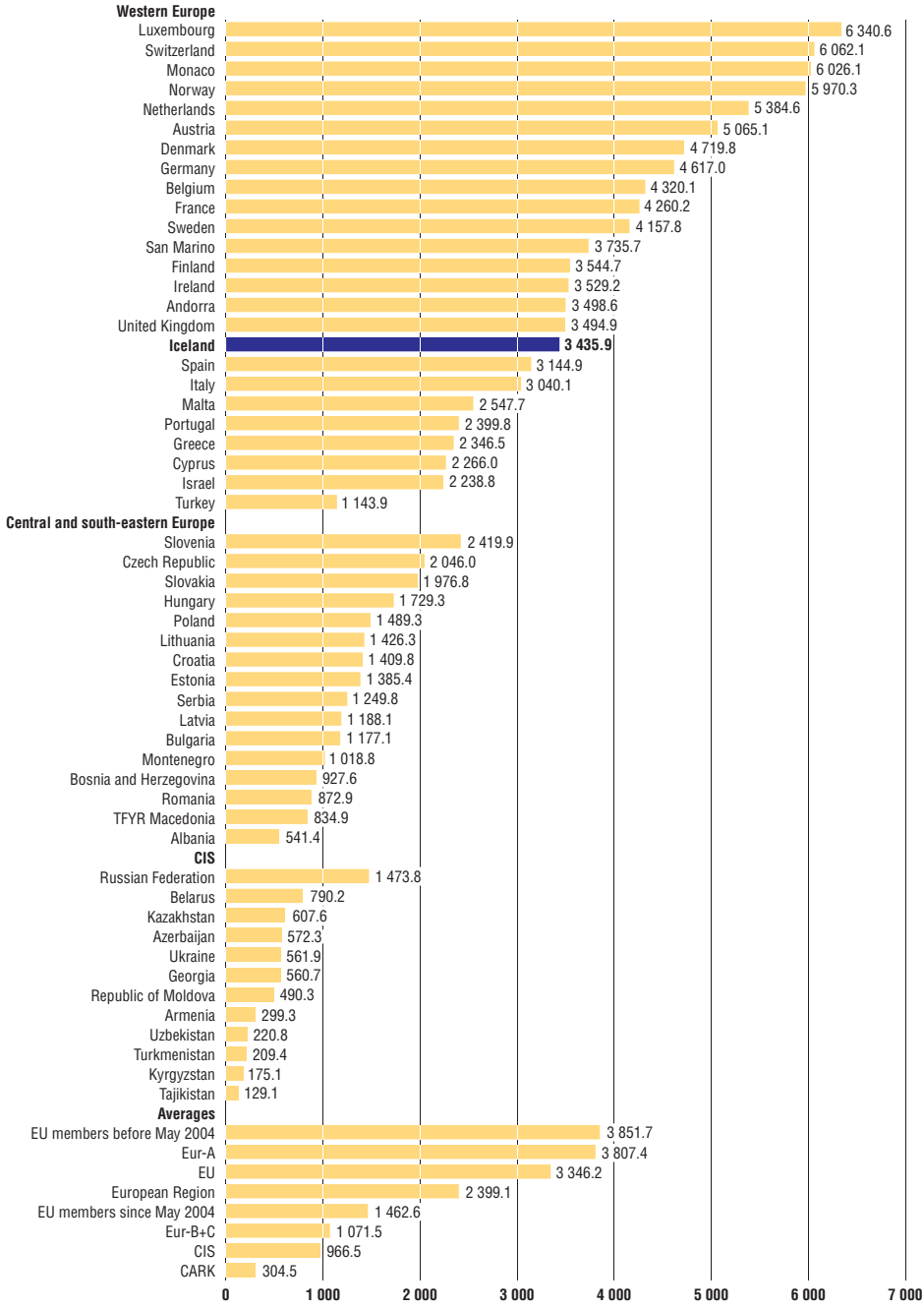
Fig. 3.4 shows how Iceland fares in comparison to other countries in the WHO European Region in terms of health expenditure from public sources as a share of total health expenditure, using 2012 (or latest available year) data. In real terms, public expenditure on health decreased by 4.5% in 2009, 8.3% in 2010 and 1.8% in 2011 (GFA, 2012). For the last 15 years, public expenditure as a proportion of total health expenditure has been around 82% and private spending has been roughly 18%. In 2010 these levels changed to 80.4% for public expenditure and 19.6% for private expenditure on health and have remained at this level since (Table 3.1). Nevertheless, at 80.6 % Iceland scores significantly above the WHO European Region average (69.1%), the EU average of 75.9% (see Fig. 3.4) and the 72.2% average among OEDC countries (OECD, 2013b).[12]

Table 3.2 demonstrates how health expenditure is divided between various service programmes. Inpatient care is the biggest expense for public expenditure and this is also the case for total expenditure on health. There are marked differences between total expenditure and public expenditure on health for

[12] Einarsson (2013) has pointed out that the Icelandic figures underestimate private spending and have lacked consistency in terms of definition/measurement over the years. Another problem is that the OECD figures have not been adequately harmonized in general. They are collected by national authorities and reported by the OECD.

Fig. 3.3

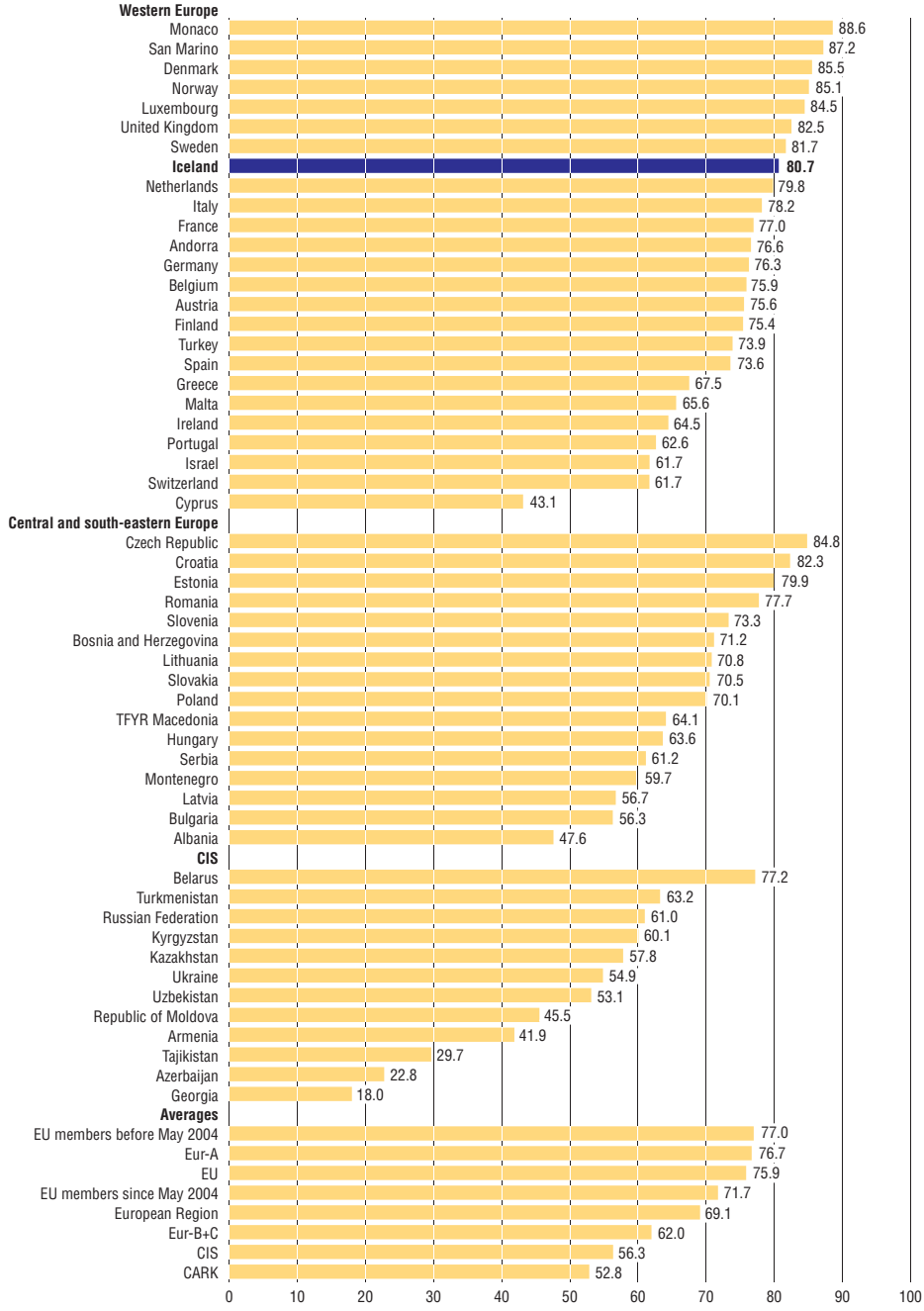
Health Expenditure in US$ PPP per capita in the WHO European Region, 2012 or latest available year



Source: WHO Health For All, 2014.
Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Fig. 3.4

Health expenditure from public sources as a percentage of total health expenditure in the WHO European Region, 2012 or latest available year



Source: WHO Health For All, 2014.
Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

dental services and medical goods dispensed to outpatients (pharmaceuticals and medical aids), highlighting the role that household expenditure plays in these two service programmes. When public health expenditure is examined in relation to service input it becomes apparent how a large proportion of the budget goes towards human resources (paying employees' salaries). Table 3.3 highlights that over the five years for which data are currently available, over 50% of public expenditure on health went to this category.

Table 3.2

Public health expenditure on health by service programme, latest available year (2011)

	% of public expenditure on health	% of total expenditure on health
Health administration and insurance	50.90	53.10
Education and training[a]	0.00	0.00
Health research and development	46.20	44.10
Public health and prevention	2.77	2.64
Medical services:	2.00	1.50
Inpatient care[b]	66.60	47.48[c]
Outpatient/primary care	10.14	12.45
Outpatient/specialist care	5.17	5.54
Outpatient/dental services	1.12	6.19
Ancillary services[d]	3.04	4.83
Home or domiciliary health services	n/a	0.98
Medical goods dispensed to outpatients	10.46	17.75
Mental health	n/a	n/a
Other	3.01	1.16

Source: Statistics Iceland, 2013b.
Notes: [a]Classified with governmental spending on education; [b]Including inpatient care and inpatient long-term care; [c]Including inpatient care, inpatient long-term care and day-care services (3.82%); [d]Including outpatient rehabilitation care, clinical laboratory, diagnostic imaging and patient transport and emergency rescue; n/a: Data not available

Table 3.3

Public expenditure on health by service input (%), 2005–2009

Public expenditure on health (current prices) in million ISK	2005		2006		2007		2008		2009	
	78 807	%	87 431	%	98 160	%	111 688	%	118 328	%
Use of goods and services[a]	32 016	40.63	34 801	39.80	39 028	39.76	47 004	42.09	54 387	45.96
Investments	1 684	2.14	1 757	2.01	2 867	2.92	2 374	2.13	1 611	1.36
Human resources[b]	43 788	55.56	49 483	56.60	54 754	55.78	60 233	53.93	59 903	50.62
Other expenses	1 318	1.67	1 390	1.59	1 511	1.54	2 076	1.86	2 427	2.05

Source: Statistics Iceland, 2011c.
Notes: [a]Medicines and medical devices; [b]Compensation of employees.

3.2 Sources of revenue and financial flows

The health care system has two main sources of financing. The first and the main source of financing is taxes levied by the central government (Table 3.4 and Fig. 3.5) while the second source comes from the private sources, mostly in the form of OOP payments (predominantly user charges). Currently, Voluntary Health Insurance (VHI) plays virtually no role and donor funding exists but is small and not accounted for in public figures (see section 3.6 below).

Table 3.4

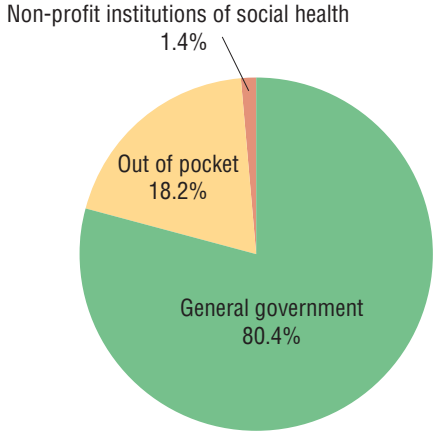
Sources of revenue as a percentage of total expenditure on health, selected years between 1990 and 2011

Source of revenue	% of total expenditure on health					
	1990	1995	2000	2003	2005	2011
Government	85.3	82.6	81.1	81.7	81.4	80.4
Central government	n/a	n/a	n/a	54.1	53.5	50.2
Local government	n/a	n/a	n/a	1.1	0.7	0.6
Social Security Fund (SSF)[a]	n/a	n/a	n/a	26.5	27.2	29.6
Private sources	14.7	17.4	18.9	18.3	18.6	19.6
Out of pocket	14.7	17.4	18.9	18.3	18.6	18.2
Non-profit institutions of social health – other than social insurance	0.0	0.0	0.0	0.0	0.0	1.4

Source: Statistics Iceland, 2013c.
Notes: [a]Including Icelandic Health Insurance and the health care component of the Social Security Institute; n/a: Data not available.

Fig. 3.5

Percentage of total expenditure on health according to source of revenue, 2011



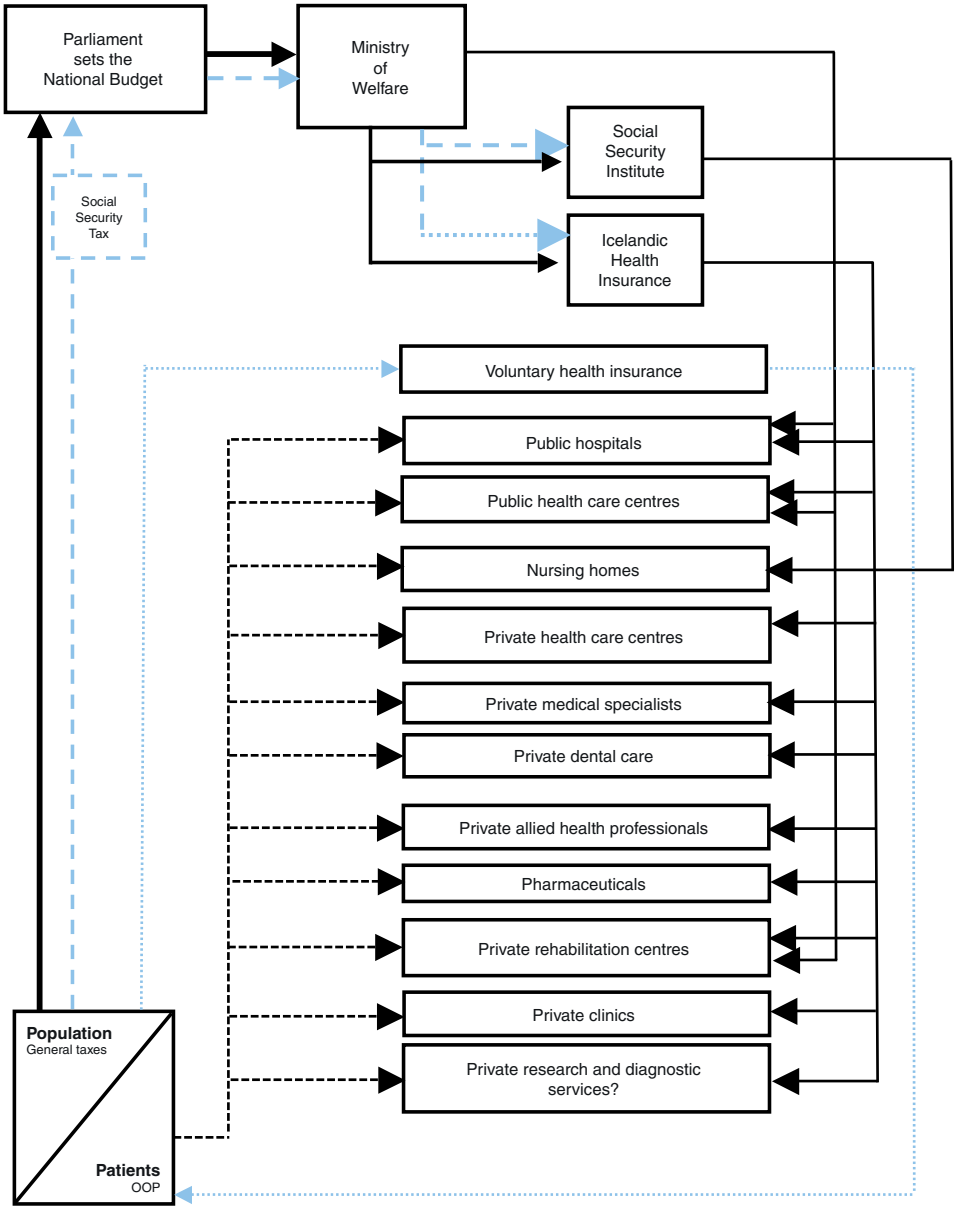
Source: Statistics Iceland, 2013c.

The Health Insurance Act (No. 112/2008) stipulates that the government has a legal responsibility to finance health care. The Internal Revenue Directorate (*Ríkisskattstjóri*) is responsible for levying taxes and the Directorate of Customs (*Tollstjóri*) is in charge of collecting taxes for the National Treasury. Financial resources for health-care services are allocated by the parliament through the national budget bill each year. The allocation of financial resources is channelled through two main funding streams within the government's budget, i.e. through the Ministry of Welfare and through the IHI, which acts as a government commissioning agency that administrates health insurance and occupational injury insurance. The IHI receives its funds to finance health care via the MoW from the national budget (Fig. 3.6). The Social Security Fund (SSF) (see Table 3.4) is merely a collector, i.e. it has no governing role in the system but it collects an ear-marked Social Security Tax levied on the self-employed and employers, who pay social security tax on all paid wages (see Fig. 3.6). This revenue is channelled to the Treasury as the SSF. It is important to note that social security taxes are not contributions such as those made in social insurance-based health systems but a separate part of welfare funding; the Social Security Institute (SSI) receives funds channelled through the SSF to finance the part of public pension benefits that translate into per diem payments if the recipient moves into institutional care. The occupational injury benefits administered by the IHI are also financed by a share of the SSF. Together, these funding sources[13] made up 26.5% of total government expenditure in 2003 and 29.6% in 2011 (Table 3.4). However, although SSF sources of revenue feature as an increasing share of total government expenditure, its actual share in financing the public pension system and financing health care has been decreasing.

The second source of revenue – private spending – is largely made up of OOP payments (user charges) and a very small percentage of contributions from non-profit social health institutions (Table 3.4). It should be noted that VHI does not exist as a mainstream financing source for health care. The revenues identified here as sources channelled through local governments and non-profit social health institutions constitute the share contributed by local governments and various social/health nongovernmental organizations. These organizations have established collaborative arrangements with the MoW on a contractual basis to provide health care and social health care. The Minister of Health is responsible for deciding the level of user-charges for ambulatory services and pharmaceutical products.

[13] The IHI receives the majority of the SSF's funds (roughly 65%) and the SSI receives about 35% (memo from the MoF, December 2013).

Fig. 3.6
Financial flows in the Icelandic health-care system



Private expenditure on health care as a percentage of total health expenditures has increased over the last 30 years from 12.8% in 1980 to 19.6% in 2012 (Statistics Iceland, 2011; Table 3.1). A government report detailing

changes in total health expenditure between 2000 and 2010 calculated that total expenditure on health care increased in real terms by 15%, with government expenditure rising by 14% and private expenditure by 18%. However, when the sub-period from 2008 to 2010 was examined, total health-care expenditure (calculated at constant prices) had decreased by 7%, government spending on health care had decreased by 10% and private spending increased by 4% (Sveinsson, 2011).

The share of local government spending as a proportion of total health expenditure has been less than 1% annually for most of the last 10 years (Table 3.4). Health-care issues are not, in general, the responsibility of local governments; however, part of their social services budget is dedicated to paying for health-related matters, such as ambulance transport, health monitoring, health protection, alcohol and drug-related matters and services for elderly people and disabled individuals (ALA, 2010).

3.3 Overview of the statutory financing system

3.3.1 Coverage

Breadth: who is covered?

The health-care system has universal coverage based on residence in the country. The Health Care Services Act (No. 40/2007) states that all residents should have access to the best health care available while the Health Insurance Act (No. 112/2008) stipulates who is insured, their entitlements and what is covered. The goal of this legislation is to ensure that people are covered by the public health insurance system and to guarantee equal access to health care regardless of age, gender, race or ability to pay.

The health insurance system automatically covers everyone who has been legally residing in Iceland for six months, regardless of nationality.[14] Children and adolescents under the age of 18 are covered by the health insurance scheme with their parents, as are adopted children and foster children. People who have been insured, employed or held residence in another Nordic country or other EEA Member States prior to acquiring legal residency in Iceland, can use their time in those countries to fulfil their six months' qualification period.

[14] This applies unless intergovernmental treaties say otherwise. If there are no intergovernmental treaties, no public health insurance coverage is in place for the first six months of residency. Therefore, medical assistance during this period must be paid in full by the patient. An exemption from this six-month period can be issued by the Minister of Health and the IHI may pay for necessary care in cases of emergency. Each case is treated on an individual basis.

All eligible individuals must take part in the system and it is not possible to voluntarily leave the statutory system ('opting-out'). Everyone covered by the IHI receives all the health-care services they require irrespective of how much they contribute to the system.

Scope: what is covered?

Decisions about which medical goods and services are to be included or excluded from the statuatory benfit package are made by the Minister of Health. Health technology assessment (HTA) is not, to a large extent, carried out in Iceland. However, to support decisions, the Minister of Health will consider HTAs performed in other Nordic countries and by NICE in England. The IHI pays part or all the costs of health care for those who are insured. Below is a general overview, and not an exhausive account, of what is covered. The standard benefit package has remained relatively unchanged for a long time and is fairly extensive. In early 2012, however, some reductions were made, for example, in relation to assisted reproduction services (Reg. 917/2011).

After hospitalization, inpatient care, including medications, in public hospitals is covered in full for as long as necessary. If patients have to seek care at private clinics rather than receive treatment in the public system, in certain cases (e.g. psoriasis patients and cosmetic surgery) expenses may be reimbursed if specified conditions are met. Home nursing falls under the responsibility of the primary care providers and is free of charge to the user. In cases of serious and longstanding diseases or accidents where extensive care is needed, the IHI will subsidize domestic nursing. The cost of transporting patients between hospitals by ambulance is paid for by the hospital. However, the patient bears a fixed cost in the form of a co-payment for travelling to and from hospital.

IHI covers the cost of medical treatment in hospitals abroad if: (1) the medical treatment is urgently required; (2) the treatment is a recognized medical treatment; and (3) the medical treatment is not available in Iceland. Each case is evaluated by a specific committee consisting of a group of experts, including five specialist doctors and one lawyer. Patients who decide to go for treatment at a more expensive hospital are responsible for the costs that are beyond approved treatments.

Medical care provided outside hospitals in primary care settings or with physicians with whom the IHI has a contract is covered by IHI but patients pay different user charges depending on the services they receive (see Table 3.7 and section 3.4.1). IHI also covers all necessary examinations and treatments carried out by specialists and institutions with which the IHI has a valid contract. The

elderly (i.e. anyone aged 67 or over) and recipients of disability pensions in general pay lower fees for medical care as do children. Those who have been unemployed for six months or longer pay the same fee as pensioners.

The IHI reimburses part of the costs of dental care for the elderly, recipients of disability pensions and children. In a new agreement signed in May 2013 it was agreed that dental care for children will be subsidized in stages to be completed in 2018 (Reg. No. 451/2013). For others, the IHI will only cover the cost if the treatment is required due to serious birth defects, diseases or accidents. In some cases, the IHI will also participate in the cost of dental treatment for people with mental health disabilities. Dentists set the prices of dental services themselves but the IHI publishes a pricelist for specific reimbursed services. If the cost of treatment is higher than the published price, the patient has to pay the difference. All costs for general dental care are fully reimbursed according to the published price list for chronically ill and severely disabled children and individuals with intellectual disabilities who are 17 or over. Special treatments such as dental implants, bridges or gold fillings are not covered. Children and adolescents under the age of 21 can apply to the IHI for a fixed stipend for orthodontics.

The IHI also subsidises visits to physical, occupational and speech therapists. Reduced rates are in place for children and adolescents under 18, pensioners with and without supplemented income, and individuals with special discount cards issued by the IHI. Visits to psychologists by children with serious mental, emotional and developmental conditions are also subsidized by the IHI, up to a total of ten visits.

The IHI pays the costs of a midwife for a home birth. If the birth is in hospital and the mother is discharged within 36 hours of the birth, the IHI pays for follow-up visits to the mother's home by a midwife. All insured women are entitled to free maternity care with hospitalization as long as it is deemed necessary, along with all required medical care and medications.

The IHI pays for medical devices that are intended to increase patient safety and ability to function in their environment and are to be returned when no longer needed. The IHI also subsidizes the acquisition of any aid apparatus and motor vehicle made necessary by physical impairment. For patients admitted to hospitals, nursing homes or residential homes, the institutions in question supply the appropriate medical equipment free of charge. The IHI also subsidises the purchase of a hearing aid every four years and of nutrients or any special dietary requirements made necessary by physical impairment.

The IHI shares the cost of medications for insured individuals according to new regulations approved in 2013 (Reg. No. 313/2013). In the new system the individual pays proportionally less the more pharmaceuticals he or she purchases over a 12-month period. The IMPRC decides on prices, which are published regularly in an official price list (IMPRC, 2013). The IHI can decide to increase its cost-sharing of medicines for certain parts of the population and to issue specific medicine cards for that purpose (see sections 3.4 and 5.6).

School health care and preventive health-care consultations for pregnant women and mothers with infants are free of charge. In addition, special clinics at PCCs that offer preventive consultations and information for young people are free of charge.

Depth: how much of the benefit cost is covered?
Cost-sharing by means of user charges in Iceland applies to primary care visits, outpatient care and pharmaceuticals. Inpatient care in hospitals is free of charge and so are all tests and medications required during hospitalization. The amount set for user charges is governed by regulations set by the MoW and the amounts vary according to user group and type of health-care service provided (see Table 3.7 and section 3.4.1). Children under the age of 18, disabled children and children with long-term illnesses do not pay any user charges. A lower fee is paid by recipients of old age and disability pensions. Primary maternity services are exempt from this fee, as well as general health care provided in schools, teenagers' visits to GPs and for information on prevention (section 3.4.1).

3.3.2 Collection

Health-care spending represents a significant percentage of the annual government budget in Iceland. As mentioned in section 3.2, the Directorate of Internal Revenue (*Ríkisskattstjóri*) and the Directorate of Customs (*Tollstjóri*) are in charge of collecting taxes and other state revenues, along with the Government Financial Authority (GFA). About 85–90% of total taxes and duties are collected electronically (INAO, 2011a). None of the taxes collected are earmarked specifically for health care (i.e. there are no hypothecated taxes for health care); however, as mentioned in section 3.2, the social security tax paid by employers and the self-employed is meant to finance the social security system – mainly the SSI and a fraction of the IHI. Where they are not sufficient to meet this objective, general tax revenues are used to cover the financial needs of these systems.

The taxation system is a mixture of progressive income taxes and in general regressive taxes on goods and services. Redistribution of income is achieved both through the taxation system and through social benefits in the social

security system. Income inequality is low in Iceland compared to other countries before the application of taxes and benefits (IMF, 2010). Notwithstanding this, Iceland is still below the OECD average (Table 3.5).

Table 3.5
Redistribution of income produced by taxes and transfers, selected countries, 2010

			Inequality reduction	
	Gini[a] after taxes and transfers	Gini[a] before taxes and transfers	Percentage reduction	Point reduction
Denmark	0.23	0.42	0.44	0.18
Finland	0.27	0.39	0.30	0.12
Iceland	0.28	0.37	0.24	0.09
Norway	0.28	0.43	0.36	0.16
Sweden	0.23	0.43	0.46	0.20
OECD-24	0.30	0.45	0.34	0.15

Source: IIMF, 2010.
Note: [a]Standard economic measure of income inequality.

3.3.3 Pooling of funds

The health budget is determined by Parliament on an annual basis. All tax and duties receipts are pooled by the GFA and the Minister of Finance has overall responsibility for supervising and coordinating the implementation of the national budget. Government agencies are instructed, whenever possible, to use detailed inputs, such as quantities and unit prices when estimating their financial needs and not simply to extrapolate last year's expenses to determine the next year's requirements.

Allocation of financial resources to government agencies is a centralized process. In the National Budget passed by parliament every year a given allocation is fixed to each government agency. In the process of planning the following year's health-care budget, the Minister of Health obtains financial and programme information from all agencies under the ministry's control, which then becomes the basis for allocation to these agencies in the budget. The MoW uses modelling in which the population and type of service is taken into consideration when allocating funds.

After the Parliament's approval on the National Budget for the year, the MoW has authority over the implementation of its particular budget allocation for health. The Minister of Health is responsible for the operations of the relevant agencies, monitoring whether their activities are within budget, that resources are being used in an efficient manner and that they are in line with

existing legislation and government policy. The director of each agency and/or its board is responsible for allocating the funds within the agency in accordance with the approved budget. He or she is responsible for the operation of the agency and to deliver to the Icelandic National Audit Office (*Ríkisendurskoðun*) (INAO) a professionally prepared annual financial statement. The director must ensure that the agency operates in line with an approved long-term plan and that funds are allocated in an efficient manner to achieve set goals. To that end, the director has the freedom to move funds between various cost categories and operational tasks within the agency.

Over the last 10 years, health-care spending has, in most years, exceeded the approved annual budget allocation, resulting in the Minister of Health requesting additional funding from the government – a request ultimately voted on by Parliament and habitually approved by them near the end of the year in an additional national budget (*Fjáraukalög*). The economic crash in 2008 led to a new environment of much leaner budgets and the agencies are still struggling to stick within spending limits. In the autumn of 2008, Parliament was discussing the financial budget for 2009 as the Icelandic banking system collapsed. The budgetary process was suspended for a few weeks while the government radically revised public expenditure, resulting in a flat cutback of around 6% across the whole of the health-care system.[15] However, National Treasury accounts show that health-care expenses for 2009 actually exceeded the budget by 2.1% (INOA, 2010).

The previous government had made it a priority to spare the welfare system from budget cuts, in particular pledging to shelter health-care services and services for children and young people, the elderly and the disabled from the impact of the economic crisis. However, the new government that came into office in May 2013 announced an 8% cut in the health-care budget and plans to improve efficiency in the health sector through decentralization and privatization of services (see Chapter 6).

3.3.4 Purchasing and purchaser–provider relations

The dominant feature of the health-care system is the integrated purchaser–provider relationship in which the payer, i.e. the state, is also the owner of most of the organizations providing health-care services. The Icelandic health-care system is a small and predominantly publicly owned system. Although the idea of purchaser–provider arrangements (split) has been discussed and debated for nearly 20 years, the issue of how to separate and fit these two operational

[15] Personal communication, MoW, October 2011.

functions inside the system has been a challenge. Since 1990, the health system has become increasingly characterized by a mixed economy of care and service provision, in which the number and scope of private non-profit and private for-profit providers has increased. However, the health-care system is small and competition is still limited. In 2008 the IHI agency was established as a health-care commissioning agency.

The IHI agency is responsible for negotiating and purchasing health-care services from public as well as independent health-care providers. Thus, it establishes a contractual relationship with provider agencies in the system and is responsible for managing the contracts. As stipulated in the Health Insurance Act, the relationship based on contracts has as an important policy goal to (1) improve the effectiveness of service delivery through a more explicit and transparent specification of the type, quantity and quality of services provided in a particular period defined in the contracts, and (2) to improve cost-efficiency through a process of comprehensive and systematic activity-based cost analyses as a foundation for activity-based financing of health-care services. In this respect the IHI is designed as a government tool to achieve these policy goals by balancing costs and health-care demands based on the rights of the insured as stipulated in the Health Insurance Act.

As a commissioning or purchasing agency under the direction of the Minister of Health, the IHI's core function is to manage the health-care cost-sharing system and reimburse patients for health-care services. The list of fully reimbursed services and the level of cost-sharing is set in a regularly published price list (see section 3.4.1). The IHI also negotiates agreements with health-care professionals, such as medical specialists and paramedical personnel, and hospitals, clinics, rehabilitation centres and research laboratories for the reimbursement (payment) of the services they provide. In addition, IHI negotiates agreements with hospitals in other countries to provide services for insured individuals who are unable to receive suitable care or treatment in Iceland.

3.4 Out-of-pocket payments

Out-of-pocket (OOP) payments are a significant source of financing in the health-care system and in 2011 OOP payments made up 18.2% of total health expenditure (Table 3.1). Official figures for health expenditures reveal that direct spending by individuals and households has increased significantly over the last 15 years (Statistics Iceland, 2011). Total private expenditure on

health care increased by roughly 76% from 1995 to 2010 (calculated at 2010 prices). During that period, government expenditure on health care increased by roughly 38%. Since 1995, the government's share of total expenditure on health care has decreased from 82.6% to 80.4% in 2012, while private expenditure has increased from 17.4% to 19.6% (Table 3.1). About 93% of private expenditure is OOP payments made directly by households.

Data from two national health surveys from 1998 and 2006 among Icelandic adults reveal that household health expenditures increased by 27% in real terms between 1998 and 2006 (Vilhjálmsson, 2009). The data also highlight that the average household expenditure committed to health-care expenses had increased on average from 1.82% in 1998 to 2.52% in 2006. Of note in Vilhjálmsson's study is the difference in average household expenditure for health care depending on income. Households with annual income below ISK 3.5 million (EUR 22 071) spent 4.8% of their total household expenses on health care compared to an average of 1.73% for households with higher income. Other studies have demonstrated that people with high OOP health-care costs relative to family income postpone visits to the doctor even though they need care, suggesting to the study's author that such costs compromise the goal of equal access (Vilhjálmsson 2005, 2011) (see Chapter 7).

Vilhjálmsson's 2009 study showed that 96.6% of private health expenditure in 2006 was for conventional health care and 3.5% for complementary and alternative medicine (CAM) such as chiropractors, reflexology, herbal medicine and acupuncture (Vilhjálmsson, 2009). OCT medicines are not covered by the IHI and patients pay the cost in full. This amounted to ISK 7861 (EUR 50) per capita in 2006 or 7.5% of total health expenditure for conventional health care. Each year more than half of private expenses on health care are dedicated to pharmaceutical products and dental services. In 2013, 30% went on pharmaceutical products and 28% on dental services, which are not extensively covered by the IHI (Table 3.6). Private expenditure per capita for pharmaceutical and other medical products increased in real terms by roughly 15% between 2003 and 2010, while expenses for other items stayed relatively the same over this period (Statistics Iceland, 2011).

At the beginning of 2012, the MoW announced a 5.3% increase in all user charges for health-care services in line with the budget plan for 2012 and also in response to price and exchange rate changes. However, co-payments for general medical services and visits to GPs remained unchanged, emphasizing the importance of primary health care as the first entry point into the health-care system. Again in 2013 user charges were increased, on average by 5.6%,

Table 3.6
Breakdown of private health expenditure, 2000–2013

	% of total private expenditure on health				
	2000	2005	2010	2012	2013
Pharmaceutical products	32.2	30.7	31.7	30.7	30.0
Medical aids	13.1	14.9	15.9	15.6	15.7
General and special medical services	17.1	16.7	14.9	14.9	14.6
Dental services	27.4	27.4	26.8	27.5	27.9
Ancillary services[a]	7.2	7.4	8.0	8.6	8.9
Hospital services	2.3	2.3	2.1	2.1	2.0
Other health expenses	0.7	0.7	0.7	0.7	0.7

Source: Statistics Iceland, 2013c.
Note: [a]Rehabilitation and other paramedical services.

but no changes were made to co-payments for primary health care. However, user charges for visits to Accident and Emergency (A&E), specialists outside hospitals and to hospital outpatient departments increased on average by 14% between 2012 and 2013 (MoW, 2012b).

3.4.1 Cost-sharing (user charges)

The Minister of Health is responsible for deciding the level of user charges for health-care services and these are regularly published in specific regulations (Reg. No. 1100/2012). No user charges are collected on admission or during a stay in acute hospitals. Insured individuals are categorized into four different user groups, with different user charges applicable to each group (Table 3.7). Group A consists of all insured individuals between the ages of 18 and 66; group B includes people aged between 67 and 69; group C comprises elderly people aged 70+, recipients of disability pensions, people aged 67–69 who received disability pensions when they reached the retirement age of 67, and people aged 60–69 receiving non-income-tested old age pensions; and finally, group D consists of children and young people under 18 years and children who are recipients of special care due to disability or chronic diseases. Individuals who have been unemployed for six months or more are entitled to health care at the same prices as those in group C. Since 2001, there have been significant changes in user charges for each group. The user charges for group A have increased by 43%, for group B by 167%, for group C by 67% but for patient group D user charges have decreased by 100%.[16]

[16] Calculated by the authors based on Regulation 218/2002, 193/2003 and 1042/2010 issued by the then MHSS.

Table 3.7

User charges (in ISK) for contacts with a medical doctor in different settings

Health care services	User groups	Before discount certificate	With discount certificate
Primary care or GP visits during weekly day-time hours	A[a]	1 000	580
	B[b]	800	500
	C[c]	500	400
	D[d]	Free of charge	Free of charge
Primary care or GP visits outside weekly day-time hours and at week-ends	A	2 600	1 500
	B	2 080	1 000
	C	1 300	700
	D	Free of charge	Free of charge
Home visits by a GP during weekly day-time hours	A	2 800	1 600
	B	2 200	1 000
	C	1 400	700
	D	Free of charge	Free of charge
Home visits by a GP outside weekly day-time hours and at week-ends	A	3 800	2 300
	B	3 200	1 700
	C	1 850	900
	D	Free of charge	Free of charge
Visits to A&E departments in hospitals	A	5 600	3 000
	B	4 700	2 400
	C	3 000	1 020
	D	Free of charge	Free of charge
Outpatient specialist visit or outpatient departments in hospitals	A	4 500 + 40% of excess cost	1 800 + 13.33% of excess cost
	B	3 500 + 13.33% of excess cost	1 400 + 13.33% of excess cost
	C	1 600 + 13.33% of excess cost	1/9 of 4 500 + 40% of excess cost though minimum 800
	D – children under 18 years for outpatient specialist visit	1/9 of 4 500 + 40% of excess cost though minimum 720	1/9 of 4 500 + 40% of excess cost though minimum 520
	D – children under 18 years visits to a specialist at an outpatient department in hospital	Free of charge	Free of charge
	D – children with special care card due to disability or chronic illnesses	Free of charge	Free of charge

Source: IHI, 2011a.
Notes: Listed user charges are those that were in place in July 2013; [a]User group A: insured members of the population aged 18–66; [b]User group B: people aged 67–69 years; [c]User group C: (i) people aged 70+; (ii) recipients of disability pensions; (iii) people aged 67–69 years who were receiving disability pensions when reaching retirement age of 67 years; (iv) people aged 60–69 years receiving non-income-tested old age pension; [d]User group D: children and young people under 18 years of age and children recipients of special care due to disability or chronic diseases.

The general protection mechanism applied in the health-care system is a health-care discount certificate. All insured individuals are entitled to apply for a discount certificate if their OOP payment costs for using health services in one calender year exceeds a certain amount, which differs for each patient

group (group A: ISK 31 100/EUR 196; group B: ISK 24 900/EUR 157; group C: ISK 7800/EUR 49; and group D: ISK 8900/EUR 56).[17] Holders of these discount certificates are entitled to discounted user charges within the health-care system (Table 3.7). Since 2001, the threshold level for obtaining the discount certificate for category A has risen by 133%, for category B by 647%, for category C by 133% and for children under the age of 18 years of age, it rose by 367%.[18] By comparison, the consumer price index for the period from December 2001 to December 2010, increased by 67% (Statistics Iceland, 2013b).

Vilhjálmsson (2009) demonstrated that discount certificates were poorly distributed and only 45.7% of eligible individuals had actually obtained a certificate. This lack of uptake was greatest among younger people, parents of young children, individuals in larger households, the full-time employed, and those who had more education and income. One reason for poor uptake was that health authorities had done little to promote the certificates and it was also cumbersome for patients to obtain one. Reimbursement on the basis of discount certificates increased between the years 1995 and 2009 but at a more significant rate between 2006 and 2009,[19] mainly due to improved administrative efficiency, particularly computerization and electronic records automatically keeping track of patient payments in the system.

Table 3.8 outlines both direct and indirect methods of cost-sharing in Iceland. OOP payments are in the form of user charges and direct payments. Informal payments are not a feature in the health-care system. Fixed amounts (co-payments) are charged for primary care services and GP visits on weekdays and weekends as well as for home visits by a GP during weekdays and weekends and for visits to hospital A&E departments (see Table 3.7). A combination of co-payments and co-insurance is common for outpatient specialist visits with specialists who have a valid contract with the IHI and for visits to outpatient departments in hospitals where the user pays a fixed amount plus a fixed proportion of the extra cost of the services received. However, as mentioned above, there is an annual OOP maximum payment ceiling and when that limit is reached, the IHI can issue a discount certificate that entitles the card holder to pay lower user charges.

From April 2011 to 1 January 2014 medical specialists had no valid contract with the IHI. Specialists' services are offered on a fee-for-services basis and patients are free to schedule as many visits to a specialist as needed without any

[17] In this group, all children under the age of 18 years in the same family are counted as one individual.

[18] Calculated by the authors based on Regulation 218/2002, 193/2003 and 1042/2010 issued by the then MHSS.

[19] IHI, personal communication, April 2011.

Table 3.8

Types of user charges for health services, 2013

Health service	Type of user charge in place	Exemptions and/or reduced rates	Cap on OOP spending	Other protection mechanisms
GP visit	• Co-payment	• Children and young people under 18 years of age are exempt from charges. • Pensioners, disability pensioners, disabled people and individuals unemployed for more than 6 months pay a reduced rate.	Low income ceilings on spending	Discount certificate issued when user cost of health care reaches certain level within the calendar year
Primary care	• Co-payment			
Outpatient specialist visit	• Co-payment • Co-insurance • Extra billing[a]	• Children with special care card due to disability or chronic illnesses are exempted from charges. • Children and young people under 18 years of age, pensioners, disability pensioners and disabled people pay reduced rate.		
Outpatient prescription drugs	• OOP payments maximum • Direct payment for 'O' marked drugs.	• Reduced maximum for people aged 67 and older, recipients of disability pensions and children and adolescents younger than 22.	Low income ceilings on spending	
Inpatient stay	• Free of charge		n/a	
Dental care	• Co-payment • Co-insurance • Extra billing • Benefit Maximum	• Children and young people under 18 years are exempt from charges except for annual co-payment. Fully integrated in January 2018. • Disabled and chronically ill children and mentally retarded individuals 17 years or older are reimbursed for total cost. • The elderly, pensioners, disabled individuals and children under 18 years pay reduced charges. • For serious birth defects, diseases or accidents individuals pay reduced rate.	No	
Medical devices	• Benefit Maximum	• Patients admitted to hospitals, nursing homes or other residential institutions are exempt from charges.	No	
Physical, occupational and speech therapy	• Co-insurance	• Children and young people under 18 years, pensioners with supplemented income and individuals with special care card from the SSI pay reduced rate. • Children, pensioners with supplemented income and individuals with special care card are exempt from charges after >30 visits (occupational therapy – exempt from charges after >20 visits). • Cases of serious diseases, such as cancer, late stage Parkinson's and serious disabilities, may be exempt from charges.	Low income ceilings on spending	

Source: IHI, 2011a.
Notes: [a]Because specialists currently do not have a contract with the IHI, charges that are higher than the maximum reimbursement levels set by the IHI must be met by the user; n/a: Data not available.

gatekeeping from a GP. Over the years there has been an increase in specialist fees and patient's co-payments have grown from 29% of the total price in 2008 to 35% in 2010 (BCG, 2011). During the period 2008–2010 the increase in expenditures for medical specialist services was 7% each year with patients

absorbing the larger part of this cost increase.[20] In 2011 the Minister of Health published a regulation detailing certain specialist treatments that the IHI would partly reimburse according to predetermined price lists despite the absence of a contract (Reg. No. 333/2011). If prices charged by specialists were higher than the listed prices, cost-sharing was in the form of extra billing as patients were liable to pay the difference (see Chapter 7.2.1).

Patients also pay fixed amounts in the form of co-payments for the following services: immunization, ambulance transportation and tubal reversal surgery. For laboratory tests, radiology, bone density tests, cancer tests (pap smears and mammograms – as a preventive screening programme and for diagnostic purposes) and surgical procedures, such as cervical conisation and coronary and heart catheterization, user charges are also in the form of co-payments but the amount depends on the user group (A–D). A form of co-insurance is in place for physiotherapy, occupational and speech therapy as well as for psychiatric treatments (Table 3.8).

For physical and speech therapy treatments, the IHI pays 27% for the first 30 visits and 60% for additional visits that have to be pre-approved by the IHI (for occupational therapy it is 30% for first 20 visits and 60% for extra visits). Much higher reimbursement rates (77% and 100% respectively for physical and speech therapy) apply to the elderly, recipients of disability pensions, and children and individuals with cards for special care, as well as for recipients of pensions without supplemented income the IHI (67% and 80%). The IHI shares the cost of psychiatric treatment for children in accordance with a special agreement. Patients pay 20% of the price for each treatment and 10% if they have a discount card, with the rest being funded by the IHI. A referral from a specific inter-disciplinary team has to be provided as a condition for the IHI to enter a cost-sharing agreement. Apart from this, there are no special user charge schemes for mental health services in Iceland. Patients with mental health conditions are mainstreamed and general user charges apply to them as for other patients using the health-care system. Data from 2006 to 2009 show that the IHI's share of the cost for psychiatric treatments has increased.[21] In 1996, the IHI paid 62.9% of the cost compared to 73.1% in 2006, while the patients' share of the cost decreased from 37.1% to 26.9%.

The IHI reimburses part of the cost for dental care, in the form of co-insurance for the elderly, recipients of disability pensions and children under the age of 18. For children under 18, the IHI will pay 75% of the cost in

[20] During this period patients' costs had increased by 13% compared to the government's share, which had risen by 4%.

[21] IHI, personal communication, April 2011.

accordance with the published price list. The IHI will reimburse 50% of the costs for the elderly and the disabled without supplemented income; 75% of the costs for pensioners with supplemented income; and 100% of the costs for chronically ill pensioners and those in hospitals or nursing care facilities. The IHI also shares the cost of dental care for anyone requiring necessary treatment resulting from serious birth defects, diseases and accidents, and special grants are available for individuals with intellectual disabilities.

In addition to this direct method of cost-sharing for these patient groups, an indirect method of extra billing is in place. The IHI publishes prices for dental treatments but dentists themselves decide on the price of each treatment. If that price is higher than the listed price, the patient has to cover the difference. The IHI will reimburse 95% of the cost for orthodontics in serious cases such as, for example, cleft palate, otherwise a stipend is given for children and adolescents under the age of 21 years (ISK 100 000/EUR 631 for one palate and ISK 150 000/EUR 946 for orthodontics in the upper and lower palates). In May 2013 a new contract was signed between the IHI and the Dental Association of Iceland in which subsidies for dental care for children under 18 will be increased in stages to be completed in January 2018 (Reg. No. 451/2013). Under this contract children under 18 will be exempt from charges except for an annual co-payment of ISK 2500/EUR 16. Prerequisite for IHI participation is the child's registration with a certified dentist. Children with acute dental problems who live in difficult social circumstances but have not reached the age limits of the contract at the time, will be exempt from charges and costs will be covered in full by the IHI.

The IHI shares the cost of pharmaceuticals for every insured individual. A new payment system for the purchase of drugs took effect in May 2013. The main objective is to increase equality between individuals independent of disease and to reduce pharmaceutical costs for people with high drug usage. There are only two categories of pharmaceuticals ('G' and 'O') and the IHI only participates in the cost of 'G' category drugs. In the new system the individual pays proportionally less the more pharmaceuticals he or she purchases over a 12-month period. There are four stages of IHI reimbursement: in the first stage the individual pays the full cost; in stage 2 he or she pays 15% of the cost; and in stage 3, 7.5% of the cost. In stage 4 the pharmaceutical cost has reached a certain maximum (ISK 69 416/EUR 438) and at that stage the IHI pays the full cost. The maximum is reduced for people aged 67 and over, recipients of disability pensions and children and adolescents under 22 (ISK 46 278/ EUR 292). The IMPRC publishes the Icelandic drug price catalogue every month (see IMPRC web site).

The indirect cost-sharing method for medical devices takes the form of a benefit maximum (Reg. No. 1138/2008). The IHI pays 50%, 70% or 100% of the price depending on the device and the user bears the remaining cost. The IHI does not pay for medical devices for patients admitted to hospitals, nursing homes or other residential institutions: here the hospital or institution in question will bear the cost. The IHI, however, pays for wheelchairs for patients in hospitals or other institutions on the condition that they are returned after use.

Families on low incomes can apply to the IHI for reimbursement of user charges due to unusually high health care, pharmaceutical or physical, occupational or speech therapy costs (Reg. No. 355/2005). Families and individuals pay user charges up to 0.7% of their previous year's income and receive a proportion of their expenditure beyond the basic cost. The share of reimbursement decreases as income rises. Reimbursement stops when annual income has reached ISK 3 890 000 (EUR 24 530).

3.4.2 Direct payments

In general, patients have to pay the full cost of treatment in private hospitals or clinics unless there is a negotiated contract between the hospital or clinic and the IHI. For example, for the treatment of psoriasis and eczema, the Blue Lagoon,[22] a private clinic, provides treatments that are reimbursed by the IHI. Patients have to cover in full most cosmetic surgery but the IHI operates a co-insurance scheme in cases where treatments will considerably improve patients' daily living activities and the condition is due to birth defects, tumours or other diseases or deformities caused by wounds or accidents. Patients also are required to pay directly for all CAM that is not approved in the Health Insurance Act (No. 112/2008) and when no valid contract is in place between the provider and the IHI.

3.4.3 Informal payments

There is no history or existing evidence of informal payments in the Icelandic health-care system.

[22] This is a psoriasis treatment centre providing treatments based on the beneficial effects of mineral-rich geothermal seawater.

3.5 Voluntary health insurance

Individuals insured through the IHI do not need to subsidize their coverage by buying private health insurance as all residents are entitled to available health care. However, for those individuals who plan to apply for residential permits in Iceland, buying private health insurance is an important requirement in that process. This insurance is designed to cover the individual's health-care costs during the six-month period prior to being insured by the IHI. This type of insurance will typically not pay for treatment of pre-existing conditions. Self-employed individuals in Iceland commonly buy sick pay insurance, and life insurance is also common.

3.6 Other financing

There are no major sources of financing other than donations and gifts from organizations, private foundations and individuals. According to the Landspitali 2012 annual report these donations and gifts amounted to ISK 460 million/ EUR 2.9 million (LSH, 2012). However, no statistics are available to verify how big a share such donations represent in financing important care. Each year, there are numerous campaigns on television, radio and other media to collect money that is later donated to the health-care system to buy special equipment, new technology or to support special health-care organizations such as the Icelandic Cancer Society. These private organizations also have been known to donate considerable amounts of money to finance specific units and equipment in hospitals and end-of-life care units. Even though these sources cannot be considered financially reliable as funding sources, it can be said that the health-care system has come to rely on this type of charity donation to finance important medical equipment and projects. This is particularly the case in the current economic environment where the focus is on cutting services to reduce public expenditure on health.

3.7 Payment mechanisms

Fig. 3.6 illustrates the financial flows within the Icelandic health-care system and Table 3.9 demonstrates the various provider-payment mechanisms in the system. More details are provided in the sections below.

Table 3.9
Provider-payment mechanisms

Payers / Providers	Ministry of Health	IHI	SSI	Cost-sharing	Direct payments
GPs	S	FFS		X	
Ambulatory specialists		FFS		X	
Other ambulatory provision		FFS		X	
Acute hospitals	GB				
Other hospitals	GB				
Hospital outpatient		FFS		X	
Dentists		FFS		X	X
Pharmacies				X	X
Public health services	S	FFS		X	X
Social care			PD	X	

Source: IHI, 2013c.
Notes: FFS: fee-for-service; S: salary; GB: global Budget; PD: per diem; IHI: Icelandic Health Insurance; SSI: Social Security Institute; X: cost-sharing and/or direct payments apply.

In 2011, about two-thirds of the health budget was used to pay for all general hospital services and roughly one-third was funnelled through the SSF (see section 3.2) to the MoW. This funding is divided between the IHI and the SSI. In 2009, roughly 65% went to the IHI and contributed to the funding of services provided by private clinics and private PCCs, medical specialists, dental care, allied health professionals, rehabilitation centres and pharmaceuticals for outpatient care, which all incur cost-sharing by patients. However, the share of the SSF funding stream that finances IHI's share of health care has been diminishing while the share of general taxation has been increasing. The IHI also pays for the public share in paying for after-hours care at public PCCs, which is on a fee-for-service basis. About 34% of SSF resources go to the SSI to pay for the public share of the cost for social care, i.e. nursing care and social assistance payments (see section 3.2) (Statistics Iceland, 2011).

3.7.1 Paying for health services

Until 1977, hospitals were paid by health insurance funds according to the number of bed-days, i.e. on a per diem basis (Halldórsson, 2003). That year, the largest hospital in the country, Landspitali in Reykjavik, was the first to be switched to a global budget system financed directly from the national budget, through the MHSS. Today, all hospitals in the public system are financed by a global budget channelled through the MoW. Of the total budget for general hospital services, about 70% goes to the Landspitali (Statistics Iceland, 2011). In comparison, the next largest hospital, which is in Akureyri in the north of the country, receives a little over 8% of the budget.

Public PCCs also receive their financing through the MoW by means of a global budget, in total amounting to 10.1% of the government's total expenditure on health care in 2011 (Table 3.2). The public PCCs in the Capital Region receive about 40% of this budget. In January 2003, all nursing homes began to be paid on a per diem basis in accordance with the Resident Assessment Instrument (RAI). Before that, financing was either a fixed budget similar to hospital financing or fixed payment on a per diem basis, while some received payment based on a service contract. Nursing homes, as mentioned above, are financed through the SSI. Some private rehabilitation centres, such as Reykjalundur Rehabilitation Centre, NLFI Rehabilitation and Health Clinic, the rehabilitation centre for MS patients, the Hlein residential facility for people with brain damage, and the SÁÁ National centre for addiction medicine, are financed through the national budget and receive funding via the MoW under a contract with the IHI. Private ambulatory care such as medical specialists, dental care and physical, occupational and speech therapy are reimbursed on a fee-for-service basis through the IHI. This amounted to roughly 9% of total government expenditure on health in 2011 (Table 3.2).

All pharmaceutical costs are partly reimbursed through the IHI. A cost-sharing system is in place for pharmaceuticals administered within outpatient care and amounted to about 60% of the total amount spent on pharmaceutical products in 2012. Pharmaceuticals dispensed in hospitals (category 'S' market drugs) are free of charge for patients and amounted to roughly 40% of IHI's total pharmaceutical cost that year (GFA, 2012).

3.7.2 Paying health workers

In general, health-care professionals are salaried employees. Doctors working in hospitals and in general practices receive salaries from the state as do other professionals such as nurses, midwives, auxiliary nurses, physiotherapists, occupational therapists and other health-care workers. Private practitioners such as medical specialists who provide outpatient care outside hospitals, physiotherapists, dentists and psychologists that are under a contract with the IHI are paid by the IHI on a fee-for-service basis. Community pharmacists are paid by pharmacy owners.

The remuneration structure for GPs consists of both salary and fee-for-services payments. GPs receive a salary for their daytime work but for work after hours between 4 pm and 6 pm on weekdays, they are paid on a fee-for-service basis (Table 3.9). This system of paying GPs has been in place since 1996. Before that, from 1989 – when the state took over responsibility for primary health care centres – to 1996, GPs received a salary from the state

but on top of that they also received fee-for-services payments from the SSI and some payments directly from patients (Halldórsson, 2003). These fees became an increasing proportion of their income and in 1996 the fee-for-service component was 65% of the average GP remuneration in Reykjavik. This system was abolished and after 1996 GPs received a salary decided by a committee in the same way that salaries are set for senior civil servants. The aim was to limit fees-for-service to a small part of GP's overall remuneration. However, recent evaluations of this system have shown that there are limited incentives during daytime hours to increase productivity and patients are often referred to the after-hours surgery before it formally starts at 4 pm. Today, a significant part of GPs' remuneration in the Capital Region (on average 24%) comprises fees-for-services (BCG, 2011).

Salaries of doctors working at hospitals are based on an agreement between the Icelandic Medical Association and the Ministry of Finance. Doctors working in hospitals receive fixed monthly salaries. Medical specialists who own and run private clinics outside the hospital can only work in a hospital at 80% capacity.[23] A chief physician cannot simultaneously hold a post outside the hospital unless it is a teaching position at the University of Iceland. Since November 2002, as an incentive against dual-practice, medical specialists who are employed exclusively in a hospital (with no private practice) receive extra salary bonuses and enjoy priority for specific positions. Medical specialists working in private clinics receive remuneration on a fee-for-service basis. They receive their remuneration directly from patients and through a cost-sharing scheme by the IHI according to a pre-determined price list published by the Minister of Health (Reg. No. 333/2011).

Nurses, auxiliary nurses, physiotherapists, occupational therapists, speech therapists and other professional health-care personnel working within the public system are salaried employees. Outside the public system in private clinics physiotherapists, occupational therapists and speech therapists that have a valid contract with the IHI receive remuneration on a fee-for-services basis and directly from patients.

Dentists work in privately owned clinics and receive remuneration on a fee-for-service basis from the IHI and directly from patients.

Pharmacists working in the public system are state-salaried employees while those working in private sector pharmacies are paid salaries by the private owners of the pharmacies.

[23] Before 2002, there were no specific limits on a specialist's time spent on work outside the hospital and simultaneously receive a salary from the hospital.

4. Physical and human resources

Each of Iceland's seven health regions has at least one main regional hospital varying in terms of size and combination of functions. In most cases there is a strategic regional unit responsible for coordination of services between primary health care centres (PCCs), hospitals and long-term nursing care. The number of hospital beds has been decreasing for the last two decades and a number of acute hospital beds around the country have gradually been changed into long-term nursing beds. Average length of stay in all hospitals has also been decreasing since 1990. In general, the health-care system is well placed with medical technology. In addition, the same information system (the Saga system) is used in all public HCOs and all public PCCs and hospitals have clinical information systems. Patient information is shared among public primary care physician clinics within each of the seven health regions but not yet across health regions. The connection of electronic health record (EHR) systems across different health-care regions is currently being planned. Moreover, a majority of physicians have access to e-prescription and all pharmacies are connected to the e-prescription Health Network.

In 2012, individuals employed in health and social care services made up about 11.4% of the total working population. Thirty-three different health professional groups are licensed through the Directorate of Health to work in the health-care system. Since 1990, there has been a steady increase in the number of practising physicians; approximately, 79% work in hospitals while most GPs work in public PCCs. Compared to other Nordic countries Iceland has more specialists per 100 000 population, which has resulted in higher visits rates to specialists compared to visits to GPs. Nurses and auxiliary nurses are the largest health personnel group and there were roughly four nurses and auxiliary nurses per physician in 2012.

4.1 Physical resources

4.1.1 Capital stock and investments

Current capital stock

The number and location of health-care facilities including hospitals are set within the organizational framework laid out in the Health Care Act (No. 40/2007). In total, publicly provided health-care services are provided in 18 hospitals, 10 HCOs and 39 public PCCs around the country. Each of Iceland's seven health regions has at least one main regional hospital, of which two, Landspitali University Hospital in Reykjavik, the Capital Region, and Akureyri Hospital, a teaching hospital in Akureyri, are also the country's main hospitals providing tertiary care. Apart from these two main hospitals there are six regional hospitals. Secondary care or general hospital services are also provided in 10 smaller general hospitals and health institutions within the regions around the country. Regional and general hospitals around the country vary in terms of size and combination of functions. All the public health facilities are owned by the state. Most public PCCs were built after the 1970s, with the most recent being built in Reykjavik in 2008. Hospital buildings are older, with some dating back to 1930, but the bulk of the buildings were built between 1950 and 1970. Some nursing homes also date back to the 1930s but most are relatively new, built after the mid-1980s.

The cost of maintenance is planned and budgeted for separately from operating and administrative costs. The administrative directors of individual health-care facilities are responsible for ensuring that proper maintenance is carried out and that it fulfils the requirements set out by public agencies such as the DH and the Administration of Occupational Safety and Health (AOSH); it is monitored by local health inspectorates. Appraisals of the facilities' condition are carried out in parallel with the budget planning process, and proposals for maintenance work, including preliminary cost estimates, are presented. A public agency reporting to the MoF – Government Real Estate (GRE) – plays a central role in this process. GRE is responsible for the planning and management of maintenance and redevelopment of all state properties, except for Landspitali University Hospital and Akureyri Hospital which plan and manage their own maintenance and redevelopment work independently and have these expenses planned and budgeted for in their own annual budgets.

All public hospitals, HCOs and public PCCs pay rent for the facilities in which they operate. A fixed price per square metre is calculated and the rent is budgeted for separately through the annual budget. The rent is supposed to

cover council tax, statutory insurance fees, and the cost of maintenance work involving repair and pre-emptive maintenance. Major changes or redevelopment is planned for by applying for a special contribution from the Treasury as a part of the government's annual budget.

Investment funding

Capital investment funding is a separate stream of financing from the funding stream covering reimbursement of service delivery. The cost of building hospitals and PCCs, and their equipment, is financed through the Treasury while local governments contribute 15% to the cost of building and equipping nursing homes.[24] Local governments provide land for buildings, including residential buildings intended for personnel, without cost to the Treasury. Since 2009, the Housing Fund may grant local authorities loans of up to 100% of the building cost or purchase price of a nursing home for the elderly. Such loans are for 40 years and under the scheme local governments pay the loan back by paying rent to the state (85%) and to local government administrations, i.e. to themselves (15%) (Act No. 120/2009).

Major donations through charity or special fundraising campaigns are common in Iceland and can constitute a major contribution to the provision of medical equipment and diagnostic technology in individual hospitals or to the further development of particular facilities.

In 2002 the Government approved proposals to build a new National University Hospital, i.e. new Landspitali. Financing plans first concentrated on using part of the funds raised through the privatization of the Icelandic Telecommunication Company but after the financial crisis in 2008, a financing vehicle similar to a public–private partnership was in place. In November 2009, the Government and a number of pension funds signed a cooperation agreement on the building of the new hospital with the pension funds[25] providing the state with the financing for the new hospital building. However, in March 2013 the Parliament changed the plan and has now moved away from public–private partnership towards a traditional public undertaking of the whole building project.

[24] Until 2003, local governments also contributed 15% of the capital investment in building PCCs and hospitals, purchase of technology and the cost of maintenance (for PCCs only). However, this statutory financial obligation was abolished in 2003.

[25] Pension funds in Iceland operate in the private sector. Currently their assets equal about 130% of Iceland's GDP.

4.1.2 Infrastructure

Hospital beds and long-term elderly care beds are distributed across the seven health-care regions. Table 4.1 summarizes the number of acute hospital and long-term care beds in Iceland. In the 1990s a number of acute hospital beds in public hospitals around the country were gradually changed into long-term nursing beds.

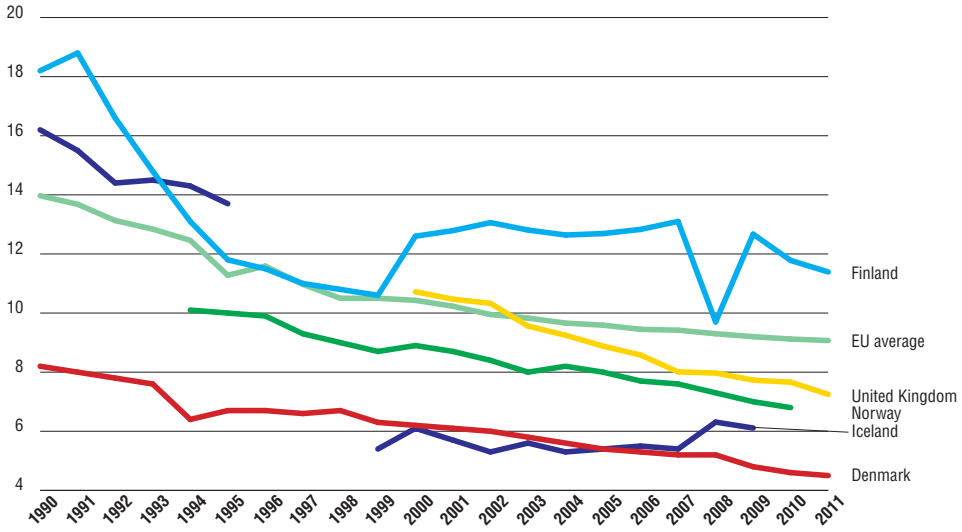
Table 4.1
Number of hospital and long term care beds in Iceland, 2011

Health regions	Hospital beds	Nursing home beds	Residential home beds	Long-term nursing care beds	Day care places
Western Region (total)	64	126	71	63	35
Regional hospital in Akranes	44				
Capital Region (total)	714	1 366	186	0	429
University Hospital in Landspitali	654				
Southwest Peninsula Region (total)	33	71	0	31	43
Regional hospital in Reykjanesbær	33				
Northern Region (total)	152	252	98	108	100
Teaching hospital in Akureyri	131				
Eastern Region (total)	27	32	27	28	58
Regional hospital in Neskaupstaður	24				
Southern Region (total)	48	175	129	55	69
Regional hospital in Selfoss	30				
Regional hospital in Westman Islands	15				
Westfjord Region (total)	18	0	0	49	18
Regional hospital in Isafjarðabær	15				
Total	**1 056**	**2 022**	**511**	**329**	**752**

Source: BCG, 2011.

As with Denmark, Finland, Norway and the UK, the average length of stay (ALOS) in all hospitals in Iceland has decreased significantly since 1990 but after a very steady level between 1999 and 2006, a small upward trend has been observed since 2007 (Fig. 4.1). Nevertheless, compared to these countries and to the EU average, Iceland has the second lowest ALOS, at 6.1 days (in 2009) after Denmark. During this same period, inpatient surgical procedures per year per 100 000 increased from 2946 to 13 184, while acute hospital discharges decreased from 19.78 to 12.49 per 100, and inpatient care discharges decreased from 20.72 to 13.51 per 100 (World Health Organization, 2014).

Fig. 4.1
Average length of stay, all hospitals in Iceland and selected other countries, 1990–2011 (latest available year for Iceland is 2009)



Source: World Health Organization, 2014.

4.1.3 Medical equipment

The Icelandic health-care system is well placed with regard to medical technology. Table 4.2 illustrates that compared with some other Scandinavian countries and the UK, the number of CT scanners, MR imaging units and radiation therapy equipment per 100 000 inhabitants is higher in Iceland. The small population, geographical equality of access to health care and the fact that Iceland is an island at a considerable distance from neighbouring countries (thus limiting cross-border access to health care) are often mentioned as explanatory factors when data on expenditure and physical resources is considered. However, part of the explanation also lies in the public–private divide. The two sectors operate in parallel within the health-care system, allowing a free flow of patients and medical staff across the public and private domains; moreover, the private provision of specialized medical care and diagnostic services is by and large unregulated and responds to market demand for specialist care and high levels of diagnostic services.

Table 4.2
Medical technology equipment, per 100 000 inhabitants, in Iceland and other selected countries, 2007 and 2010

	Iceland		Denmark		Finland		UK	
	2007	2010	2007	2010	2007	2010	2007	2010
CT scanners	3.1	3.8	1.8	2.8	1.6	2.1	n/a	0.8
MR imaging units	1.9	2.2	n/a	1.5 (2009)	1.5	1.9	n/a	0.6
PET scanners	0.0	0.0	0.4	0.6 (2009)	n/a	0.1	n/a	n/a
Radiation therapy equipment	1.3	1.3	0.8	1.3	0.9	0.9	0.4	0.5

Source: Eurostat, 2013a.
Note: n/a: Data not available.

4.1.4 Information technology

In Iceland, 96% of households have computers and 95% have access to the Internet, which is used widely (Statistics Iceland, 2012b). Within public primary health care, 100% of clinics have clinical information systems, while in secondary care over 60% of private clinics and 100% of hospitals have clinical information systems. Moreover, the same system (the Saga system) is used within all public HCOs. However, preventive maternity care is mostly paper based, as the clinical information system in use does not support the data gathering needed. All hospitals and PCCs have access to laboratory systems and digital imaging. Moreover, a majority of physicians have access to e-prescription, and all pharmacies are connected to the e-prescription Health Network (Harðardóttir, 2011).[26] Hospitals and PCCs have an appointment-booking system integrated into their clinical information systems. Some of the PCCs also have online booking systems that patients can use to make appointments, with more clinics to follow in the near future.

All public PCCs in Iceland have computers, as do a majority of private GPs. Currently, all GPs have electronic clinical information systems in place, while every hospital has an electronic admission-transfer-discharge information system with a fully integrated nursing documentation component. Immunization information is shared countrywide. Physician discharge letters and home health nursing letters are sent electronically across different institutions (e.g. both hospitals and primary health care). Only two hospitals in Iceland have an

[26] Information also sourced through personal communication Directorate of Health, October 2012.

operational medication administration system but this is not integrated into the hospitals' main clinical information system. Several other information systems are in use, especially within Landspitali, all with different levels of integration.

Patient information is shared among public primary care physician clinics within each of the seven health regions but not yet across health regions. However, some laboratory results and imaging results are accessible via secure Internet across health regions. Nevertheless, integration between the electronic health-care systems is lacking and, hence, patient ID and user authentication may have to be entered multiple times if, for example, information is located in different digital imaging databases.

The secure HealthNet system allows for the connection of all participants in the country's health services. The health network provides a secure way to share and exchange patient information electronically, e.g. among hospitals, health-care centres and private health-care professionals. These data include, but are not limited to, electronic and immediate ID allocation to newborns at birth, birth announcement to the centralized birthing database, immunization, real time surveillance for communicable diseases, e-prescriptions, patient billing, patient discount for medicine and health services and, recently, real time information on hospital admissions, discharges, diagnosis and treatment.

The connection of EHR systems across different health-care regions is currently being planned. Strategic eHealth goals aim to improve the quality of health care and reduce health-care costs through the secure use of health IT. Since March 2012, the DH has been responsible for the development, coordination and implementation of the national EHR system, with its Health Information Management Division overseeing EHR-related projects and the management of health-care data standards. In addition, projects have been launched to build a health data warehouse within the DH to improve data reporting and dissemination of health information for better monitoring of population health and health data benchmarking. In January 2013 all hospitals in the country became connected via HealthNet providing the DH with real-time health information collected by using the Icelandic Hospital Minimum Data Set. These data include admissions, discharges, patient days and length of stay, diagnosis and treatment. In late 2013 physicians gained access to a centralized medicine prescriptions database for their patients. Access is based on the use of eCards issued for professionals. The goal is for citizens to have secure access to their own medication profile no later than 2014.

The Health Records Act (No. 55/2009) provides the legal framework for accessing and sharing health data among health-care institutions. The law allows different health-care organizations to share the same EHR database via HealthNet. Patient rights and protection are thoroughly addressed in the legislation: all health-care data are viewed as sensitive information and the law emphasizes the importance of privacy and confidentiality of such data.

4.2 Human resources

4.2.1 Health workforce trends

The Health Care Practitioners Act (No. 34/2012), which came into force in January 2013, clarifies and coordinates rules that apply to health-care workers, facilitates cooperation between them and defines their fields of work. The goal of this new legislation is to ensure quality of health-care services and the safety of patients by defining health-care workers' educational requirements, knowledge, skills and practices. In 2012, individuals employed in health and social care services made up about 11.4% of the total working population (Statistics Iceland, 2013b). Approximately 71% worked in the Capital Region and of these, about 34% worked in the country's largest hospital, Landspitali (LSH, 2012). Women represent the greater part of this workforce (77%), which is roughly 18% of all working women in Iceland compared to 5% of all working men (Statistics Iceland, 2013b).

The number of practising health personnel registered by the DH rose by 23% between 1990 and 2000 and by about 34% between 2000 and 2010 (DH, 2013a). Table 4.3 demonstrates that the number of health workers per 1000 population has been steadily increasing since 1990. However, from 2008/2009 onwards, i.e. since the onset of Iceland's economic crisis, there has been a decrease in the number of employees in professions that account for about 65% of professional health-care workers, namely physicians, nurses and auxiliary nurses. A report commissioned by the MHSS in 2006 forecasts the required numbers of physicians, nurses, auxiliary nurses and physiotherapists to 2020 (MHSS, 2006). Based on a number of retirement age scenarios and graduation rates the report predicts that the demand for physicians will be met. However, since the economic collapse in 2008, there have been significant changes in the number of physicians working in Iceland that, according to the Icelandic Medical Association, has decreased by 7.5%. In 2011, about one-third of Icelandic doctors were working abroad (Friðfinnsdóttir, 2011).

Table 4.3
Health workers in Iceland per 1 000 population, 1990–2012 (selected years)

	1990	1995	2000	2005	2008	2009	2010	2011	2012
Physicians[a]	2.86	3.03	3.47	3.64	3.67	3.65	3.61	3.52	3.57
GPs	0.64	0.64	0.67	0.68[d]	0.63[d]	0.59	0.60	0.59	n/a
Nurses	7.07	7.62	8.02	8.67	8.65	8.41	8.35	8.68	9.10
Midwives[b]	0.80	n/a	0.74	0.79[d]	0.79[d]	0.78	0.79	0.87[d]	0.80
Auxiliary nurses	5.46	n/a	5.34	5.45[d]	6.33	6.84	6.21	6.16[d]	6.11
Dentists	0.91	1.01	1.01	0.98	0.95	0.92	0.94	0.89	0.84
Pharmacists[c]	0.71	0.93	0.97	1.13	1.13	1.11	1.15	1.19	1.12
Occupational therapists	0.20	0.24	0.25	0.53	0.58	0.60	0.61	0.67	0.74
Physiotherapists	0.81	1.01	1.45	1.43	1.51	1.47	1.49	1.48	1.56
Radiographers	0.31	n/a	0.31	0.31	0.34	0.35	0.36	0.37	0.34
Social workers	0.17	n/a	0.38	n/a	1.05	1.11	1.24	1.19	1.20

Source: DH, 2013a.
Notes: [a]Practising physicians: physicians licensed to practise in the Register of Physicians with permanent residence in Iceland and registered domicile in Iceland; [b]Figures refer to those working in inpatient care institutions and health centres; [c]Pharmacists, proprietary pharmacists and exam pharmacists; [d]Preliminary figures or estimates; n/a: Data not available.

Both this 2006 IES report and the Icelandic Nurse's Association (INA) expect the need for nurses to grow by between 1% and 1.5% over the coming years. Based on the current average retirement age for nurses – 64 years (Friðfinnsdóttir, 2011) – and the average annual graduation rate (105 nurses) (DH, 2013a), the increased demand for nurses to 2020 is not expected to be met. Another report published in 2007 also estimated the shortage of nurses at roughly 20% and to meet increasing future demand some 170 nurses need to graduate each year (Finnbogadóttir & Jónsson, 2007). Having said this, the economic downturn since 2008 resulted in a 1% unemployment rate among nurses in 2010–2011, mainly due to cost-saving measures in the health-care system (Friðfinnsdóttir, 2011). Furthermore, about 25% of nurses in Iceland are 55–64 years old and will soon be retiring.

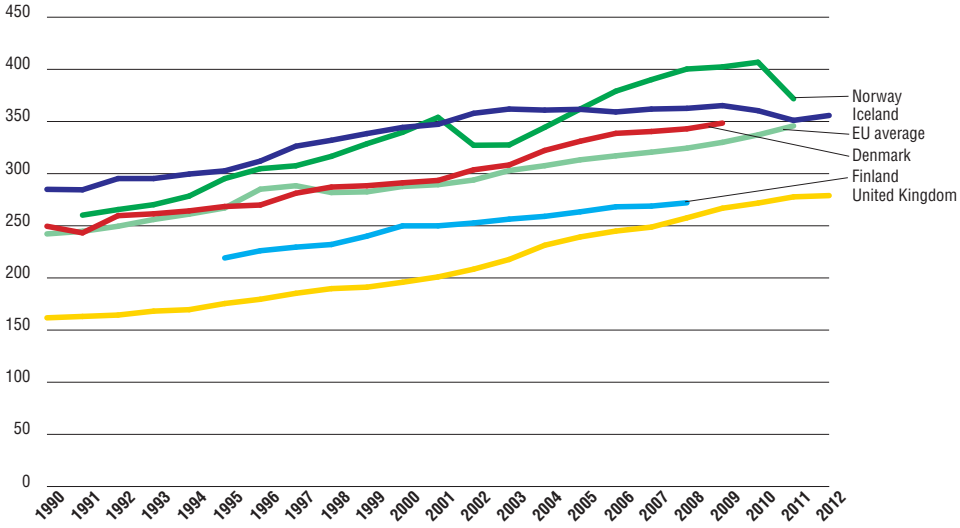
Physicians

According to the DH, 1141 physicians were practising in full and part-time positions in 2012. Fig. 4.2 depicts the number of physicians per 100 000 population in Iceland in comparison to other selected Nordic countries and the United Kingdom from 1990 to 2012, the latest year for which data are available. Since 1990, there has been a steady increase in the number of practising physicians in Iceland, with a small dip appearing in 2010. The most recent national data note that between 2009/2010 and 2010/2011 there was a 2% decrease in practising physicians but it increased again in 2011/2012 by 2% (DH, 2013a). When compared to other countries in the European

Region, Iceland had 355.8 physicians per 100 000 population in 2012, behind Norway (371.8) but above Finland (272.05), the United Kingdom (278.9), Denmark (348.4) and the EU average of 345.8 per 100 000 population (Fig. 4.3).

Fig. 4.2

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

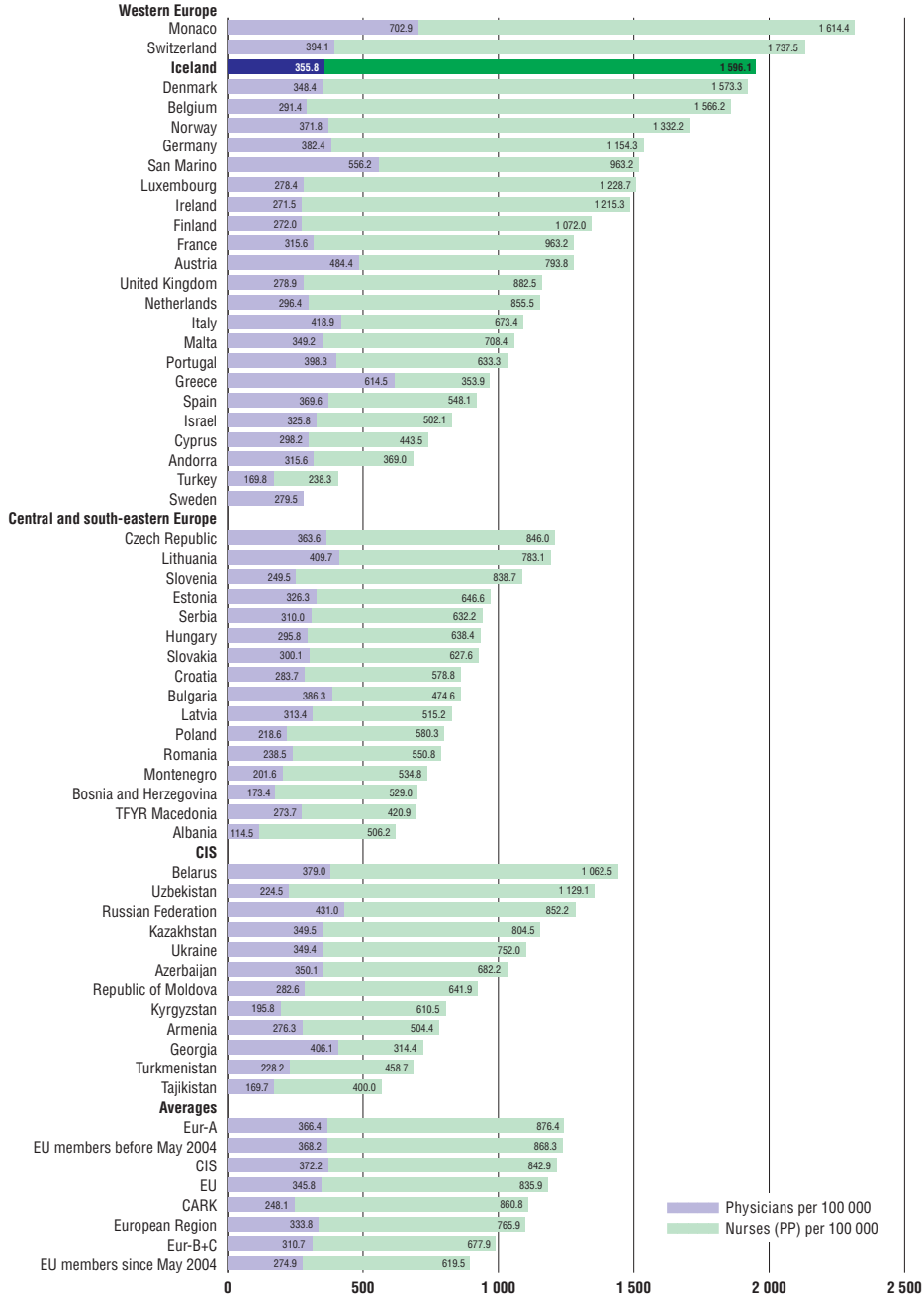


Source: World Health Organization, 2014.
Note: Latest available year for Iceland and UK is 2012; 2011 for Norway and EU average; 2009 for Denmark and 2008 for Finland.

In 2012, roughly 79% of all physicians worked in hospitals (WHO, 2013) and approximately 65% of these hospital doctors worked at Landspitali (LSH, 2012). Many of these physicians also practise part time in their private clinics with some limitations because of their employment at the hospital (Ellertsson, 2012, personal communication). Most GPs are salaried and are employed in public PCCs, but in 2010, 12 of the 190 GPs practising in Iceland were independently employed in private PCCs serving about 1800–2000 individuals each (MoH, 2010a). In 2009, there were 286 practising specialists per 100 000 population (NOMESCO Nordic Medico Statistical Committee, 2011). Table 4.4 shows how they are divided between specialties. Compared to Denmark and Norway, Iceland has more specialists per 100 000 population and there are fewer physicians without specialist authorization. The higher number of specialists compared to GPs results in higher visit rates to specialists in Iceland compared to other

Fig. 4.3

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



Source: World Health Organization, 2014.
Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Table 4.4

Practising physicians by specialty per 100 000 population in Iceland, Norway and Denmark, 2009

Specialty	Iceland	Norway	Denmark
General practice	58	43	74
Internal medicine	50	30	26
Paediatrics	17	10	6
Surgery	25	16	15
Plastic surgery	3	2	2
Gynaecology and obstetrics	12	11	9
Orthopaedic surgery, including hand surgery	12	9	11
Ophthalmology	10	7	5
Ear, nose and throat	7	6	6
Psychiatry	24	27	17
Skin and sexually transmitted diseases	6	3	3
Neurology	6	5	5
Oncology	5	3	2
Anaesthetics	18	14	16
Radiology	12	11	9
Clinical laboratory specialities including pathology	12	9	8
Other specialities	8	11	3
Specialists in total	**286**	**217**	**216**
Physicians without specialist authorization	80	191	125
Total physicians/100 000 population	**366**	**408**	**341**

Source: NOMESCO Nordic Medico Statistical Committee, Copenhagen, 2011.

Nordic countries (BCG, 2011). Table 4.5 shows the geographical distribution of physicians (and nurses) in Iceland. The Capital Region (where two-thirds of the population lives) has the highest ratio of physicians to population at 3 per 1000 population. The ratio is also high (2.5 per 1000 population) in the Northern Region where the second largest hospital is located. Other regions have ratios ranging from roughly 1 per 1000 population in the South-west Region to 1.7 per 1000 population in the Eastern Region.

Table 4.5

Geographical distribution of physicians and nurses in Iceland per 1 000 population

Health Regions	Full-time positions (AWU)[a]	Population 1.12.11[b]	Physicians per 1 000 population	Physicians in health-care centres per 1 000 population	Nurses per 1 000 population
Western Region					
Physicians (total)	27	17 498	1.5		
No. practising at health-care centres	9			0.5	
Nurses	67				3.8
Capital Region					
Physicians (total)	592	203 594	2.9		
No. practising at health-care centres	125			0.6	
Nurses	1232				6.1
South-west Region					
Physicians (total)	21	21 242	1.0		
No. practising at health-care centres	15			0.7	
Nurses	50				2.4
Northern Region					
Physicians (total)	88	35 130	2.5		
No. practising at health-care centres	29			0.8	
Nurses	220				6.3
Eastern Region					
Physicians (total)	17	10 213	1.7		
No. practising at health-care centres	11			1.1	
Nurses	46				4.5
Southern Region	34	25 886	1.3		
Physicians (total)					
No. practising at health-care centres	28			1.1	
Nurses	70				2.7
Westfjord Region					
Physicians (total)	8	6 012	1.3		
No. practising at health-care centres	3			0.5	
Nurses	24				4.0
Total physicians (AWU)	787				
Total nurses (AWU)	1 709				

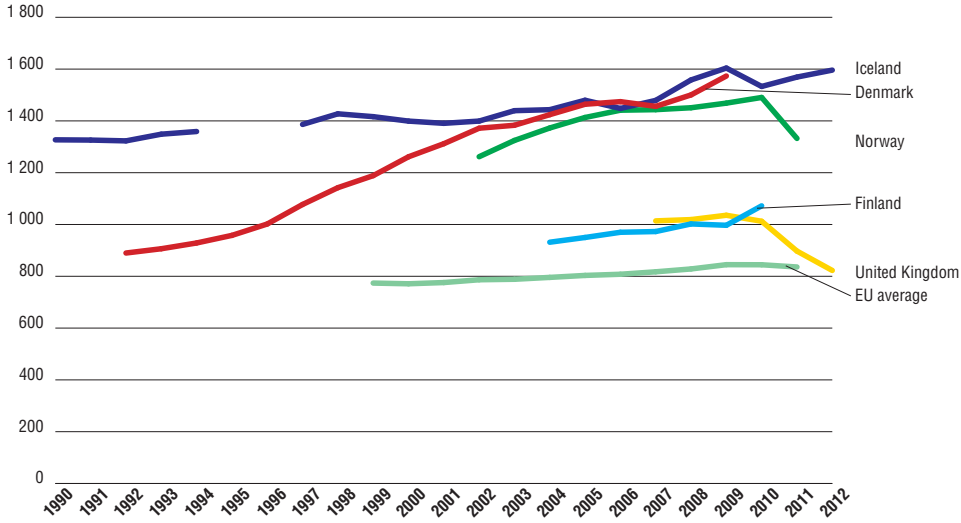
Source: BCG, 2011.
Note: [a]AWU, Annual Working Unit; [b]Samband íslenskra sveitarfélaga (Association of Local Authorities – http://www.samband.is/).

Nurses, auxiliary nurses and midwives

In 2012, there were 2909 nurses and 1954 auxiliary nurses practising in Iceland in full or part-time positions, equivalent to 1522 nurses and auxiliary nurses per 100 000 population (DH 2013a). Fig. 4.4 shows the number of nurses and auxiliary nurses per 100 000 population in Iceland and selected countries from 1990 to 2012 (or latest available year). When compared to

Fig. 4.4

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



Source: World Health Organization, 2014.
Note: Data for Iceland covers nurses and auxiliary nurses.

other Nordic countries up to 2010, Iceland, Denmark and Norway had very similar numbers ranging from a little over 1300 to 1600 nurses and auxiliary nurses per 100 000 population over the last 10 years. Iceland also has ranked consistently high in this category in comparison to other countries in the WHO European Region with 1596 nurses and auxiliary nurses per 100 000 population (or approximately 16 per 1000 population) (Figs. 4.3 and 4.4). On average there were roughly four nurses and auxiliary nurses per physician in Iceland in 2009. Large numbers of practising nurses are salaried staff working in hospitals and public PCCs. For example, roughly 44% of all practising nurses in 2012 (1291) were working in Landspitali in Reykjavik (LSH, 2012). Nurses are also employed in long-term care institutions, schools and private firms.

There were 256 practising midwives in Iceland in 2012 or 0.80 midwives per 1000 population (Table 4.3). There was very little actual growth in the numbers of practising midwives between 1990 and 2000 but between 2000 and 2010 the number increased by 21% (from 206 to 250). Most midwives are publicly employed in the two main hospitals and six regional hospitals. In 2012, almost 50% of all midwives (124) worked at Landspitali in Reykjavik (LSH, 2012). Roughly 47% of all midwives also work as independent contractors through

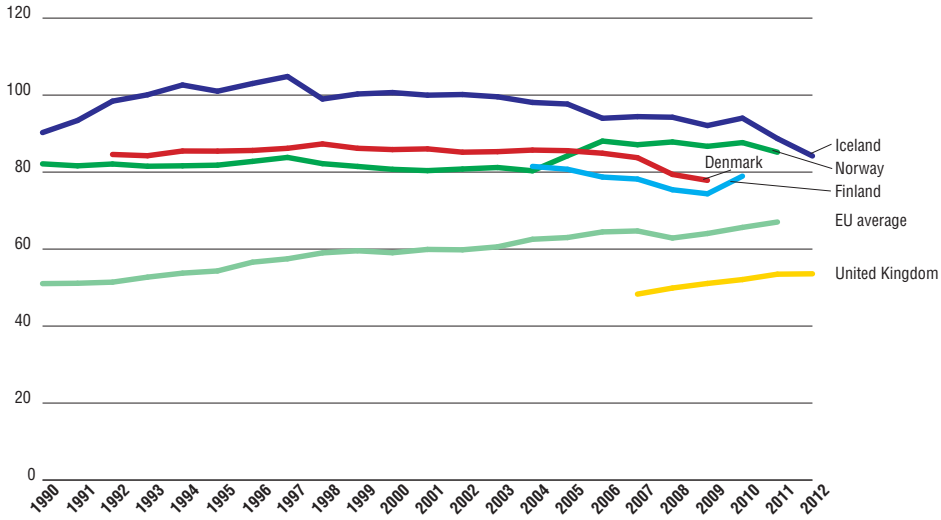
an agreement with the IHI, handling postnatal care, breast-feeding advice at the mother's house after discharge from the maternity ward and overseeing home births.

Dentists

There were 270 practising dentists in Iceland in 2012, equal to 0.84 dentists per 1000 population (Table 4.3). From 1981 to 1990, the number of practising dentists increased by roughly 30%. However, in the following 20 years the relative growth of the profession has been decreasing and from 2010 to 2012 a 9.7% decrease in the number of practising dentists was recorded, bringing the current number to the same level as it was in 1995 (DH, 2013a). Nevertheless, in comparison with other countries in the WHO European Region, only Greece has had more dentists per 100 000 population than Iceland during most of the last 20 years (WHO, 2013). Fig. 4.5 demonstrates how Iceland is ahead of all other Nordic countries (Sweden is not included in the comparison) in the number of dentists per 100 000 population. It also has a considerably higher number than the United Kingdom and the EU average. According to figures from the DH and Statistics Iceland, the number of patients per dentist in 2012 was 1184. Almost all dentists in Iceland are self-employed. An increasing number of women are entering the dental profession and in 2008 women represented one-third of all practising dentists (Thoroddsen, Richter & Elíasson, 2008).

Fig. 4.5

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



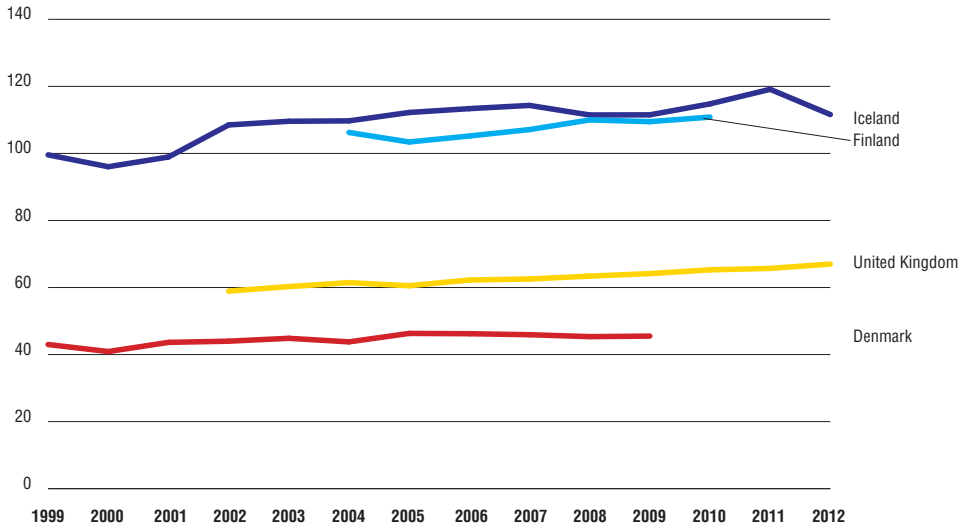
Source: World Health Organization, 2014.
Note: Latest available year for Iceland and United Kingdom is 2012; 2011 for Norway and EU average; 2010 for Finland and 2009 for Denmark.

Pharmacists

In 2012, there were 358 practising pharmacists in Iceland, which corresponds to 1.12 per 1000 population (Table 4.3). Compared to other European countries, Iceland has ranked in the top four positions for the number of pharmacists per 100 000 population since 1999 and consistently has been ahead of other Nordic countries and the United Kingdom (Fig. 4.6). The number of pharmacists grew steadily from 1981 to 2000 – on average by roughly 4.5% per year – but since then, the growth rate has slowed down and between 2011 and 2012 the number of practising pharmacists decreased by almost 6% (DH, 2013). In 2005, 40% of pharmacists worked in the pharmaceutical industry (Faculty of Pharmaceutical Science, 2007). Other areas of employment were pharmacies (35%), hospitals (6%), the University of Iceland (4%), public administration (4%) and other areas (11%). Pharmacy technicians are supervised by pharmacists and work in pharmacies, hospital pharmacies and in pharmaceutical production. In 2012, there were 164 practising pharmacy technicians, almost 9% less than in 2011. Each pharmacy technician is licensed through the DH.

Fig. 4.6

Number of pharmacists per 100 000 population in Iceland and selected countries, 1999 to latest available year



Source: World Health Organization, 2014.
Notes: Latest available year for Iceland and United Kingdom is 2012; 2011 for Norway; 2010 for Finland; 2009 for Denmark. No time series data available for EU average. More detailed data (recently available) showed that some pharmacists had been counted twice (both as pharmacists and proprietary pharmacists). Corrected data is available only from 1999.

4.2.2 Professional mobility of health workers

Until a few years ago, almost all physicians in Iceland were educated at the University of Iceland (UI) Medical School. However, today students are increasingly registering at foreign universities for basic training in medicine, which, to a large extent, is due to the limited number of medical students that are admitted to UI each year. In 2012 there were 193 medical students studying at the UI compared to 117 medical students enrolled at foreign universities.[27] Although there are programmes for specialization, most physicians choose to go abroad either for the full course of training or to finalize their training. The other Nordic countries as well as the United States are the most common destinations for Icelandic doctors to finish their training. Of those who seek specialization abroad, about 80% return to Iceland afterwards but 20% stay on to work abroad after graduation (Icelandic Medical Association, 2011).

Although the situation varies for different specializations, for a long time more Icelandic physicians have wanted to return home after specialization than the positions available allowed. According to the Icelandic Medical Association, all positions advertised in the Capital Region have always been fully staffed (Icelandic Medical Association, 2011). However, since early 2011 there have been instances where this has not been the case. In particular, posts advertised in primary health clinics have been difficult to fill. For example, in early 2010 there were no applicants for seven GP posts advertised at primary health clinics in the Capital Region (Sigbjörnsdóttir & Haraldsdóttir, 2010). Moreover, for many years posts in rural areas have been difficult to fill on a permanent basis, with examples of GP posts being vacant for 5–10 years. Generally, these posts are filled by temporary staff or by foreign physicians (Icelandic Medical Association, 2011). Moreover, since 2008, the number of physicians working in Iceland has decreased by 7.5% and in 2011 about one-third of doctors, according to the Icelandic Medical Association, were working abroad (Friðfinnsdóttir, 2011).

Nurses have been able to complete their MSc and PhD degrees in Iceland for several years. Although some nurses have chosen to receive their postgraduate training abroad, no figures are available. More recently, INA has reported an increased number of inquiries about job opportunities abroad, indicating that many nurses are contemplating moving away from Iceland (Friðfinnsdóttir, 2011).

[27] Icelandic Student Loan Fund (2012); email communications.

Dentists who wish to specialize in certain areas need to go abroad for specialist education. Recently, there have been increased concerns about a possible shortage of dentists, especially in rural areas and largely due to inadequate remuneration. According to the President of the Icelandic Dental Association, an increased number of dentists are seeking work abroad and already there is a shortage of dentist within specific specialities (Geirsdóttir, 2012).

Iceland is a member of the EEA but health professionals who seek to work in Iceland need to have their professional qualifications evaluated by an appropriate body before they can apply for a licence to practise.

4.2.3 Training of health workers

Doctors

Admission to the UI's School of Medicine is limited every year to 48 students, who are selected after a competitive examination (numerus clausus). This number is indicative of the estimated teaching and training posts that are available in affiliated hospitals and PCCs. Every student who has successfully completed a matriculation examination (*Stúdentspróf*) can register for the exam, which costs about €100 (ISK 15 000).

The basic medical training is six years of undergraduate studies. The first three years are dedicated to academic studies and the latter three years are devoted to clinical work at hospitals alongside academic studies. During the spring semester of the final year, students are given the opportunity to study at specific hospital departments or research institutions depending on their specialization interests. This semester is completed with a standardized American test, the CCSE (Comprehensive Clinical Science Examination), which is a prerequisite for working or studying in the United States. After successfully completing final examinations, each student is awarded a *candidatus medicinae* or *candidata medicinae* degree. Graduation is followed by 12 months of compulsory clinical training programmes at hospitals where students gain valuable experience by rotating between major departments. Each student completes 4 months in internal medicine, 3 months in general practice, 2 months in surgery and a final 3 months in a department of his/her own choosing. This compulsory 12-month clinical training can be completed in another country. Following successful completion of this programme, the student is awarded a licence to practise medicine by the DH. A licensed medical doctor can start specialist training that will take at least 5 years and is carried out in a salaried position with medical responsibilities. Although specialization in internal medicine, psychiatry, surgery, paediatrics and primary health is

available in Iceland, most medical doctors do not complete their training in Iceland but rather in one of the other Nordic countries or the United States (Ellertsson, 2012, personal communication).

Nurses, auxiliary nurses and midwives

All nursing education in Iceland is now at university level, at the UI (since 1973) and at the University of Akureyri (since 1987). Before this, nurses graduated from the Icelandic School of Nursing, which was established in 1931. Basic nursing education takes four years and culminates in a BSc degree. Following successful completion of the degree, nurses become registered nurses and are awarded a licence to practise by the DH. Admission to the programme is unrestricted for students who fulfil the admission criteria but due to the limited availability of clinical training posts for nursing students, only about half the students that start each year are allowed to continue into the 2nd semester (Friðfinnsdóttir, 2011). The UI's Faculty of Nursing offers graduate programmes leading to a graduate degree in midwifery as well as MSc and PhD degrees in nursing and midwifery. In addition, the faculty also offers two interdisciplinary programmes, one in Health Informatics leading to an MSc degree and another in Public Health Sciences leading to an MSc or PhD degree. More than half of all graduate nurses have finished formal postgraduate degrees and 2% have a doctoral degree (Friðfinnsdóttir, 2011).

Since 1980, the admission criterion for studying midwifery in Iceland has been a nursing degree. The programme at the UI follows EU directives on midwifery studies; it is a two-year programme divided into one academic year of theoretical and clinical courses and one full year of training with a focus on evidenced-based practice. At graduation, a midwife has finished over half the units required (65 units) for an MSc degree in midwifery, which can be completed in the department.

Education for nurse assistants takes three years and is offered by a number of higher secondary comprehensive schools. Each student also has to undertake 16 weeks of clinical experience at a recognized hospital and these are salaried positions. Nurse assistants receive a licence to practise through the DH. In order to give unskilled individuals with long experience in health care the opportunity to gain accreditation as nurse assistants, a new educational opportunity – called the auxiliary nurses' bridge (*Sjúkraliðabrú*) – was established in 2006. Individuals who fulfil the admission criteria have to complete at least 83 required units. Graduate courses have also been offered to nurse assistants since 1992. Qualified nurse assistants can continue their education and receive, for example, specialization in nursing for the elderly and psychiatric nursing.

Dentists

The UI's Faculty of Odontology offers two undergraduate degree programmes: a degree in odontology and a degree in dental technology. An unlimited number of candidates who meet the admission criteria (matriculation certificate) are admitted but at the end of the first semester, exams are held and only the top seven students in odontology and the top five students in dental technology are allowed to continue into the second semester. The odontology programme is a six-year programme, leading to a *candidatus* degree. Practical training takes place in the faculty's dental clinic that provides the public with both general and specialized services. Graduate programmes leading to MSc and PhD degrees are also offered at the Faculty of Odontology. Specialization in different dental specialties has to be acquired abroad. The dental technology programme is a three-year programme, leading to a BSc degree. Both dentists and dental technologist are licensed through the DH.

Pharmacists

Admission to the UI's Faculty of Pharmaceutical Sciences is successful completion of matriculation exams, preferably from a natural sciences branch, with emphasis on chemistry. The pharmacy programme is divided into 3 years of theoretical study ending in a BSc degree, followed by a further 2 years of study ending in an MSc degree. On completion of the MSc programme in Pharmacy, graduates may apply to the DH for registration as pharmacists. The Faculty of Pharmaceutical Sciences also offers a MSc programme in Pharmaceutical Sciences and a three-year PhD programme in Pharmacy and Pharmaceutical Sciences.

Other health professions

Physiotherapists undertake a four-year programme ending in a BSc degree. Uptake is determined on the basis of *numerus clausus* after a competitive exam each year and only 25 students with the highest grades are allowed to begin in the following year. Graduates can apply to the DH for registration as a physiotherapist.

Occupational therapy is a four-year programme (taught at the University of Akureyri) ending in a BSc degree. The admission requirement is successful completion of the Icelandic matriculation exams or a comparative education evaluated on an individual basis. Occupational therapists are licensed professionals through the DH.

4.2.4 Doctors' career paths

To obtain a general licence to practice as a medical doctor in Iceland, young doctors need to apply for a 12-month rotating internship (see section 4.2.3). The Division of Research, Education and Innovation at the National University Hospital (Landspitali) organizes these rotations. Similar smaller programmes are offered at two hospitals outside the Capital Region. This is followed by internship programmes towards specialization when this initial rotating internship is completed. Most Icelandic doctors do not finish their specialization in Iceland but receive this training abroad.

Availability of training institutions and budget restrictions affect doctors' career paths. With regard to the positions for specialist internship programmes, local hospital directors decide on how many positions are available and what educational programmes are offered. Each young doctor seeks training in the speciality he or she is interested in and there has been no attempt from the Icelandic authorities to interfere in this process or steer young doctors into specialties that are under-represented. Hospital management is not directly involved in promoting staff. However, they can indirectly influence and control the employment situation and the specialization emphasis each institution pursues.

In Iceland, movement of doctors between hospitals is rare. However, consultations and cooperation among physicians in different hospitals occurs frequently. Several hospital specialists, through a special contract with the authorities, work part time at a hospital and part time at their own private clinic, with only a few specialists working full time at their private clinics. Many specialists stay in close contact with their former foreign employers (during their specialization training). As each group of specialists in Iceland is relatively small, this helps them stay informed about new developments in treatments and for the purposes of continuous medical education. These connections are also used to facilitate the advancement of younger Icelandic doctors when they seek placement in foreign institutions. Moreover, during the economic crisis in Iceland, some specialists have continued working part time in their foreign institutions, regularly commuting between Iceland and abroad.

5. Provision of services

The Public Health Institute (PHI) merged with the DH in 2011 with the objective of promoting population health by strengthening public health practices and ensuring that they are based on best practice and knowledge. Since its establishment in 2003 the PHI had focused on various risk factors in relation to public health, such as nutrition and exercise, obesity, tobacco and substance abuse.

Primary health care, formally designated as a patient's first point of contact with the health-care system, is provided in public PCCs throughout the country and a few private primary health-care clinics and private GPs operating in the Capital Region. Most clinics are able to offer the required services but small clinics in rural areas often cannot and their patients are referred to larger clinics in the health region or to the nearest hospital. Nurses play an important role in PCCs and can be the first point of contact for patients. However, in the absence of a GP referral system, the first point of contact is often a private medical specialist. Outpatient care, provided by private medical specialists, is a significant feature of the health-care system, with patients having direct access to medical specialists. In addition, the numbers of doctors are skewed towards specialists and apart from gaining a licence to practise, entry to the medical specialist market is more or less unregulated. As a consequence, signs of overconsumption are evident.

All hospitals providing inpatient and ambulatory care are public hospitals. Regional hospitals provide general medical care in outpatient as well as inpatient departments 24 hours a day but availability of specialist care varies. Some of these hospitals provide day care for patients undergoing surgical treatment ending with discharge on the same day. Various types of day surgery also are provided at special ambulatory clinics that are privately owned by medical specialists.

Pharmaceutical care is regulated by the MoW but Iceland is a very small market with restricted profitability; for this reason, the supply of drugs is small compared to other Nordic countries. There are also fewer generic drugs and less competition among pharmaceutical companies. The pharmacy market is different from other retail markets because the cost of medicines is fixed: the IMA determines the maximum price and the maximum discount that can be given.

The MoW and local authorities share responsibility for the organization and provision of long-term care services. Admission to institutional care is regulated by the MoW and care is provided on the basis of an aged care pre-admission scheme administered by regional aged care admission committees. Older people in Iceland are living at home longer than previously and when admitted to nursing homes they are in poorer health and length of stay is shorter.

Palliative care is well established, especially in Reykjavik and the surrounding areas. Responsibility for the organization and provision of services for people with mental health conditions or disabilities lies with local authorities, which support a stronger move towards community-based services for this population. Patients bear the majority of the cost for dental health care and care is provided by private dentists on a fee-for-service basis. A new contract that came into effect in 2013 makes dental care for children under 18 almost free of charge.

5.1 Public health

The Public Health Institute (PHI) was established in 2003 (Act No. 18/2003) under the supervision of the Ministry of Health and Social Security (MHSS) (see sections 2.3 and 6.1). Various public health care projects were transferred from the DH to the PHI, including the monitoring of alcohol consumption and substance abuse, mental health, nutrition and exercise, accident prevention, tobacco use and dental health. The PHI promoted knowledge and information on public health by participating in research and educational activities aimed at influencing public attitudes and health behaviour. Its work programme was based on the Icelandic National Health Plan 2001–2010 (MHSS, 2001), in which health policy objectives are published in seven priority areas: alcohol; other drugs and tobacco; children and adolescents; older adults; mental health; cardiovascular disease and stroke; cancer; and accidents. In May 2011, the government decided to incorporate the PHI back into the DH (Act No. 28/2011)

(see also section 6.1), thus broadening the latter's mission. The objective of the merger was to promote population health by strengthening public health practices and ensuring that they are based on best practice and knowledge.

Responsibility for surveillance and control of communicable diseases lies with the DH (Act No. 19/1997). Amendments to the Communicable Disease Act in 2007 expanded its scope to include public health threats resulting from toxic and radioactive materials (Act No. 43/2007). The Chief Epidemiologist for Iceland (operating within the DH) has a wide-ranging remit and is responsible for preparedness against danger caused by infectious diseases/pathogens, toxic materials, radioactive materials and unexpected events that threaten the health of the population. He is also responsible for the notification of any serious health threats to the WHO and for communicating such information to other relevant parties in Iceland. The Chief Epidemiologist prepares the response plan, conducts risk assessments, carries out epidemiological studies to investigate the origin of the outbreaks and determines future actions to prevent their spread. The Chief Epidemiologist is required to keep a register of infectious diseases, pathogens and events that may pose a risk to the public, and physicians and laboratories are obliged to report incidents of communicable diseases to the DH. Since 2002 the Chief Epidemiologist has also been responsible for keeping an updated database on the vaccinations taking place under national vaccination programmes, which are free of charge for children (but not mandatory). Moreover, incidents of HIV infection have been reported to the Chief Epidemiologist since 1983.

Information regarding HIV and AIDS are accessible through the DH website and the DH and the Chief Epidemiologist cooperate with various organizations conveying important information to the public about the disease and its prevention. Iceland is experiencing a steady increase in HIV infections, mainly linked to intravenous drug use (Briem, 2011a). The MoW and nongovernmental organizations (NGOs), as well as the private sector, have been working together to fight this problem. The Icelandic Red Cross (IRC) has been running a special 'mobile clinic' in the Reykjavik area since October 2009, aimed at reaching marginalized groups such as homeless people and addicts, to improve their access to wound care, clean needles and syringes and general information about harm reduction (IRC, 2013a).

Since 1967, the Icelandic Heart Association (IHA) has been conducting research into the causes of heart disease, educating the public about prevention of cardiovascular diseases and providing individual risk evaluations (IHA, 2013). It has conducted large-scale studies of over 30 000 men and women born in

Iceland between 1907 and 1935 for more than 40 years, focusing on the multiple causes of disability in old age including heart disease, high blood pressure and Alzheimer's disease.

The ICS, a nationwide, voluntary organization financed by donations and fund-raising activities and also through significant support from health authorities, organizes screening programmes and they are also responsible for the Cancer Registry, a population-based data bank on cancer incidence in Iceland. Through the society's web site, people can access 15 patient support groups for different types of cancer and age-groups (ICS, 2013). Organized screening in Iceland for cervical cancer began in 1964. Today, women aged 20–69 are invited to have cervical cancer screening every two years and, since 2009, women aged 40–69 are invited to come every four years if they have had five normal Pap smears and at least two of them are from the last six years. The three-year accumulative attendance rate for screening in 2011 was 61% for women aged 20–69 and 63% for women aged 25–69 (ICS, 2012). At the end of 2011, 7.8% women aged 25–69 had never come for a cervical cancer screening appointment. Breast cancer screening began in 1973 and has always been connected to a cervical cancer screening visit; initially palpation (examination by hand) was used but since 1987 mammography has been used for screening women aged 40–69. The two-year accumulative attendance rate for breast cancer screening for women in this age group in 2011 was 58% and the three-year accumulative attendance rate was 68%. About 15.4% women aged 40–69 had never been for a breast cancer screening with a mammography at the end of 2011. No other general screening programmes exists in Iceland; however, a screening programme for cancer of the colon and rectum has been discussed for some years.

Vaccinations for infants begin at three months and the schedule includes immunizations against diphtheria, Hib, influenza, MMR, pertussis, polio and tetanus. Each child's health is monitored through their regional primary health-care centre (see section 5.3).

One of PHI's first tasks in 2003 was a project conducted in collaboration with local authorities and the primary health-care sector, aimed at countering the growing problem of overweight and obesity among Icelanders. The goal of this award-winning project[28] was to promote a healthy lifestyle among children, young people and their families, with an emphasis on increased physical activity and improved diet (Heimisdóttir & Guðlaugsson, 2011). Following widespread

[28] Winning the WHO Counteracting Obesity Award in 2006. http://www.euro.who.int/__data/assets/pdf_file/0006/96459/E90143.pdf.

surveys on kindergarten and elementary school children in 2005, 2007 and 2009 and their schools' policies on physical activity, nutrition and well-being, local government and school authorities developed their own strategies and action plans with the help of educational material distributed to primary health- care centres. The final report, published in 2011, stated that many elementary schools are encouraging students to exercise more in addition to the traditional school gymnastics but for younger students increased activity after school needs to be further emphasized (Heimisdóttir & Guðlaugsson, 2011). Moreover, since the start of the project the availability of fruit and vegetables for pre-schoolers had increased and water was offered at mealtimes in almost every kindergarten and primary school. A similar programme in upper secondary schools, offering a comprehensive strategy for prevention and health promotion that emphasizes nutrition, exercise, mental health and lifestyle was started by the PHI in 2009. Today, 31 upper secondary schools have signed up for this project.

Sex education in primary schools is mandatory and part of the curriculum. Sex education is not mandatory in upper secondary schools but various materials are available on the DH website and brochures are published by the DH and the PHI with information on safe sex, sexual transmitted diseases (STDs), contraception and pregnancies. Some PCCs offer special clinic times for young people (14–20 years) where no appointment is needed and the services are free of charge. Abortions are performed at hospitals for a minimal payment (EUR 25 or ISK 4000).[29]

In 2010, a special taskforce was appointed by the then Minister of Health to examine ways to improve health and health care for young people aged 14–23 with special emphasis on prevention in order to avoid accidents and diseases such as diabetes, heart disease and obesity later in life. An interim report published by the MoW in September 2011 provides an overview of the various issues related to young people's health and lifestyle and summarizes the available resources and services (MoW, 2011a).

[29] Abortions are allowed up to the 12th week of pregnancy (Act No 25/1975). Between weeks 12 and 16, abortions may be permitted after the patient has applied to a special committee for an exception. In rare cases, abortions are allowed after the 16th week and then only in cases where fetal or maternal health is at serious risk. Exchange rate of EUR 158,58 on 31.7.2013.

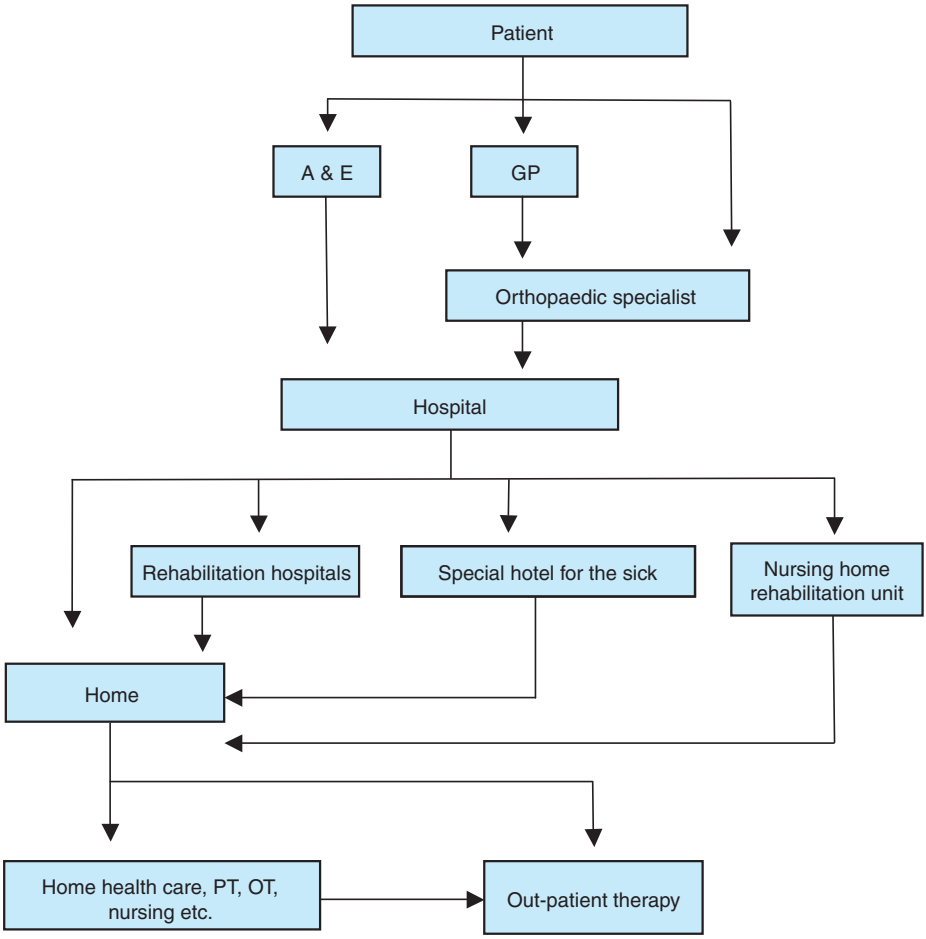
5.2 Patient pathways

The Health Care Act (No. 40/2007) states that health services should always be provided at the most appropriate level of care and that the PCCs should usually be the patient's first point of contact when entering the health-care system. Patients have the right to seek care from any primary health care clinic or health-care facility that is most easily accessible to them.

Fig. 5.1 demonstrates schematically the possible pathways patients in need of a hip or knee replacement can take in the health-care system. The key elements include:

- Patients can contact their GP or make an appointment with any GP in the most easily accessible health clinic. Patients can also contact an orthopaedic specialist directly without a referral from a GP. Co-payments are involved for both GP visits and outpatient consultations with a specialist (see Chapter 3).
- In cases of acute accidents (e.g. traffic accidents) patients may be sent directly to an A&E department and, after evaluation, be admitted to hospital for appropriate orthopaedic surgery.
- After evaluation by the GP, the patient may be referred to an imaging service, from where the patient is referred to an orthopaedic specialist who will, after evaluation, refer the patient to hospital for surgery.
- Patients are free to choose from any of the country's three public hospitals that perform these elective operations. However, patients may have to wait for several months and up to over a year for surgery.
- Following surgery, patients will receive rehabilitation in hospital until set goals for discharge have been achieved. After this, the responsible orthopaedic specialist, together with hospital staff, the patient and his or her family, develop a plan for further care, if needed.
- Depending on the circumstances, patients can be discharged to their home without any further care except for future follow-up appointments with the orthopaedic specialist, or may be referred for special home care, such as physical therapy, if they are unable to travel for outpatient care. Patients are referred for outpatient physical therapy, when possible, if further treatment is needed.

Fig. 5.1
Patient pathway for artificial hip/knee replacement surgery



- If patients are unable to go home following their surgery, the following options are available, depending on what is deemed most appropriated: (1) rehabilitation hospital; (2) special hotel for the sick; or (3) nursing home (temporary rehabilitation admission). In all instances the eventual goal is to discharge patients to their home with appropriate support for independent living. There they can receive home health care as needed or travel to outpatient clinics for further care.
- A follow-up visit to the hospital outpatient department or with a private specialist is scheduled in all cases to evaluate the outcome.

5.3 Primary/ambulatory care

Primary health care is stipulated as the first point of contact the health-care system. However, in the absence of a GP referral system the first point of contact is often a private medical specialist.

The goal of the health system is to ensure equal access to safe and high quality health care, regardless of financial ability to pay or geographical location. A new Health Care Act, introduced in 1973, marked the beginning of organized primary health care in Iceland. Public PCCs were established throughout the country, first in rural areas and then later in the Capital Region (MoH, 2010a). This legislation also laid the foundation for the integration of health promotion and general practices and the role of primary health clinics. Since 2007, the role of PCCs has encompassed the provision of general medical care, nursing, health promotion and prevention, emergency and casualty care as well as other health care. As part of the health system restructuring that took place in the 2000s and the creation of seven health regions, at least one primary health-care centre should be located in each region. All PCCs should provide (Reg. No. 787/2007):

- general medical services;
- nursing;
- home nursing;
- maternity care;
- infant and child medical care and immunizations;
- health care in schools/school nursing;
- health promotion and prevention, such as STD prevention, psychiatric care, alcohol and drug prevention, tobacco use prevention, hearing and vision screening, mass screening and organized disease search, communicable disease prevention, health care for teens, geriatric care and accident prevention;
- primary health clinics can also offer specialist care, psychological services, social work, occupational and physiotherapy and nutrition advice.

In terms of maternal and infant care, PCCs (through their midwives and GPs) offer antenatal care free of charge to all expecting mothers/parents. A number of procedures are offered to screen for diseases that could affect the health of the mother or the child, such as anaemia, hepatitis B, HIV, rubella and syphilis. Ultrasound screening of the fetus is offered at weeks 11–14 (not free of charge) and at weeks 19–20 (free of charge to the mother). Women are also offered

diagnostic tests for genetic disorders where appropriate and specific counselling is available. Women can choose to give birth at home or in a hospital; in 2011, about 2.1% of women chose to give birth at home (DH, 2013b). When a child is born, all parents are offered home visits during the first weeks. At six weeks, the infant's health and progress is evaluated at the regional PCC where a special vaccination schedule begins at three months. The regional PCC continues to monitor infants and young children all the way through primary and elementary school where a special school nurse monitors their development and coordinates care as needed.

There are now 78 PCCs (of which six operate jointly at regional hospitals) and satellite clinics throughout the country (MoW web site). These are public PCCs staffed by salaried health-care professionals. In addition, there are two privately owned but publicly funded primary health-care clinics both located in the Capital Region and 12 private practising GPs also in the Capital Region. Private GPs have a contract with the IHI and patients receiving care at private clinics, private GPs and public PCCs pay the same for services. Seventeen public PCCs are located in the Capital Region where about 65% of the population resides. About one-fifth of the population in the Capital Region receives care at the private clinics and from private practising GPs (MoH, 2010b; DH, 2012a). PCCs are modern and generally well equipped. Most clinics are able to offer the required services but small clinics in rural areas often cannot and their patients are referred to larger clinics in the health region or to the nearest hospital. Private GPs provide the same services as GPs in public PCCs except that they do not offer maternal and infant care.

There has long been a shortage of GPs in Iceland (see section 4.2.1). Reliable numbers are not available but it has been estimated that about 30 000 people in the Capital Region – representing about 15% of the region's population – are unable to register with a specific GP (MoH, 2010b). However, people are free to choose a GP or obtain services at any primary health-care centre they want, whether or not they are registered with a GP or at the centre. Those who are not registered with a specific GP are mostly aged between 20 and 40 years, and typically do not have children (MoH, 2010a). Patients have direct access to medical specialists, hospital clinics and after-hour clinics since there is no GP referral system or a GP gatekeeping role in the system.

In 2011, the average number of patients per GP (full-time equivalent) was about 1600 but the actual ratios ranged from 844 patients per GP in the Eastern Region, a vast rural area where roughly 3% of the population lives, to 1914 patients per GP in the South-west Region, an area very close to the Capital Region where most of the population lives (Althingi, 2010a). Contacts

with PCCs in 2011 were 2.0 per inhabitant, ranging from 1.8 per inhabitant in the Capital Region to 2.8 per inhabitant in the Westfjord Region (DH, 2011). In the Capital Region, there are more options for outpatient care with specialists, which largely explains this difference. According to figures from Health Statistics in the Nordic Countries, Iceland had 58 GPs per 100 000 inhabitants in 2009, which was similar to Sweden (60) but lower than Denmark (74) and Finland (102) (NOMESCO Nordic Medico Statistical Committee, 2011). Norway had the fewest GPs per 100 000 inhabitants in 2009 (43).

Nurses play an important role in PCCs and can be the first point of contact for patients. They have roles both inside and outside the clinics, where they are involved in home care, especially for older people and make house calls relating to maternity and infant care. In 2012 nurses/midwives made 0.7 consultations per inhabitant and 0.4 house calls per inhabitant (DH, 2012a). Nurses in PCCs, as elsewhere in the system, have professional autonomy and operate in an administrative hierarchy independent of physicians (Reg. No. 787/2007).

5.3.1 After-hours primary care

All PCCs in the Capital Region provide after-hours services between 4 pm and 6 pm. After-hours care in Akureyri, in the North of the country, is provided at the regional hospital's A&E department where GPs are on call. PCCs in other health regions provide a telephone number for the physician on call after regular hours. In the Capital Region there is also a special after-hours medical clinic (*Læknavaktin*), which is privately operated under a contract between the IHI and GPs working in PCCs. This clinic also provides after-hours professional health services advice. All primary health clinics offer house calls by GPs; however, in the Capital Region most are performed by the GPs at *Læknavaktin* (DH, 2012a). Table 5.1 shows the number of visits to after-hours care at PCCs in the Capital Region and *Læknavaktin*. Since 1995, after-hours paediatric services have been operating in Reykjavik, mainly catering for children under the age of three. The clinic operates under a service agreement with the IHI and there is a cap on how many patients can be seen at the clinic.

Table 5.1

Number of visits to GPs in after-hours PPCs in the Capital Region, 2007–2012

	2007	2008	2009	2010	2011	2012
Primary care centres[a]	52 593	53 755	51 695	50 154	55 443	54 285
Læknavaktin[b]	16 800	63 304	60 527	61 356	63 626	68 999

Sources: [a]Primary Health Care of the Capital Area Annual Reports, 2010–2012; [b]DH, 2013c. Contacts with primary health care centres 2007–2012. The figure for 2007 only includes October–December 2007. Figures from the IHI are more complete and indicate 61 692 (personal communication at IHI, December 2013).

5.3.2 Medical specialists and ambulatory care

Outpatient care, provided by private practising medical specialists, is a significant feature of the Icelandic health-care system, with patients having direct access to medical specialists. Advances in medical technology and treatment, hospital mergers, closure of hospital beds, long waiting lists in hospitals and a small medical care market are the major explanatory factors for this feature (Sigurgeirsdóttir, 2006). Table 5.2 provides data from the IHI, showing the growing trend in activities performed by some selected medical specialists, particularly since the late 1990s. It shows that these selected specialists are increasingly performing more complex operations, involving more anaesthetic, which were previously performed exclusively inside hospitals.

Table 5.2
Number of procedures/units per visit to specialists, 1994–2007

	Orthopaedic surgeons		Surgeons		Urologists		Anaesthetists	
	Visits	Units/ procedures per visit	Visits	Units/ procedures per visit	Visits	Units/ procedures per visit	Visits	Units/ procedures per visit
1995	19 069	28	17 582	27	9 389	25	14 661	50
2000	21 784	45	16 150	42	9 115	34	13 448	95
2005	25 730	50	14 731	49	10 311	41	12 623	118
2007	27 824	53	14 509	54	10 701	44	11 752	132

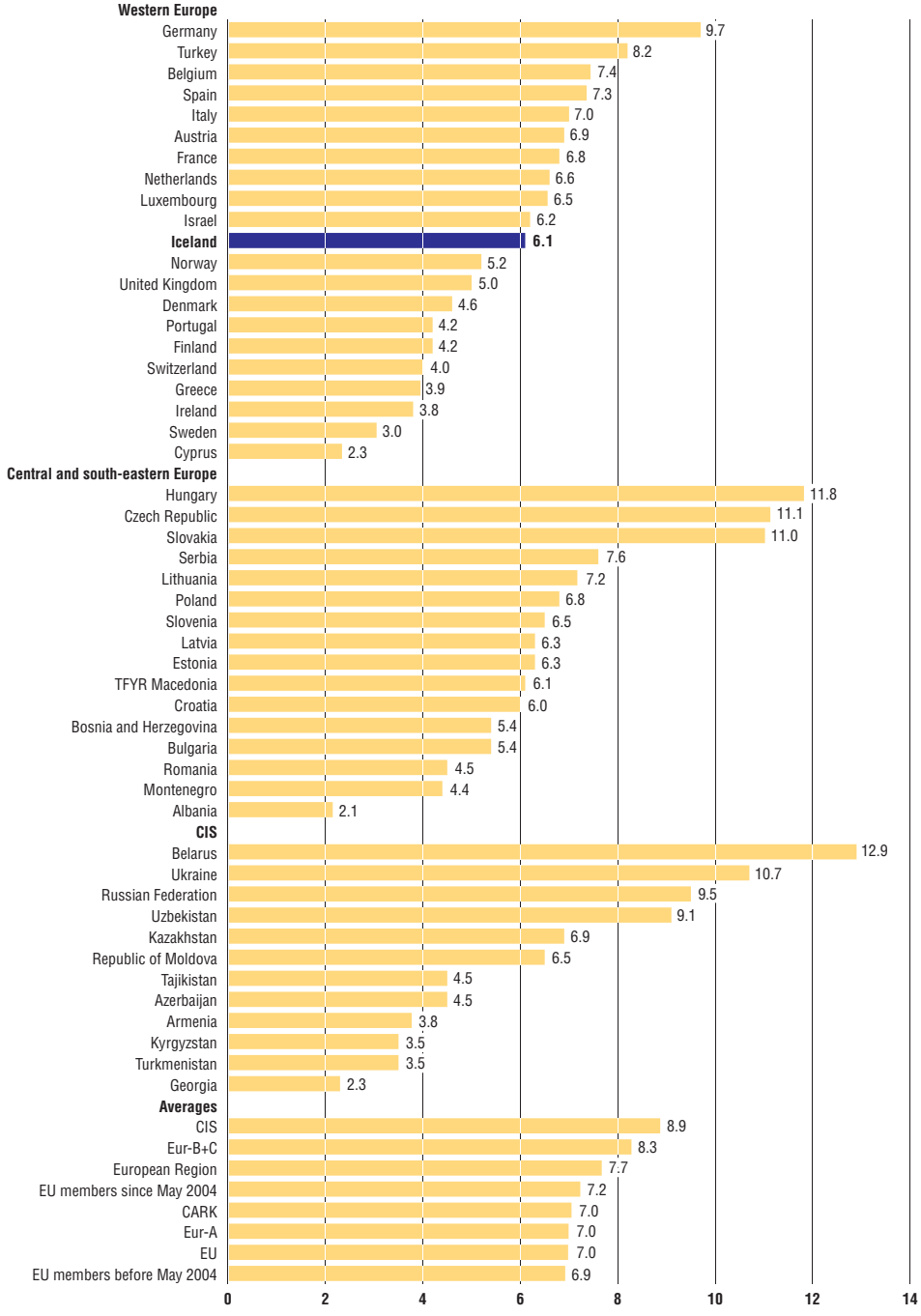
Source: IHI Statistics, 2013b.

There were 1.8 outpatient contacts with medical specialists per inhabitant in 2012, a similar rate to 2009 (IHI Statistics, 2013a). Most private medical specialist clinics are in the Capital Region. However, many specialists provide consultations on a regular basis in health regions around the country. Between 2008 and 2010, the number of visits to specialists grew by 3% per annum whereas visits to GPs declined by 2% over the same period (BCG, 2011). People in the Capital and South-west Region visit private specialists more frequently than people in other regions. By way of international comparison Fig. 5.2 shows the average number of outpatient contacts per person in the WHO European Region. With 6.1 contacts per person per year, Iceland's rate is similar to that of France, The Netherlands and Luxembourg but higher than the Scandinavian countries and the United Kingdom.

In Iceland, the number of doctors is skewed towards specialists (BCG, 2011). In 2009 overall there were 3.7 physicians per 1000 population in Iceland, which was the same as Sweden. Only Norway had a higher number at 4.0 per

Fig. 5.2

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



Source: World Health Organization, 2014.
Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

1000 population. However, Iceland had the highest number of medical specialists at 1.1 per 1000 population compared to the other Nordic countries (Sweden 0.8, Finland 0.6, Norway 0.6 and Denmark 0.5), and the lowest number of GPs at 0.6 per 1000 population, the same as Sweden (Sweden 0.6, Denmark 0.7, Norway 0.8 and Finland 1.0). Until 1984, referrals were required for specialist medical services in Iceland. This was changed following an agreement between the Reykjavik Physicians' Association and the SSI and legislative changes in 1989. Although there were attempts to reinstate a referral system (in 1992 and 1995) these were either abandoned or postponed indefinitely. Apart from gaining a licence to practise, entry to the medical specialist market is more or less unregulated. Signs of overconsumption have been found; for example, for cataract surgery, Iceland is well above Sweden with 98.3 surgeries per 1000 inhabitants compared with 70.1 per 1000 inhabitants in Sweden (BCG, 2011).

5.4 Specialized ambulatory care and inpatient care

As discussed in the previous section, extensive medical specialist care is provided in private ambulatory settings outside hospitals. All hospitals providing inpatient and ambulatory care are public hospitals. Regional hospitals in each of the seven health regions provide general medical care in outpatient as well as inpatient departments 24 hours a day but availability of specialist care varies. The university and teaching hospitals in Reykjavik (Landspitali University Hospital) and Akureyri and a few other hospitals provide secondary care while highly specialized tertiary care is most extensively provided at Landspitali and to a lesser extent at the hospital in Akureyri. These two largest hospitals in the country provide a wide range of specialized medical services in ambulatory outpatient departments. In particular, Landspitali maintains high levels of clinical competence and is equipped with advanced medical equipment. Health professionals and other employees working in hospitals are salaried employees. In line with emphasis placed on savings in the general hospital system, hospitals are increasingly shifting their care from inpatient care to outpatient and day care services. In addition, there are ten HCOs with acute beds offering general internal medicine, nursing and necessary support functions.

The DH collects and publishes information on numbers of people waiting for more than 3 months for elective surgery (DH, 2013d). According to this official source, waiting times for various types of surgery have been increasing steadily in more recent times. For example, in October 2012, the average waiting time at Landspitali for a hysterectomy was 15.5 weeks and for incontinence or

uterine prolapse 65 weeks. In addition, 1220 patients were waiting for cataract surgery, with an average waiting time of 74 weeks. The latest merger between Landspitali and St Josef's Hospital and the subsequent closing of the latter's operating rooms can, to some extent, explain this increase in waiting times as these three operations were commonly performed at that hospital. In early 2013, 79 people had been waiting for more than 3 months for hip replacement surgery at Landspitali (estimated waiting time 14.3 weeks) and 185 people had been waiting more than 3 months for knee replacement surgery (estimated waiting time 41 weeks).

5.4.1 Day care

Day care in hospitals is provided for patients undergoing surgical treatment ending with discharge on the same day. Day care also provides specific programmes for patients undergoing a number of diagnostic or therapeutic tests and medical treatments that require a specific medical environment but do not necessitate hospital admission. Day care at Landspitali is provided for women's and children's services, mental health services, internal medicine services (including geriatrics and rehabilitation) and surgical services. There has been little variability in the number of visits to emergency rooms and day and outpatient clinics between 2007 and 2011 (LSH, 2011a). However, the number of surgeries performed at day care clinics has been increasing from roughly 2600 in 2008 to roughly 6600 in 2012 (LSH, 2012). Various types of day surgery are also provided at special ambulatory clinics that are privately owned by medical specialists. Trends in visits to anaesthetists in private outpatient clinics show an increase from a little over 11 700 in 2007 to roughly 14 300 in 2011, indicating an increase in surgical treatments in outpatient settings that require anaesthesia (IHI Statistics, 2013b).

5.5 Emergency care

Almost all PCCs and hospitals in Iceland operate accident and emergency (A&E) departments providing services throughout the year and some providing services around the clock. The emergency departments serve patients with acute illnesses and injuries. The two main emergency departments are located at Landspitali in Reykjavik and this had over 96 000 visits in 2011 (LSH, 2011a) and a smaller one in Akureyri Hospital with over 12 500 visits in 2011 (Akureyri Hospital, 2011). Special emergency care is available at the Children's Hospital at Landspitali for children and adolescents up to 18 years and it is open around

the clock. In addition, at Landspitali, a special emergency room is operated for patients with acute heart disease and for patients with acute psychiatric problems (who can seek help without a referral). The regional hospital in Akureyri also runs an emergency department for psychiatric problems.

The A&E at Landspitali is the only major trauma centre in the country operating with a landing facility on-site for helicopters operated by the Icelandic Coast Guard (ICG). This service is a critical component of the emergency services provided for sailors, fishermen and tourists travelling in Icelandic waters or off-road in inland areas. Of the six smaller emergency rooms (ERs) located in regional hospitals around the country, the one in the Southern Region is open 24/7 with on-site/on-call services from physicians and nurses but others have shorter opening hours with hospital physicians and/or primary care physicians on call during off hours.

A designated publicly owned company, the Emergency Line, has been operating the 112 national emergency number since 1996, providing all responses to accidents, fire, crime, search, rescue and natural disasters on land, at sea or in the air. This number can be dialled, free of charge, from any telephone or mobile phone regardless of whether the phone is blocked, for example, because of late payment. Box 5.1 provides an example of a patient pathway in an emergency care episode.

An evaluation of the emergency care services in Iceland states that the inflow of patients to the A&E department at Landspitali is too high (BCG, 2011). The evaluation estimates that 30 000 visits out of 70 000 could have been handled by a GP. According to the Boston Consulting Group, the health-care system is lacking a care guidance function and a more structured collaboration with the primary care system could resolve the problem. Moreover, results from a recent study carried out at Landspitali's A&E department, examining the effect of crowding and length of stay on death and/or length of hospitalization (Benedikz et al., 2013) demonstrated that the first 90 minutes after arriving at the A&E department seemed critical and mortality significantly increased with longer stays. After this initial time period, increases in crowding rather than length of stay increased 30-day mortality after admission. Neither crowding nor length of stay was significantly associated with length of hospitalization.

The organization of medical transport is governed by Regulation No. 262/2011. Operation of the ambulance services is subject to meeting all technical requirements and DH approval. Nationally, the Emergency Line 112 coordinates the registration of patient transportation: currently, 77 ambulances

Box 5.1
Example of a care pathway for a patient after a motor vehicle accident in Reykjavik

- A call is placed to the 112 national emergency number.
- The emergency dispatchers are on duty round-the-clock. They are specially trained to evaluate the acuteness of the incident and to respond immediately, sending appropriate assistance.
- An ambulance staffed with paramedics and/or a medical doctor is sent to the location and transports the patient to the A&E department at Landspitali.
- A nurse will examine and evaluate the patient on arrival. The nurse is responsible for prioritizing and classifies individuals according to a five-category priority classification where the most urgent problems are handled first (triage).
- After defining the level of priority, the patient is either referred to the acute department (G2) or acute and outpatient department (G3). If the patient is referred to G2 he or she usually requires more complicated treatment and often admittance to hospital. Acute and outpatient department (G3) admits patients that are not as sick or are injured after an accident.

A person can go directly to the A&E department after an accident without calling 112 and will receive the same treatment on arrival as a person arriving in an ambulance. In other parts of the country where a person is involved in an accident they would also call the national emergency number 112 and an ambulance would be dispatched from the appropriate area. Patients are then taken to the nearest regional hospital or health-care centre where they are evaluated by the GP/physician on call.

are owned and operated by the IRC and located at 40 different locations around the country (IRC, 2013b). The ambulances transport, on average, 40–50 patients per day or 20 000–24 000 patients per year. The MoW has contracted the IRC to handle procurement, purchasing and operation of ambulance vehicles and equipment for the whole country. This agreement was renewed in early 2012 and is valid until the end of 2015 (IRC, 2012). The IRC also has an agreement with the IHI on cost-sharing of transport services but the patient pays a fixed amount regardless of distance travelled (IHI, 2011a).

An evaluation of the ambulance services in Iceland shows that some ambulances were poorly utilized and the education of paramedics needed to be improved (BCG, 2011). In the light of this, a project group appointed by the Minister of Health to suggest future planning strategies for the ambulance services (MoW, 2012c) emphasized the importance of improving the education of paramedics. Currently, a paramedic can be licensed by the DH after only a three-week training course (EMT-Basic). The group also emphasized the importance of increasing ambulance services in rural areas in order to compensate for decreasing health care services.

5.6 Pharmaceutical care

Pharmaceutical care is regulated by five different government agencies (see section 2.8.4). While the main objective of the Medicinal Products Act (No. 93/1994) is to ensure an adequate and efficient supply of essential drugs, Iceland is a very small market with restricted profitability, which explains why effectively the registration of drugs is limited. Because the market is small, the supply of drugs is modest compared to other Nordic countries; there are also fewer generic drugs and less competition among pharmaceutical companies (INAO, 2011b). According to a 2011 report prepared for the Icelandic Parliament, there were approximately 3000 drugs available in Iceland, compared to 8000 in Norway, 9000 in Denmark and 10 700 in Sweden.

Marketing authorization to introduce a drug into the Icelandic market is granted by the IMA. Detailed information on a drug's quality, safety and pharmacological properties has to accompany the application. However, in Iceland, achieving market authorization does not always result in a drug being put on the market. For example, in June 2011, 4372 drugs had received a valid marketing authorization but only 2237, or 51%, were actually for sale (INAO, 2011b). A report by the Heads of Medicines Agencies (HMA) cites the main reason for this as being the small size of the market (Heads of Medicines Agencies, 2007) and the costs involved such as translating and printing information into Icelandic, issuing a summary of product characteristics (SPC) in the language, producing patient information and drug labelling and covering pharmacovigilance, scientific services and pricing procedures. These extra costs are difficult for companies in a small market such as Iceland where profitability potential is limited. Because fewer drugs are introduced to the market in Iceland, the IMA is allowed to grant exemptions from requirements when the use of an unregistered drug is required, which ensures that doctors can prescribe medicines that patients need.

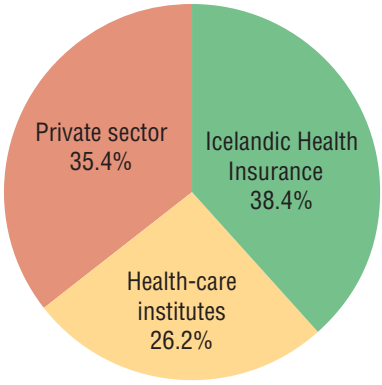
An INAO report on drug costs in Iceland (INAO, 2011b) recommends that strategies be pursued to gain access to larger markets by collaborating with other countries to increase the number of drugs on offer in Iceland, lower market prices and increase diversity. Improving Iceland's limited access to inexpensive generic drugs that are available in other Nordic countries is especially important. One such initiative with Sweden, which started in 2007, allowed companies to simultaneously apply for a marketing authorization in both Sweden and Iceland but according to the MoW, the results of this project have not been as good as hoped (INAO, 2011b). Another EU-led initiative provides an informal connection between small countries to discuss pharmaceutical supply in small

markets. In 2011 this collaboration led to the establishment of a special project team, of which Iceland is a part, called 'Facilitating supply in small markets' dedicated to enhance collaboration among Member States in finding common non-regulatory approaches to timely and equitable access to medicines (European Commission, 2013).

Pharmaceuticals are exclusively distributed through community pharmacies and hospital pharmacies (see section 2.8.4). According to figures from 2011, there were 63 pharmacies in Iceland, of which about 70% were owned by two large corporations, with the remaning pharmacies operated by independent pharmacists (Hjaltalin, 2011). The pharmaceutical market has the characteristics of an oligopolistic market where the two large companies combined have a 65% share and, as a result, barriers to entry into the market can be considered to be relatively high. Iceland has ranked among the top four European countries for the number of pharmacists per 100 000 population for many years and the number of practising pharmacy technicians is growing (see section 4.2.1).

The pharmacy market differs from other retail markets because the cost of medicines is fixed. The IMA determines the maximum price and the maximum discount that can be given (see Chapter 2.8.4). In 2010, the retail value of the pharmaceutical market, including both prescription drugs and OTC drugs was roughly ISK 25 billion (EUR 157 million) (Statistics Iceland, 2011). Fig. 5.3 demonstrates how this expenditure was divided between the IHI, health-care institutions and privately by consumers.

Fig. 5.3
The pharmaceutical market in 2010



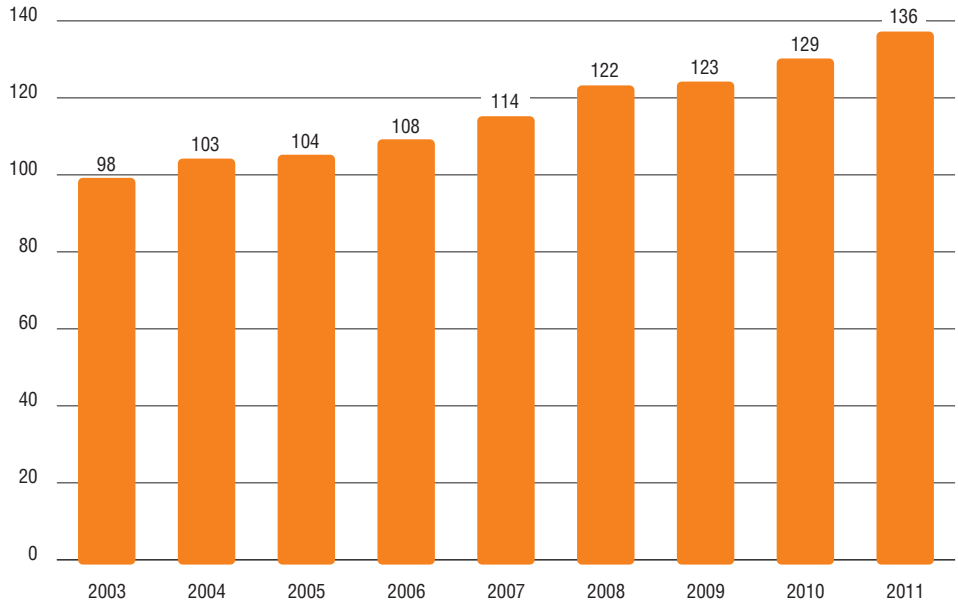
Source: Statistics Iceland, 2011.

Drugs administered in hospitals are coded 'S' and are free of charge. The costs of S-coded drugs are expected to increase in the coming years (MoW, 2011c). This can be explained partly by the natural increase in the population but also because of the potential positive effects of life-saving drugs and other treatments, and the increases in quality of life of patients. Iceland has actively been trying to manage the increased cost of S-coded drugs, particularly by enforcing strict clinical guidelines for very expensive drugs. For example, at Landspitali, an application has to be approved by a special committee before the use of a designated drug can begin for a fixed period.

Fig. 5.4 demonstrates how the use of prescription drugs measured by defined daily dose (DDD) has been increasing on average by 4.1% per year from 2003 to 2011 (IHI, 2011b). Between 2009 and 2011, there was a 10.9% increase in the use of prescription drugs; however, the cost to the IHI decreased by 13% from ISK 10.7 billion (EUR 67.4 million) to ISK 9.3 billion (EUR 58.6 million). Table 5.3 shows expenditure on pharmaceuticals by payers between 2007 and 2010 (Statistics Iceland, 2011) and highlights the decreasing public share in pharmaceutical costs and rising private share of costs.

Fig. 5.4

Pharmaceutical use in Iceland measured in DDD, 2003–2011



Source: IHI, 2011b.

Table 5.3
Expenditure on pharmaceuticals by payers, 2007–2010, million ISK

	2007	2008	2009	2010
Icelandic Health Insurance	7 055	9 287	10 743	9 594
Health-care institutions	4 718	5 782	7 323	6 551
Private consumers	6 123	7 119	8 035	8 866

Source: Statistic Iceland, 2011.

Electronic prescriptions have been used in Iceland since 2008 and the MoW employs various measures to influence physicians'prescribing behaviour (see section 2.8.4). The DH monitors physician's prescriptions and since 2002 information has been collected in a special pharmaceutical database. The use of pharmaceuticals in nursing homes has been included in this database since 2010. In May 2013, a new payment system for the purchase of drugs began (IHI, 2013a) with the primary aim of making access to medicines more equitable. Each individual will pay proportionally less as the cost of medications rises within a 12-month period (see section 3.4.1).

5.7 Rehabilitation/intermediate care

Rehabilitation occurs in various areas of the health system. All rehabilitation (physical, occupational and speech therapy) is offered free of charge within hospitals. Moreover, patients discharged from hospitals can be referred to physiotherapy provided at home if they are unable to travel to a clinic. The IHI shares the cost of home physiotherapy treatments subject to prior medical approval and patients pay the same price for home physiotherapy as they do for treatment at clinics. The IHI may, however, waive a patient's co-payments in cases of serious medical conditions, such as cancer or end-stage Parkinson's disease, and also in cases of very severe disabilities. In addition to sessions at physiotherapy clinics, physically disabled children in primary schools can also receive physiotherapy (one visit per week) at their schools. This type of treatment requires prior approval by the IHI and physiotherapists have to submit an application stating the rationale for school-based treatment. Many nursing homes have rehabilitation departments that offer treatment to their inhabitants free of charge and some have designated rehabilitation beds that accept geriatric patients from hospitals who are in need of further rehabilitation before they can be discharged to their own homes or other appropriate housing arrangements.

Rehabilitation is also provided at special rehabilitation hospitals, partly or fully reimbursed by the IHI depending on the contract in place. A special programme for overweight and obese individuals is provided at Reykjalundur Rehabilitation Hospital and since 2002 the clinic has been cooperating with Landspitali, preparing individuals for bariatric surgery, which is fully reimbursed by the IHI. Reykjalundur, which operates under contract with the IHI, is a comprehensive rehabilitation hospital that aims to improve the quality, competence and independence of care recipients. The NLFÍ Spa and Medical Clinic (owned by the Nature and Health Association of Iceland and located in Hveragerði) is only a half-hour drive from Reykjavik. It accepts individuals for rehabilitation following an accident or illness and, if individuals are referred to the clinic by a medical doctor, the IHI shares the cost of treatment.

5.8 Long-term care

The MoW and local governments share responsibility for the organization and provision of long-term care services. In January 2011, services for people with mental health and physical disabilities were transferred from the state to the municipalities (Act No. 152/2010) although the MoW still retains policy-making responsibilities for issues related to people with disabilities. One of the main objectives of this transition was to improve services for disabled people and to facilitate a more appropriate individually adjusted level of care. The services transferred to local levels included group homes, increased assistance for disabled individuals living independently in the community or in specially serviced residential apartments, rehabilitation centres and day-care institutions, sheltered workshops and supported employment, homes for children, short-term admission to institutions, support to families and counselling and other support to disabled individuals and their families.

Services are supplied by both public and private non-profit providers. A recent study has shown that within this group, relatively few individuals receive user-led personalized (direct payments) assistance but 59% were interested in these types of services (Social Science Research Institute, 2011). An all-party resolution on personalized lifestyle assistance was approved by parliament in January 2010 (Althingi, 2010b). With this resolution it is expected that a special joint project between the state, local authorities and the confederation for disabled people will be established for the introduction of user-led personalized assistance. Funds were earmarked for this project up to 2013. The MoW

has published a handbook to be used as a framework to assist users, local governments, government agencies and other service providers in developing and implementing such services (MoW, 2012d).

Services for the elderly are organized into home and community care and institutional/residential services. The policy aim is to enable older people to enjoy an independent standard of living as long as possible and to guarantee institutional services when needed (Act No. 125/1999). Home and community care services include social home help and home health care, service centres, day care and serviced apartments for the elderly that may be privately owned, leased or residence apartments. These are often provided by NGOs or local governments, who are responsible for providing services to inhabitants. Institutional care services include residential old people's homes, which can be categorized into two main types of institutional care. Firstly, sheltered apartments that are equipped with security alarm systems, specially designed for the needs of the elderly. These apartments are not financed through the public budget or per diem rates but rather with a direct contribution in the form of co-ownership via a share in the apartment matched with a monthly rent and user charges for services from the inhabitants. Admissions to these apartments are not regulated by a pre-admission assessment (see below). Secondly, there are small collective housing units for people with dementia who despite adequate social home help and health care are unable to sustain independent living at home. These collective homes are usually financed on a per diem basis. Finally, the more traditional institutional care includes nursing homes and nursing beds designated for the elderly in hospitals and geriatric institutions. Admission to this type of institutional care is regulated by the MoW and care is provided on the basis of an aged care pre-admission scheme administered by regional aged care assessment committees (see below). Institutional care for the elderly and the operation of the aged care assessment programme is the responsibility of the MoW.

The government policy for the elderly is that they should be assisted by appropriate health and social services to live in their own homes outside institutions as long as possible. To achieve this, an Aged Care Assessment Programme has been in place since 1990. Since 2008, seven special admission assessment committees (Reg. No. 1262/2007), located in each health region, have been appointed by the MoW to monitor the health and social well-being of inhabitants and to make a professional assessment of people's needs, regardless of age, for permanent placement in a nursing home. The DH is responsible for and monitors the work of the committees and oversees the operation, as well as maintenance and development, of an electronic record system of admissions.

Demand for institutional services is high. A relatively high proportion of the elderly in Iceland – 8.2% – was receiving institutional services in 2008 and 2009, compared with an average of 6.6% in the other Nordic countries (ALA, 2012). For home health and social care in 2008–2009, a high proportion of the elderly in Iceland – or 20.1% of those aged 65 and older – were receiving these services compared to 11% in other Nordic countries. However, in an earlier report, it was reported that the average number of hours spent on home and social care was 2.4 hours per week in Iceland, compared to 7 hours per week in Sweden (INAO, 2005). According to this report, the elderly in Iceland were receiving 1.73 hours of home health care per week. The elderly in Iceland are, in general, receiving less help than their peers in other Nordic countries. Similar results can be found in a study published in 2011 where the work environment and well-being of staff caring for the elderly in Iceland was compared to other Nordic countries (Karlsdóttir, 2011). Moreover, the results also demonstrated that staff caring for the elderly in Iceland are less educated, are generally younger and have shorter work experience than their colleagues in other Nordic countries. In addition, the work they performed was not as diverse and required less managerial involvement than that of their Nordic colleagues. The overall conclusion was that there was less stability and a more restricted scope of services provided to the elderly in Iceland compared to the other Nordic countries.

Compared to the other Nordic countries, Iceland had the fewest number of nursing and elderly home beds per 100 000 inhabitants in 2010: Iceland (697/100 000), Denmark (845) and Sweden (1423) (WHO, 2013). However, in 2010 only 12.14% of the population in Iceland was 65 years or older compared to 14.98% in Norway and 18.28% in Sweden (OECD Factbook Statistics, 2013) Iceland also had the fewest 80+ individuals or 3.37% of the total population compared to Norway 4.51% and Sweden 5.29% (OECD StatExtracts, 2013). The number of available nursing home beds remained relatively constant between 2008 and 2010 (2542 in 2010, up from 2541 in 2008) but the average length of stay in available beds decreased from 3.8 years to 2.9 years (INAO, 2012). At the same time, the waiting list for nursing home beds also decreased on average by 45% between those years and the average waiting time decreased from 248 days to 119 days. There are indications that older people in Iceland are living at home longer than was previously the case and possibly taking advantage of other available services such as home care and day care. When admitted to nursing homes they are in poorer health and length of stay is shorter. The number of nursing home beds in 2012 decreased to 2472 (Althingi, 2012). This was partly a result of government policy to improve the quality of institutional care by

transforming multiple occupancy dwellings in institutions into single rooms. There were 244 people waiting for a nursing home bed in October 2012 and the average waiting time was 3.6 months.

In 2011 there were 64 institutions with nursing beds and many of them were also regular nursing homes and/or had day care facilities (INAO, 2012). Twenty one of these institutions were run by the state but others were run by private, mostly non-profit, providers or local governments with financing from the SSI and from the inhabitants themselves. Residents in institutional care and nursing homes pay a part of the cost in line with the Social Insurance Act (No. 117/1993) and as specified in the Institutional Services for the Elderly Regulation (No. 1112/2006) (see financing of inpatient care in Chapter 3).

The DH is responsible for monitoring health care in nursing homes and the quality committee for the care of the elderly at the DH has published criteria for care in such settings (DH, 2008). In addition, the DH uses the Residents Assessment Instrument (RAI) database and its quality indicators to evaluate nursing needs and the health of residents in nursing homes. Since 2003, when data collection from the RAI evaluations became electronic, information has been entered into the database three times a year.

Currently, the organization and provision of long-term care services for older people are supervised by the MoW but since the autumn of 2011, a committee has been examining the possibilities of also transferring these services to local governments (ALA, 2012). According to the committee, the division of responsibility for financing and provision of services between different administrative levels results in a lack of coordination and is the main weaknesses of current arrangements, thus impeding the aim of achieving comprehensive, continuous and integrated long-term care.

5.9 Services for informal carers

In line with the objective of enabling elderly people to stay in their homes for as long as possible, policies have been developed to improve social services and health-care services in the home. All citizens in Iceland are entitled to appropriate health care at all stages of life and legally families are not bound to provide care for their elderly relatives or disabled individual. Informal carers are usually family members, friends or neighbours and no compensation is available to those supplying informal care to an elderly individual. Studies have shown that the elderly in Iceland rely significantly on informal care from

their relatives. A study published in 2010 (Sigurðardóttir, 2010) showed that 43% of those surveyed received help from their family, friends and neighbours. Of those, 27% received only informal care but 16% received both informal and formal care. The study also demonstrated that 14% of study participants also received other types of formal care, such as a safety alarm, transport services, meal-on-wheels, day care and respite care. The study concluded that family members are those who provide the most help to the elderly living in their homes, particularly when the help needed is minor, and that the need for formal care increases as an individual's needs increase. However, organized services specifically targeting the needs of informal carers do not exist in Iceland.

5.10 Palliative care

The Minister of Health has stated that the cornerstone of palliative care policy is aiming to treat the symptoms of the disease (as well as other burdensome symptoms) and achieving effective pain control (Althingi, 2011). Providing appropriate psychosocial and spiritual support for patients and their families and bereavement counselling are also important. There are no national documents or legislation that relate to standards and norms for palliative care services in Iceland but in 2011 the MoW started work on a National Cancer Plan that will include a section on palliative care. In addition, the Patient's Rights Act (Act No. 74/1997) states that a patient has the right to die with dignity and if the patient does not wish for life-prolonging treatments, the physician must respect that decision. In cases where the patient is unable to make this decision, the physician must consult with the patient's family about continuing or terminating treatment.

The Icelandic Cancer Society started the first palliative home care team in Reykjavik in 1987 (EAPC, 2013). In 1999, the first general palliative care unit was opened at Landspitali with eight beds and in 2001 a geriatric palliative care unit was established with nine beds. In 2007, a five-day unit opened in connection with the general palliative care unit with an additional four beds, and at the same time a day care centre (open two days a week) was opened that could accommodate 8–12 patients. In September 2012, the general palliative care unit, which is staffed by a multidisciplinary team, increased the number of palliative care beds from 13 to 17. A palliative consulting team is situated at Landspitali and operates as an advisory team for all of the hospital's departments and those who provide specialized services in the home. Currently, four palliative home care teams operate in Iceland. Two of them are in Reykjavik: one is part of

Landspitali and the other operates on a contract with the IHI. The remaining two (in Akureyri and Reykjanesbær, close to Reykjavik) also operate on a contract with the IHI.

Today, palliative care is well established, especially in Reykjavik and the surrounding areas. There is increased discussion about palliative care within the health-care system, with official recognition of the importance of existing palliative care settings. There has been increased interest from nursing homes to offer palliative care and, in February 2013, Landspitali entered into an agreement with two large nursing homes in Reykjavik where the hospital will provide advice, support and patient evaluations for palliative care required by the nursing homes' elderly patients. Two to four beds are dedicated for this treatment. Clinical guidelines for palliative care were published by Landspitali in December 2009 and, between October 2010 and December 2011, the Liverpool Care Pathway (LCP) for dying patients was integrated into all departments of Landspitali (except the Children's Hospital) and most nursing homes in the Reykjavik metropolitan area (LSH, 2009). In addition, two other general hospitals have adopted the LCP, one in Akureyri and one in Reykjanesbær.

About 62% of patients admitted to the general palliative care unit come from Landspitali and over half of those come from the hospital's cancer unit (Althingi, 2011). Thirty-six per cent of patients are admitted from their homes and almost all of those have received specialized home care. The remaining 2% come from other hospitals outside Reykjavik. Patients are admitted through a waiting list that usually ranges from a few days and up to 2–3 weeks. 'Non-cancer' patients represent fewer than 5% of all patients admitted to palliative care settings but since 2009, increased focus has been placed on admitting patients with end-stage heart failure and chronic obstructive pulmonary disease (COPD).

Palliative care services are funded by the MoW, either directly through hospital budgets or through contracts with the IHI. No payment is required from patients for palliative consultations or hospitalization. Patients do not pay for medications used in palliative care but they may have to pay in part for other medications. Palliative care is not reliant on volunteers; however, the Odd Fellow Order in Iceland has provided continued financial support for this activity since 1999 when it was instrumental in supporting the opening of the palliative care unit at Landspitali and its enlargement in 2012 as well as the establishment of the day care centre in 2007.

One significant issue facing palliative care is the severe lack of physicians specializing in this area. The general palliative care unit has had to temporarily close the five-day care unit in the recent past due to lack of physicians. No formal palliative care education programmes are available for medical or nursing students at UI.

5.11 Mental health care

Responsibility for the organization and provision of services for people with mental health conditions or disabilities lies with local authorities, having been transferred from the state in January 2011. People with mental health disabilities are entitled to the same health-care services as other citizens (as specified in Health Care Act, 2007), and services for people with disabilities, including mental health conditions, are stipulated in the Affairs of Disabled People Act (No. 59/1992) and the Patients' Rights Act (No. 74/1997). The Affairs of Disabled People Act aims to ensure that people with disabilities are provided with an equal and comparable standard of living as other citizens, and the legislation's implementation is guided by the UN Convention on the Rights of Persons with Disabilities, signed by Iceland in 2007. All individuals with mental or physical disabilities are entitled to special services and support when needed. In addition, the participation of stakeholder groups and organizations representing the views and interests of disabled people are guaranteed under the legislation. Government policy supports a stronger move towards community-based services for people with mental health conditions.

Mental health inpatient services for psychiatric patients are provided at Akureyri Hospital and Landspitali in Reykjavik. Akureyri Hospital has 10 acute beds available and provides day and outpatient services, to which patients can be referred after a preliminary evaluation and treatment at a primary care clinic or with a GP. The hospital also operates an outpatient clinic for children and adolescents up to 18 years of age. At Landspitali, there are 124 beds for psychiatric inpatient care. The hospital also operates a psychiatric emergency department, outpatient clinics, day care services and care facilities in the community. In 2011, over 5600 individuals received care from the psychiatric department's various units and clinics, with over 39 100 visits recorded at the psychiatric outpatient and emergency departments, of which 4624 were visits to the emergency department (LSH, 2011b). Approximately 13 400 visits were recorded at the psychiatric day care facilities in 2011. The Landspitali psychiatric department also runs outpatient and day care clinics for alcohol

and drug addiction and for people with eating disorders, and special psychiatric outpatient and inpatient clinics for children and adolescents with mental health and developmental problems.

One of Landspitali's psychiatric departments is the Kleppur Hospital, which has been part of mental health care in Iceland since 1907. Today it provides rehabilitation for patients with longstanding chronic psychiatric conditions. The hospital provides round the clock care, day care facilities and an outpatient rehabilitation clinic. At the outpatient clinic, a multidisciplinary team treats and follows patients both at the clinic and with home visits. Recent reports have stated that about 80% of patients that have completed their rehabilitation at Kleppur are unable to be discharged due to the lack of continuing resources for this group at local government level and there are examples of patients waiting for over a year to be discharged (Valgerðardóttir, 2012). The discharge process has slowed down after responsibility for the delivery of mental health services was transferred to local authorities. The only rehabilitation department for young people aged 18–30 with early stage psychosis is in Reykjavik, where an open rehabilitation centre treats 25–30 individuals at any given time, both round the clock (seven beds) and through day care services. Reykjalundur, a rehabilitation hospital, also provides a special programme for patients with depression, anxiety or multifactorial problems involving a mixture of physical, mental and social problems. Rehabilitation of patients forms part of a longer process that continues after the patient is discharged from the hospital.

At Kleppur there is also a department for individuals with serious mental illnesses who will need long-term care and a special department for adults who have committed a crime but cannot be prosecuted because of mental illness. However, few resources are available for children and adolescents who commit serious crimes. Prior to February 2013, when Iceland's ratification of the Convention of the Rights of the Child (in 1992) actually achieved legal status, most children and adolescents under 18 served their sentences in remand custody rather than in a treatment-oriented environment (Geirsdóttir, 2013). This has now been changed with a few exceptions, such as in cases of very violent individuals. The authorities recognize the importance of improving current care settings available to this group and the MoW has provided funds to improve conditions so that violent children and adolescents can be kept separated from other children receiving treatment.

Since early 2010, a special interdisciplinary community team has been operating at Landspitali, where specialists follow mentally ill individuals in their homes or other living arrangements. The main objectives of this service

are to provide multidisciplinary and individualized services to users in their own community (assertive community treatment) and to reduce the need for hospitalizations (and shorten the period of hospitalization) by ensuring support and follow-up. Hospitalizations of participants in the programme dropped from 125 to 80 after two years in the programme and the number of hospitalization days also decreased (Sveinsdóttir, 2012). In 2006 a similar one-year pilot project in Akureyri – 'Advice in the home' ('*Ráðgjöfin heim*') – was targeted at individuals with mental illnesses living independently (MoW, 2011d). Based on its positive effects the project has been integrated into home care services and also extended to all disabled people living independently in the community. Similar services by primary health-care providers for individuals and their families are provided with good results in the Capital Region to individuals living in the community and include follow-up and counselling, comprehensive support and rehabilitation (Tryggvadóttir, 2012).

Every primary care clinic in the country treats individuals with minor mental health problems and refers them when needed to the appropriate services within the system. Private practising psychiatrists and psychologists provide their services in their own clinics. The SÁÁ provides children of alcoholics, aged 8–18 years, who have not started using drugs or alcohol with a subsidized interview with a psychologist (SÁÁ, 2013). Each child can receive up to eight individual interviews for ISK 2000 (EUR 12), and each family only pays for one child even though other children in the family can also receive treatment. Other community resources are also available, such as from the IRC which operates a free helpline that is open round the clock and provides advice to people in need. The IRC also operates shelters for people with mental illnesses around the country and a special shelter for homeless women in Reykjavik.

5.12 Dental care

Dentistry in Iceland has moved from being mostly publicly funded to patients bearing the majority of the cost out of pocket. Dental care is provided by private practising dentists on a fee-for-service basis. No valid contract on cost-sharing has been in effect between the MoW and dentists for many years. Dentists set the prices for their services, while the IHI publishes its own pricelist (reimbursement level); where charges for dental care are higher than the IHI pricelist the patient pays the difference. Dentists operate under the Health Care

Practitioners Act (No. 34/2012) and must be licensed through the DH in order to practise. The DH is responsible for monitoring dental services and ensuring that services meet professional standards.

In 2010, 20–30% of children did not go for regular check-ups with their dentist, with the cost of dental care being seen as the main barrier (Icelandic Dental Association, 2010). Dental health care costs for children with chronic illnesses and people with severe mental and physical disabilities, aged 17 years and older, are fully covered by the IHI. General dental care is partly covered for the elderly but fully covered for the elderly with long-term illnesses and living in institutional settings (see Chapter 3).

A study has found that household health expenditures increased by 29%, in real terms, between 1998 and 2006, and the highest cost categories in 2006 were drugs and dental care (Vilhjálmsson, 2009). A number of government initiatives has aimed to improve access to dental health services for children and adolescents, including increasing the reimbursement rate for dental care for children under 18 by 50% (IHI, 2012) and launching a special project in 2011 in which nearly 800 children from low income families received free dental care (MoW, 2012e).

In May 2013, a new contract between the IHI and the Icelandic Dental Association came into effect in which subsidized dental care for children under 18 will be phased in until 2019 (IHI, 2013b). The aim of the agreement is to ensure that all children under 18 will receive the necessary dental care, regardless of their parents' financial situation. It is hoped that this agreement will bring the dental health status of children in Iceland to a level that is comparable to other Nordic countries. A preventive programme that covers the cost of a dental inspection for children aged 3, 6 and 12 years has also been launched (IHI, 2013b).

5.13 Complementary and alternative medicine

As in many other countries, unconventional treatments for various problems are increasingly popular in Iceland. It is estimated that approximately 20–30% of people seek complementary and alternative treatments (CAM) during their lifetime and roughly 90% of individuals with malignant diseases use unconventional treatments (DH, 2012b). A study examining the utilization of CAM providers in 2006 showed that almost 32% of those surveyed had used a CAM provider in the preceding 12 months, an estimated 6% increase from

1998 (Helgadóttir, Vilhjálmsson & Gunnarsdottir, 2010). Most people were using CAM treatments as a supplement to the care they were receiving in the general health-care system and those who went more frequently to the doctor were more likely to use CAM treatments. In addition, women were significantly more likely than men to use CAM (41.3% compared to 22.6%), and those with higher education levels were significantly more likely to use CAM treatments. People with higher incomes were also more likely to use CAM, which can be partly explained by the fact that the IHI generally does not cover the cost of CAM. The most common type of CAM used was massage therapy and chiropractors, both of which are performed by licensed professionals (see below). A study on OOP health-care expenditure among population groups highlights that household expenditure on unconventional health services rose by 104% between 1998 and 2006 (Vilhjálmsson, 2009). In 2006, 5.5% of total private health-care expenditure went on unconventional health care, up from 3.5% in 1998.

Following an evaluation of unconventional medicine by a special committee in 2002, new legislation came into force in 2005, the Healers Act (No. 34/2005), which aims to promote the quality of health-related services that healers offer and to promote the safety of individuals using such services. Consequently, a voluntary registration system for healers practising CAM was established in 2005 and is managed by the Association of Complementary and Alternative Medicine in Iceland (ACAMI). Registration is subject to meeting certain criteria.[30] Today, there are approximately 163 registered members (ACAMI, 2013).

The legislation places some restrictions on practitioners offering CAM treatments, namely that patients with serious illnesses should only be treated by licensed health-care professionals unless the patient, after consulting a doctor (which is mandatory), requests treatment from a healer. Moreover, CAM practitioners cannot perform medical interventions or treatment that may cause serious health risks to patients or treat infectious and communicable diseases that are subject to other regulation and are dangerous to the community. CAM practitioners may not advise people to stop medications or other treatments that they have started with other licensed health-care professionals. The legislation also places restrictions on how healers advertise their services, which are in line with regulations governing other health-care professionals.

[30] Educational requirements for ACAMI members are: having at least 660 hours of training/lessons, including credits in anatomy, physiology and pathology, as well as having a valid first aid certificate.

Registered CAM practitioners must have valid liability insurance from an insurance company licensed in Iceland for any damages resulting from any negligence. CAM practitioners are not formally licensed except for chiropractors and massage therapists who are licensed through the DH. Alternative treatments are paid for in full by the patient. However, health professionals such as physiotherapists who use CAM, such as acupuncture and craniosacral therapy as part of their treatment, are reimbursed through the IHI. Nurses are also known to use massage and relaxation methods in their treatments. In Iceland, there are no published guidelines on how to use CAM as an adjunct therapy in health-care institutions; however, one of Landspitali's departments has established such guidelines (Helgadóttir, Vilhjálmsson & Gunnarsdottir, 2010).

6. Principal health reforms

Since 1970, when the Ministry of Health first became a separate government department, the health-care system has been undergoing a series of reforms in the areas of financing, provision and regulation. The overall health-care system trend since 1970 has been towards increased state stewardship; however, an analysis of sequential periods highlights a more complex picture – from decentralization in the 1970s to centralization in late 1980s, and back to more decentralization in the 1990s in which the state still plays a key role.

Some major supply-side reforms have been implemented in the 1990s and 2000s, such as reconfiguring the organization and supply of primary care services, hospital mergers – particularly in the capital Reykjavik – and measures to reduce public expenditure on pharmaceuticals. Attempts have been made at demand-side reform, namely the introduction of gatekeeping but with no success. The health-care system is confronted with immediate and long-term challenges involving the financial sustainability of the current system. In responding to these challenges the government will be forced to change the country's pattern of health-care utilization, which is characterized by utilization of high volumes of services, particularly at the most expensive end of the care spectrum. A rapidly ageing population, new public health challenges (such as obesity) and the impact of the country's financial collapse in 2008, are shaping the context in which reform strategies will need to be developed.

6.1 Analysis of recent reforms

Health-care reforms: overview

The dominant policy trend in the governance of the health-care system since 1970 has been towards increased state centralization. In order to make sense of more recent policy changes it is important to provide an overview of earlier

reforms that provide the platform for later reform efforts. These contextual details also shed light on the policy-making framework from which decision-makers have selected their policy tools. Since 1970, when the Ministry of Health first became a separate government department, the health-care system has been undergoing a series of reforms in the areas of financing, provision and regulation. The reforms shaping the main features and development of the system have been introduced through major pieces of landmark legislation and constitute the legislative policy-making framework on which the present system is based (see Chapter 2).

First of all, the enactment of the *Social Security Act* in 1971 (Act No. 67/1971) consolidated the financing of the system in fewer municipally based public insurance schemes providing all citizens with universal rights to a package of comprehensive health-care services. Secondly, the *Health Care Act* in 1973 (Act No. 56/1973) set the stage for the organization of comprehensive public provision of health-care services with access to health care for all citizens and the foundation of primary health-care infrastructure across the country. Thirdly, through the enactment of the *Law on Changes in the Division of Tasks between the State and Municipalities* in 1989 (Act No. 87/1989) state financing of health services became the main source of financing and municipally based public insurance schemes were abolished. Fourthly, the ratification of the new *Health Care Act* in 1990 (Act No. 97/1990) institutionalized the framework established by the *Law on Changes in the Division of Tasks between the State and Municipalities* and the state took over full responsibility for both the provision and financing of all health-care services in the country – and thus also took on a key role in the regulation of health care.

As outlined in section 2.2, the 1990 *Health Care Act* (and its later amendments in the 1990s and in 2000 onwards) gradually centralized the power to regulate the provision of health-care services in the hands of the Minister of Health and Social Security. A series of policy actions resulted in the merger of public PCCs and hospitals around the country (1995), the abolition of regional health councils and the formation of regionally based HCOs (2002), the dissolution of HCO boards and consequent reporting of their CEOs directly to the Minister of Health – who now had the power to reconfigure health-care services without having to consult local governments (2003) – and the abolition of the 15% statutory financial share of local governments to new hospital buildings and hospital technology (see Chapter 4). These decisions reflected the prevailing New Public Management principles adopted by the government in its reform agenda and which sought improved efficiency through aligning financial, administrative and political responsibilities.

In addition, within the context of the government's wider economic and administrative reforms in the early 1990s, major reforms occurred in the pharmaceutical and hospital sectors. In 1991, faced with escalating pharmaceutical costs, the state stopped subsidizing several categories of prescription drugs with an immediate effect on public expenditure on pharmaceuticals (Halldórsson, 2003). Moreover, in line with greater market liberalization and competition after Iceland joined the EEA (in 1993), new legislation (Act No. 93/1994) meant that owners of pharmacies lost their state-provided monopolies and pharmacies became subject to market forces (Morgall & Almarsdóttir, 1999). Furthermore, Regulation No.426/1997 resulted in a dramatic increase in the private (OOP) share of financing pharmaceuticals throughout the 1990s. In the hospital sector, in the mid and late 1990s, a series of hospital mergers in Reykjavik resulted in the state taking over all hospital services owned and provided by the local government and thus became the only provider of acute hospital services in the country. In 2000, further consolidation occurred and the two remaining hospitals in the capital, the National University Hospital, Landspitali, and the Reykjavik Municipality Hospital were merged.

In parallel to these major supply-side reforms, an attempt at demand-side reform, through the introduction of gatekeeping, was abandoned in 1995, partly due to successful pressure from vested interests and partly due to a government focus on supply-side factors. During the 1990s a major acceleration towards increased private provision of medical specialist services outside hospitals also occurred, spurred on by the hospital merger processes, the growing number of medical specialists returning home from postgraduate education and training abroad, and the easy entry into an unregulated market for medical specialist services (Sigurgeirsdóttir, 2006).

In terms of governance, although the overall trend in the health-care system since 1970 has been towards increased state centralization, an analysis of sequential periods up to 2000 highlights a more complex picture (see Table 2.1). Two types of decentralization occurred in the late 1990s: firstly, a process of decentralization in which coordination and administrative authority was moved to local regional levels; and secondly, a process of decentralization in the form of privatization occurred in which medical specialist services became increasingly provided in private clinics outside hospitals, in particular in the Capital Region. The former involved a process of organizational consolidations and concentration of administrative capabilities at the level of the health regions. The latter, on the other hand, involved a growing number of private, independent health-care providers, resulting in a more fragmented service delivery. Both these decentralization trends continued into the 2000s. At the

same time there was a trend towards state centralization of financing health care, accompanied by a process of health-care costs increasingly being shifted from the public to the private sphere, i.e. shared between the state and patients. In addition, with the centralization of hospital and primary care provision within national government, local authorities – which previously were the state's main counterparts in provision and financing of health care – gradually withdrew their part in financing health services and capital investment, and consequently lost their say in the provision and regulation of health care.

Recent reforms: brief analysis of major reforms 2000–2013

The current shape of the health-care system in Iceland is a result of the reforms and policy developments discussed above. Recent reform efforts to some extent have been legislative changes aimed at strengthening existing functions and previous infrastructure development. However, an important feature of the health-care system is a result of incremental change without formal reforms (Hacker, 2002), which characterizes the public policy process in Iceland in general. This means that although government policy is clearly and publicly stated in legislation, policy outcomes have become distorted in the process of implementation in which providers have been able to gradually nudge the policy towards their own preferences and interests. There is a relatively weak primary care sector compared to a growing and ever stronger private medical specialist services outside hospitals, which is a result of the absence of a GP gatekeeping function in the system and which gives patients direct access to medical specialist services. These features of the health system are more an effect of a lack of demand-side regulation that enabled vested interests inside the health system to respond to financial incentives during a period of politically driven, major supply-side restructuring. Moreover, the impact of supra-national regulations in which competition and market principles were introduced through the adoption of EEA directives has reinforced this development (Sigurgeirsdóttir, 2006).

A mixed economy of care was the organizational landscape of health-care policy in the early 2000s. In Iceland both public and private providers operate in the inpatient and outpatient sectors, whereas dental care and pharmaceutical services are almost entirely in the private sector. Since 1995, there has been no private acute care hospital in Iceland. Private providers in the inpatient sector are mainly providers of rehabilitation services, long-term nursing and residential care for the elderly and disabled people, and alcohol and drug clinics and treatment centres. All these facilities, with only a handful of exceptions, are publicly funded, private, non-profit institutions licensed by the DH and operating with or without a contract with the IHI. They operate as so-called

self-governing trusts or organizations with joint ownership by, for example, local governments, NGOs and trade unions, which are represented on the administrative or supervisory boards. Apart from pharmacists and dentists, other private providers include the private clinics of medical specialists, diagnostic and research centres, a few GPs and more recently, two private PCCs in the Capital Region (which otherwise are predominantly public).

The principal reforms over the last decade are listed in Table 6.1. Only two of the reforms listed in Table 6.1 can be classified as demand-side reforms, i.e. The Public Health Institute Act (2003) and the Health Insurance Act (2007). The former initiative was a demand-side measure that directly aimed to influence individuals' conduct and daily habits associated with health-related risk behaviour. The latter legislation focuses on negotiation of contracts and purchasing of services that takes direct account of the entitlements and needs of the insured population. The other reforms address supply-side operations and issues. Each of the reforms listed in Table 6.1 is discussed below in more detail.

Table 6.1
Recent health-care reforms, 2000–2013

Year	Reform/legislative measure
2003	Act No. 18/2003 establishing the Public Health Institute. Took effect 1 July 2003.
2005	Ministerial decision to merge all public PCCs in the Capital Region into one single administrative unit. Took effect January 2006.
2007	Act No. 40/2007 on Health Care to better define the organization, management and supervision of health care services. Took effect 1 September 2007.
	Act No. 41/2007 on the Medical Director of Health. Took effect 1 September 2007.
2008	Act No. 112/2008 on Health Insurance introducing purchaser–provider arrangements in the health system and streamlining contracting of health services. Took effect 1 October 2008.
2011	Act No. 28/2011 on Medical Director of Health and Public Health, amending the Medical Director of Health Act (2007), abolishing the Public Health Institute as a single entity and merging it with the DH.
2013	Act No. 45/2012 amending Act No. 112/2008 and Act No. 93/1994 including later amendments on cost-sharing of pharmaceutical products. Took effect 4 May 2013.

The Public Health Institute Act, 2003

In May 2001 the Icelandic parliament issued a parliamentary resolution on the *Health Plan 2010*, which fleshed out and emphasized long-term health objectives to improve population health. The priorities in the *Health Plan 2010* were on public health policies addressing the use of alcohol, drug and tobacco, children's injuries and death caused by accidents, fractures among elderly people, poor dental health of children and older people, death caused by cardiovascular, circulatory diseases and cancer, the rate of mental health illnesses and suicide, and death caused by accidents in general. A legislative proposal followed, aiming to strengthen public health policies and practices.

The proposal suggested better coordination of all public health programmes in the country through a consolidated organizational approach. This involved bringing together in one single agency the operations of the various councils responsible for each area of public health policy, i.e. alcohol and drug prevention, tobacco prevention, improved nutrition policy, accident prevention and other government health promotion and prevention policies.

With reference to government programmes in other Nordic countries, a new government agency, The Public Health Institute, reporting directly to the MHSS was established in 2003. Its main task was the organization and coordination of public health programmes, including the variety of public health areas, building up the relevant information and database necessary to support teaching and research, sharing information and knowledge with the public in cooperation with other relevant agencies and organizations, regularly evaluating public health policy outcomes, monitoring programmes, practices and innovative public health initiatives embarked upon elsewhere, and providing the government with policy advice and recommendations.

This new institute and its programme involved the pooling of financial, technical and human resources in order to strengthen public health strategic capabilities. Therefore, the transfer of funds and revenues to this new agency was required from existing public bodies – funds that previously had been earmarked to individual council's activities (such as alcohol and tobacco prevention) or funds allocated to those bodies through government budget. In some cases funds were to be transferred from the Medical Directorate of Health to this new agency for strategic and policy-making purposes. By fostering more innovative and entrepreneurial approaches to agenda-setting and public information strategies, the new agency was supposed to enjoy more flexibility and scope to respond to emerging public health challenges. The Public Health Institute was abolished as a single entity in 2011 and merged with the DH (see below).

The merger of PCCs in the Capital Region, 2005

In 2005 the Minister of Health made the decision to create an administrative umbrella in which he strategically merged all public PCCs in the Capital Region into one administrative unit (see section 2.3.1). Previously, 10 PCCs in Reykjavik and 2 in neighbouring communities had belonged to the same administrative directorate reporting directly to the minister. This new merger joined 15 public PCCs into a new bigger strategic and administrative unit also reporting directly to the minister. The aim was to exploit economies of scale and scope by further merging the coordination and administration of various

sub-units within primary care services, such as infant and maternity care and home nursing, and to create a better organized base for teaching, training and research in the field of primary care. The resulting health-care organization has become one of the biggest employers in the country.

As a supply-side reform, the aim was to improve the administrative and organizational efficiency of primary care provision in the Capital Region through administrative restructuring. Unlike the attempt to introduce a gatekeeping function in the 1990s, this reform of primary care services did not address the main objectives stated in the Health Care Act that primary care should be the first point of patients' contact with the health-care service. In addition, this reform has not been well received among clinical staff. In particular, primary care doctors find the large organization cumbersome, the lack of flexibility is having a negative effect on staff morale, and inefficient management hampers innovative practices in primary care (MoH, 2010a).

The Health Care Act, 2007

The new Health Care Act builds on earlier legislation from 1973 and 1990 and their later amendments. After a series of legislative amendments and changes in the health-care system a more holistic and comprehensive review of existing legislation was needed to better define the organization of health services, the management of health-care organizations, the operational supervision of services and contracting.

The main objectives of the new Health Care Act were to further clarify the organizational structure of the health-care system, provide the authorities with a clear legislative framework, ensure effective supervision and monitoring of health-care services, and provide the minister with a better defined policy-making authority in order to ensure that the minister has the authoritative power to set priorities and follow up policies. Among the main changes introduced are the division of the country into health regions and the classification of health services into two main categories, i.e. general health-care services or basic services and specialized health-care services. The role of primary care as the first point of contact in the system is restated and the managerial and administrative responsibilities of leading personnel are sharpened. The act provides a better conceptualized framework for the role and functions of various hospitals, such as university and teaching hospitals, and addresses more explicitly than previously the minister's mandate to contract out services, the scope and nature of outsourcing of health-care services and the use of contracts as a tool of government in the delegation of tasks and responsibilities to the private as well as the public sectors.

Strictly speaking, this legislation, in and of itself, does not constitute a reform; rather, it documents and reinforces the changes made in earlier versions of the Health Act (in 1973 and 1990) and carves out more clearly the existing components and functions of the health system, bringing out more explicitly the policy-making powers and responsibilities of the minister. Although demand-side issues are addressed in the provisions on contracting, the main emphasis of the Health Act is on describing, sharpening and stipulating existing supply-side components in the health system.

The New Act on Medical Director of Health, 2007[31]

In parallel to the new Health Care Act passed in the same year, this legislation sets out more explicitly the regulatory function and administrative and reporting responsibilities of the DH in a separate act of parliament in order to increase the DH's visibility and the distinctiveness of its function in the system. The responsibility of the agency to keep health-care records and to monitor services in order to ensure quality and clinical standards was sharpened and emphasized, procedures on patients complaints were better defined and the duty of providers to report adverse incidents were more explicitly stipulated. Additionally, later amendments (Act No. 12/2008) moved the licensing of health-care personnel from the MoH to the DH.

The Health Insurance Act, 2008

In 2007, only a few weeks after the enactment of the new Health Care Act, a new government began preparing a major reform of the health-care system. As mentioned above, in the early 2000s a mixed economy of care had already provided the organizational landscape of health-care policy, with both public and private providers operating in the inpatient and outpatient care sectors, and dental and pharmaceutical services being almost entirely provided by the private sector. This part of the system had been expanding and required a more focused and coherent management of contracts.

The reform under the Health Insurance Act introduced purchaser–provider arrangements into the health system. The preparations for this change involved a de-merger at two levels. Firstly, the agency administering social security was separated into two separate agencies. The previous agency had been responsible for administering cash benefits as well as benefits in-kind, including negotiating contracts and reimbursement to health-care providers. These latter responsibilities were split from it and became the building blocks for a key new agency in the health-care system – a health services commissioning agency,

[31] The act focuses on the role and responsibility of the Directorate of Health as an institution not on the role of the Medical Director of Health.

the IHI, reporting directly to the Minister of Health. Secondly, the social security functions of the previous agency were maintained under a new and streamlined SSI, which is responsible for administering social security cash benefits. Together with policy-making and administrative responsibility for elderly care, the SSI was transferred from the MHSS to the Ministry of Social Affairs. The MHSS then became the MoH.

The idea behind the creation of the IHI was to unite into one agency the necessary skills and technology to build up relevant information and contracting capabilities within a single entity. The aim was to improve and strengthen state commissioning and purchasing capacity in health care. Existing expertise in the area of cost analysis and activity-based health-care financing and management within the system was to be consolidated in this new commissioning agency in order to fulfil the objectives stated in the new government's manifesto from May 2007, i.e. to carry out cost analysis of health-care services and to produce the knowledge and information necessary to take the approach of 'money-following-the-patient'.[32]

The Health Insurance Act incorporates provisions on patients' entitlements and health-care coverage as well as on contracting.[33] In line with the Health Care Act (2007), the objectives of the Health Insurance Act are to ensure health services to all insured people resident in Iceland for the protection of their health and equal access to health services, irrespective of their ability to pay. Moreover, the act's provisions are designed to promote allocative and technical efficiency of the health service and to maximize the quality of services. Lastly, the legislation aims to strengthen the role of the state as a purchaser of health services and to analyse the cost of the national health service.

In terms of contracting, the new act stipulates in detail the terms of agreements with the provider – what is required regarding types of services, quality and quantity, provided by whom, where and when. The level of detailed requirements for providers was new in the Icelandic health-care system and cover, for example, competence, service area and level of service and supervisory mechanisms with regard to the performance of the contract. The selection of contractors should be made on the basis of non-discriminatory and objective criteria, covering competence, quality, efficiency, cost, safety, equality and knowledge. When negotiating contracts on health services, care should be taken to ensure that statutory services are not disrupted. Moreover,

[32] Some experts from the MoH's financial department and from Landspitali, which had been implementing cost-based analysis methods and developing the hospital activity-based payment system (DRGs), were to be transferred to this new agency.

[33] These provisions previously were part of the Social Security Act and the Health Care Act respectively.

should the supply of a specific health service exceed needs, or exceed the amount for which contracts can be made in view of available funding, it is permitted to restrict contracts to only some of the parties capable of providing the service.[34] Thus, the act promotes a more disciplined and coherent approach to negotiating health services contracts and a comprehensive management of the whole commissioning process.

The current financial crisis has had some impact on the implementation of this reform. However, the struggles facing the relatively new IHI agency have less to do with the financial crisis than with resistance inside the system. One factor is the reluctance to transfer resources, in the form of financial and human resources, expertise and skills, to the IHI agency from other parts of the health system (as planned when the legislation was drafted and agreed in parliament).[35] Consequently, operationalizing parts of the IHI agency's responsibilities has been repeatedly postponed by parliament on the grounds that the agency lacks the necessary resources to undertake its designated tasks. In particular, the full implementation of the agency's commissioning function is currently in a 'catch-22' position and the necessary political leadership to bring the plan forward has been absent.

Amendments to the Medical Director of Health Act and abolishing the Public Health Institute, 2011

In August 2009, the Minister of Health appointed a working party to look into the organization of governing agencies within the health-care system. This was a part of a bigger government reform agenda that aimed to cut the number of agencies and merge institutions and ministries in order to create bigger administrative and operational units. The main objectives of the Health Minister's working party were to increase the operational effectiveness and efficiency of health-related agencies through restructuring, mergers and shifting tasks and responsibilities. The working party drew on practices and programmes in similar institutions in neighbouring countries, in particular in other Nordic countries. Finally, the working party considered further coordination between similar functions across policy domains and jurisdictions.

The working party's report and recommendations were submitted to the minister and resulted in legislative amendments to the Medical Director of Health Act and the abolition of the Public Health Institute. Less than 10 years

[34] Such decisions should be made on the basis of non-discriminatory and objective considerations, e.g. with respect to the cost–effectiveness and quality of service.

[35] Additionally, in Parliament during the legislative process, there was strong opposition including considerable scepticism within the executive branch, towards expanding the IHI's contracting powers, despite its legal contracting powers. Mostly, the scepticism concerned opposition to privatization of health care.

after its establishment as an agency reporting directly to the Minister, the PHI was taken over by the DH. The main argument supporting this course of action highlighted the efficiency gains that would be reaped in terms of information gathering, analysis and dissemination of information on health and welfare, not just for public health policy purposes but also for the DH's regulatory purposes, i.e. monitoring and inspection. It was believed that by merging the two bodies, these two functions would be strengthened through alignment and creation of critical mass.

The strengthening of these functions can be easily justified as a policy goal. However, at the time of writing, it is too early to say whether the merger has achieved this objective. From a system and governance perspective, in theory this reform raises some questions. Firstly, a policy aiming to strengthen operational functions at the agency level does not necessarily or automatically translate into strengthening of policy functions at the system level. This is due to the well-established knowledge that policy outcomes also depend on implementation processes in which competing views and professional interests may affect the balance of influence and allocation of resources necessary to see such policy priorities through.[36] Moreover, while policy performance relies on similar operations, such as information gathering, data analysis and dissemination, merging different policy functions into one agency can also reduce their visibility, which again can facilitate the shifting of resources from one policy function to another, and run the risk of destabilizing the balance of influence and effectiveness between them.

Secondly, holding a disciplinary role and managing relationships in such a small community of professionals can prove to be especially challenging for the regulator. Inspection and regulatory practices are particularly complicated and sensitive practices in small societies such as Iceland. Individuals carrying out regulatory roles have a tendency to avoid confrontation involved in monitoring and inspection, and are more tempted to engage in tasks that are more indirectly related to inspection and monitoring, such as information gathering and dissemination, or to overemphasize work on quality assurance programmes and standard setting.

Theoretically, a large agency with multiple policy functions can be perceived as a strong and powerful agency because of all its different functions. However, the constellation of functions can also be incompatible to the degree that its assigned core policy function can be weakened. Since the merger with the PHI, the DH holds a range of policy functions in health care, addressing both

[36] See for instance Tuohy (1999), Hacker (2002), Giaimo (2002) and Sigurgeirsdottir (2006).

demand-side and supply-side issues in the system, performing policy advisory, planning, preventive, promotional and regulatory roles. Prior to the merger there was a governance problem in the system in that the DH was already responsible for monitoring, inspection and complaint procedures, but also for the planning and administering of communicable diseases and immunization programmes. The problem that arises is not just about the question of who inspects the inspectorate but also a problem of disqualification. In the event of a complaint over a decision on priorities when planning and organizing immunization programmes, complaints can be directed to the DH. If the response is seen as unsatisfactory, appeal can be directed to the MoW. However, the MoW will not be able to get an advisory opinion from the DH as it is the subject of the complaint. Leaving the PHI intact and merging the medical public health and non-medical public health functions within it would have strengthened the PHI's policy function in the system and might have reinforced institutional arrangements in support of enhanced checks and balances and thus improved system accountability and safety of patients. Instead the merger added to a pre-existing governance and accountability problem. Moreover, since the merger reduced the potential of counterbalancing power in the system it intensified the existing risk of regulatory capture.

In recent years government policy in general has emphasized a move away from frameworks of coercive regulation towards more voluntary forms of compliance in which organizations are expected to meet standards of quality and safety, although with a great deal of flexibility in how they achieve this. Academic literature has tended to eye this move with concern, as it is often associated with a greater risk of the regulatory capture of government regulators. Moreover, regulatory capture studies have found that capture was more prevalent when one regulatory agency is responsible for overseeing a single industry (Koliba, Meek & Asim, 2011). Furthermore, in the governance literature it is well known that an agency that has the role of gathering, analysing and reporting information about its own role and activities has incentives to report information that favours its own operations, with a commensurate risk of creating a conflict of interest (Lupia, 2003).

Act No. 45/2012 amending the cost-sharing system for pharmaceutical products

In May 2013 a new cost-sharing system came into effect, aiming to increase equality between patients irrespective of disease and to reduce pharmaceutical costs for people with high drug usage. More specifically, the legislation aims to lower the pharmaceutical costs for patients who are dependent on expensive medicinal products or who are dependent on medicinal products long term

vis-à-vis patients who only use medicines occasionally. Hence, the reformed system pools the cost across all patients using medicines by imposing an upfront cost at the beginning of each 12-month period that a patient starts using medicinal products; a patient's cost-sharing then gets proportionally lower over the 12-month period (see section 3.4.1). IHI also offers a scheme to patients who need to spread the cost of medicinal products more evenly over these 12 months. At the time of writing the new cost-sharing scheme has only been in operation for one year and it is too early to provide a comprehensive assessment of its effectiveness or to gauge to what extent it has achieved stated objectives.

6.2 Future developments

The health-care system is confronted with major immediate and long-term challenges involving the financial sustainability of the current system. In responding to these challenges the government will be forced to change the country's pattern of health-care utilization, which is characterized by utilization of high volumes of services, particularly at the most expensive end of the care spectrum. A rapidly ageing population, new public health challenges (such as obesity) and the impact of the country's previous financial collapse are shaping the context in which reform strategies will need to be developed.

Although the policy framework has emphasized primary care, mostly provided in public PCCs, as the first point of users' contact in the system, direct access to privately provided specialist medical care characterizes the system. Any attempt at changing this pattern of health-care utilization and redirect it towards more GP-led health care has been unsuccessful so far. However, reports and recommendations commissioned by the MoW and published on the Ministry's website (MoH, 2010a; BCG 2011) have stressed the importance of addressing this demand-side problem of the system by introducing some sort of steering mechanism. So far, a firm policy action has not been taken and the incentives currently in place are not strong enough to direct patients to GPs before going to medical specialists. This is a systemic failure that, as in the case of the IHI agency discussed above, can be described as a 'catch-22' situation: a highly state-regulated public primary care sector is competing with a private, self-regulated and financially more lucrative medical specialist sector for the recruitment of junior doctors and has resulted in a lack of GPs, with a number of GP vacancies unfilled; this, in turn, creates a primary care sector that lacks the capacity to take on the role of gatekeeping in the health system. In short, historical path dependency, in the form of perverse financial and regulatory

incentives in the system, stands in the way of achieving policy objectives that are stated in the Health Care Act. Moreover, the current strength of private interests (private investments in technology and facilities) makes it a major challenge to reverse these incentives.

Adding to this problem is the lack of integration between electronic health information systems (see section 4.1.4). Although all patient information is shared among public PPCs within each of the seven health regions, this is not the case across the different regions nor between public and private sector clinics. The connection of EHR systems across different health-care regions is currently being planned. However, the cost of duplications due to lack of communication and coordination between health-care professionals in the system is unknown but regarded as considerable. Therefore, improving health information systems in order to share medical and health information more effectively across institutions and sectors needs to be elevated on the policy agenda and made a highest priority.

The government that took office in May 2013 stated in its manifesto that it plans to strengthen PCCs as the first point of users' contact with the health system, implement a steering mechanism into the management of patient pathways and follow up on integrating and connecting the EHR systems across the country. Two government ministers are now in the MoW – one responsible for social affairs and housing and the other for health policy. The Minister of Health has expressed his interest in making private provision of health care his policy priority. Apart from the Minister of Health's policy, the government announced a 1.5% budget cutback across the board and appointed a committee of MPs to scrutinize the public sector to identify areas in which public expenditure cuts could be made. In the health sector, the committee recommended (in November 2013) that firmer action be taken to implement existing measures to promote greater efficiency but stopped short of proposing any further cuts.

7. Assessment of the health system

When assessed against the publicly stated objectives of the health system we observe a trend towards state centralization in regulation, financing and provision of health care, even though the share of private provision has been increasing. With rising levels of ambulatory and outpatient care – increasingly provided by the private sector and spurred on by more advanced medical technology and hospital restructuring – the cost of health care has been shifting steadily from the public to the private, resulting in increased private expenditure, of which household expenditure forms the largest part.

While health-care benefits are available to all residents, one of the main barriers to access is the growing burden of health-care costs on household budgets. Evidence is indicating that the publicly stated objectives on equal access to health care, regardless of ability to pay, may be in jeopardy. Increasingly, people report unmet needs for medical examinations due to cost, distance to travel and waiting time. Moreover, when looking specifically at financial barriers to accessing health care and comparing lower income groups (first quintile of equivalized income) to the total population over the same period, the rates are higher. In addition, evidence shows that postponement or cancellation of medical care is fairly common among adults.

User charges are increasing: while co-payments for primary health care have remained unchanged, visits to the emergency room and specialists outside hospitals and in outpatient departments in hospitals increased by 15% between 2012 and 2013. Evidence on health utilization shows that people of lower socioeconomic status, measured by level of education and income, are not necessarily the largest primary care users; rather, people of higher socioeconomic status use proportionally more services.

The population of Iceland enjoys good health status. Life expectancy at birth is high and the gender gap in life expectancy is much smaller than elsewhere. Evidence suggests that income influences an Icelander's health status but to a smaller extent than reported for other countries.

Countervailing influences and incentives are operating within the health-care system that hinder government efforts to improve health system efficiency. The cost-sharing mechanism in place does not seem to involve strong enough (demand-side) incentives to direct patients to GP services more effectively as desired by stated policy objectives. In addition, a shift has occurred in the allocation of financial resources from publicly provided services to privately provided services. The health-care system lacks a care guidance function and a more structured collaboration with the primary care system could redirect utilization of health care towards a more appropriate level of care and improve allocative and technical efficiency in the system.

7.1 Stated objectives of the health system

The objectives of the health-care system are explicitly stated in three major sets of legislation. Firstly, the Health Care Act (No. 40/2007) applies to the organization of health care. Its objective is for all residents to have access to the optimum health services possible, when needed, in order to preserve mental, physical and social health. In organizing the delivery of health care, the aim is to provide services at the appropriate level, with primary care normally as the patient's starting point. Secondly, the Health Insurance Act (No. 112/2008) stipulates who is insured, their entitlements and what is covered. The goals of this legislation are to ensure that people are covered by the public health insurance system and to guarantee equal access to health care regardless of age, gender, race or ability to pay. Furthermore, it is the objective of this act to promote allocative and economic efficiency[37] in the health-care system and to maximize its quality as far as possible. In addition, this legislation aims to strengthen the role of the State as a purchaser of health-care services and to systematically carry out a comprehensive analysis of health-care costs. Thirdly, the Medical Director of Health and Public Health Act (No. 41/2007) aims to promote the population's health, through among other things, more active public

[37] While the meaning of this phrase is close to technical efficiency, the legislation emphasizes the importance of considering 'economic efficiency' in the sense, for instance, of not outsourcing/privatizing a particular type of service from a hospital/health care centre if by the outsourcing the remaining unit in the public sector will be left inefficient due to higher cost per unit/service or the outsourcing leads to higher coordination costs.

health activities, ensuring the quality of health-care services, and ensuring that public health and health-care services are evidence-based and delivered in line with best practices.

Long-term planning takes the form of national health planning, which is overseen by the MoW (see Chapter 2). A *National Health Plan 2001–2010* was published in 2001 (MHSS, 2001), which fleshed out national health policy objectives in seven priority areas: alcohol, other drugs and tobacco, children and adolescents, older adults, mental health, cardiovascular disease and stroke, cancer and accidents. These objectives were evaluated and reconsidered in 2005–2007 (MoW, 2011b). In most areas the objectives had either been achieved or were approaching achievement but in some areas conditions had moved away from stated objectives. A new *Health Plan 2020* has been formulated by the MoW and was presented to Parliament in November 2012; it is awaiting parliamentary approval.

A national quality development plan for health services aims to enhance their quality and safety. Quality monitoring is supervised by the DH. In 2007 the MHSS and the DH published the *Health Authorities' Policy on Quality in Health Care 2007–2010* (MHSS and DH, 2007). In 2008 the MoH issued a new regulation outlining the creation of quality indicators for the health service (Reg. No. 1148/2007) and in 2012 the DH published a handbook including quality indicators and clinical guidelines on how to implement quality indicators in health care (DH, 2012c).

The health-care system is assessed in the following sections against these publicly stated objectives, plans and programmes.

7.2 Financial protection and equity in financing

National health insurance with universal coverage of health-care costs is a fundamental part of the social security system. Entitlement is based on residence in the country and the system automatically covers everyone who has been legally residing in Iceland for six months, regardless of nationality. All eligible individuals must take part in the national health insurance system and it is not possible to voluntarily leave the statutory system ('opting-out'). Everyone covered by IHI receives all the health-care services that they require irrespective of how much they contribute to the system.

7.2.1 Financial protection

A cost-sharing mechanism is in place in which the cost of health care is shared between the state and the users of health care. In Iceland, cost-sharing by means of user charges applies to primary care visits, outpatient care and pharmaceuticals, whereas inpatient care in acute hospitals is free of charge and so are all tests and medications required during hospitalization. The cost-sharing scheme is progressive in the sense that is aims to protect vulnerable groups against excessive financial cost due to health care. The groups that are particularly protected are the elderly, people with disabilities receiving a disability pension, children and young people under 18, and recipients of special care due to disability or chronic diseases.

Although less protected by the cost-sharing scheme, all insured members of the population aged between 18 and 66 years are eligible for a discount certificate when a certain level of OOP health-care expenditure has been reached within a calendar year. The certificate gives a discount above that level. The level of annual expenditure on health is different depending on the groups of users. However, a study published in 2009 (Vilhjálmsson, 2009) demonstrated that discount certificates were poorly distributed and only 45.7% of eligible individuals had actually obtained one. This lack of coverage was greatest among younger individuals, parents of young children, individuals in larger households, the full-time employed, and those who had more education and income. One reason for poor uptake was that health authorities had done little to promote the certificates and it was also cumbersome for patients to obtain one (see section 3.4.1).

Medical specialists' services are offered on a fee-for-service basis and patients are free to schedule as many visits to a specialist without a referral from a GP. From 2008 to 2010 there was an increase in specialist fees and the patient co-payment grew from 25% of the total price in 2008 to 28% in 2010 (BCG, 2011). During this period there was an annual increase of 7% in expenditures for medical specialist services, with patients absorbing the larger part of this cost increase; patients' costs increased by 13% compared to the government's share of 4% (BCG, 2011, p.61). Patients' cost-sharing increased even further between April 2011 and the end of 2013 when there was no valid contract between medical specialists and the IHI. Despite the absence of a contract, the Minister of Health listed the specialist treatments that the IHI would still partly reimburse, according to set price lists (Reg. No. 333/2011). If prices charged by specialists were higher than the listed prices, patients were liable to pay the difference (see section 3.4.1). According to IHI's calculations

the patient's share of the cost for a specialist's visit averaged 30% in April 2011 and reached above 40% by the end of 2013. A new contract was negotiated at the end of 2013 and took effect in January 2014; the IHI's new reimbursable prices for specialist treatments are designed to partly compensate patients for their increased cost-sharing during the previous two years.

In spite of rising costs to patients, visits to specialists outside hospitals and in outpatient departments in hospitals increased by 15% between 2012 and 2013 (see section 3.4.). In 2013, user charges increased on average by 5.6%. Co-payments for primary health care remained unchanged. This indicates that financial barriers to accessing health care may have increased in this period by more than the levels indicated by in the latest Eurostat data published in 2013 (also see below).

Over the past two decades there has also been a shift of dental health expenditure from the public to the private in which dental services have become a growing share in household expenditure on health. Household health expenditures increased by 29%, in real terms between, 1998 and 2006, and the highest cost categories in 2006 were drugs and dental care (Vilhjálmsson, 2009) (see also section 5.12).

7.2.2 Equity in financing

The health-care system has two main sources of financing. The first and main source is taxes levied by the central government (80%) and the second source of revenue comes from private expenditure (households) in the form of OOP payments (20%). Health systems financed by general direct taxation tend to be more progressive than systems financed by indirect taxation (Mossialos & Dixon, 2002). The taxation system in Iceland is a mixture of progressive income taxes and general regressive taxes on goods and services. Redistribution of income is achieved both through the taxation system and through social benefits in the social security system (see Chapter 3). However, the progressivity of income taxation depends on the individual tax system and how it is designed with regard to equitable distribution of the tax burden. In Iceland in the 2000s the tax burden shifted towards lower income groups but after the beginning of the global financial crisis in 2008 this trend was reversed and a reform of the taxation system set out to make the system more progressive (see Chapter 1). Financial resources for health-care services are pooled and allocated through the national budget bill each year (see sections 3.3.3 and 7.5.1). The biggest part of

the pooled financial resources are allocated as global budgets through the MoW to providers of health-care services but a growing part has been channelled to providers through the IHI, the commissioning agency (see section 3.3.4).

With rising levels of ambulatory and outpatient care, increasingly provided by the private sector and spurred on by more advanced medical technology and hospital restructuring, the cost of health care has been shifting steadily from the public to the private, resulting in increased private expenditure, of which household expenditure forms the largest part (see Table 3.4).

7.3 User experience and equity of access to health care

7.3.1 User experience

Despite the steadily increasing patient cost-sharing burden in the last decade, the results from a European Values Studies (EVS, 2011) indicate improved citizen satisfaction rates in relation to the health system. For example, in 2008–2010, 38.1% of survey respondents stated that that they had 'a great deal' of confidence in the health-care system, rising from 30.2% in 1999–2001 while 56.6% responded that they had 'quite a lot' of confidence in the health system, also rising from 54.8% in 1999–2001. A more recent study on equity in health showed that feelings of discomfort had the strongest link to age, sex and income. The study showed a relationship between being older, male and of a higher income group and experiencing less frequently a feeling of discomfort, while there was a relationship between being younger, female and of lower income and experiencing more frequently the feeling of discomfort (Þorvaldsdóttir, 2010).

7.3.2 Equity of access to health care

In addition to the trend for higher household expenditure on health care there is ample evidence showing that due to knock-on effects, the publicly stated objectives on equal access to health care, regardless of ability to pay, may be in jeopardy.

While health-care benefits are available to all residents the main barrier to access is the growing burden of health-care costs on household budgets. Data from two national health surveys among Icelandic adults from 1998 and 2006 reveal that household health expenditures increased by 27% in real terms between 1998 and 2006 (Vilhjálmsson, 2009). The data also highlighted that the average household expenditure committed to health-care expenses had

increased on average from 1.82% in 1998 to 2.52% in 2006. One noteworthy aspect of Vilhjálmsson's study is the difference in average household expenditure for health care depending on income. Households with annual income below ISK 3.5 million (EUR 22 071) spent 4.8% of their total household expenses on health care compared with an average of 1.73% for households with higher incomes. Other recent national studies have demonstrated that people with high OOP health-care costs relative to family income postpone visits to the doctor even though they need care, suggesting to the study's author that such costs compromise the goal of equal access (Vilhjálmsson, 2005, 2011) (see Chapter 3). Although the cost of pharmaceuticals and dental services constitute the biggest share of household expenditure on health care, household expenditure on medical specialist services has been on the rise (see Table 3.7).

The latest Eurostat figures published in 2013 show that barriers of access to health care have been increasing in Iceland. More and more people report unmet needs for medical examinations due to cost, distance to travel and waiting time, with the figure rising to 3.8% in 2011 from 3.1% in 2004 and 1.0% in 2006 (Eurostat, 2013b). When looking specifically at financial barriers to accessing health care and comparing lower income groups to the total population over the same period, the rates are higher: 6.8% in 2011, rising from 3.8% in 2004 and 1.1% in 2006. The corresponding figures for the total population were 3.4% in 2011, up from 1.9% in 2004 (0.8% in 2006) (Eurostat, 2013b).

There is also evidence that indicates increased access barriers to health care due to cuts in public expenditure. Figures from October 2013 illustrating trends in waiting times, i.e. people waiting longer than three months, for elective surgery[38] show that waiting times are increasing. The main reasons for increased waiting times are deterioration of technology leading to frequent technical breakdowns, closure of hospitals and wards and staff shortages[39] (DH, 2013d).

Two studies in Iceland have shown a relationship between socioeconomic status and health. In the first study, evidence on health utilization shows that people of lower socioeconomic status, measured by level of education and income, are not necessarily the largest primary care users; rather, people of higher socioeconomic status use proportionally more services (Vilhjálmsson,

[38] Such as angiography of the heart and/or coronary arteries and PTCA and prosthetic replacement of hip and knee joint.

[39] Personal communication with the Directorate of Health, 20 December 2013.

2000; Gunnarsdottir et al., 2004). Another study published in 2007 showed evidence that suggested that income influences an Icelander's health status but to a smaller extent than reported for other countries (Ásgeirsdóttir, 2007).

Lastly, a study from 2011 (Vilhjálmsson, 2011) observed that postponement or cancellation of medical care is fairly common among adults. In the study, 22% of the respondents had postponed or cancelled a physician visit they thought they needed in the past six months and considerable variations in postponement rates were found. Postponement was positively related to younger age, full employment, financial difficulties, high OOP health-care costs, inflexible daily schedules, dissatisfaction with the last visit to a physician and the number of chronic medical conditions experienced.

7.4 Health outcomes, population health, health services outcomes and quality of care

7.4.1 Population health

Measured by conventional health outcome indicators, the population of Iceland enjoys good health status. Life expectancy at birth is high. For men, it is among the highest in the world, while for women – who held first place for some time – it is close to the top. The gender gap in life expectancy is much smaller than is the case elsewhere. Perinatal and infant mortality are the lowest among other countries, and maternal mortality is virtually non-existent.

Diseases of the circulatory system are by far the most common causes of premature death, with ischaemic heart disease at the top of the list. However, standardized death rates per 100 000 population of both cerebrovascular diseases and ischaemic heart disease have dropped considerably in the period 1980-–2009 (see Chapter 1). In this same period, the incidence of cancer per 100 000 population increased by 50% for men and 43% for women (see Table 1.5). However, total mortality rates fell from 897.2 to 572.1 for men and from 539.2 to 402.7 for women. Lung cancer and colon cancer have the highest death rates (see Chapter 1). National experts infer from the trends in the rates of smoking in the past that the death rate due to lung cancer in Iceland has reached its apex and is likely to decrease from now on. At present, Icelandic men and women are living longer in spite of being diagnosed with cancer, therefore it is likely that they will have to spend more years in a chronic state of poorer health.

Findings from more recent studies on population health following the economic crisis in 2008 indicate that psychological stress may have increased following the economic collapse in Iceland, particularly among females in economically vulnerable groups (Hauksdóttir et al., 2013).

For dental health, supply of services is not reflected in better dental health outcomes. Compared to other Nordic countries, Icelandic children have poor dental health: 12 year olds have twice as many damaged teeth than their peers in other Nordic countries (see section 1.4).

7.4.2 Health service outcomes and quality of care

High life expectancy is attributable to the lowest overall cancer and acute myocardial infarction mortality rate in the OECD and below average mortality from stroke and heart disease (BCG, 2011). In both disease categories, early intervention is a critical factor. Short distances, a small community of professionals and policy priorities may help to explain the good outcomes. On the other hand, recent data indicate not only an uneven distribution of inpatient elderly care but also that there are indications of some large quality issues due to lack of structured planning and performance management in some selected areas of elderly care (BCG, 2011).

7.5 Health system efficiency

As mentioned above (section 7.1) provisions in the Health Insurance Act (No. 112/2008) are designed to promote the allocative and economic efficiency in the health service and to maximize the quality of services. The aim of the act is also to strengthen the role of the state as a purchaser of health services and to develop comprehensive health-care cost analysis tools as instruments for strategic commissioning purposes. However, countervailing influences and incentives are operating within the health-care system that hinder government efforts in improving health system efficiency: the objectives of the Health Insurance Act rely more on demand-side mechanisms whereas in Iceland there has been a long tradition and heavy reliance on supply-side driven approaches, stipulated in legislation such as the Health Care Act (No. 56/1973 and No. 40/2007).

7.5.1 Allocative efficiency

In organizing the delivery of health care, the Health Care Act aims to provide services at the appropriate level of care, with primary care normally being the patient's starting point. To achieve this, two main approaches have been employed. The first concerns the allocation of financial resources via the budgeting process in which the MoW obtains financial and programme information from all agencies under the ministry's control, with this forming the basis for budgetary allocations to these agencies. For this purpose, the MoW uses modelling in which a crude population formula and type of service is taken into account when allocating funds. The second main approach is to encourage patients to use PCCs as their first contact by keeping patients' co-payments for GP services lower than for visits to medical specialists.

However, this strategy is not working effectively for a number of reasons: firstly, while entry for private practising medical specialists into the health-care system is unregulated, regulation not only restricts entry of GPs into the system but also seems to create bureaucratic burdens resulting in GPs' diminishing job satisfaction. This has contributed to a shortage of GPs, in particular in the Capital Region where the majority of the population lives and where most outpatient medical specialist services are provided. Secondly, the cost-sharing mechanism in place does not seem to involve strong enough (demand-side) incentives to direct patients to GP services more effectively. Furthermore, GP shortages – as well as underutilization of nursing services at PCCs in the Capital Region – create waiting times, forcing patients to use specialists. Finally, historical factors play a role: many patients have developed trusted relationships with individual specialists that are not easily overcome.

Nevertheless, mechanisms to set priorities based on evidence about effectiveness and cost–effectiveness are being administrated by the IHI when introducing new pharmaceuticals into the health systems. For this purpose, the IHI, in cooperation with the country's major hospitals, bases its decisions on assessments from the United Kingdom's institute, NICE, and assessments from other Nordic countries, especially Denmark and Norway. This approach to improve allocative and technical efficiency has proved successful (see section 7.5.2).

When examining the allocation of funds the authors' own calculations show a decrease in total expenditure on health between 2004 and 2012 by 1.61% in real terms (Table 7.1). In addition, a shift has occurred in the allocation of financial resources from publicly provided services to privately provided services. Primary care services remained constant (10%) as a share of the

total over this period and hospital services dropped by 9 percentage points (from 49% to 40%) as a share of the total. On the other hand, expenditure on medicinal products as a share of total expenditure rose by 3 percentage points (from 9% to 12%) over this period and the share of ambulatory private medical specialist services increased by 1% (Fig. 7.1).

Table 7.1

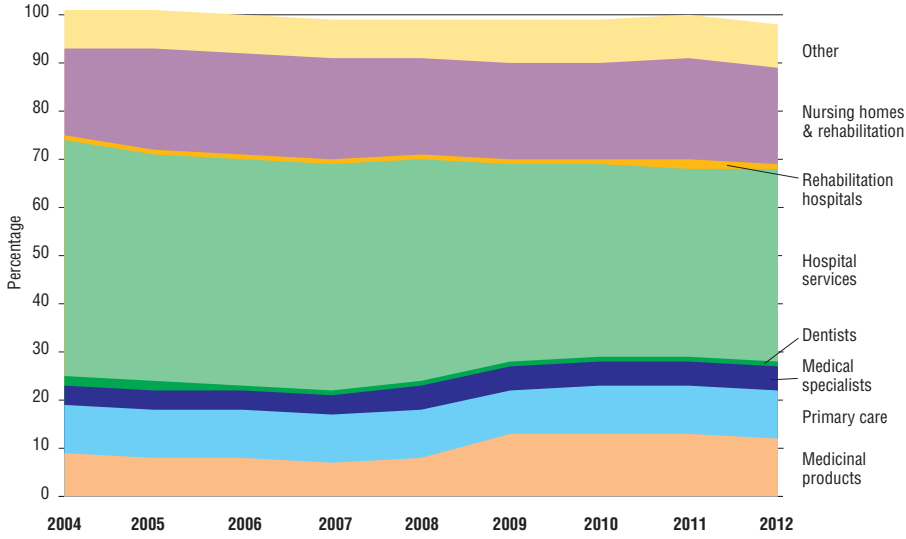
Total expenditure on health in Iceland, 2004–2012

Year	Total expenditure on health current prices (ISK millions)	Total expenditure on health in 2012 prices[a] (ISK millions)	Year-on-year real change in total expenditure on health (%)	Real change in total expenditure on health from 2004 (%)
2004	72 924	123 317	–	–
2005	76 736	123 840	0.42	0.42
2006	85 676	127 258	2.76	3.20
2007	95 201	132 570	4.17	7.50
2008	109 505	137 547	3.75	11.54
2009	116 828	133 441	-2.99	8.21
2010	112 923	124 031	-7.05	0.58
2011	115 664	122 093	-1.56	-0.99
2012	121 326	121 326	-0.63	-1.61

Source: [a]Authors' own calculations based on Treasury Accounts 2004–2012 provided by Government Financial Authority and the public consumption index from the Statistical Office in Iceland.

Fig. 7.1

Breakdown (%) of total expenditure on health by sector in Iceland, 2004–2012

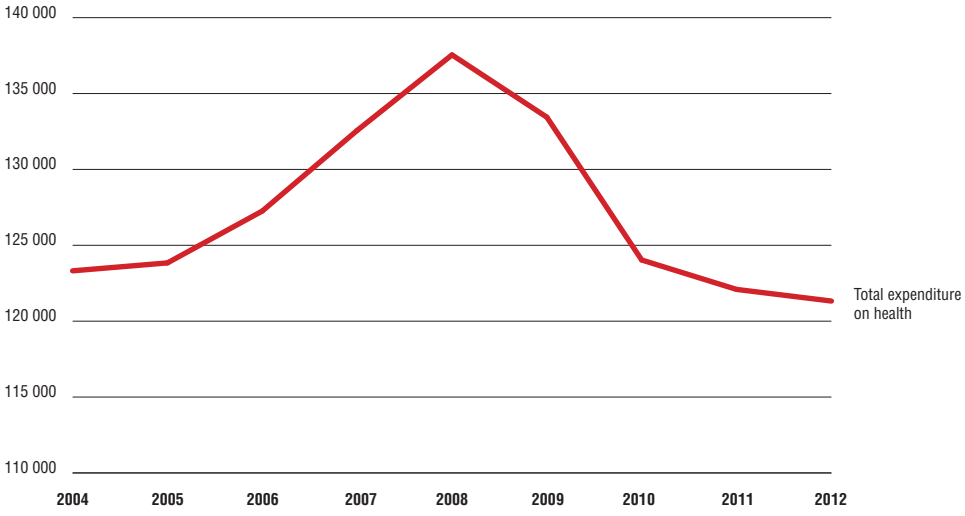


Source: Authors' own calculations based on Treasury Accounts 2004–2012 provided by Government Financial Authority and the public consumption index from the Statistical Office in Iceland.

However, while allocation of funds between different health-care sectors remained almost constant over this period showing only limited signs of direct steering of funds in line with stated objectives, a break in the normal trend in 2008 (Fig. 7.2) is mainly an effect of the financial crisis and thus a result of management at the level of the national economy. In contrast, in 2009 the transfer of managerial responsibility for funding medicinal products provided during hospitalization (so-called S-category pharmaceuticals (see section 5.6) to the IHI does represent a direct steering of funds. This transfer of responsibility explains the drop in hospital services expenditure but there is also a sharp rise in pharmaceutical expenditure, for which the transfer of managerial responsibility is only partly responsible.

Fig. 7.2

Total expenditure on health, 2004–2012 (in 2012 prices)



Source: Authors' own calculations based on Treasury Accounts 2004–2012 provided by Government Financial Authority and the public consumption index from the Statistical Office in Iceland.

About two-thirds of the decrease in hospital services expenditure between 2008 and 2009 can to be explained by the transfer of managerial responsibility to the IHI. The currency collapse in 2008 also played a part. In the ensuing years, the expenditure decreases in the other sectors, as well as in hospital services, were mainly a result of expenditure cuts in which publicly provided services have suffered more than privately provided services. The reasons for this lie in the ability of government authorities to implement expenditure cuts and manage cost-containment strategies more easily in the public sector than

in the private sector where costs may be affected more by factors related to the role and efficiency of markets. In the case of the rise in pharmaceutical costs, a large share of that increase was directly attributed to the collapse of Iceland's currency during the financial crisis, i.e. a rise in cost that was already a feature in 2008. In the case of privately provided outpatient medical specialist services, private investment in medical technology, private property rights and in part political ideology favouring a bigger role of markets in health play a role in rising expenditure.

7.5.2 Technical efficiency

As seen in section 6.1, the idea behind the creation of the IHI was to unite into one agency the necessary skills and technology to build up relevant information and contracting capabilities. The aim was to improve and strengthen commissioning and purchasing capacity in health care. Existing expertise in the area of cost analysis and activity-based health-care financing and management was to be consolidated in this new commissioning agency in order to fulfil the objectives stated in the new government's 2007 manifesto, i.e. to carry out cost analysis of health-care services and to produce the knowledge and information necessary to take the approach of 'money-following-the–patient' (Prime Minister's Office, 2007).

The current financial crisis has had some impact on the implementation of this reform. However, the struggles facing the relatively new IHI agency have less to do with the financial crisis than with resistance inside the system. The full implementation of the IHI's commissioning function, as stipulated in the Health Insurance Act (No. 112/2008) is still in a 'catch-22' position (see section 6.1). On the one hand, despite the legislation's clear instructions, various resources from other parts of the health administration have not yet been transferred to the IHI so that it may begin its commissioning functions in earnest. On the other hand, implementation has been repeatedly postponed by parliament on the grounds that the agency lacks the necessary resources to undertake its designated tasks. Therefore, to date, the agency lacks the necessary resources to undertake its mandate.

In line with the emphasis placed on generating savings in the general hospital system, hospitals are increasingly shifting their care from inpatient to outpatient and day care services (see section 5.4). The number of hospital beds has been decreasing for the past two decades and large numbers of acute hospital beds around the country have gradually been changed into long-term nursing beds (see section 4.1.2). Average length of stay in all hospitals has

also been decreasing since 1990, as have the number of discharges from acute hospitals – but over this same period, inpatient surgical procedures have been increasing. Nevertheless, it should be noted that demand for long-term care institutional services is high. For example, in 2008 and 2009 a relatively high proportion of the elderly in Iceland (8.2%) were receiving institutional services, such as nursing home places and nursing beds designated for the elderly in hospitals and geriatric institutions, compared with an average of 6.6% in other Nordic countries (see section 5.8).

The health-care system is well placed as regards medical technology. Compared with some other Scandinavian countries and the United Kingdom, the number of CT scanners, MR imaging units and radiation therapy equipment per 100 000 inhabitants is higher in Iceland (Table 4.2). The small population, an emphasis on geographical equality of access to health care and the fact that Iceland is an island at a considerable distance from neighbouring countries (thus limiting cross-border access to health care in other countries) are often mentioned as explanatory factors when data on expenditure and physical resources are considered. However, a part of the explanation lies also in the public–private divide. The two sectors operate in parallel within the health-care system, allowing a free flow of patients and medical staff across these two sectors; moreover, the private provision of specialized medical care and diagnostic services is by and large unregulated and responds to market demand for specialist care and high levels of diagnostic services (see section 4.1.3).

Compared to the other Nordic countries, Iceland had the fewest number of nursing and elderly home beds per 100 000 inhabitants in 2010 (see section 5.8). However, examining the ratio of nursing home beds to the population aged over 65 or 80 reverses this picture. In 2010 only 12.1% of the population in Iceland was 65 and older compared to 15.0% in Norway and 18.3% in Sweden (see section 5.8). Proportionately, Iceland also had the fewest individuals of 80+ years or 3.4% of the total population compared to Norway (4.5%) and Sweden (5.3%). The number of available nursing home beds remained relatively constant between 2008 and 2010 but the ALOS in available beds decreased from 3.8 years to 2.9 years (INAO, 2012). In general, the elderly in Iceland receive fewer service than their peers in other Nordic countries. Research evidence has shown that staff caring for the elderly in Iceland are less educated, generally younger and with less work experience than colleagues in other Nordic countries. Moreover, compared to other Nordic countries, services provided to the elderly in Iceland seem to be of less stability and more restricted in scope (see section 5.8).

An evaluation of the emergency care services in Iceland states that the inflow of patients to the A&E department at Landspitali is too high (BCG, 2011). The evaluation estimates that 30 000 out of 70 000 visits could have been handled by a GP. According to the BCG, the health-care system is lacking a care guidance function and a more structured collaboration with the primary care system could resolve the problem.

Pharmaceutical products are mainly imported and thus are affected by the foreign exchange rate. As discussed above, during the financial crisis in Iceland, prices of pharmaceutical products increased sharply as a result of the currency collapse. Since 2010, prices have come down from that level and in spite of increased consumption of pharmaceutical products (see section 5.6) cost-containment strategies have achieved reductions in pharmaceutical costs. This has been achieved partly by means of a shift to prescribing more generics and using reference pricing – resulting in lowering of retail prices as a consequence of increased retail market competition – and partly by changing the cost-sharing mechanism, resulting in a shift from public expenditure to private expenditure, i.e. to patients (IHI, 2010, 2011, 2012; IHI web site 2009, 2010).

The number of doctors is skewed towards medical specialists and apart from gaining a licence to practise, entry to the medical specialist market in Iceland is more or less unregulated; as a consequence, signs of overconsumption have been noticed (BCG, 2011). Compared to other Nordic countries, Iceland has more medical specialists per 100 000 population, which has resulted in higher visits rates to medical specialists compared to visits to GPs. The Capital Region (where two-thirds of the population lives) has the highest ratio of physicians to population at 3 per 1000 population. Nurses and auxiliary nurses are the largest health-care group and on average there were roughly four nurses and auxiliary nurses per one physician in Iceland in 2012 (see section 4.2.1).

7.6 Transparency and accountability

Patients have a right to access their own health records and to determine who should have access to them. In this respect, the Patients' Right Act (No. 74/1997) allows patients or their representative to specify which health-care practitioners may have access to their records and to be informed if medical necessity requires other non-specified personnel to have access. Patients are also entitled

to obtain information from health record supervisors on which people have gathered information from their health record, where and when the data were gathered, and for what purpose.

The Patients' Rights Act also accords patients the right to comment on the services provided to them and to make a complaint (see section 2.9.4). Complaints are directed to the DH, which is responsible for processing and keeping records. The DH produces statistics on the causes of complaints, types of services and organizational providers involved and on the responses to the complaints. These are published on the DH web site (DH, 2010b). The total number of complaints decreased by 13% between 2005 and 2010 (2010 being the latest available year), down to 252 complaints in 2010 from 290 in 2005.

8. Conclusions

The main characteristics of the Icelandic health-care system are, on the one hand, a relatively high level of health-care supply and demand and, on the other, remarkable health-care outcomes. While Iceland's health outcomes are some of the best among OECD countries, they have been delivered at a relatively high price.

The population of Iceland enjoys good health status, with high life expectancy at birth, a smaller gender gap in life expectancy than found elsewhere, among the lowest infant mortality in the world and virtually non-existent maternal mortality. High life expectancy is also attributable to the lowest overall cancer and acute myocardial infarction mortality rate in the OECD and below-average mortality from stroke and heart disease. A point to bear in mind in this context is that, in general, population health depends more on factors external to health-care systems than the health-care services themselves. This includes food quality and nutrition, sewage systems, quality of drinking water, quality of housing, and sanitation practices. Iceland ranks high on these other factors that affect population health.

The system is characterized by high levels of health-care resources and utilization. Compared with health-care systems in the OECD and Europe, the ratio of medical and health-care professionals per 1000 population and, in the 65 years and older group, long-term care beds per 1000 population is very high and the availability of diagnostic technologies is, on a per capita basis, by far the highest among OECD countries. Measured in visits to medical doctors and usage of pharmaceutical drugs, health care is characterized by a high level of utilization of services at the most expensive end of the care spectrum, i.e. medical specialist services and the most expensive pharmaceutical drugs.

Iceland has a public national health-care service. It is a comprehensive, highly state-centralized system with universal rights, predominantly publicly provided services (albeit with growing private provision) and financed by general taxation as well as patient cost-sharing. The trend towards increased outpatient care and day care surgery has been the main driver of the process of privatization in which services have been privatized and the cost of some care has steadily been shifted from the public to the private arena. Recent evidence is worrying, showing that in 2013 some 31.7% of those surveyed had postponed or cancelled an appointment to a medical doctor compared with 21.6% in 2006. People with disabilities, single people and students are the biggest groups of people postponing or cancelling appointments, thus showing that postponement is more frequent among groups with less income (Social Science Research Institute, 2013). Moreover, cuts in public expenditure in the periods prior to and after the financial crisis have hit public provision harder than private provision of care. This highlights the existence of a weak state commissioning authority and sub-optimal system governance, in spite of a recent attempt to strengthen the state as the only purchaser of health-care services in the country.

The legal framework in Iceland provides the Minister of Health with major policy-making and executive authority but professional organizations and private interests in the system are powerful and influential in policy-making and the organization of services. At the level of policy there is a long tradition of having a supply-led approach to the health-care system that, until recently, was predominantly shaped by a legislative framework emphasizing the administrative and the organizational structure of care delivery. This policy orientation has facilitated the growth of specialist care by not impeding increased supply in the sector. Moreover, this policy not only directs health-care utilization towards the more expensive type of services but also results in a more fragmented care system with associated coordination problems and risks of diminishing quality of care. In addition, the increased provision of medical specialist services provided in private clinics outside the Landspitali University Hospital in Reykjavik undermines the core objectives of the hospital merger processes in the 1990s in which ensuring a critical mass of patients per medical specialist in that public hospital was the preferred approach to guarantee quality of care.

A survey in 2013 showed that over 80% of respondents think that the health service should first and foremost be a public service and 94% think more public money should be spent on health care (Social Science Research Institute, 2013). Although public opinion strongly favours a public national health service in line with other Nordic health-care systems, recent developments signal a system in

transition, in which the nature of the system is changing. This may put at risk the core objectives of equal access to health care irrespective of ability to pay, and illustrates a drift away from the Nordic welfare paradigm.

With this background in mind, the health-care system faces some major immediate and long-term challenges involving the financial sustainability of the current system and reasserting the Nordic welfare paradigm. A rapidly ageing population, new public health challenges (such as obesity) and the continued impact of the country's financial collapse in 2008 are shaping the context in which the Icelandic government will have to lay out its reform strategy.

The most important challenge is to change the pattern of health-care utilization to steer it away from the most expensive end of the health services spectrum towards more cost-efficient and effective alternatives. To a large degree, this will involve renewed attempts to prioritize primary care as the first port of call for patients. Although past policy frameworks have repeatedly emphasized primary care, mostly provided in public PCCs, as the first point of users' contact in the health-care system, direct access to privately provided specialist medical care continues to characterize the system. So far, attempts at changing this pattern of health-care utilization by redirecting it towards more GP-led health care have been unsuccessful. The main stumbling block to change is the prevailing framework of regulatory incentives that strongly favours specialist care. In effect, regulation restricts the operation of GPs in the health system while entry of medical specialists is unregulated, resulting in the number of visits in the Capital Region being skewed towards medical specialist services. Cost-sharing mechanisms seem not to be strong enough to steer health-care utilization towards primary care.

This pattern of health-care utilization may also signal a problem of specialization and how it plays out in the context of the health-care sector. In an island with a small population and long distances to the nearest country all medical specialties need to be represented but the number of cases in the respective specialties may not be enough. Therefore, a medical specialist may have to take on procedures of a more general nature, leading to a crowding-out effect on GP services in primary care settings. If that is the case, the authorities may need to emphasize more strategic and sophisticated methods of care commissioning and management of contracts. In other words, the authorities need to strengthen health system governance in which ministers should focus more strategically on the long-term vision, policy objectives and system design while leaving government agencies with more independent scope for action to achieve and deliver publicly stated policy objectives.

Recent reform efforts have focused on strengthening existing functions and previous infrastructure development. However, an important feature of the Icelandic health-care system is that changes also take place as a result of 'policy drift' (a feature of the public policy process in Iceland in general). This means that although government policy is clearly and publicly stated in legislation, policy outcomes have become distorted in the process of implementation, namely in the way that providers have been able to gradually nudge the policy towards their own preferences and interests. Key examples of this are the issues discussed above, i.e. the relatively weak primary care sector, the absence of a GP gatekeeping function in the health-care system and the growing and ever stronger private medical specialist services outside hospitals. These features of the health system are mainly the effect of a lack of demand-side regulation that enabled vested interests inside the health system to respond to financial incentives during a period of politically driven, supply-side restructuring. Moreover, the impact of supranational regulations in which competition and market principles were introduced through the adoption of EEA directives has reinforced this development in the system.

Thus, weak system governance rather than inadequate planning capacities seems to increase the scope for over-utilization of services at the most expensive level of care. This feature of the health system may provide a legitimate basis to the IMF's recent opinion that the Icelandic health-care system still exhibits potential for some efficiency savings (IMF, 2013b). Policy-makers in Iceland are faced with a major challenge – that of improving cost-efficiency while ensuring equal access to affordable, quality care without the risk of eroding the social solidarity principle behind the tax financed health-care system.

9. Appendices

9.1 References

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9.2 Legislation and regulations

Act No. 111/2000 on Patient Insurance (*Lög um sjúklingatryggingu*)

Act No. 112/ 2008 on Health Insurance (*Lög um sjúkratryggingar*)

Act No. 117/1993 on Social Security (*Lög um almannatryggingar*)

Act No. 25/1975 on Advice and Education on Sexual and Reproductive health and Abortion and Sterilization (*Lög nr. 25/1975 um ráðgjöf og fræðslu varðandi kynlíf og barneignir og um fóstureyðingar og ófrjósemisaðgerðir*)

Act No. 40/2007 on Health Care (*Lög um heilbrigðisþjónustu*)

Act No. 12/2008 on amendments of several acts because of transfer of Licensing to the Medical Director of Health (*Lög um breytingar á ýmsum lögum vegna flutnings á útgáfu starfsleyfa til landlæknis*)

Act No. 120/2009 amending the Act No. 44/1998 on housing (*Lög um breytingar á lögum um húnæðismál*)

Act No. 125/1999 for the Affairs of the Elderly (*Lög um málefni aldraðra*)

Act No. 140/1996 on Measures in Public finances (*Lög um aðgerðir í ríkisfjármálum*)

Act No. 152/2010 amending the Act No. 59/1992 for the Disabled (*Lög um breytingar á lögum um málefni fatlaða*)

Act No. 154/2001 amending the Act No. 97/1990 on Health Care (*Lög um breytingar á lögum um heilbrigðisþjónustu*)

Act No. 16/2001 on Medical Devices (*Lög um lækningatæki*)

Act No. 160/2007 amending the Act No. 100/2007 on Social Security (*Lög um breytingar á Lögum um almannatryggingar*)

Act No. 160/2010 on Buildings (*Lög um mannvirki*)

Act No. 18/2003 on Public Health Institute (*Lög um lýðheilsustöð*)

Act No. 19/1997 on Health Security and Communicable Diseases (*Sóttvarnarlög*)

Act No. 28/2011 amending Act No. 41/2007 on Director of Health and repealing Act No. 18/2003 on Public Health Institute (Merging institutions) (*Landlæknir og lýðheilsa (sameining stofnanna)*)

Act No. 34/2005 on Healers (*Lög um græðara*)

Act No. 34/2012 on Health Care Practitioners (*Lög um heilbrigðisstarfsmenn*)

Act No. 40/1991 on Social Services (*Lög um félagsþjónustu sveitarfélaga*)

Act No. 40/2007 on Health Care (*Lög um heilbrigðisþjónustu*)

Act No. 41/2007 on Medical Director of Health and Public health (*Lög um landlækni og lýðheilsu*)

Act No. 41/2007 on the Medical Director of Health (*Lög um Landlækni*)

Act No. 43/2007 amending the Act on Health Security and Communicable Diseases No. 19/1997 (*Lög um breytingu á sóttvarnalögum með síðari breytingum*)

Act No. 44/2002 on Radiation Protection (*Lög um geislavarnir*)

Act No. 50/1996 on Freedom of Information (*Upplýsingalög*)

Act No. 55/2009 on Health Records (*Lög um sjúkraskrár*)

Act No. 56/1973 on Health Care (*Lög um heilbrigðisþjónustu*)

Act No. 57/1978 on Health Care (*Lög um heilbrigðisþjónustu*)

Act No. 59/1992 on the Affairs of Disabled People (*Lög um málefni fatlaðs fólks*)

Act No. 6/2002 on Tobacco Control (*Lög um tóbaksvarnir*)

Act No. 61/2013 on Chemicals, previously Act No. 52/1988 on Toxic Chemicals and Radio-nuclear substances (*Efnalög sem numu úr gildi Lög um eiturefni og hættuleg efni*)

Act No. 67/1971 on Social Security (*Lög um almannatryggingar*)

Act No. 7/1998 on Public Health and environmental protection (*Lög um hollustuhætti og mengunarvarnir*)

Act No. 73/1969 on Government Offices of Iceland (*Lög um Stjórnarráð Íslands*)

Act No. 74/1997 on Patients‘ Rights (*Lög um réttindi sjúklinga*)

Act No. 78/2003 amending the Act No. 97/1990 on Health Care (*Lög um breytingar á lögum um heilbrigðisþjónustu*)

Act No. 82/2008 on Civil Protection Act (*Lög um almannavarnir*)

Act No. 84/2007 on Public Procurement (*Lög um opinber innkaup*)

Act No. 87/1989 on Changes in the Division of Tasks between the State and Municipalities (*Lög um breytingu á verkaskiptingu ríkis og sveitarfélaga*)

Act No. 93/1994 on Medicinal Products (*Lyfjalög*)

Act No. 93/1995 on Food Safety (*Lög um matvæli*)

Act No. 93/2002 amending several Acts of Parliament regarding the Abolition of Regional Medical Doctors (*Lög um breytingu á lögum um brottfall lagaákvæða um héraðslækna o.fl.*)

Act No. 97/1990 on Health Care (*Lög um heilbrigðisþjónustu*)

Regulation No. 1025/2008 on sickness cash benefits (*Reglugerð um sjúkradagpeninga*). Ministry of Health.

Regulation No. 1065/2008 on sale of medicinal products by mail order (*Reglugerð um póstverslun með lyf*). Ministry of Health

Regulation No. 1100/2012 Regulation on partisipation of insured individuals in health care cost (*Reglugerð um hlutdeild sjúkratryggðra í kostnaði vegna heilbrigðisþjónustu*). Ministry of Health

Regulation No. 1112/2006 on institutional services for the elderly (*Reglugerð um stofnanaþjónustu fyrir aldraða*). Ministry of Health and Social Security

Regulation No. 1138/2008 for grants for medical devices (*Reglugerð um styrki vegna hjálpartækja*). Ministry of Health

Regulation No. 1148/2008 on the construction of quality indicators to use for the assessment of quality and outcome in the health care service (*Reglugerð um gerð gæðavísa sem notaðir eru til að meta gæði og árangur innan heilbrigðisþjónustunnar*). Ministry of Health

Regulation No. 1175/2011 on cost-sharing of insured individuals in health care cost (*Reglugerð um hlutdeild sjúkratryggðra í kostnaði vegna heilbrigðisþjónustu*). Ministry of Welfare

Regulation No. 1262/2007 on admission assessment (*Reglugerð um vistunarmat*)

Regulation No. 262/2011 on implementation and organization of medical transports (*Reglugerð um framkvæmd og skipulag sjúkraflutninga*)

Regulation No. 313/2013 Regulation for IHI participation in paying for pharmaceuticals (*Reglugerð um greiðsluþátttöku sjúkratrygginga í lyfjakostnaði*). Ministry of Welfare

Regulation No. 333/2011 for reimbursement of costs because of services rendered by privately practising specialists practising without a valid contract with the Icelandic Health Insurance. (*Reglugerð um endurgreiðslu kostnaðar vegna þjónustu sjálfstætt starfandi sérgreinalækna sem starfa án samnings við Sjúkratryggingar Íslands*). Ministry of Welfare

Regulation No. 355/2005 on reimbursement due to unusually high expenses for pharmaceuticals, medical- and therapy treatments (*Reglugerð um endurgreiðslu á umtalsverðum útgjöldum sjúkratryggðra vegna læknishjálpar, lyfja og þjálfunar*). Ministry of Health and Social Security

Regulation No. 400/1998 on planning (*Skipulagsreglugerð*)

Regulation No. 403/2010 for participation of the Icelandic Health Insurance in paying for pharmaceuticals (*Reglugerð um greiðsluþátt sjúkratrygginga við kaup á lyfjum*)

Regulation No. 426/1997 on pharmaceutical retail licences and pharmacies (*Reglugerð um lyfsöluleyfi og lyfjabúðir*). MHSS

Regulation No. 451/2013 Regulation on IHI's cost-sharing due to dental health care for insured individuals (*Reglugerð um þátttöku sjúkratrygginga í kostnaði sjúkratryggðra við tannlækningar*). Ministry of Welfare

Regulation No. 787/2007 for primary health care centres (*Reglugerð um heilsugæslustöðvar*). Ministry of Health

Regulation No. 82/1995 on referrals (*Reglugerð um tilvísanir*). Ministry of Health and Social Security

Regulation No. 917/2011 on the IHI's cost-sharing of in-vitro treatments provided outside the IHI's contract (*Reglugerð um þátttöku sjúkratrygginga í kostnaði við tæknifrjógvanir sem veittar eru án samnings við Sjúkratryggingar Íslands*). MoW

Regulations nr. 785/2007, 764/2008, 1083/2008, 448/2009 and 562/2009 on health-care regions and health-care organizations.

9.3 Useful web sites

ALA. Association of Local Authorities in Iceland
http://www.samband.is/um-okkur/english/

AOSH. Administration of Occupational Safety and Health in Iceland
http://www.vinnueftirlit.is/english

Directorate of Customs (*Tollstjóri*)
http://www.customs.is/default.asp?cat_id=61

DH. Directorate of Health) (*Embætti Landlæknis*)
http://www.landlaeknir.is/

Directorate of Internal Revenue (*Ríkisskattstjóri*)
https://www.rsk.is/english/individuals/

Directorate of Labour (*Vinnumálastofnun*)
http://english.vinnumalastofnun.is/home/

GFA. Government Financial Authority
http://www.fjs.is

GRE. Government Real Estate (*Fasteignir ríkissjóðs*)
http://www.fastrik.is/

ICS. Icelandic Cancer Society
http://www.krabb.is/Forsida/icelandiccancersociety

IHA. Icelandic Heart Association (*Hjartavernd*)
http://www.hjarta.is/english/

IHI. Icelandic Health Insurance (*Sjúkratryggingar Íslands*)
www.sjukra.is/english

IMA. Icelandic Medicines Agency
http://www.imca.is/

IMPRC. Icelandic Medicine Pricing and Reimbursement Committee (*Lyfjagreiðslunefnd*)
http://www.lgn.is/index.php?pageid=62

INAO. Icelandic National Audit Office (*Ríkisendurskoðun*)
http://www.rikisendurskodun.is/index.php?id=44&L=0

IRC. Icelandic Red Cross
http://www.raudikrossinn.is/page/rki_enska

MoW. Ministry of Welfare (*Velferðarráðuneytið*)
http://eng.velferdarraduneyti.is/ministry/organization/

National Registry (*Þjóðskrá*)
http://www.skra.is/English

Statistics Iceland (*Hagstofa Íslands*)
http://www.statice.is/pages/916

STC. State Trading Centre (*Ríkiskaup vefsíða*)
www.rikiskaup.is/english/nr/324

The New Landspitali (*Nýr Landspítali*)
http://www.nyrlandspitali.is/nyrlandspitali/islenska/um_nlsh/

9.4 HiT methodology and production process

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

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to published literature. Furthermore, international data sources may be incorporated, such as those of the OECD and the World Bank. The OECD Health Data contain over

1200 indicators for the 34 OECD countries. Data are drawn from information collected by national statistical bureaux and health ministries. The World Bank provides World Development Indicators, which also rely on official sources.

In addition to the information and data provided by the country experts, the Observatory supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the European Health for All database. The Health for All database contains more than 600 indicators defined by the WHO Regional Office for Europe for the purpose of monitoring Health in All Policies in Europe. It is updated for distribution twice a year from various sources, relying largely upon official figures provided by governments as well as health statistics collected by the technical units of the WHO Regional Office for Europe. The standard Health for All data have been officially approved by national governments. With its summer 2013 edition, the Health for All database started to take account of the enlarged EU of 28 Member States.

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

A typical HiT consists of nine chapters.

1. Introduction: outlines the broader context of the health system, including geography and sociodemography, economic and political context, and population health.
2. Organization and governance: provides an overview of how the health system in the country is organized, governed, planned and regulated, as well as the historical background of the system; outlines the main actors and their decision-making powers; and describes the level of patient empowerment in the areas of information, choice, rights, complaints procedures, public participation and cross-border health care.
3. Financing: provides information on the level of expenditure and the distribution of health spending across different service areas, sources of revenue, how resources are pooled and allocated, who is covered, what benefits are covered, the extent of user charges and other out-of-pocket payments, voluntary health insurance and how providers are paid.
4. Physical and human resources: deals with the planning and distribution of capital stock and investments, infrastructure and medical equipment; the context in which information technology systems operate; and human resource input into the health system, including information on workforce trends, professional mobility, training and career paths.

5. Provision of services: concentrates on the organization and delivery of services and patient flows, addressing public health, primary care, secondary and tertiary care, day care, emergency care, pharmaceutical care, rehabilitation, long-term care, services for informal carers, palliative care, mental health care, dental care, complementary and alternative medicine, and health services for specific populations.
6. Principal health reforms: reviews reforms, policies and organizational changes; and provides an overview of future developments.
7. Assessment of the health system: provides an assessment based on the stated objectives of the health system, financial protection and equity in financing; user experience and equity of access to health care; health outcomes, health service outcomes and quality of care; health system efficiency; and transparency and accountability.
8. Conclusions: identifies key findings, highlights the lessons learned from health system changes; and summarizes remaining challenges and future prospects.
9. Appendices: includes references, useful web sites and legislation.

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

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

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

9.5 The review process

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

9.6 About the authors

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Sigurgeirsdóttir has undertaken consultancy work for the World Bank (2004), the OECD (2011) and is currently a member of a Network of Policy Experts working for the EU Directorate-General of Justice. She has co-authored several articles in reviewed international journals on the 2008 financial crisis in Iceland.

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