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Belarus

Health system review

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Health Systems in Transition

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Preface

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

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

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

Compiling the profiles poses a number of methodological problems. In many countries, there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services are based on a number of different sources, including the European Health for All database, national statistical offices, Eurostat, the

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

A standardized profile has certain disadvantages because the financing and delivery of health care differs across countries. However, it also offers advantages, because it raises similar issues and questions. The HiT profiles can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situation. They can also be used to inform comparative analysis of health systems. This series is an ongoing initiative and material is updated at regular intervals. Comments and suggestions for the further development and improvement of the HiT series are most welcome and can be sent to info@obs.euro.who.int.

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

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

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The HiT reflects data available in July 2008.

List of abbreviations

AIDS	Acquired immunodeficiency syndrome
ALASS	Association Latine pour l'Analyse des Systèmes de Santé
BCG	Bacillus Calmette-Guérin (vaccine)
BelMAPO	Belarusian Medical Academy of Post-graduate Education
BYR	Belarusian rouble
CARK	Central Asian republics and Kazakhstan
CDC	Communicable disease control
CEE	Central and eastern Europe
CIS	Commonwealth of Independent States
CT	Computerized tomography
DMFT	Decayed, missing or filled teeth
DOTS	Directly observed treatment, short course
ECEPT	Eastern and Central European Palliative Care Task Force
ECG	Electrocardiogram
EGPRN	European General Practice Research Network
ENT	Ear, nose and throat
EPI	Expanded Programme on Immunization
EU	European Union
FAP	Feldsher-midwife point(s)
FTE	Full-time equivalent
GDP	Gross domestic product
GMP	Good medical practice
GP	General practitioner
HALE	Healthy (health-adjusted) life expectancy
HDI	Human Development Index
HiT	Health Systems in Transition
HIV	Human immunodeficiency virus
HTA	Health technology assessment

ICD	(WHO) International Classification of Diseases
IMF	International Monetary Fund
IT	Information technology
MRI	Magnetic resonance imaging
NATO	North Atlantic Treaty Organization
NGO	Nongovernmental organization
NIVEL	Netherlands Institute for Health Services Research
OECD	Organisation for Economic Co-operation and Development
OSCE	Organization for Security and Co-operation in Europe
PHC	Primary health care
PPP	Purchasing power parity
SEEC	East European Committee of the Swedish Health Care Community
SIDA	Swedish International Development Cooperation Agency
STI	Sexually transmitted infection
TB	Tuberculosis
TFYR Macedonia	The former Yugoslav Republic of Macedonia
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VAT	Value-added tax
VHI	Voluntary health insurance
WHO	World Health Organization

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Abstract

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

Since independence, the health system in Belarus retained many of the key features of the Semashko system. The system is still characterized by a hierarchical management structure, line-item budgeting and domination of inpatient care, although capitation funding has been introduced in some areas and there have been consistent efforts to strengthen the role of primary care. The incremental change approach, rather than introducing radical reforms, allowed stability in health care funding and service provision during severe fiscal difficulties in the 1990s. However, the incremental reform approach has not yet led to improvements in service quality or a significant reduction of excess hospital beds. High levels of health expenditure, universal access and a comprehensive package of care reflect the Government's commitment to the population's well-being.

Issues of high costs in the hospital sector and of overburden in primary care demonstrate the necessity of moving forward with the reform programme. The focus for future reform is on strengthening primary care and improving the quality and efficiency of health services. The key challenges in achieving this involve reducing excess hospital capacity, improving health care management, use of evidence-based treatment and diagnostic procedures, and the development of cost-effective technologies. Involving all stakeholders in the development of further reform planning and achieving consensus among them will be key to its success.

Executive summary

Introduction

The Republic of Belarus declared independence from the Soviet Union in December 1991. Since then, the country has been a titular democracy headed by a President. Due to the moderate pace of economic reforms and partial price liberalization, Belarus avoided the full impact of “shock therapy” reforms experienced in many other Commonwealth of Independent States (CIS) countries. However, much of Belarus’s economic stability was bolstered by cheap energy supplies from the Russian Federation.

The relatively mild economic transformation has resulted in lower rates of unemployment, poverty and inequity, as well as less drastic fluctuations in mortality indicators. Belarus is experiencing negative population growth as the birth rates are falling and death rates are increasing due to noncommunicable diseases, external causes and communicable diseases. Average life expectancy has been declining in Belarus; however, maternal and infant mortality have been steadily improving in recent years.

Organizational structure

The Belarusian health system is hierarchical and its organization is based on territorial administrative division. While the central Government sets national health priorities, regional and district administrations oversee the organization and funding of primary and secondary care at the local level. The Ministry of Health has overall responsibility for the system, but it directly funds only highly specialized tertiary services. Although efforts to empower local health care administrations have been undertaken, there is no real experience of privatization of health care facilities or delegating regulatory functions to

non-state bodies. In addition, as the responsibility for health care funding was assigned to local authorities, inequities increased between some of the richer urban and poorer rural areas.

Financing

Since independence, health expenditure patterns remained similar to those under the prior Semashko system, while levels of total health expenditure and public sector expenditure remained relatively stable. Social health insurance has not been introduced in Belarus, and the system is mainly funded by the State through general taxation and some out-of-pocket payments. The majority of revenue is raised at the local level, with most taxes being collected from the publicly owned enterprises rather than payroll contributions. Since there are no formal user charges in Belarus, out-of-pocket payments are usually made in order to purchase pharmaceuticals and for limited private services.

Although pooling of funds is the responsibility of local authorities, the health system is still a single-payer system. Local authorities and national Government act as third-party payers for health care services and personnel. There has been a slow shift in purchasing health services from input-based to capitation-based financing, which should improve resource allocation efficiency in the longer term.

Regulation and planning

The Ministry of Health plays a key regulatory role at all levels of the highly centralized health system, issuing norms for care and standards for service provision. Although regional and district health authorities are deemed to be important stakeholders due to their responsibility for local health care financing, their decision-making capacity is still limited. In Belarus, purchaser and provider functions are integrated and different levels of government purchase various kinds of care and cover the costs of public health facilities. Approaches to planning are still based on setting norms and imposing penalties for not meeting them. The top-down policy development and implementation process leaves little room for stakeholder participation. There is also a need to improve information systems so that data and analysis can better inform policy and planning.

Physical and human resources

Since 2001 there have been attempts to reduce excess hospital capacity through financing mechanisms that are based on the number of residents at the district

and regional levels, rather than the number of beds. However, the country still has a higher number of hospital beds per capita than any of the other CIS and central and eastern European (CEE) countries. Stability in the numbers of beds and hospitals in Belarus can partially be explained by their reallocation from medical to social care. Capital investments favour the hospital sector and specialist care and more resources have been devoted to the refurbishment of existing capital stock, rather than building new health facilities.

Belarus has an extreme overcapacity in the supply of doctors and nurses for inpatient and specialist care, which over time has been increasing, but despite the large overall numbers of health professionals, they are very unevenly distributed across the country and across health specialties. The broadening of alternative career opportunities and low wages for health workers mean that the country is now facing recruitment problems for key health workers in rural areas and in primary health care (PHC), as well as overcapacity in the cities and hospitals.

Provision of services

There is an extensive PHC network of providers throughout Belarus, but with an uneven distribution of health care workers. All PHC facilities are owned by the State. The PHC network has two forms of service provision: traditional polyclinics in the cities and outpatient clinics and feldsher-midwife (*akusher*) points (FAPs) in the rural areas. In some of the outpatient clinics general practice is emerging. Primary care in the capital, Minsk, and five other regional centres is provided through the network of adult and paediatric polyclinics, where a number of prevention, diagnostic, consultation and referral services are offered.

At the secondary level of care there are district and regional hospitals. While district hospitals provide general secondary care services, regional hospitals deal with more complex cases and offer a wider choice of care. At the same time, each district and region has an outpatient polyclinic, which delivers specialized secondary care for the patients in the community. In Belarus, the use of hospital beds for social and long-term care has been formalized and is partially covered by the deductions from patients' pensions and welfare benefits.

Principal health care reforms

The incremental approach, often using pilot projects to trial potential reforms, has been the main feature of health reforms in Belarus. Since 2000 there have been efforts to strengthen primary care and narrow the urban–rural gap in

health care, and to implement new methods of health care financing based on per capita financing and contracting for primary care doctors. The prioritization of primary and preventative care and output-based funding mechanisms, while ensuring free and universal access to care, are important steps in the direction of more comprehensive reforms. The focus for future reforms is on improving the efficiency and quality of health services available to the population, giving more spending freedom to health facilities, introducing better incentives for health care personnel and developing well-targeted treatment protocols so that the overall population health status can improve.

Assessment of the health system

The Belarusian health system aims to provide the entire population with universal access to care, which is free at the point of use. While there has been equity in receiving health services, distribution of health staff and facilities has been uneven between rural and urban areas. Efforts to reorient financial resources from the hospital sector to primary care and to introduce technical efficiency have been slow. However, the centralized health system has proved to be effective in public immunization campaigns and lowering infant and maternal mortality. Even modest improvements in the population's health status or demographic circumstances are embraced by policy-makers as evidence that recent initiatives and the health system as a whole are working well, as these are considered to be the key success indicators. However, these indicators are also influenced by factors beyond the control of the Ministry of Health, and a downturn in the economic situation could compromise any gains.

1. Introduction

1.1 Geography and sociodemography

Belarus is a landlocked country in eastern Europe, sharing borders with Poland, Ukraine, Lithuania, Latvia and the Russian Federation. The capital city is Minsk (Fig. 1.1). The land is low lying, with many lakes and marshes. Forests extend over much of the northern territory, while the south is characterized by vast tracts of arable land. Belarus has a moderate continental climate with the average January temperature of -6°C and the average July temperature of $+18^{\circ}\text{C}$. Average annual rainfall is 550–700 mm. The population of Belarus has fallen from 10.2 million in 1990 to 9.73 million in 2006; there has been a marked fall in the birth rate since the collapse of the Soviet Union, from 13.9 per 1000 people in 1990 to 9.2 in 2005, and an increase in the mortality rate which has not been offset by net in-migration (Table 1.1). Consequently, Belarus has a rapidly ageing population, particularly in rural areas (UNDP 2005a); 72% of the population live in urban areas and population density in 2004 was 47 people per km^2 (Table 1.1).

According to the 1999 census, Belarusians make up the largest population group (81.2%), followed by Russians (11.4%); but there are also Polish, Ukrainian, Roma and other minorities. The majority of religious believers are Orthodox Christians, but there are also Catholics, Protestants, Muslims and Jews. The official languages are Belarusian and Russian. Belarusian is widely spoken in rural areas, but the main language of government and business is Russian.

The whole territory of Belarus was occupied by the Nazis during the Second World War and the republic lost approximately one quarter of its population and 80% of its infrastructure. The sizeable Jewish communities which had lived in Belarus were almost completely lost in the Holocaust. After the massive devastation of the Second World War, there followed a period

Fig 1.1 Map of Belarus



Source: United Nations Department of Peacekeeping Operations 2004.

of intense reconstruction: rapid industrialization and significant economic development. From the 1950s Belarus emerged as one of the major Soviet manufacturing regions, emphasizing tractors, trucks, oil processing, the machine tool industry, synthetic fibres, televisions, and high-technology industries such as superconductors and microchips, which were part of the Soviet military-industrial complex (Ioffe 2004). However, agriculture remained important to the economy and the Chernobyl disaster in neighbouring Ukraine on 26 April 1986 had a devastating effect, as more than 70% of the radioactive pollution fell on southern Belarus, contaminating large areas of arable land and making many small towns and villages uninhabitable.

1.2 Economic context

The collapse of the Soviet Union was initially disastrous for Belarusian manufacturing industries due to the subsequent rise in energy costs and the disruption of supply chains across what became national boundaries, because

Table 1.1 Population/demographic indicators, 1970, 1980, 1990, 2000, 2005, 2006

	1970	1980	1990	2000	2005	2006
Total population (millions)	–	9.6	10.2	10.0	9.8	9.7
Population female (% of total)	–	51.9 (1981)	54.2	53.0	52.0	51.8
Population ages 0–14 (% of total)	–	22.7 (1981)	23.0	18.6	15.4	–
Population ages 65 and above (% of total)	–	10.6 (1981)	10.7	13.4	14.5	–
Population growth (annual %)*	–	–	3.2	-4.1	-5.3	–
Population density (people per km ²)	–	–	49.1	48.1	47.0	46.9
Fertility rate, total (births per woman)	2.4	2.0	1.9	1.3	1.2	–
Birth rate, crude (per 1000 people)	–	16.3 (1981)	13.9	9.4	9.2	–
Death rate, crude (per 1000 people)	–	9.6 (1981)	10.7	13.5	14.5	–
Age dependency ratio (population 0–14 & 65+, population 15–64 years)	–	0.5 (1981)	0.5	0.4	0.4	–
Distribution of population (% of urban population)	43.4	56.0	66.0 (1991)	69.4	71.8 (2004)	–
Literacy rate (%) in population aged 15+	98.7	99.2	99.5	99.7	99.6 (2004)	99.6

Sources: WHO Regional Office for Europe 2007; *UNICEF Innocenti Research Centre 2007.

Belarusian industries were highly integrated parts of the Soviet system. There was a breakdown in trade and a sharp fall in productivity. Consequently, following independence, there was a dramatic fall in gross domestic product (GDP) and hyperinflation as price liberalization took hold. However, genuine “shock therapy” and mass privatization were not realistic options for Belarus, as there was insufficient popular consensus in support of such an approach, given the social hardships that they would have entailed (Ioffe 2004).

The Belarusian population has therefore been buffered from the full force of economic transformation because price liberalization and privatization have only been partially introduced by the State, and the pace of economic reform has been evolutionary and moderate (UNDP 2005a). Officially, Belarus has a socially oriented market economy and it retains many features of the Soviet administrative-command economy but with limited central planning (Nutti 2005). It is state policy to support Belarusian producers in all spheres of the economy (including tobacco and alcohol manufacturing). The official overall unemployment rate is extremely low at 1.5%, but there is considerable underemployment (Table 1.2). However, Belarusian society would appear

Table 1.2 Macroeconomic indicators, 1997–2006

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
GDP (current US\$, millions)	14 128	15 222	12 138	12 736	12 355	14 595	17 825	23 142	29 566	36 945
GDP per capita*	–	–	2560	–	1226	1441	1770	2330	–	–
GDP per capita, PPP (\$)*	4850	6319	6876	7544	7620	5520	6052	6970	–	–
Annual GDP growth (%)	11	8	3	6	5	5	7	11	9	10
Income inequality: Gini coefficient**	0.354	0.351	0.337	0.337	0.343	0.342	0.340	0.338	0.326	–
Value added in industry (% GDP)	41	41	39	39	37	37	39	41	41	42
Value added in agriculture (% GDP)	15	14	15	14	12	12	10	10	10	9
Value added in services (% GDP)	43	46	46	47	51	51	51	49	48	49
Labour force (total %)*	45.9	–	47.2	53.1	45.4	45.5	45.5	45.2	–	–
Annual unemployment rate (% of labour force)*	2.8	2.3	2.1	2.1	2.3	3.0	3.1	1.9	1.5	–
Poverty headcount ratio at national poverty line (% population)	–	–	–	42	–	18	–	–	–	–

Sources: World Bank 2008; *WHO Regional Office for Europe 2007; **UNICEF Innocenti Research Centre 2007.

Notes: GDP: Gross domestic product; PPP: Purchasing power parity.

relatively equitable with a Gini coefficient of 0.326 in 2005, compared with 0.445 for the Russian Federation (2005) and 0.41 for Ukraine (2004) (UNICEF Innocenti Research Centre 2007). This relative equity has been achieved through the maintenance of a narrow wage spectrum, price subsidies and generous social transfers (World Bank 2004). The gradualist approach has provided stability and supported slow economic growth; poverty has fallen substantially in recent years, although wage arrears and in-kind substitutes for workers are a persistent problem (World Bank 2004). Belarus has the highest position in the Human Development Index (HDI) of any Commonwealth of Independent States (CIS) country (with an HDI value of 0.804 in 2006), and of the CIS countries only Belarus and the Russian Federation are considered to have a high level of human development (UNDP 2007). However, Belarus's economic stability was reliant on cheap gas and oil supplies from the Russian Federation and the re-export of these subsidized resources accounted for much of the country's foreign currency revenue. The favourable terms of energy exports have been renegotiated and are no longer subsidized to the same level.

1.3 Political context

The Republic of Belarus declared independence from the Soviet Union in December 1991. The country is a titular democracy headed by a President with very strong executive powers, to the point that there is limited separation of executive, legislative and judiciary branches. The President of Belarus at the time of writing is Alexander Lukashenko, who has been in power since 1994. The Government is headed by a Prime Minister (Sergei Sidorskii since December 2003) and a first Deputy Prime Minister (Vladimir Semashko since December 2003); both of these positions are appointed directly by the President. The legislative branch consists of a bicameral parliament (National Assembly) with an upper house (Council of the Republic) and a lower house (Palace of Representatives). The Council of the Republic has 64 seats: 56 members are elected by regional councils and 8 members are appointed by the President. The Palace of Representatives has 110 seats and members are elected for a 4-year term. The judiciary consists of a Supreme Court and a Constitutional Court. In the Supreme Court all judges are appointed by the President while in the Constitutional Court half are appointed by the President and half are appointed by the Palace of Representatives. The main political changes since Belarus was declared independent from the Soviet Union have been referenda which have lead to amendments of the 1994 Belarusian Constitution, strengthening the role of the executive relative to the legislative branch. For example, a referendum in October 2004 removed all presidential term limits (previously a president could only serve two consecutive terms).

Belarus is divided into six administrative regions (*oblasti*) – Brest, Gomel, Grodno, Mogilev, Vitebsk and Minsk region excluding the capital city Minsk, which has the status of an independent administrative entity. Each region and the city is further subdivided into districts (*raiony*), which have their own local authorities. Local authorities play an important role in the provision of various services, including primary health care (PHC) (see Chapter 2 *Organizational structure*). However, the regional and district levels of government lack legally defined limits of authority and guaranteed financing amounts. Consequently, although responsibility for the provision of health care services is devolved to the local government level, this mandate is frequently not matched by appropriate resources and a legal entitlement to generate revenue for the local budget (UNDP 2005a). A strong executive power structure organized in a top-down manner and reporting directly to the President undermines the accountability of the executive branch to locally elected people's representatives (UNDP 2005a). Most often, important laws related to health care are enacted by presidential and ministerial decree and the main channel for influencing the health policy-making process is to lobby through contacts within the Ministry of Health.

In 1991 Belarus became a founding member of the CIS, the official headquarters of which are in Minsk. The CIS is very important to Belarus on many levels, but particularly as the Belarusian economy is reliant on trade with other countries of the CIS; in 1999, 61% of all exports went to CIS countries and 64% of all imports came from them (Ioffe 2004). Since 1996 Belarus has been party to a Union Treaty with the Russian Federation, which is one reason why historically Belarus has been able to purchase Russian energy on such favourable terms. However, the leadership in Belarus at the time of writing has shown less interest in becoming a member of transnational organizations such as the European Union (EU), Council of Europe, or the North Atlantic Treaty Organization (NATO), accession to which has strongly influenced the political and economic situation in Belarus's western neighbours. Belarus has observer status with the World Trade Organization.

Belarus is a signatory to both the United Nations Convention on the Rights of the Child and the International Convention of Human Rights. However, in 2007, Belarus was blocked from joining the United Nations Human Rights Council on account of the domestic human rights situation, which was deemed particularly problematic in the run-up to the presidential elections in 2006. The main concerns – raised by the United Nations Special Rapporteur in a number of reports – related to restrictions on the activities of the media, the political opposition and human rights groups, as well as increased restrictions on freedom of association (Severin 2007). Following the elections, the Organization for Security and Co-operation in Europe (OSCE) expressed serious concerns about whether the elections were indeed free and fair (OSCE Office for Democratic Institutions and Human Rights 2006). In the 2008 Global Corruption Report, Belarus scored 2.1 on the Corruption Perception Index, where 10 would be a country without any perceived corruption (Transparency International 2008).

1.4 Health status

Average life expectancy at birth in Belarus is low relative to other CIS countries, at 62.9 for men and 75.1 for women (2005), but fluctuations in the mortality rate have not been as dramatic as in the neighbouring Russian Federation or Ukraine (Table 1.3). In 2005, the leading causes of mortality in Belarus were diseases of the circulatory system (691.2 per 100 000), external causes such as accidents, poisoning, injury, homicide and suicide (165.6 per 100 000) and cancers (148 per 100 000) (Table 1.4). However, there are some gender differences in both overall mortality rates (Table 1.4) and mortality attributable to specific diseases; most notably, the leading causes of mortality

Table 1.3 Mortality and health indicators, 1981, 1990, 2000, 2005

	1981	1990	2000	2005
Life expectancy at birth, female (years)	76.1	75.8	74.8	75.1
Life expectancy at birth, male (years)	66.0	66.3	66.4	62.9
Life expectancy at birth, total (years)	71.4	71.3	69.0	68.8
Mortality rate, adult female (per 1000 female adults)	770.6	816.3	903.6	891.7
Under 65 mortality rate, adult female (per 1000 adult females aged under 65)	268.0	262.2	299.6	302.5
Mortality rate, adult male (per 1000 male adults)	1437.9	1490.2	1828.7	1914.4
Under 65 mortality rate, adult male (per 1000 adult males aged under 65)	689.9	698.7	902.3	958.7
Mortality rate, infant (per 1000 live births)	16.6	12.1	9.3	6.3
Mortality rate under 5 (per 1000 live births)	20.6	15.0	12.3	8.5

Source: WHO Regional Office for Europe 2007.

among women in Belarus in 2005 were first diseases of the circulatory system (508.5 per 100 000), second cancers (111/5 per 100 000), and third external causes, including injuries and poisoning (63.3 per 100 000) (WHO Regional Office for Europe 2007). Overall healthy life expectancy (HALE) fell after 1999 and in 2002 was 60.7 (56.6 for men and 64.9 for women), which compares favourably with the 2002 CIS average of 58.6, but is considerably lower than the 2002 EU average of 70.3 years (WHO 2003).

Table 1.4 Main causes of death, all ages, per 100 000 population, 1990, 1995, 2000, 2005

Main causes of death (ICD-10 Classification)	1990	1995	2000	2005
I. Communicable diseases:				
– Infectious and parasitic diseases (A00-B99)	7.5	10.1	9.9	15.7
– TB (A17-A19)	4.7	6.9	7.3	10.5
II. Noncommunicable conditions:				
– Circulatory diseases (I00-I99)	544.7	620.6	658.9	691.2
– Malignant neoplasms (C00-C97)	176.6	187.3	180.3	148.0
– Trachea/bronchus/lung cancers (C33-C34)	24.2	25.5	21.8	19.3
– Mental and behavioural disorders (F00-F99)	12.2	18.3	13.5	15.7
– Respiratory diseases (J00-J99)	73.3	64.8	62.0	47.5
– Digestive diseases (K00-K93)	22.7	25.9	28.5	41.2
III. External causes (V01-Y89)				
– Transport accidents (V01-V99)	27.5	21.7	18.5	19.8
– All external causes, injury and poisoning	103.4	150.9	157.8	165.6

Source: WHO Regional Office for Europe 2007.

Notes: ICD-10 Classification: WHO International Classification of Diseases; TB: Tuberculosis.

The leading causes of premature mortality (that is, under age 65) in Belarus (2005) are diseases of the circulatory system (223 per 100 000), external causes including injury and poisoning (162 per 100 000), cancers (84 per 100 000), suicide (28 per 100 000) and road traffic accidents (14.6 per 100 000 in 2000) (WHO Regional Office for Europe 2007). Many of the deaths from external causes are alcohol related, and according to official figures in 2007, 2416 people died of alcohol poisoning alone (Zharko 2008). However, a considerable proportion of deaths attributed to external causes are the result of suicides, and Belarus has the highest suicide rate in the WHO European Region, with men aged under 65 years of age appearing to be most at risk (WHO Regional Office for Europe 2007).

There have also been significant increases in tuberculosis (TB) infections and rising sexually transmitted infection (STI) rates, including HIV/AIDS, although the main mode of transmission for this disease remains injecting drug use, despite increases in sexual transmission since 2006 (UNAIDS and WHO 2007). With assistance from international organizations, a wide range of harm reduction initiatives have been introduced to slow the spread of HIV. The directly observed treatment, short course (DOTS) strategy has been supported in Belarus since 2003; however, TB remains a significant cause of death and is not yet well contained.

While the long-term health impact of the Chernobyl disaster is still hotly contested in the international arena, there is a widely held belief in Belarus that the disaster has caused a significant increase in cancers and other diseases among the population (Havenaar et al. 2003); but research has shown that the Chernobyl accident contributed greatly only to significant increases in thyroid cancer. Childhood thyroid cancer rates in Belarus rose dramatically through the 1990s and are still significantly elevated (World Bank 2002). The largest public health problem created by the accident has been the impact on mental health for those affected (Chernobyl Forum 2006). Whatever the lay beliefs, it is likely that many premature deaths can be attributed to the consumption of alcohol and tobacco. In 2001 the standardized mortality rate for selected alcohol-related causes was 188 per 100 000, for smoking-related causes it was 731 per 100 000. The 2004 average rates for countries of the CIS were 164 per 100 000 for alcohol-related and 691 per 100 000 for smoking-related causes; for the WHO European Region as a whole they amounted to 100 per 100 000 for alcohol-related and 396 per 100 000 for smoking-related causes (WHO Regional Office for Europe 2007). High levels of alcohol consumption and smoking are therefore key public health challenges in Belarus.

The reported infant mortality rate was 6.3 per 1000 live births in 2005 and the reported maternal mortality rate was 10.3 per 100 000 in 2006 (Table 1.3 and Table 1.5). The United Nations Development Programme (UNDP) estimated

the maternal mortality rate to be considerably higher at 35 per 100 000 in 2003 (UNDP 2005b) and the United Nations Children's Fund (UNICEF) estimated the infant mortality rate to be 10 per 1000 live births in 2005 (UNICEF 2007). Nevertheless, even at these higher rates, the UNICEF and UNDP estimates, as well as World Development Indicators (World Bank 2008), show a similar marked downward trend to that shown in the official data supplied to the Health for All database.

In 2005 all routine Expanded Programme on Immunization (EPI) vaccines were financed by government, and measles coverage grew from 92.8% in 1996 to 98.0% in 2006, which compares favourably with other countries in the WHO European Region (Fig. 1.2). The available sources show that, following an outbreak in 1993 which saw measles incidence rise to 37.5 per 100 000, measles incidence fell to 0.01 per 100 000 in 2005 and then increased again to 1.53 per 100 000 in 2006 (WHO Regional Office for Europe 2007). The total eradication of poliomyelitis in Belarus was confirmed in 2000. The national childhood immunization programme is free of charge for all and consists of immunization against Hepatitis B, diphtheria, tetanus, whooping cough, poliomyelitis, mumps, rubella and measles. In contrast to western European countries, there is no obligatory vaccination against *Haemophilus influenzae* type B. Belarus has maintained the Soviet programme of total BCG vaccination at birth with annual Mantoux testing for all children up to 16 years with the subsequent regular chest X-ray examinations (fluorographs) from the age of 17.

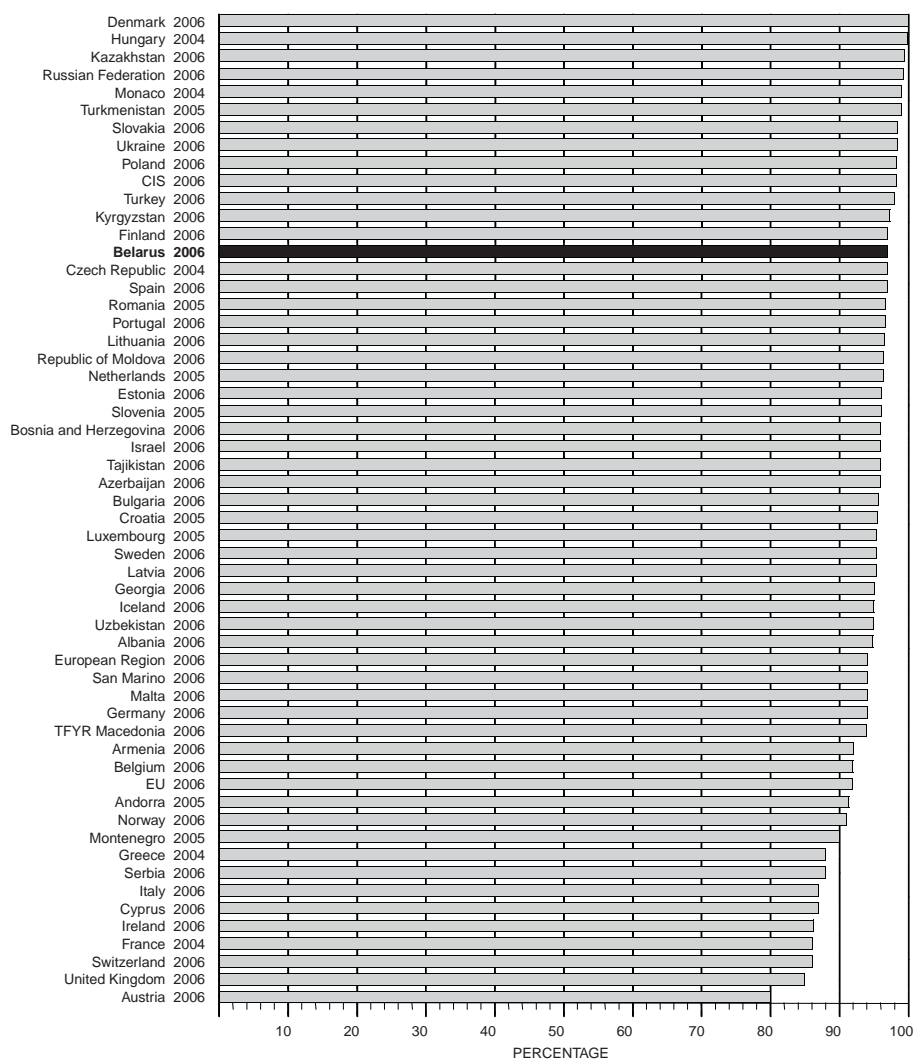
The data for decayed, missing or filled teeth at age 12 (DMFT-12 index) were last made available to the Health for All database in 2000, and showed a rate of 2.7; the CIS average for 1990 (latest available data) was 3.5, but DMFT-12 data for the whole CIS region is very patchy. The results of a dental health survey in Belarus, published in 2004, found the DMFT-12 rate to be 2.7 on average,

Table 1.5 Maternal and child health indicators, 1985, 1990, 1995, 2000, 2005, 2006

	1985	1990	1995	2000	2005	2006
% all live births to mothers aged under 20 years	—	—	14.3	11.5	9.1	8.5
Neonatal mortality per 1000 live births	—	—	—	4.7	3.0 (2004)	—
Postneonatal mortality per 1000 live births	—	—	—	4.6	3.8 (2004)	—
Maternal death rate per 100 000 live births	16.7	21.8	13.8	24.6	15.5	10.3
Syphilis incidence per 100 000	3.5	2.7	150.6	105.2	32.7	27.0

Source: WHO Regional Office for Europe 2007.

Fig. 1.2 Levels of child immunization for measles in the WHO European Region, latest available year



Source: WHO Regional Office for Europe 2007.

Notes: CIS: Commonwealth of Independent States; EU: European Union; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

2.6 in rural areas and 2.7 in urban areas, while DMFT at age 6 was 4.7 on average (4.6 in rural areas, 4.8 in urban) (Bondarik & Leous 2004).

There are no specific data collected on the health status of minority ethnic groups living in Belarus. Potential health inequalities between socioeconomic groups have not been on the policy agenda, so this area is also relatively under-researched. The main focus of health policy and reform has been to challenge geographical inequality in access to health care, as rural health facilities are often significantly understaffed (see Section 6.3 *Primary/ambulatory care*). Geographical inequalities between urban and rural communities in Belarus are also visible in terms of access to water supply; in 2002, 78% of the population living in urban households were connected to the water supply system, while in rural areas just 22% had access (WHO Regional Office for Europe 2007). Other survey data have shown that 37.4% of rural respondents depended on wells and other sources of water that were not “on tap”, and hot running water was a rarity, with 76.3% of rural respondents having no access. For urban respondents, only 3.4% depend on wells and other sources of water not on tap, and only 15.7% had no hot water on tap (McKee et al. 2006). However, it should also be noted that rural respondents generally considered the quality of their water to be “good” or “quite good” (76.2%), while fewer urban respondents considered the quality of their water to be “good” or “quite good” (56.2%) (McKee et al. 2006).

2. Organizational structure

2.1 Overview of the health system

Administrative relationships in the Belarusian health system are hierarchical and organized on a territorial basis; selective contracting is therefore not a significant feature of the system. The organization and financing of primary and secondary care services happens at the local level (both regional and district level), with minimum standards set centrally by the Government in accordance with epidemiological priorities of the country (see Section 2.4 *Decentralization and centralization*). The minimal standards are determined on the basis of the available capacity of the Government and the Ministry of Health within a certain time frame and can be refined if necessary. Day-to-day management and financing of the system therefore happens at the local level and the key actors are regional and district governments and Regional Health Care Departments; however, the hierarchical administrative arrangements and regulatory framework mean that ultimate management power lies with central Government, namely the Ministry of Health, the Parliament and the President. The various actors in the health system are outlined in Section 2.3 *Organizational overview*.

2.2 Historical background

Prior to declaring independence in August 1991, Belarus was a highly integrated Republic in the Soviet Union. Consequently, the country inherited a Semashko-model health system. Although there was quite extensive health care coverage through the *zemsvo* system in Belarus prior to the October Revolution in 1917, it

was the introduction of the Semashko system which really set the context for the current health system. The Soviet Semashko system was organized around the guiding principle of universal access to health care, free at the point of use. It was a tax-based system with highly centralized planning of resources and personnel, based on a hierarchy of facilities at the district, regional, republican and all-union levels. All health care workers were employed by the State and private practice was not allowed. Care was focused on inpatient treatment and, consequently, primary care was very weak. There was an emphasis on the continuous expansion of staff and facilities and an extensive system of parallel health services which were attached to large industrial enterprises, certain ministries (for example the Ministry of Transport, Ministry of Internal Affairs and so on) and the Communist Party elite. The extensive coverage and universal access to free care meant that the Semashko system was equitable, despite qualitative differences in provision between geographical regions and mainstream and parallel health services. However, it was also inefficient and resource intensive, particularly in terms of its reliance on inpatient care. Also, while the Semashko system proved reasonably effective in its control of communicable diseases, with the epidemiological shift towards a noncommunicable disease burden the system was insufficiently flexible and PHC and health promotion too weak to enable the control of noncommunicable diseases predominating towards the end of the Soviet era (Figueras et al. 2004).

Since independence, a programme of radical reform of the health system has not been introduced, which is why health care in Belarus retains many of the key features of the Semashko system and faces many of the same key challenges. Instead, a process of incremental change has been followed, using pilot projects to test the suitability of different approaches to the financing and organization of health care. In some cases, elements of these pilot projects which the Government and the Ministry of Health deem successful or useful have then been rolled out nationwide. Incremental change, rather than radical reform, has been viewed as a means of maintaining access to and the provision of services – both of which have proved difficult in some CIS countries which embraced more far-reaching socioeconomic reforms. The incremental-rather-than-radical-change approach also fits with the wider approach to post-Soviet social and economic policy in Belarus.

The key organizational reforms since 1991 have focused on the core weaknesses of the Semashko system. There have been policy efforts to strengthen primary care and to address the urban–rural divide, which has included the introduction of general practice in rural areas. However, in practice, the hospital sector is still dominant and is in need of streamlining so that resources can be released for primary care and public health. Some excess inpatient capacity in rural areas has been converted into long-term social care,

which has fulfilled a service need, since long-term care provision in the Soviet system was sorely lacking, but it has blurred the boundaries of care provision between the health system and the social care system (see Section 6.7 *Long-term care*). There has also been significant decentralization of health care financing and administration (see Section 2.4 *Decentralization and centralization*) and capitation-based budgeting has been introduced in order to encourage greater efficiency in resource allocation at the district level. More details on the reform process are included in Chapter 7 *Principal health care reforms*.

2.3 Organizational overview

Belarus has a national health system and the Ministry of Health has overall responsibility for it, although the funding of primary and secondary care is devolved to the regional level. Tertiary services (highly specialized hospitals) are funded directly from the Ministry of Health budget. The relationship between different layers within the system is hierarchical and most policy decisions are made centrally (Fig. 2.1). There are few private service providers in the system, and, with the notable exception of some nongovernmental organizations (NGOs), most organizations are state bodies. The main actors in the health system which provide the institutional setting for health care financing, planning, administration, regulation and provision are listed in the subsections that follow, with their primary functions and roles.

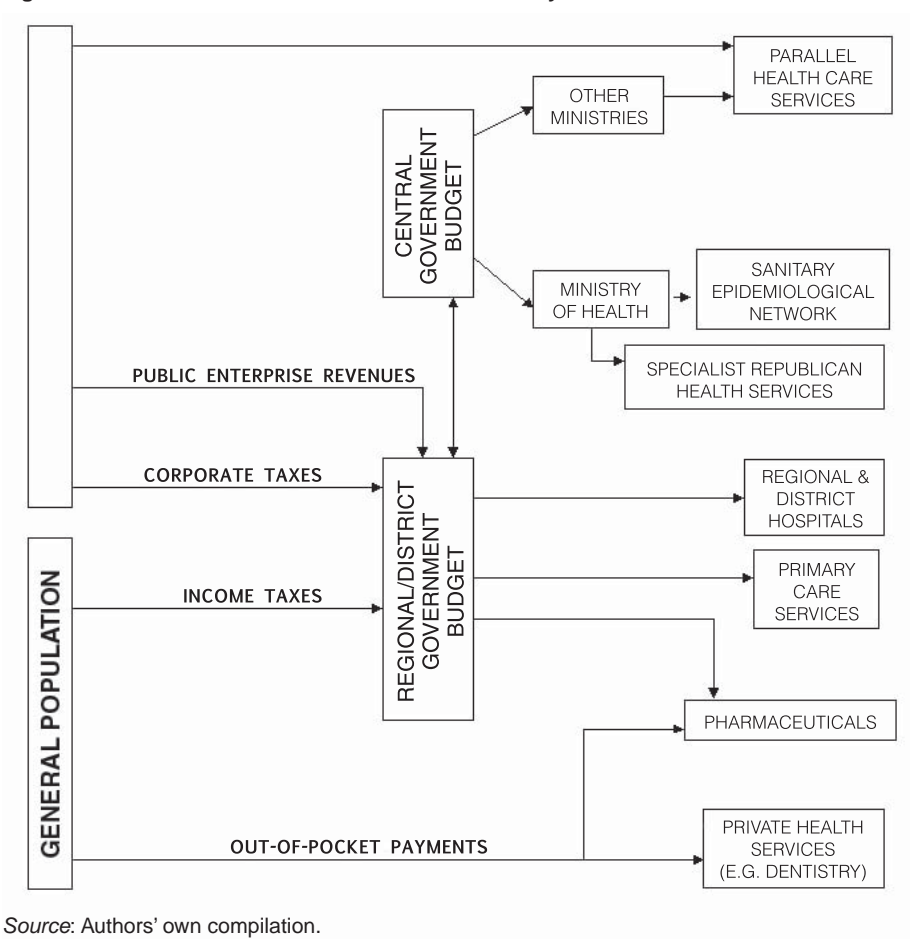
Parliament and President

The national-level Government, in conjunction with the Ministry of Health, makes decisions on the future of health care services and defines the reform agenda. The Parliament and the President must also approve the budget, which should be in line with their strategic vision for the development of health care services.

Ministry of Health

This is the key institution in the organization of the Belarusian health system. Different departments within the Ministry of Health undertake planning in all aspects of human and physical resources, decide on the financing of services and administer the system. The Ministry of Health is organized hierarchically (Fig. 2.1): the administration of the central district hospitals (*Administratsiya tsentralnoi rayonnoi bolnitsy*) is subordinated to the regional-level health

Fig. 2.1 Overview chart on the Belarusian health system



Source: Authors' own compilation.

care departments (*Oblastnye Upravleniya Zdravookhraneniya*), which are subordinated directly to the Ministry of Health and the local Executive Authorities, but power is concentrated in Minsk where most of the planning decisions are made.

Ministry of Finance

The Ministry of Finance works with the Ministry of Health, the Parliament and the President to determine the budget allocation to health care services. The Ministry of Finance also monitors Ministry of Health spending, and the Ministry of Health must submit regular accounting reports to the Ministry of Finance.

Ministry of Transport, Ministry of Internal Affairs and Ministry of Defence

Some line ministries (and large enterprises) have their own parallel health systems, which provide services to their current and retired employees. These occupational health care facilities include both inpatient and outpatient services and funding for these services comes from the budgets of the responsible line ministry or enterprise, rather than the general health budget. As a rule, the occupational service facilities at the big enterprises consist of a polyclinic with the principal specialists, diagnostic facilities and occupational therapists available. The patients enrolled with the parallel health care services can always access the main health care system according to their place of residence.

During the Soviet era, such parallel services were considered to be much higher quality than those services provided by the main health care system. While it is not possible to say whether this is still the case, these services are still perceived as being of higher quality, as the doctors have a lighter workload and there are shorter waiting times. The doctors are also better paid and have better working conditions, as they are relieved of numerous duties that those working in the main health system are obliged to carry out. Consequently, there has been strong resistance to having these parallel services integrated into the main health system under the Ministry of Health. However, from 2005 the system of railway hospitals and polyclinics has gradually been absorbed into the main health system, despite objections from the former patients and the doctors working in these facilities. Such integration is necessary because parallel services are not generally well coordinated with the statutory system and represent a significant area of excess capacity in Belarus. According to the Decree of the President of the Republic of Belarus No. 251 of 13 May 2008, the Ministry of Health must control the work of other parallel health care services.

Regional Health Care Departments

The Regional Health Care Departments (*Oblastnye Upravleniya Zdravookhraneniya*) are significant agents in the organization of health care as they officially own all the state hospitals, as well as all polyclinics, outpatient clinics and feldsher-midwife (*akusher*) points (FAPs) within their region. The Regional Health Care Departments are established and controlled by the Regional Executive Committee (by the order of the Governor (*Gubernator*) of the region) with the formal approval of the Ministry of Health. Although they are subordinated to the republican-level Ministry of Health, they do have limited autonomy in the organization of services and, to a certain extent, their funding from the regional budgets. At district level, the Administration of

the District Central Hospital works with the District Executive Committees (local government).

Professional associations

There are professional associations evolving in order to promote the interests of different groups of health professionals. For example, the Byelorussian Association of Physicians is a national-level organization which works closely with the Belarusian Medical Academy for Post-graduate Education (BelMAPO) to support postgraduate medical study and, since 1994, to publish a professional quarterly journal (*Medicine*). There is also an Association for General Practitioners.

Nongovernmental organizations

There are some NGOs active in the field of health care in Belarus. Many of these are active in supporting people most seriously affected by the Chernobyl nuclear power plant disaster in 1986. Many Belarusian NGOs collaborate closely with international NGOs in their programmes. However, the role of NGOs in the health system is limited; there is no contracting out of services to non-state organizations and there is no formal process for NGOs to feed into the policy-making process.

International organizations

International organizations have not been as influential in shaping the health systems as they have been elsewhere in the post-Soviet space. Nevertheless, United Nations agencies such as WHO, UNDP, United Nations Population Fund (UNFPA) and UNICEF have been very active in working with state structures on specific health-related projects, such as the control and prevention of TB as well as mother and child health. At the time of writing the Global Fund is funding TB control initiatives and an HIV/AIDS project. The East European Committee of the Swedish Health Care Community (SEEC), which is funded by the Swedish International Development Cooperation Agency (SIDA) has also become an important partner in the development of PHC, health care management, mental health and childhood accident prevention.

The organizational structure of the Belarusian health system has not undergone radical reform since independence in 1991. The most significant change has been the decentralization of funding for health care (see Section 2.4 *Decentralization and centralization*).

The main stakeholders in the policy-making process are the President and the Ministry of Health, and this is the level at which the policy agenda is set. There is some influence from international organizations, such as Global Fund and WHO, and the media also raise the profile of different health issues, but overall, key policies are developed centrally.

As funding for health care comes from general taxation, the Ministry of Finance is responsible for collecting financial resources for health care, but there are no earmarked taxes or other contributions specifically for health funding. The Ministry of Finance is less influential in deciding the proportion of budgetary expenditure that is to be devoted to health care than the President and Parliament. When the annual budget is being decided, the Ministry of Health and the Ministry of Finance settle their positions and present an agreed budget to the Government. The delivery and planning of health care is the responsibility of the Ministry of Health. There is a Department within the Ministry of Health which is responsible for assessing policy outputs according to set assessment criteria, but these reports are for internal use and are therefore difficult to access. Consequently, the most widely available reports on policy implementation and systems performance are produced by international partners in relation to their specific pilot projects.

2.4 Decentralization and centralization

In Belarus, different tiers of government operate hierarchically and power is concentrated at national level. Following independence, there has been some deconcentration of authority in the health system from the national to the regional and district levels, as regional and district Regional Health Care Departments and regional and district governments became responsible for the organization of primary and secondary health care services within their respective territories. National programmes and minimum standards are set at national level, but local authorities are able to supplement this with their own priorities. Although funding for primary and secondary services has always come through local government channels, local funding for services has been strengthened since independence, which has led to some inequities between richer urban areas with a strong manufacturing base and poorer rural areas (see Section 3.3 *Revenue collection/sources of funds*).

There is no real experience of delegating regulatory functions to non-state bodies, and only retail pharmaceutical facilities have been privatized. There are no plans at the time of writing to alter the balance and introduce further decentralization into the health system, and much greater administrative and financial capacity would be needed at local level for any further decentralization to take place, if it were deemed desirable.

2.5 Patient empowerment

Patient information

Since the Soviet era, the Belarusian Government and health authorities have recognized the need to make available health education materials for patients as part of their attempts to prevent disease and to promote healthy lifestyles. There is now a growing understanding that provision of information about treatment options and self-help strategies could enable patients to use health services more efficiently and effectively. Achieving a maximum attainable level of health has been declared a national priority and 2008 was officially named the “Year of Good Health”. In line with this concept, the scope of information materials on health issues was substantially increased.

There is a vast range of patient information available, including printed materials (special magazines, newspapers, columns in popular editions, books, brochures and leaflets) and the mass media (special television programmes and broadcasts). As the number of Internet users in Belarus is increasing, the Internet has become a popular source of information for and about self-help in health-related issues. Although most of the health sites are not government sponsored, there are several official medical portals, including web sites of the Ministry of Health and its subordinates, where information is available regarding organizational structure, functions and capacities, contact points and working hours of publicly owned health organizations. However, these sites do not provide information about the quality performance indicators of hospitals and ambulatory care, the technical skills and qualifications of physicians and specialists, or where to find independent sources of advice and assistance.

A few studies – conducted to evaluate the demand for health information on the part of the public and the impact of that information on health behaviours – concluded that, while the level of demand is quite high, the quality of information is still not enough to meet public needs (Kunitskaya & Roga 2007). Generally, people are dissatisfied with their doctors’ attitudes, giving patients too little time for consultation and limited information during visits.

Patient rights

The legal basis for the recognition, protection and promotion of patients’ rights in Belarus has been established by the Constitution (adopted in 1994, amended in 1996 and 2004):

“Citizens of the Republic of Belarus shall be guaranteed the right to health care, including free treatment at state health-care establishments. The State

shall make health care facilities accessible to all of its citizens.” [Section II, Article 45]

The chosen method of giving statutory recognition to the rights of patients has been by including specific provisions defining and safeguarding patients’ rights into different legislative texts regulating specific aspects of health care (Fomenko 2006). The main legislative document, the Law on Health Care (last amended in June 2008), comprehensively defines patients’ rights, including the right to care and treatment in a healthy and safe environment; the right to a choice of health services and attending physician; the right to be respected as individual and treated with dignity; the right to information; the right to informed consent; the right to self-determination, confidentiality and privacy; the right to be referred for a second opinion; the right to participation in decision-making; the right to complain; and many others. Besides this document, some relevant provisions have been included in laws granting protection to specific patients, such as mental health patients, disabled individuals, the elderly and children. The protection of patients is also foreseen in laws on specific medical procedures, such as organ transplantation and blood transfusion.

Although these provisions are well formulated and correspond closely to the norms and recommendations of many relevant international documents concerning patients’ rights (for example, the WHO Declaration of Patients’ Rights in Europe and the European Charter of Patients’ Rights), patients’ rights in Belarus represent a case of being more of a declarative concept than having a real impact on daily practice.

The main problem with the implementation of these rights is the underdeveloped mechanisms of their realization in day-to-day practice, with regard to the current socioeconomic conditions and cultural values relevant to health care in Belarus. For example, the right to choose a satisfactory physician or health care facility is difficult to accomplish, not only because it is restricted by geographical location, but it is also obstructed by a lack of good information and official criteria by which to choose. In addition, such choices may be put into practice only with the special allowance of a senior doctor, which may be regarded as an additional barrier.

The issue of patients receiving full information about their health status is also problematic, taking into account the very restricted time for consultations and the doctors’ reluctance to provide patients with full information, alleging that they would not understand their condition. The paternalistic approach in the doctor–patient relationship seems to have remained strong in the Belarusian health system. For example, the right to access one’s own medical records and to correct them has not been included in the national legislation; at the time of

writing, patients are entitled to request and to be given only a written summary of diagnosis, treatment and care upon discharge from a hospital.

No specific studies have been conducted in Belarus to explore the issue of patients' rights awareness among public and medical professionals, but the general perception from mass media comments and studies exploring patient satisfaction makes it possible to assert that knowledge about patients' rights is totally insufficient among the both groups (Fomenko 2006).

The Ministry of Health, with technical assistance from WHO Europe, elaborated the draft Law "On Patients' Rights in Belarus" in 2005, with the intent of narrowing the gap between declared statements and patients' legitimate expectations; in order to set out all the key elements of patients' rights clearly so that they are more likely to be understood; and to elucidate the ways in which patients' rights could be effectively enforced in the Belarusian health care environment. However, this document has not been enacted as yet and is still awaiting a parliamentary procedure of endorsement.

One survey found that there is also an issue relating to unbalanced protection of rights between patients and health professionals, especially in primary care. In a survey among doctors, 49% considered patients' rights to be sufficiently protected, 38% insufficiently protected and 10% not protected at all; in the same survey, only 4% of doctors considered their rights to be sufficiently protected, with 47.9% of respondents considering their rights to be insufficiently protected and 46.2% considering their rights were not protected at all (Antipova, Goryacheva & Suvorova 2004).

Patient choice

In Belarus, the choice of primary care provider is determined by area of patient residence (as a rule, patients are supposed to use the nearest medical facility), but there is a greater degree of choice in primary specialist care since patients are entitled to self-refer without the need for prior approval by a physician. A specialist is able to refer a patient to a hospital, also without informing the primary care physician.

Such a mechanism, while being favourable for patients by providing them with extended choice, makes it almost impossible to strengthen the role of PHC providers in rationalizing access to and utilization of secondary and specialized care. As in many other countries, patients generally view hospital care as being of better quality, and PHC has very low status. Officially, within the regular state health care system, the patient cannot choose the hospital or specialist in secondary or tertiary care. Inpatient care is geographically organized into zones

providing care for inhabitants of particular administrative territories (except for emergency hospitalizations).

Patients can self-refer outside their territory if they pay out of pocket at the special commercial departments of the state-owned health care facilities or at the private diagnostic medical centres located mainly in the regional cities. Only in rural areas is patient choice more constrained, and the gatekeeping role of PHC practitioners is a reality, but this is a feature of geography, as patients have fewer health facilities on their doorstep. If they wish to self-refer, they must go to the nearest city and arrange their own transport.

Complaints procedures (mediation, claims)

The Law on Health Care has stipulated the patient's right to petition and complain to the health care provider if s/he believes her/his rights have been breached during medical care. Moreover, a patient can submit a petition to the supervisory body of the health care institution. In both cases the complaint should be treated as part of a legal procedure within administrative law. In practice, most patients first submit their complaint to the administration of the hospital or polyclinic where their care was provided. The administration is obliged to investigate the complaint and inform the patient in writing within 10 days of the results of the investigation. If dissatisfied with the results, the patient can submit a complaint to the Regional Health Care Department or to the Ministry of Health. An investigation is then conducted by a commission, including high-profile specialists from the specific field of medicine. If the patient still complains about the quality of care received, usually a civil lawsuit is initiated.

Patients harmed during medical treatment can seek restoration or mitigation of the consequences of adverse events by suing health care organizations for negligence, based on the provisions of delictual liability in the Civil Code. In addition, it is possible to seek redress through criminal proceedings, as the Criminal Code reserves criminal punishment for health care workers that have been extremely irresponsible and directly caused a patient's death or serious injury. The number of medical malpractice claims has grown significantly in recent years, increasing by 15–20% annually (Fomenko 2007).

There is also an informal complaints procedure involving the Ministry of Health telephone hotline for submitting complaints about services directly. Patient concerns about the quality or safety of services are also sometimes raised by the media. Such concerns are then taken very seriously by the Ministry of Health and are generally followed up using the internal audit system (see next section *Patient safety and compensation*). The number and essence of complaints are noted and used internally as a form of quality control.

Patient safety and compensation

Patient safety is an issue of major concern for health authorities, as its importance in achieving the quality of care is clearly understood. The key mechanisms used to ensure patient safety are the widespread use of diagnostic and treatment protocols and the frequent auditing of patient records; there are also strict sanitary norms and protocols which are enforced by the Sanitary-Epidemiological Inspectorate. The relevant head of department (Chief Doctor in clinical matters or Chief Nurse for the implementation of sanitary protocols) is responsible for ensuring protocols are followed and staff can be penalized if they do not follow these protocols.

Protocols are developed according to the ministerial annual plan for the revision of clinical guidelines and protocols. Specialists in all fields meet twice a year in Minsk to revise protocols in their field and consult internationally, particularly with colleagues in the Russian Federation, to establish models of best practice. All diagnostic and treatment protocols have therefore been revised since the Soviet era, but they do not necessarily coincide with models of best practice used in western Europe. Where patient safety is deemed to have been compromised by the inadequate implementation of diagnostic and treatment protocols, the physician at fault can be demoted or dismissed, but as there is no formal licensing of doctors, they cannot be banned from practising. No established mechanisms exist for collecting and analysing information about errors that occur in health care. Some categories of patient death trigger an automatic investigation, such as deaths from heart attack in the first hour, appendicitis, pneumonia and infant or maternal deaths. The results of investigations are discussed in mortality conferences, but even if some deficiencies are discovered in terms of care delivered, they are rarely able to be disseminated as lessons learned to prevent adverse events in the future (Fomenko 2007).

Both the public and leaders of health care organizations still tend to blame individuals when adverse events occur. As a result, health professionals are reluctant to report errors as they fear reprimand and disciplinary action, a great scope of errors remains undiscovered and the opportunity for information sharing is lost. An open and fair, blame-free culture in which staff can report incidents with no negative consequences for themselves would therefore ease this problem.

Patient participation/involvement

At the time of writing, most citizens of Belarus have only an indirect influence on health policy decisions through exercising their right to vote in elections. An organized movement of health care consumers, as seen in some neighbouring

countries, has not yet emerged in Belarus. A small number of patients' self-help groups exist, with a focus on specific diseases, often working in conjunction with health professionals to raise awareness of the needs of the people they represent. Generally, patients are not accustomed to participating in decisions affecting their health, since the traditional paternalistic model of care prevails in everyday doctor–patient relationships.

Nevertheless, the importance of assessing patient satisfaction is clearly understood by the Ministry of Health. A special directive (*prikaz*) obliged the administrations of all outpatient facilities to conduct quarterly patient satisfaction surveys and to report the results to the higher authorities. However, implementation has been troublesome: the surveys are usually conducted by the staff of the health care facilities, rather than an independent external body; the administration is not interested in negative results being reported to higher levels; and for facilities where only one or two doctors work it is just another “paperwork burden”.

There is no systematic, methodologically robust routine monitoring of patient satisfaction by the independent agencies for use in the development of health policy. Most often, patients “vote with their feet” with regard to the introduction of new services and this is taken into account in the development of plans. For example, the old system of polyclinics with specialists rather than general practitioners (GPs) has been maintained in urban areas, largely because the patients and physicians have not yet fully welcomed the proposed introduction of the GP model. According to surveys, 46% of doctors are positive in their attitude towards the introduction of the general practice model and 23% are negative towards it, with a considerable amount of respondents (31%) having no idea (Antipova, Goryacheva & Suvorova 2004). Another national survey found that while the patients surveyed were satisfied with their primary care doctor, they trusted the narrow specialists more, whether or not their doctor had retrained as a GP (see Section 6.3 *Primary/ambulatory care*) (Egorov et al. 2006).

3. Financing

3.1 Health expenditure

According to WHO estimates, in 2004, total health expenditure accounted for 6.2% of GDP, which equated to a per capita expenditure (purchasing power parity (PPP)) of US\$ PPP 427 per person (Table 3.1). The vast majority of this health spending came from the state budget; WHO estimated the public sector expenditure as a share of total health expenditure to be 74.9% in 2004, and health expenditure accounted for 10.2% of total government expenditure in the same year (WHO Regional Office for Europe 2007). In 2006, most health expenditure was allocated to inpatient care (52%); 16.4% of expenditure to pharmaceutical care, of which only 14.8% was public pharmaceutical expenditure. Private households' out-of-pocket expenditure on health accounted for 1.2% of total health expenditure in 2004, and most of this was spent on pharmaceuticals (Fig. 3.1). Expenditure patterns in Belarus have not changed considerably since independence, and they continue to echo the expenditure patterns of the Semashko system. According to internal Ministry of Health data, in 2006, 66% of health expenditure was on inpatient services, 21% on outpatient services, 10% on investment in and administration of the system, and 3% on sanitary-epidemiological services. Maintaining the required workforce – in a health system which works along similar lines to the Semashko system – means that even though they are kept quite low, salaries alone accounted for 41.3% of total health expenditure in 2006.

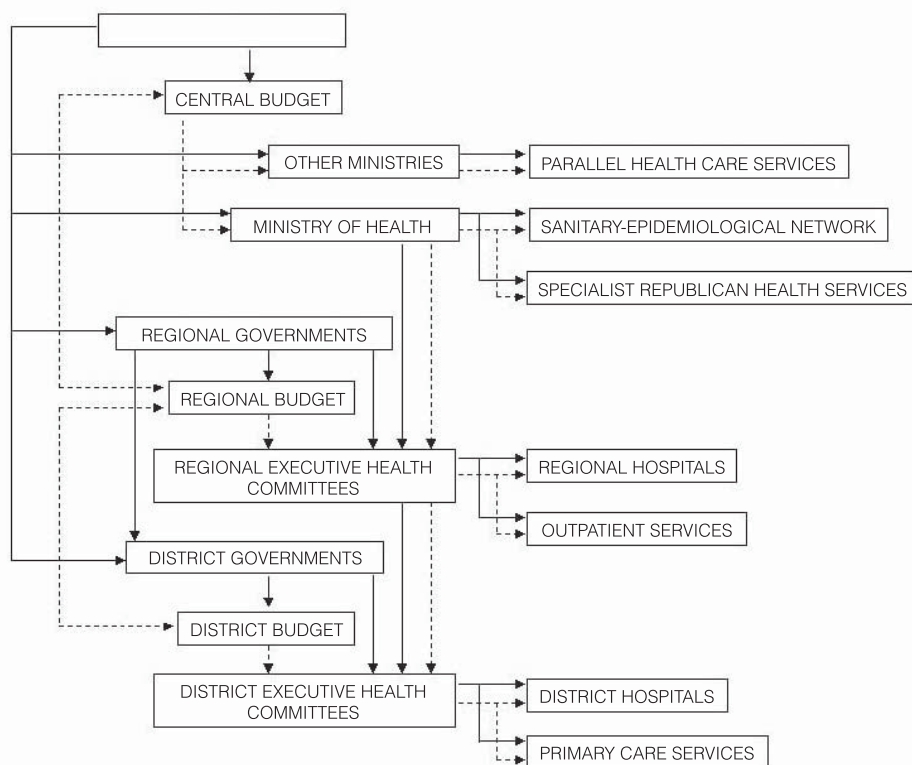
WHO estimates of health expenditure reflect the sum of general government and private expenditures on health and are based, as far as possible, on the National Health Accounts classification, including both nationally reported data and estimates from international organizations. Government expenditure

Table 3.1 Trends in health expenditure in Belarus, 1998, 2000, 2002, 2004, WHO estimates

	1998	2000	2002	2004
Total health expenditure per capita (US\$ PPP)	429	501	601	427
Total health expenditure as a % of GDP	6.0	6.1	6.4	6.2
Public expenditure on health as a % of total health expenditure	82.1	80.1	73.9	74.9
Private expenditure on health as a % of total health expenditure	17.9	19.9	26.1	25.1
Public sector health expenditure as a % of GDP	4.9	4.9	4.7	4.7
Public sector health expenditure as a % of total government expenditure	10.9	10.7	10.1	10.2
Out-of-pocket payments as a % of total health expenditure	13.2	14.0	20.8	18.2

Source: WHO Regional Office for Europe 2007.

Notes: PPP: Purchasing power parity; GDP: Gross domestic product.

Fig. 3.1 Financial flows in the Belarusian health system

Source: Authors' own compilation.

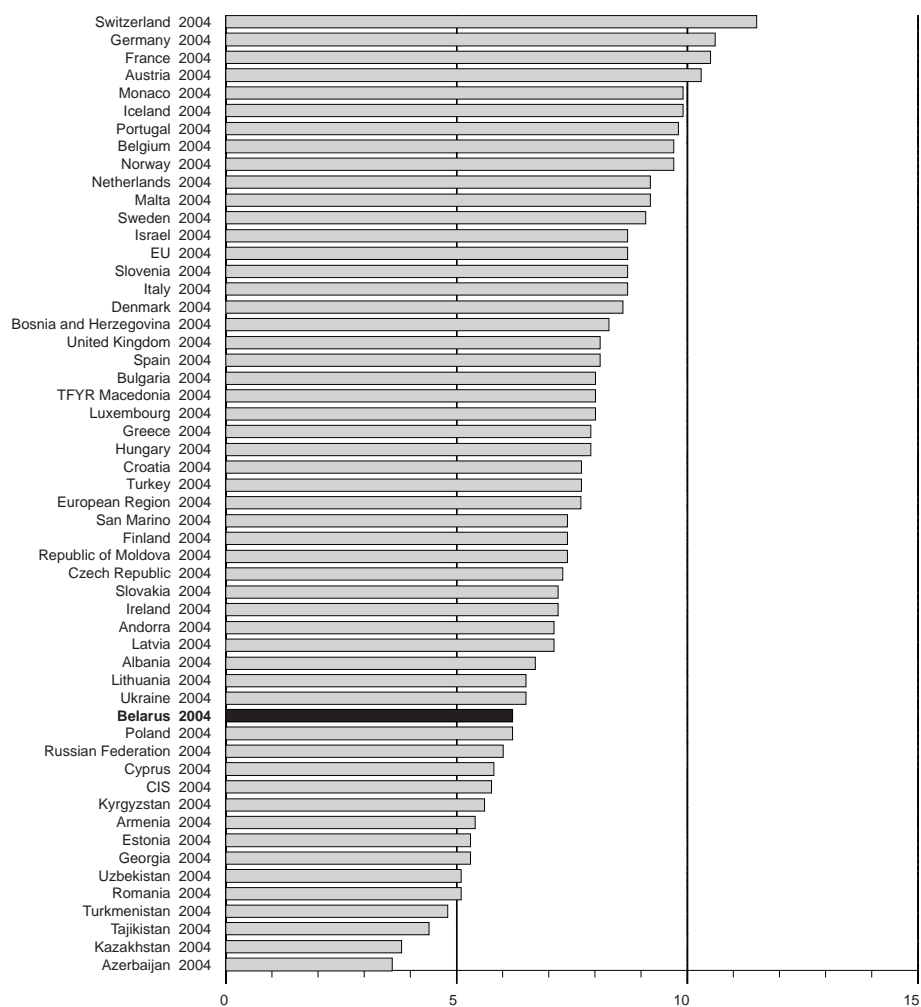
which is considered to be part of the health system includes the financing of mental health services and public health structures, but does not include all expenditure on parallel services, as the relevant ministries can make additional allocations. Social care and some long-term care are considered to be part of the social welfare budget, although this changed from 2006 as much long-term care for the elderly is now provided through the hospital sector, using “social beds” (see Section 6.7 *Long-term care*). Palliative care services in Belarus are still quite limited; only outpatient pain control for cancer patients would be included in these figures, with other services provided through the voluntary sector and international donor contributions (see Section 6.9 *Palliative care*).

Total health expenditure and the public sector share of health expenditure in Belarus have remained relatively stable (Table 3.1). At 6.2% in 2004, WHO estimates show that health expenditure as a share of GDP in Belarus is below the EU average of 8.7%, and the WHO European Region average of 7.7%, but higher than the CIS average of 5.8% (Fig. 3.2). According to WHO estimates, health expenditure as a share of GDP peaked in 2001 at 6.6% and has been falling since, but health expenditure has been consistently higher in Belarus than in the Russian Federation or the CIS, and in 2004 it was at a similar level to that of Poland (Fig. 3.3). In terms of PPP, according to WHO estimates, Belarus has the highest per capita health expenditure in the CIS, after the Russian Federation (Fig. 3.4). This reflects the genuine political priority given to health care in Belarus, but it also indicates that the current organization of care, which is quite similar to the organization of care under the prior Semashko system, absorbs considerable resources. The system is primarily funded through the public sector and, according to WHO estimates, the share of health expenditure from public sources as a percentage of total health expenditure was 74.9% in 2004, which is comparable to the EU average of 75%; this is considerably higher than in any other country of the CIS, the average for which was 56.3% (Fig. 3.5).

3.2 Population coverage and basis for entitlement

The whole population of Belarus has extensive entitlements to health care, guaranteed by Article 45 of the Constitution. Entitlement is based on citizenship, the system is universal and directly funded through general taxation, and coverage is not a significant issue. There is no system of social health insurance and there is only limited private voluntary health insurance (VHI) (see Section 3.3 *Revenue collection/sources of funds*, Subsection *Voluntary health insurance*). Many foreign nationals are expected to purchase medical insurance for their stay in Belarus, but there are reciprocal agreements guaranteeing free

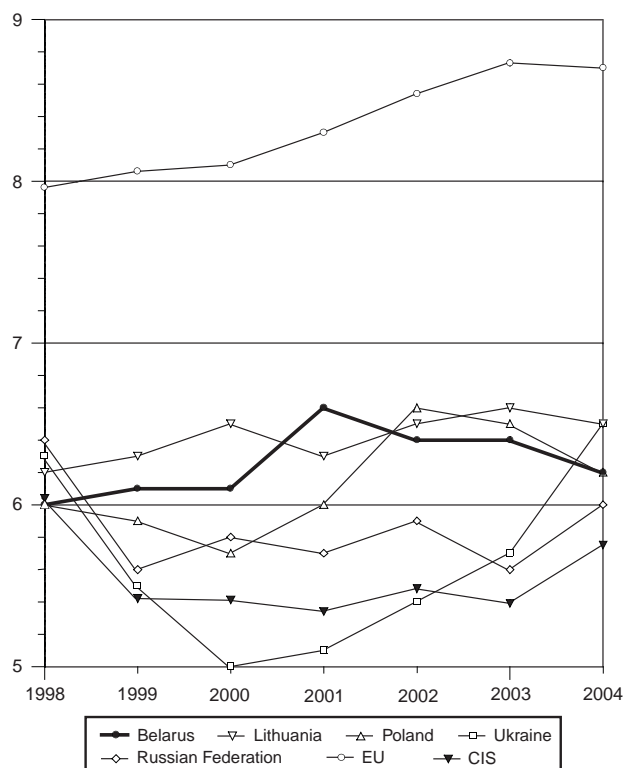
Fig. 3.2 Health expenditure as a share (%) of GDP in the WHO European Region, latest available year



Source: WHO Regional Office for Europe 2007.

Notes: EU: European Union; TFYR Macedonia: The former Yugoslav Republic of Macedonia; CIS: Commonwealth of Independent States.

Fig. 3.3 Trends in health care expenditure as a share (%) of GDP in Belarus and selected countries, 1998–2004, WHO estimates



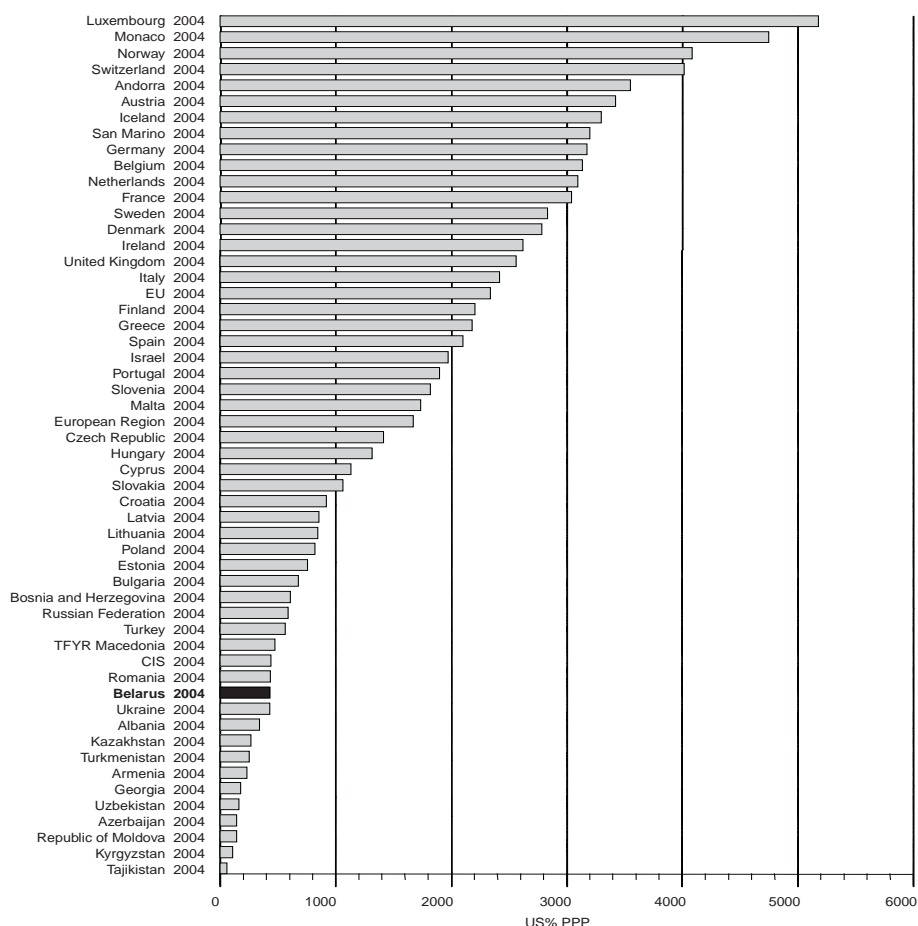
Source: WHO Regional Office for Europe 2007.

Notes: GDP: Gross domestic product; EU: European Union; CIS: Commonwealth of Independent States.

health care for nationals from certain countries, such as the United Kingdom. In essence, entitlement and coverage have been maintained as they were during the Soviet era.

Health care benefits under the Belarusian Constitution are extensive. Although there is no explicit list of services covered, all primary, secondary and tertiary care costs are de facto covered and there is no rationing of services in the state sector. The Law on State Minimal Social Standards (11 November 1999, No. 322-III) defined the areas in which the State has an obligation to provide social benefits (including health care), as well as the minimal levels of support citizens could expect. In practice, this means that as well as diagnostic and treatment services, emergency care, out-of-hours care, public health services, some long-term care for the elderly and all long-term care for people with mental health problems are all covered by the statutory system. In addition, workers in

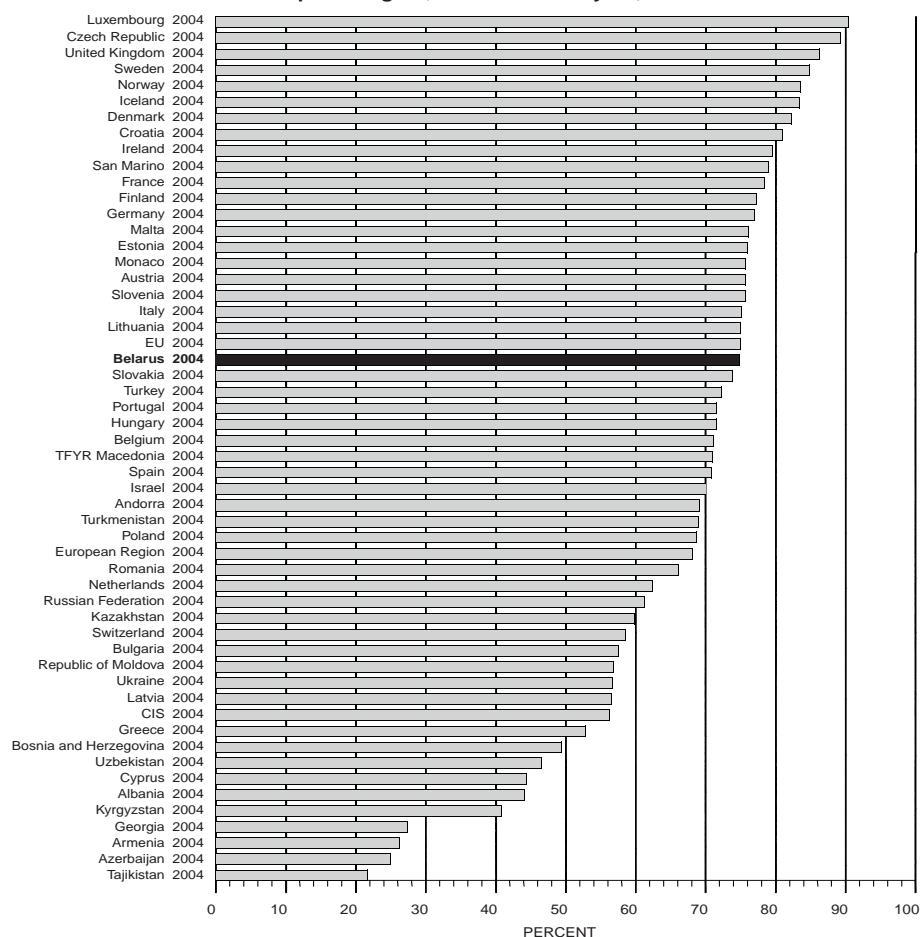
Fig. 3.4 Health expenditure in US\$ PPP per capita in the WHO European Region, latest available year, WHO estimates



Source: WHO Regional Office for Europe 2007.

Notes: PPP: Purchasing power parity; EU: European Union; TFYR Macedonia: The former Yugoslav Republic of Macedonia; CIS: Commonwealth of Independent States.

Fig. 3.5 Health expenditure from public sources as a % of total health expenditure in the WHO European Region, latest available year, WHO estimates



Source: WHO Regional Office for Europe 2007.

Notes: EU: European Union; TFYR Macedonia: The former Yugoslav Republic of Macedonia; CIS: Commonwealth of Independent States.

certain sectors and enterprises have access to parallel services funded through the relevant ministry or enterprise. These parallel services also cover some aspects of occupational health care and spa treatments. There are only limited funds available to citizens in need of treatment abroad, and there is a long waiting list for accessing these funds. Treatments needed usually include complex transplant therapies or innovative cancer treatments, which are unavailable in Belarus, and children are prioritized over adults in need.

Significant co-payments only exist with regard to pharmaceuticals, dentistry and opticians costs. Co-payment levels are determined centrally by the Ministry of Health and costs are a less significant factor than politics in determining co-payment levels. For historical reasons, opticians and dental costs are covered only at a very basic level by the state system, and most patients choose to pay out of pocket for dental treatment and spectacles, if they can afford to. In general, patients pay full costs for pharmaceuticals in outpatient care; however, a wide range of citizens are eligible for discounts. For example, in 2007 the State paid for 100% of prescription costs for patients with specific chronic diseases (asthma, diabetes, cancers and so on), war veterans and children under 3 years of age, along with 50% for all patients aged over 70 years. However, from 1 January 2008, these benefits will be means tested, rather than universal, in order to better target assistance to those most in need and to rationalize the discounts system.

As well as comprehensive medical coverage, the State provides social welfare benefits, which can either be cash or in-kind payments; for example, certain categories of people are entitled to use public transport free of charge or at a heavily reduced rate. Cash benefits include maternity benefits, officially sanctioned sick pay benefits and invalidity benefits. Coverage decisions are made at the presidential and parliamentary level, and the provision of extensive welfare and health benefits have considerable political importance. With greater budget constraints as energy costs rise, there have been some reductions in the level of social benefits, but none have been cut altogether. As the health system is relatively expensive, there has also been interest in strengthening the gatekeeping role of PHC in order to contain costs by preventing unnecessary self-referrals. However, maintaining universal access to health services free at the point of use is of key political importance and there are no plans to fundamentally change either the level of coverage or the tax-based financing of the system.

3.3 Revenue collection/sources of funds

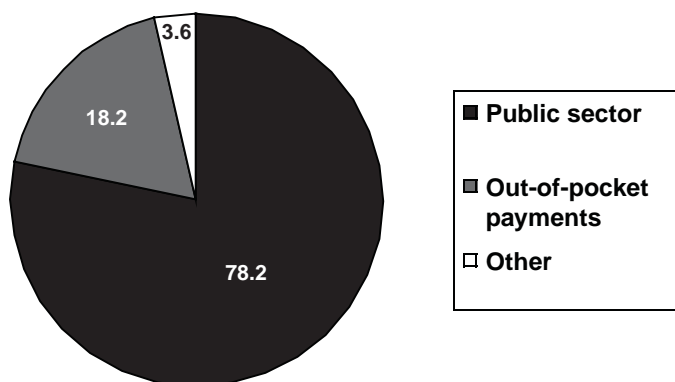
Belarus has not introduced any form of compulsory social health insurance, and while financing for the system has been decentralized to the local level, the main

source of revenue remains local enterprises, rather than payroll contributions (Fig. 3.1). This is a distinctive feature of the Belarusian system that reflects the nature of the wider economic system, which is largely unprivatized so that profits or revenue from local enterprises are channelled through local budgets. This is very similar to the financing arrangement under the prior Semashko system. The nature of the socially orientated market economy means that corporate taxation of private businesses is a more significant source of funding than income tax from the general population. The only other significant source of funding is out-of-pocket payments, which are mainly in the form of formal co-payments for pharmaceuticals and private services such as dentistry (see below). While the overall balance of public and private sources of expenditure on health has been shifting gradually away from public sources since the mid-1990s (WHO Regional Office for Europe 2007), the system is still overwhelmingly state funded through general taxation (Fig. 3.6).

Compulsory sources of finance

Most revenue for health is raised at the local level and spent in accordance with centrally determined budgets. According to internal Ministry of Health data, in 2006, 86% of revenue for health care came from local budgets and 14% from the Republican budget, of which 9% is allocated directly to health facilities and 5% to centralized services such as the sanitary-epidemiological network and vertical programmes (see Section 3.4 *Pooling of funds*, Subsection *Mechanisms for allocating funds among pooling/purchasing agencies*). The collection and administration of taxes take place at the local level, according to tax rates specified by the Parliament. Local taxes include corporate tax and

Fig. 3.6 Percentage of total expenditure on health according to source of revenue, 2004



Source: WHO Regional Office for Europe 2007.

income tax, but most revenue at the local level comes from publicly owned enterprises and rental incomes. Excise duties and value-added tax (VAT) are collected at the national level, and funds distributed through the health budget. However, there are no specific taxes earmarked for health.

There have been recent moves to simplify the tax system and make it more transparent. To encourage compliance, tax rates were even lowered. However, the key issue is the inequality between local governments in their capacity to raise revenue because the number of successful state enterprises is not evenly distributed across the country. Consequently, the regions which are the most economically disadvantaged are also the regions which face the most difficulties in fulfilling their statutory obligations to provide particular health services.

Voluntary health insurance

While it is possible to buy discretionary health insurance from the state-owned insurance company, VHI is not a significant part of the health system and the VHI market is undeveloped. Temporary visitors from most countries are obliged to show that they have suitable health insurance coverage for their stay in Belarus, and policies can be purchased through the state-owned insurance company.

Out-of-pocket payments

According to WHO estimates, out-of-pocket payments accounted for 80.6% of private health expenditure in 2004, and overall, in the same year out-of-pocket payments accounted for 18.2% of total health expenditure (WHO Regional Office for Europe 2007). There are no formal user charges in the Belarusian health system, and most out-of-pocket expenditure comprises direct payments for pharmaceuticals and private services, usually dental services. It is possible for state health facilities to provide private services, which are considered supplementary to core services that should be provided free of charge. Such services include more comfortable hotel facilities for inpatients or elective diagnostic procedures and treatments. At the time of writing, this is not a very significant feature of the health system, outside of the fields of dentistry and cosmetic surgery, but it is hoped that in future this could provide an extra stream of funding for health care, as funds which would have been spent in the private sector could come directly back into the state system. To foster the development of such private services in state health facilities, discussions are under way about giving facilities the freedom to spend such revenue instead of passing it back to the budget holders.

Although there is some scope for informal payments or gift giving in the health system, as there was in the Soviet system, it is not as widespread as in other countries of the CIS, and it is not tolerated by the authorities. In a survey among doctors, only 18.3% felt informal payments and gift giving were acceptable practice due to the low salaries of health care professionals; 45.9% of the doctors interviewed for the survey found it unacceptable and 35.8% did not answer this question (Antipova, Goryacheva & Suvorova 2004). Utilization levels would certainly indicate that informal payments are not a significant barrier to accessing care, as has been the case elsewhere in the CIS (Balabanova et al. 2004). Cost-sharing is not a notable feature of the system and the introduction of formal charges to access services would be politically unacceptable and even unconstitutional (see Section 3.2 *Population coverage and basis for entitlement*). A national survey in 2005 found that while some co-payments for certain health services were viewed as acceptable by most primary care doctors (Rousovich et al. 2006), the patients were less enthusiastic, particularly in rural areas where only 24.5% of respondents felt it would be acceptable (Egorov et al. 2006).

Parallel health systems

Parallel health care services which are outside the main statutory system are provided by some ministries and some large enterprises for employees and their families (see Section 2.3 *Organizational overview*). These services are financed directly from the budgets of the enterprise or ministry concerned, rather than regional or central health budgets. Enterprises maintaining and financing parallel health services are invariably state owned.

External sources of funds

External sources of funding are less significant in the Belarusian health system than they are in some other CIS countries, as there has been considerably less involvement with international partners. Bilateral and multilateral aid has been used mostly to fund pilot projects to trial new approaches to the organization and financing of primary care or to target specific diseases, such as HIV/AIDS or TB. At the time of writing, an international collaboration involving considerable external funding is a project with the Global Fund which aims to modernize the prevention, detection and treatment of TB. A similar project was developed in collaboration with the World Bank in 2004, but the Belarusian Government was unwilling to accept the conditions attached to the loan offered, so the project did not proceed. There has also been extensive international

nongovernmental collaboration in providing health care and services for people affected by the Chernobyl disaster.

3.4 Pooling of funds

In the Soviet era, the health system was under the centralized control of the State, which financed services using general government revenue as part of national social and economic development plans. However, following independence, the Belarusian Government decentralized the health system and local authorities gained ownership of most medical facilities and are now expected to fund them through their own budgets derived from local taxes and revenues. Pooling of funds was one of the responsibilities decentralized to the regional level, and this partly overlaps with national-level pooling. In essence, however, the Belarusian health system is a “single-payer system”.

Pooling agencies and allocation

Local government acts as the third-party payer for primary and secondary health care services for their designated populations. The Republican Government acts as the third-party payer for specialized tertiary care, vertical programmes for the whole population (see Section 3.4 following subsection *Mechanisms for allocating funds among pooling/purchasing agencies*). Local government acts as the main collecting agency, collecting taxation contributions from enterprises and individuals, along with other revenue, such as rent and profit from state-owned enterprises; it also acts as the main pooling agency for health services. A portion of local revenues are then sent to the central state budget, the collecting agency at the national level, from which the Ministry of Health receives its allocation; the Ministry of Health is thus the national-level pooling agency (Fig. 3.1).

The overall health budget allocation is set by the Ministry of Health and the Ministry of Finance in line with the will of the Parliament and the President. Budget decisions are then passed down to the local level for implementation. In theory, this should ensure that a minimum level of services are provided and financed according to agreed norms from local budget revenue; however, some regions and districts are able to raise more revenue than others and it has been hard for some areas to finance services at the required level because they have fewer successful enterprises. Funding for parallel services is allocated by the relevant ministry from their budgetary allocation and as such these services are not paid for from the general health budget.

Mechanisms for allocating funds among pooling/purchasing agencies

Although there are overlapping national- and local-level pools, the revenue collection, pooling and purchasing functions are integrated so the resource allocation mechanism to purchasers is implicit. The global budget for overall spending on health is determined annually, according to political criteria, as health care is considered to be a priority policy area by the President and the Parliament and their aim is to increase allocations to the health budget as a proportion of GDP in accordance with their key political concerns. Particularly important health concerns are addressed through centrally funded “vertical programmes”, which are administered and funded through the Ministry of Health rather than local government. The Ministry of Health acts as advisor to the central Government in determining priority areas in health policy, but also decides the level of resources to be allocated to different tertiary care providers, the sanitary-epidemiological system and so on. At the regional and district levels, local governments can choose to allocate more resources to health than is required according to national norms, but few are in a position to do so. There is a system of local budget revenue equalization, using a formula which includes norms for per capita budget expenditure on health services, but these norms are not risk adjusted. A key concern is that Gomel and Mogilev should receive more money, as they were most seriously affected by the Chernobyl disaster (see Section 6.13 *Health care for specific populations*). The per capita norms are based on the mid-year population figures for the *oblasts* and the city of Minsk, as estimated by the Ministry of Statistics.

Allocations to hospitals are made on the basis of prospective funding, based on expected future expenditure and using fixed budgets. These budgets are calculated annually, using a combination of historical precedent and political negotiation at the district, regional and national levels.

3.5 Purchasing and purchaser–provider relations

The organizational relationship between purchasers and providers is based on an integrated model, in that all personnel are directly employed by the third-party payers, which also own the facilities. Historically, funding for services in the main statutory system was determined by capacity criteria, namely the number of beds in a hospital and the number of patient visits to polyclinics, outpatient clinics or FAPs. However, new norms have been introduced, detailing how many beds and staff are considered “optimal” for all the different types of facility and facilities are not paid more for having greater capacity than is recommended.

This has been combined with the use of per capita financing arrangements in primary care as a means of tackling excess capacity.

Provider behaviour is controlled through a combination of hierarchical management and strictly enforced norms. The continued use of line-item budgeting, as well as centralized purchasing of, for example, medical equipment and most pharmaceuticals means that providers are not really in a position to deviate from the agreed plans. Budgets are also “soft”, that is, if there is a shortfall and local authorities are not able to cover provider costs, they can usually come to a suitable arrangement.

3.6 Payment mechanisms

Under the Semashko model, the level of funding a hospital received often bore little relationship to its output or the population’s needs, as incentives encouraged increased capacity and long lengths of stay in hospitals. The persistence of line-item budgeting in the health system and input-based financing mechanisms has constituted a key target for reform since the late 1990s.

Paying for health services

Health care services are paid for prospectively, using global budgets based on the population covered for primary care and on line-item budgets in turn based on historical incrementalism in secondary and tertiary care. For example, the number of diagnostic imaging procedures and clinical laboratory services are estimated and funded on the basis of the actual expenditure of the previous year, with some adjustments. Funds are earmarked for different uses and cannot readily be reallocated. Only pharmaceuticals supplied through state pharmacies free of charge or at a discounted rate are reimbursed retrospectively by the local Executive Health Committee. Outsourcing is not a feature of the health system in Belarus.

In order to improve efficiency in resource allocation, the purchasing of health services shifted in the year 2000 from one based on inputs (such as bed numbers) to one based on the population served (capitation funding). Capitation funding is achieved through the setting of social standards for the volume of medical care that should be provided as a minimum, with prices based on historical incrementalism, rather than full costing. The incentive has been to reduce excess bed capacity in secondary care, although this has not yet been achieved on a significant scale (see Section 6.4 *Specialized ambulatory care/inpatient care*).

Paying health care personnel

All health care personnel working in the main statutory system are salaried according to salary scales set at national level by the Ministry of Health, with standard increments based largely on years of service, qualifications and positions held. For health care personnel working in primary and secondary care, their salaries are paid from the local budget; all other salaries at the tertiary level derive from central Ministry of Health funds. Those working in the parallel health services can be paid more, but are nevertheless salaried. Personnel working in the private sector (some pharmacies, some dental clinics and some diagnostic centres) can earn significantly more as their wages and bonuses are decided by the managers of those enterprises within the constraints of Belarusian employment laws.

Salaries are not used to provide financial incentive structures for health care personnel beyond the need to regularly update training in order to progress up the salary scale. There are some bonuses to attract and retain primary care doctors in rural regions, but because the overall wage level is so low, the financial incentive is not that significant. The main problem with the methods in place for paying health care personnel is that, although the wage bill is huge, individual salaries are very low. Quality improvement drives have involved the use of norms and directives, rather than incentives for clinical staff to change their ways of working. As a consequence, expectations of staff are higher than ever and their bureaucratic workload has increased significantly, but their salaries have stayed at the same low level. Low morale and professional satisfaction are significant issues particularly in relation to staff working in primary care (see Section 6.3 *Primary/ambulatory care*).

4. Regulation and planning

4.1 Regulation

At national level, strategic planning in health care has been guided by the “Public Health Development Concept for the Republic of Belarus, 2003–2007”. A new Concept was under development at the time of writing. The main aims of the Concept are health promotion, addressing demographic concerns, and maintaining universal access to health care services for the whole population. However, the desire to improve efficiency in the system also features within the document (Malakhova et al. 2007a; Zharko et al. 2007a).

The Ministry of Health plays the main regulatory role at all levels of the health system – at the national, regional and district levels through the Health Care Departments, although regional and district governments are also key stakeholders, as they are responsible for financing the system at their respective levels. The boundaries between planning and regulation functions and planning and management functions in Belarus are not always clear cut. The most closely regulated aspects of the system are those where patients pay out of pocket for services. For example, prices for private practice or supplementary services provided in state health care facilities are fixed. Regulation is achieved through the use of very detailed accounting procedures and the issuing of norms and standards, rather than through contracting or licensing.

Regulation and governance of third-party payers

Belarus has maintained similar mechanisms to those in place in the Semashko system, with integrated purchaser and provider functions (see Section 3.5 *Purchasing and purchaser–provider relations*). Different levels of government

are responsible for purchasing health services for citizens within their catchment area, depending on the level of care – most tertiary services are financed directly from the national budget, whereas district and regional authorities are responsible for purchasing primary and secondary care services within the statutory system. The relevant ministries and enterprises are responsible for purchasing services available through their parallel health services.

Purchasers and providers within the statutory system are all part of the public sector; ownership of health facilities lies with the relevant level of government responsible for covering their costs, but ownership is of less relevance in Belarus, as the privatization of health care facilities or services is not on the reform agenda and is unlikely to be at any time in the near future. Governance and management arrangements for regional and district Health Care Departments are determined by the Ministry of Health in accordance with the legal framework provided by central Government. Before the financing reforms of the year 2000, the number of health care services in the public sector depended entirely on the decisions of the regional and district committees. The planning of hospital services was changed after the successful implementation of a per capita financing model as part of the Vitebsk pilot project (see Chapter 7 *Principal health care reforms*). From 2001, all health care services in Belarus have been financed with the upper limit of resources depending on the number of residents in the region and districts. This provided an incentive to the district and regional health care authorities to cut the excessive number of hospital beds. However, no risk adjustment has yet been implemented in the per capita formulation for those districts which have a higher proportion of, for example, elderly residents.

Norms for the minimum package of services to be provided are decided centrally, but there is scope for local government to provide more services than these where finances allow. Consequently, local priorities may also be reflected in purchasing decisions, but in practice this is often limited by resource constraints. While this may be desirable in ensuring flexibility in the system to respond to the needs of the local population, it has also hindered reform and a real reorientation of the system away from hospital-based services in support of primary care. The heads of district hospitals are major stakeholders at the local level and can be very effective in lobbying for resources to maintain their services at high levels. It is not clear how local government is held accountable for purchasing decisions. Norms for service provision volumes passed down through the Ministry of Health are no longer mandatory, quality control mechanisms are still underdeveloped and, in essence, budget constraints remain “soft”, so purchasers are not held accountable in terms of costs.

Regulation and governance of providers

Within the statutory system, the main health care providers are polyclinics, outpatient clinics and FAPs at the primary care level, as well as hospitals at the secondary and tertiary care levels. These providers are all in the public sector and are managed on a hierarchical basis according to an integrated “command-and-control”-type health system. Individual hospitals, polyclinics, outpatient clinics and FAPs have no meaningful decision-making powers over capital, staffing levels or payment, or the types of services offered. Decisions about capital and staffing levels are made by the regional or district health care departments, staffing payment levels are agreed centrally and the types of services offered are determined according to norms and standards issued by the relevant specialist branches in the Ministry of Health.

Until 2001, only privately established small-scale health care facilities (mostly private dental practices and private diagnostic medical centres operating on a fee-for-service basis) needed to be licensed. There was no regulatory body for licensing health care facilities in the public sector in Belarus. However, from 2001 all health care facilities (both public and private) have to complete the formal procedure of licensing by the Licensing Committee of the Ministry of Health. It was hoped that licensing in the public health care sector would improve the quality of the health care facilities and support a more equal distribution of resources between regions and districts.

There is no central register or formal licensing of professional medical staff, but upon employment, new staff must show they have the relevant qualifications and training, including continuing professional development training (organized through BelMAPO), which is linked to their bonuses and remuneration (see Section 5.2 *Human resources*, Subsection *Registration/licensing*, and Subsection *Training of health care personnel*). Professional conduct and quality of care is regulated through the Ministry of Health, which conducts regular audits of patient records in order to ensure that the required treatment protocols have been adhered to and through the burdensome system of reports which doctors need to submit in relation to a wide range of clinical procedures and outcomes (see Section 4.1 *Regulation*, Subsection *Regulating quality of care*). The guidelines and standards are produced by the relevant specialist committees within the Ministry of Health, such as cardiology, oncology and so on.

There are similar reporting systems and reviews at the facility level; these are the responsibility of the sanitary-epidemiological network, which acts as the public health and safety inspectorate, ensuring that a wide range of norms and procedures in relation to hygiene standards has been implemented. If hygiene standards are found wanting in a particular facility, the Sanitary-Epidemiological Inspectorate has the power to close a health facility until the requirements

have been met. The sanitary-epidemiological network files reports to the central Ministry of Health and the regional and district health care authorities on the results of their inspections, but there is no formal mechanism whereby the findings of these reports are made available to the general public. Most patients rely on word-of-mouth reports and recommendations, which can be very powerful in shaping public perceptions of the service quality available in different facilities, as can media exposés of shortcomings.

Regulation and governance of the purchasing process

Consistent with purchasing and providing functions being integrated in a command-and-control-style system, the main regulatory tools used are auditing mechanisms; contracting is not a feature of health care purchasing, as staff are salaried and purchasers and providers are integrated. Per capita norms for service provision are set centrally according to agreed priorities, and local health care authorities are obliged to implement these minimum standards, although they are free to supplement these as appropriate. Until 2000, norms and financing were set according to capacity criteria, such as bed numbers in hospitals, but per capita financing mechanisms have been in place since January 2001, which has given local authorities some scope to rationalize provision (see Section 3.5 *Purchasing and purchaser–provider relations*).

The regulation and governance functions of the Belarusian health system remain highly centralized within the Ministry of Health, which sets the standards of care and norms for the provision of services. Local governments work with local health care authorities to purchase services for their population and, as it is a centralized command-and-control-style system, the key regulatory mechanism is auditing of both purchasers and providers.

Regulating quality of care

Quality of care is one of the hot issues in the health care sector in Belarus. The expectations of the population are rising and there are an increasing number of complaints from patients about the long waiting times in polyclinics and outpatient clinics, the low morale and poor communication skills of clinical staff, the failure to prescribe certain medications free of charge, and doctors not signing patients off work due to disability. Current quality assurance programmes aim to strengthen the importance of proper and detailed notes in patient records. Patient records are regularly checked to ensure diagnostic and treatment protocols have been adhered to and that doctors have made sufficiently detailed notes. This pressure on doctors to produce detailed notes increases the workload at the cost of patient–doctor consultation time. Since

2002, centrally set clinical standards for more than 800 diagnoses have been developed by narrow specialists following directives from the Ministry of Health. Primary care doctors are obliged to follow these protocols in order to assure good quality of care.

4.2 Planning and health information management

The broad approach to planning in infrastructure and capital is still based on norms, although the change to per capita budgeting for primary care has meant some shift towards planning infrastructure on the basis of demographic need. Planning for health care personnel is still developed on the basis of norms, and there are policies to redistribute health workers to fulfil these norms (for example, new graduates have to complete a compulsory 2-year work placement in primary care), but it is still proving difficult to fill posts in less popular branches of medicine, and the size of the hospital sector means that there is almost no limit to the number of new specialists that can be absorbed into secondary and tertiary care (see Section 5.2 *Human resources*, Subsection *Planning of health care personnel*). Different approaches to health care planning are being explored, but it is likely that norms-based planning will prevail for the foreseeable future.

The Administration of Health Care Planning and Economy is the division of the Ministry of Health which acts as a national planning agency for health services. It has two departments, one for planning and budgetary financing for health care organizations and one for norm-setting and salaries. This department sets the standards for the volumes of medical care that should be provided as well as norms and standards for the supply of staff, pharmaceuticals, food, uniforms and so on. These norms and standards are rolled out nationwide. Planning and management functions are largely integrated, as both are ultimately the responsibility of the Ministry of Health. Health care providers manage health care delivery under the supervision of Regional Health Care Departments and local government, but the system is in essence hierarchical (Fig. 2.1).

Policy development and priority setting are centralized processes where the Ministry of Health is the key actor. District and regional authorities implement policies and act on the centrally determined priorities within the constraints of their local budgets. Regional and district authorities can appeal for more funding or lobby for different priorities to be applied in their area, either through the Ministry of Health or their elected representatives in government, but there are no formal channels for seeking the input of different stakeholders in the policy development and priority-setting process.

Health technology assessment

There are no dedicated health technology assessment (HTA) agencies in the Belarusian health system and, due to the lack of capital investment in new technologies and more limited involvement of international donor organizations, the development of HTA or the utilization of external HTA assessments is a low priority at the time of writing.

Information systems

Data on services and activity levels are collected and analysed by different departments in the Ministry of Health, but mainly by the subordinated Republican Centre of Medical Technologies. The Methodology and Medical Statistics Sector of the Ministry of Health develops the forms which are the basis of the reporting system. Clinicians are obliged to complete these forms and return them within a specified time limit. The data are aggregated at the facility level and then forwarded to the regional level before they are passed on to the national level. The accuracy of reporting in the forms for quality control purposes and patient safety auditing is the responsibility of the Control of Official Documents Execution and Citizens' Application Sector, which is a Ministry of Health Department. Reporting is, however, segmented and fragmented as each specialty has its own reporting system and there is little coordination between them. Epidemiological and demographic indicators are used for health system performance assessment at subnational levels. Statistical data on population health and volume of services are collected at the regional level in order to assess the implementation of State Programmes and minimum social standards which relate to health.

The Ministry of Statistics and Analysis is responsible for collecting, processing and disseminating population data for Belarus. The 10th revision of the International Classification of Diseases (ICD-10) was adopted in 2002 and officially the WHO definition of a live birth has been in use since January 1994, but in statistical practice extra requirements relating to gestation, birthweight and length are imposed and mean the WHO definition has not been fully implemented (Grigoriev 2007). Communicable disease reporting is the responsibility of the sanitary-epidemiological network.

In order to allow improvements in regulation and planning, the health information system needs strengthening, particularly if health care financing is to move away from input-based planning. There are a great many reports produced in the health system, but at the time of writing they are not used to provide feedback to management decisions or to improve performance. To

facilitate the development of evidence-based medicine in Belarus, more reliable and disaggregated epidemiological data are also required.

Research and development

There is a Department of Research in the Ministry of Health, responsible for the organization and coordination of research and development in health. However, research and development itself is a relatively low priority in the health system at the time of writing, other than in the field of pharmaceuticals, as Belarus is dependent on imported pharmaceuticals, and the Ministry of Health is keen to reduce the national drugs bill. There is also no tradition of using research evidence as a base for policy-making.

5. Physical and human resources

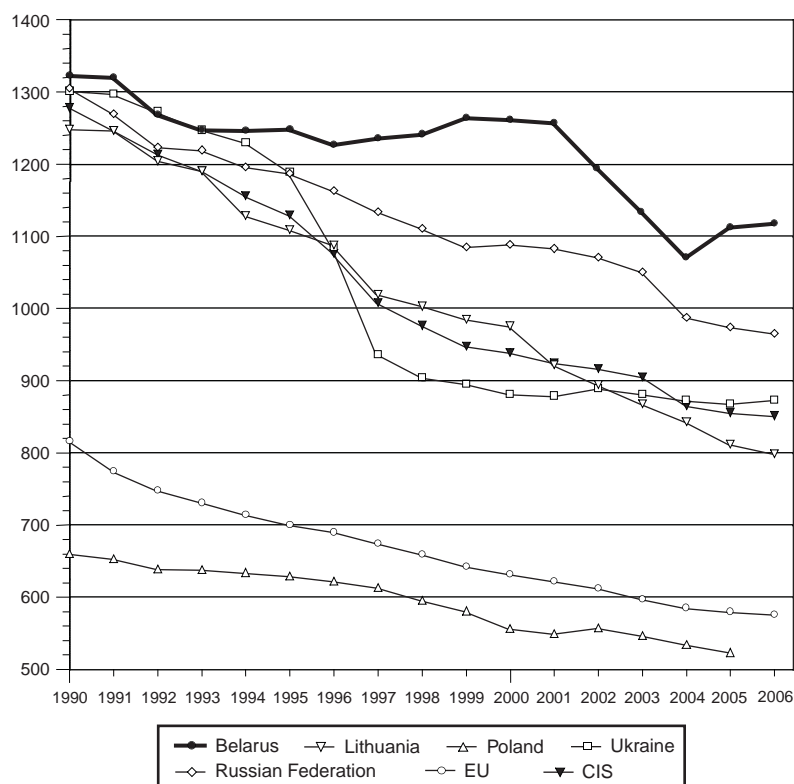
5.1 Physical resources

Infrastructure

The Licensing Committee under the Ministry of Health is responsible for licensing hospitals and health care facilities (see Section 4.1 *Regulation*, Subsection *Regulation and governance of providers*). Traditionally, the financing of health care facilities was estimated according to the number of hospital beds, in accordance with the Semashko model. As a result there was an unlimited increase in the number of hospital beds in Belarus during the Soviet era (Fig. 5.1). After independence, Belarus maintained a large stock of hospital beds, but from 2001 all health care facilities in Belarus have been financed with the upper limit of resources depending on the number of residents in the region and districts rather than the number of beds. This provided an incentive to the district health care authorities to cut the excessive number of hospital beds, although Belarus still has the largest number of hospital beds per capita of any country in the CIS or central and eastern Europe (CEE) (Fig. 5.2).

The number of hospital beds per capita in Belarus is still high compared with neighbouring countries and the CIS (Fig. 5.2). After a steady decrease in the number of hospital beds since the financing reforms of 2001, there was even a slight increase in 2004–2005 (Fig. 5.1). However, this increase was due to the reorganizing of small-scale hospitals in rural areas to turn them into nursing hospitals for long-term care, and the hospital beds became “social beds”. However, the Ministry of Health formally includes these hospitals for nursing care in the total numbers of hospitals and hospital beds within the health system (see Section 6.7 *Long-term care*). The number of long-term nursing hospital beds has increased from

Fig. 5.1 Hospital beds per 100 000 population in Belarus and selected countries, 1990 to latest available year



Source: WHO Regional Office for Europe 2007.

Notes: EU: European Union; CIS : Commonwealth of Independent States.

15 in 2001 to 2407 in 2006. In 2006, the total number of beds in acute hospitals was 100 272 and there were 6545 psychiatric hospital beds (Zharko 2007).

The introduction of hospitals for nursing care, instead of the small-scale rural hospitals, is also reflected in the hospital performance figures. There has been no reduction in the length of stay in hospitals since 2004. Indeed, there was even an increase in the overall length of hospital stay in rural areas from 12.8 days in 2004 to 17.7 days in 2006, but this disparity was due to the different regulations regarding the length of stay in hospitals for long-term nursing care. The average length of stay in 2006 was the same as in 2004: 11.8 days, but the average for urban areas was less, at 11.5 days. Hospital admissions figures are also among the highest in Europe, with 266 hospitalizations per 1000 population in 2006 (up from 264 in 2005), but again these figures include hospitalization for long-term care (Zharko 2007). The average number of occupied beds in 2006 was 306.6 (308.3 in the cities and 286.7 in rural areas) (Zharko 2007).

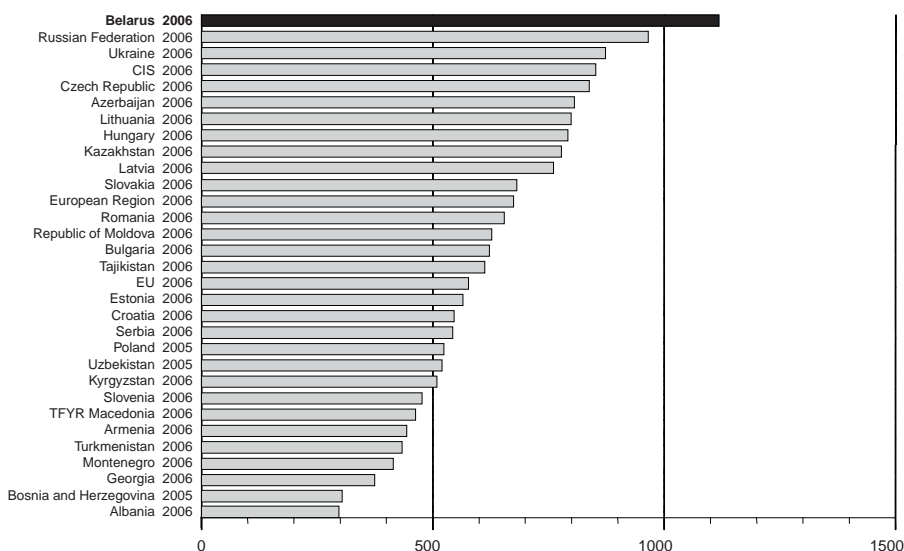
Capital stock and investments

Current capital stock

The number of hospitals declined from 793 in 2001 to 651 in 2004 and has remained relatively stable; there were 649 hospitals in 2006. This decrease has not been even across the country, however; in urban areas there was a steady decrease in the number of hospitals from 411 in 2001 to 363 in 2006, while in rural areas, after a sharp decrease from 382 in 2001 to 268 in 2004, reports show an increase in the number of hospitals in recent years from 268 in 2004 to 286 in 2006 (Zharko 2007). This latter trend is due to the reopening of the hospitals for nursing care.

Economic growth in 2004–2006 provided a surplus in the state budget, which allowed for the allocating of sufficient resources to the hospital care sector. Since the early 2000s, major efforts were made to renovate the operating theatres and the intensive care units in each district hospital from the central funds of the Ministry of Health. In accordance with the “State Programme on the development of specialist care”, 31 billion Belarusian rouble (BYR) (US\$ 14.5 million) from the national budget was spent only on the purchasing of new equipment for operating theatres and intensive care units for district hospitals in 2006 (Zharko 2007). However, the general condition of hospital buildings

Fig. 5.2 Hospital beds per 100 000 population in CEE and CIS countries, latest available year



Source: WHO Regional Office for Europe 2007.

Notes: CEE: Central and eastern Europe; CIS: Commonwealth of Independent States; EU: European Union; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

throughout the country could be improved. There are maintenance and financing problems in the more economically deprived districts. After 2003, the policy changed and the bulk of resources were invested not in new buildings but in the refurbishing of existing stock, with more investment in the equipment. The number of brand new buildings was therefore quite limited, with not more than 3–5 new buildings per year, including polyclinics.

So far there are no available data from surveys on the condition of infrastructure at various levels of care. The health care facilities are reasonably equitably distributed throughout the country. The indicators for the performance of cleaning and maintenance teams, the condition of the premises and fire safety are monitored on the regular basis by the district Sanitary-Epidemiological Centres and by the district departments of the Ministry of Emergencies (formerly the District Fire Departments). The Sanitary-Epidemiological Centres produce reports which influence decisions about investments in health care facilities. However, the priorities for investment are strongly dependent on the financial capacities of the local authorities. Backlogs of maintenance problems occur frequently in the economically deprived districts because of insufficient financing from the local budgets for health care infrastructure.

Investment funding

Capital investment in the health care sector is funded in different ways, according to the status of the hospital. Hospitals can be Republican Centres (tertiary care), or regional and district hospitals (secondary care). The republican hospitals and institutions are mostly located in Minsk city and are funded directly from the national budget through the Ministry of Health. Regional hospitals are funded from the regional budgets and district hospitals are funded from the district budgets. Minsk city is a separate administrative unit and has its own separate budget for health care facilities in the capital. Investment funding capacities depend strongly on the economic circumstances of the local authority. As mentioned earlier, decisions on investment funding are made by the district or regional local authorities in accordance with the annual planning and annual budgets for health care. As a rule, the purchase of the expensive equipment is funded in accordance with State Programmes approved by the Government.

There are a large number of comparatively small-scale standard State Programmes that are almost automatically renewed, with some amendments, upon expiry (programmes on psychiatry, healthy lifestyles and so on). In these programmes, the major source of finance is the local budget within the limits of the current health care budget. However, a few programmes receive extra financial resources from the central budget, the renovation of the operating

theatres and intensive care units in all districts being one example. Such programmes are usually initiated according to the political will of the President.

Capital investment controls

Capital investments are controlled by the Ministry of Health and the regional or district authorities, depending on the level of health care. The controls cover only the state-run public sector, but there are no private or nongovernmental inpatient hospitals at the time of writing. Certain mechanisms are used to try and improve the geographical distribution of resources. The first is the “guaranteed social standard of health care expenditure per inhabitant at the district and regional level of care”, which has been in use since 2001. Before this, the appropriate financing level was judged according to capacity-related criteria (number of hospital beds). The second mechanism is the planning and implementation of the priority State Programmes for health care. These State Programmes place the responsibility of meeting certain investment targets with the district authorities. The State Programmes aim to trigger strategic health care delivery improvements. The most recent priorities have been maternity services, building capacity for cardiosurgery and orthopaedic care (endo-prosthesis).

Capital investments prioritize the hospital and specialist sectors. However, attention has also been paid to the improvement of PHC facilities. In 2006, BYR 254 billion (US\$ 118 million) was invested in accordance with the State Programme for the Revival and Development of Rural Areas, which focused on the reconstruction and updating of primary care facilities in the country. However, social, long-term, palliative and mental health care still lack sufficient funding and are low on the priority list.

The strict geographical division of the health care facilities prevents them from sharing any spare capacity across districts. Hospitals have no financial incentives to admit patients from other districts. Moreover, there are no financial incentives to intensify treatment and diagnostic procedures, which means that hospital beds are overused by the less ill patients who require less care. There is also the need to relieve hospitals of the burden of social care for elderly people through the development of modern facilities for long-term care.

Medical equipment, devices and aids

The purchase of essential medical equipment is planned by the district Chief Doctors depending on current needs and the limitations of local budgets. For purchases from the district budgets costing more than €10 000, a tendering procedure is used. All districts have a central bookkeeping and accounts system for the supply of medical devices to all the district health care institutions

(including district hospitals, district polyclinics, ambulance services and primary care facilities, such as outpatient clinics and FAPs). Requests for disposable supplies and basic equipment from all health care facilities in the district are registered and centrally approved by the district Chief Doctor, depending on current priorities. After receiving the equipment, the central bookkeeping and account system maintains the supply of equipment, devices and aids with annual “inventarization” (annual inventories to check the levels). As a rule, primary care facilities are a lower priority than secondary hospital and specialist care. Basic equipment is not always available in sufficient quantity and quality, with a large proportion of outdated equipment being used at the outpatient clinics, FAPs and polyclinics and at district hospitals in the economically deprived districts. There are also gaps in the supply of basic equipment, transport upgrading and disposable supplies at the primary care level.

“Big-ticket technologies” (such as computerized tomography (CT) and magnetic resonance imaging (MRI) scanners) are usually administered by regional (secondary or tertiary care) specialists. Big-ticket technologies are only available in the public sector. However, it is possible to undergo diagnostic CT or MRI scans without a referral on a fee-for-service basis, even in public hospitals. As it is so expensive, such sophisticated diagnostic equipment is purchased from central or regional funds and distributed at the regional level as essential equipment for use at the tertiary specialist level of care. As a rule, there is no access directly at the primary care level to big-ticket technologies, as referrals may only be made by regional specialists. While CT and MRI scanners are available at the tertiary care level, data on the actual number of scanners in use in Belarus are not generally available.

Information technology

Belarus has experienced a steady growth in the use of information technology (IT) and in 2006 there were 56 Internet users in the country per 100 people, which is considerably higher than access and usage rates in the Russian Federation or Ukraine (18 and 12 per 100 population, respectively) and well above the European average of 48 per 100 people (World Bank 2008). The Internet can be an important source of information on health issues for the younger generation, but it is also an important source of support through forums, such as those set up by mothers to discuss child health issues. However, data on the use of the Internet for health purposes have not been published.

The health care sector itself is rather behind the level of IT use witnessed elsewhere in the country. Within the health system, the use of computers is

generally limited to the reporting of major statistical data on the number of consultations and reported illnesses. The availability of computers at the primary care level (on the desks of primary care doctors) is very low. Although the Centre of Informatization in Minsk has developed an operational system for PHC medical record keeping, computers in primary and secondary care are not used for keeping electronic patient records because of gaps in the regulations governing the use and storage of medical electronic documentation. For example, paper records are the only eligible documents required for the investigation of patient complaints in cases of malpractice. In a small proportion of primary care settings, computers are used for the statistical reporting system. Information on health care performance (the number of consultations, diagnoses and so on) is kept at the institutional level and subsequently entered into regional and national statistical reports on morbidity and on the main indicators of performance, such as the number of consultations, home visits, hospital admissions, ambulance calls and so on.

There are some centralized database registers that form part of separate statistical monitoring projects, such as the cancer register, the influenza register, the health register of patients living in the Chernobyl contaminated areas and several others. There is a State Programme for the “informatization” of health care, which was developed with the goal of improving the use of IT in the health care sector. There have been some pilot projects using telemedicine technologies in Minsk and in the Gomel region, and the introduction of electronic patient records was highlighted as a priority during the Minister of Health’s annual speech (Zharko 2007). However, while the introduction of the electronic medical records has been put on the agenda of the Ministry of Health, legislation regarding the use of electronic documents in health care also requires updating. Computers are available for the electronic booking of appointments with specialists and primary care doctors at the reception desk in the large polyclinics in the cities, but there is no hospital appointment booking system in use at the time of writing.

The process of purchasing IT systems is regulated by the Ministry of Health, which has a dedicated IT Department. The coordinating body for IT systems within the health care sector is the Belarusian Centre of Medical Technologies. Some private IT companies are also engaged in the developing and maintenance of software, providing they complete the registration of the software with the Ministry of Health. However, many managers in the health system also have very high expectations of what computerized systems should be able to do, and technological barriers might make this unachievable in the short to medium term.

5.2 Human resources

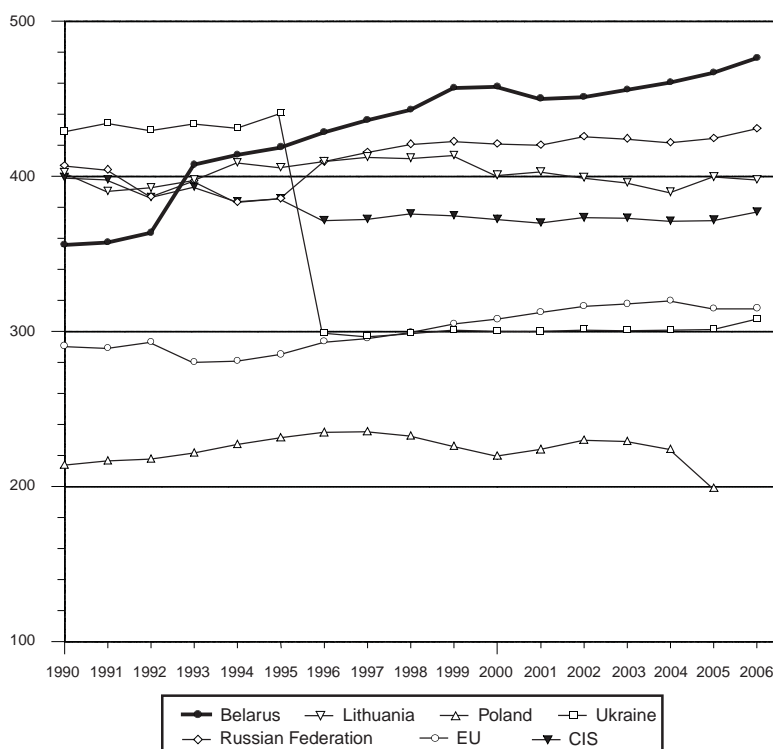
This section describes the human resources input into the health system in terms of trends in the numbers of and planning for different health care professionals working within the system, their training and registration (see also Section 4.2 *Planning and health information management*). The remuneration of staff is specifically dealt with in Section 3.6 *Payment mechanisms*, Subsection *Paying health care personnel*.

Trends in health care personnel

In 2006 there were 41 043 doctors working in the health care sector in Belarus, excluding those working in the parallel and private health care structures (Ministry of Health of the Republic of Belarus 2006). However, despite the large number of doctors and nurses, human resources in health care in the country are highly unevenly distributed, and there is a shortage in primary care in both in rural and urban areas. There are also some geographical inequalities in distribution in rural areas generally, but particularly in the regions that are close to the Chernobyl contaminated areas – the shortage of doctors is more pronounced in the rural areas of Gomel and Mogilev regions (Ministry of Health of the Republic of Belarus 2006). While in other countries of the CIS the number of physicians per capita has fallen, in Belarus throughout the 1990s the number of doctors in the country was gradually increasing (Fig. 5.3).

Primary care doctors are represented by three types of physicians: in some of the rural outpatient clinics and all urban polyclinics, district internists (treating adults) and district paediatricians (treating children); and GPs in some of the rural areas (treating both children and adults). The diversity of PHC specialists is a result of recent changes to the vision for the sector. Since the late 1990s the profession of GP has emerged in primary care and the GP model has been widely accepted for rural areas (see Section 6.3 *Primary/ambulatory care*). The number of GPs has risen from 36 in 1996 to 466 in 2006, mostly due to the retraining of practising rural district internists and district paediatricians as GPs. However, at the time of writing there are no postgraduate training programmes for GPs, which is indicative of the profession's low status. In 2006 there were 2740 internists and 1970 paediatricians working in primary care polyclinics, mostly in urban areas. Primary care doctors (including district internists, district paediatricians and GPs) form only 12% of all active physicians in the country (Ministry of Health of the Republic of Belarus 2006). Therefore, although the number of physicians per capita has been rising overall, fewer of them are working in primary care.

Fig. 5.3 Physicians per 100 000 population in Belarus and selected other countries, 1990 to latest available year



Source: WHO Regional Office for Europe 2007

Notes: EU: European Union; CIS: Commonwealth of Independent States.

The shortage of primary care doctors is one of the most acute problems in Belarus, although it is hard to quantify the scale of this shortage. Data on the numbers of primary care doctors is incomplete and often contradictory, coming from different publications and not from annual statistical reports. For example, the norm for the number of primary care doctors per capita as estimated using full-time equivalent (FTE) salary units (one per 1300 population) is being met, but other reports point to a severe shortage of primary care doctors (Tsybin, Pavlovich & Malakhova 2003). For instance, in the city of Minsk, 30% of district internist posts remain vacant and there is a huge drain of primary care doctors to other sectors; more than 2000 doctors of different specialties have left the polyclinics in Minsk since 2000 (Gabasova 2006). The difficulties have come about because there is often no distinction between district internists (*terapefty*) and district paediatricians from other internists (cardiologists, gastroenterologists, pulmonologists, endocrinologists, allergologists) or other

paediatricians working in the outpatient (polyclinic) setting. Moreover, many internists and paediatricians work in the emergency care (ambulance) system rather than in primary care per se.

Another noteworthy feature of human resource distribution in Belarus is the large number of narrow specialists and the fragmentation of specialist care. The number of specialists has been growing consistently since 1990, with a tendency towards further fragmentation. The country inherited a system of polyclinics with a dual level of narrow specialists, which are further split within the mainstream specialties into adult and paediatric narrow specialists. As a rule, there is a difference in training, qualification and equipment used by the main categories of narrow specialists working in polyclinics and the same type of specialists working in hospital settings. The narrow specialists working in the polyclinics (surgeons, ear, nose and throat (ENT) specialists, optometrists/ophthalmologists, neurologists, dermatologists, cardiologists, endocrinologists) require only the minimal 4-month extra retraining course for initial specialization. The same narrow specialists working in the hospital setting have completed the extended minimum 2-year clinical training (*ordinatura*) (see below).

Formally, the statistics do not show any delineation between these two categories of specialists, thus while a large number of specialists appear, it is not clear which work in primary care and which in secondary/tertiary care. Therefore, according to the latest available figures (2005), there are 5824 surgical specialists (including the existing separate sub-specialties of general surgeons, traumatologists, neurosurgeons, urologists, oncologists, proctologists, toxicologists, and specialists for endoscopy and intensive care) working in Belarus. This constitutes a rise of 31% from 4430 in 1990. There are 2419 gynaecologists (a rise of 16% from 2080 in 1990). There has also been a steady growth in the number of internists and narrow specialists in internal diseases to 10 521 (with narrow specialists counted including cardiologists, endocrinologists, infectionists, haematologists, gastroenterologists, allergologists, rheumatologists, physiotherapeutists, nephrologists, ultrasound scan radiologists and district internists). The total number of internists and narrow specialists in internal diseases has grown by 8% from 9760 in 1990, but at the same time, the number of district internists has fallen (Ministry of Health of the Republic of Belarus 2006). The reduction of district internists could partly be explained by the retraining of rural district internists as GPs, but nevertheless, even in the cities such as Minsk, only 55% of district internist posts are filled (Zharko 2007). Other growing specializations are: neurologists (1280 in 2005, a rise of 26% from 1008 in 1990), dermatologists (609, a rise of 13% from 535 in 1990) and the “other” specializations (3750, a rise of 24% from 3001 in 1990) (Ministry of Health of the Republic of Belarus 2006).

The number of paediatricians has been consistently falling from 4718 in 1990 to 3683 in 2005. This drastic reduction is the result of many factors. One (unsuccessful) attempt to prepare for the training of universal GPs was the 1994 closure of the separate undergraduate paediatric faculty at the Belarusian State Medical University, with its subsequent reopening in 1998. The child population has also been decreasing since 1990, with the resultant falling-off in demand for care. Some rural district paediatricians were also eligible for retraining as GPs. Another negative trend in the distribution of specialists can be found in the number of TB specialists, which is down by 11% from 554 in 1990 to 492 in 2006, despite difficulties with controlling TB infection in Belarus. According to current publications, approximately 27% of TB specialists are of pensionable age, with no substitution by the younger generation of doctors. To complete the picture of specialist care, in 2005, there were 1262 psychiatrists, including narcologists (1119 in 1990) and 1117 radiologists (1117 in 1990) working in Belarus (Ministry of Health of the Republic of Belarus 2006).

Health care managers

Health care managers make up a considerable part of the health care sector in Belarus, numbering about 2000 individuals. Health care managers have completed the regular basic medical education, with subsequent specialist training (see below). Consequently, these managers were practising doctors at the beginning of their career and later appointed to the position of manager in polyclinics, hospitals and so on. Although a small proportion of health care managers continue to practise, the main specialization route after being appointed as Chief Doctor is to become a health manager in the public health system. After shifting from clinical to managerial work, the health managers are offered either series of short (2-week) courses in different aspects of health management or a 2-year training programme in public health and health management. All continuous medical education is coordinated by the special central educational facility at the BelMAPO.

The other large professional group of public health specialists are doctor-epidemiologist-hygienists, of which there were 1757 in 2005 (Ministry of Health of the Republic of Belarus 2006). This group of specialists have completed separate basic medical training at the medico-prophylaxis faculty of a Medical University. The length of undergraduate training for public health doctors is six years, followed by one year of in-house training. Public health care specialists work mainly in the 139 district (or 6 regional) Sanitary-Epidemiological Centres, hospital laboratories and research institutions. There are numerous departments within these centres that are responsible for combating communicable diseases, along with vaccination programmes, the monitoring of medical and educational

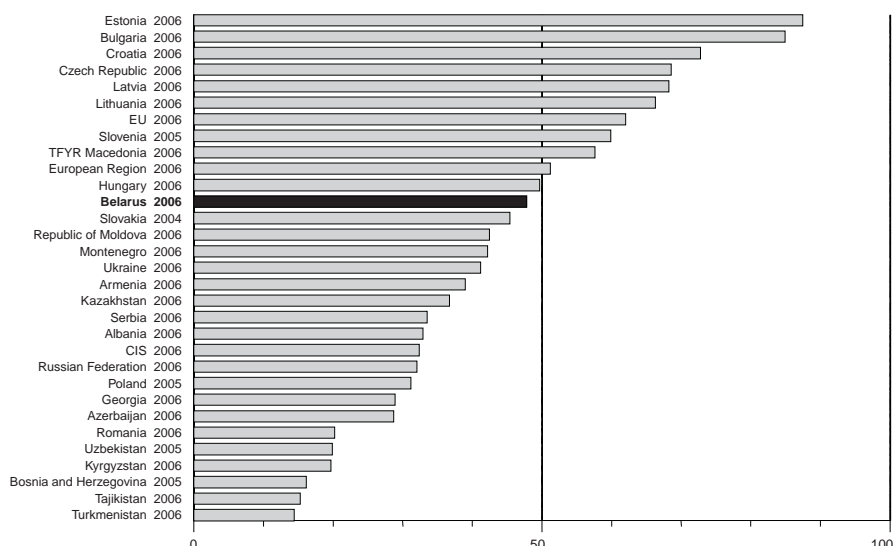
facilities, and the food production and food retail sectors (Ministry of Health of the Republic of Belarus 2006).

Most doctors' posts are concentrated in Minsk, with 12 875 FTE positions for doctors, compared with 7937 in Gomel region, 7315 in Minsk region, 7066 in Brest region, 6943 in Vitebsk region, 6079 in Mogilev region and 5895 in Grodno region. Yet, there is a shortage of doctors, estimated by the Ministry of Health to constitute 2827 FTE positions. The figures on the overall geographical distribution of unfilled physician positions show the comparative shortage of physicians in Minsk (851 vacant positions), Gomel region (532 vacant positions) and Minsk region (509 vacant positions), relative to Brest region (387 vacant positions), Vitebsk region (267 vacant positions) and Mogilev region (72 vacant positions) (Zharko 2007). There are no data available on the number of doctors trained in other countries, but their number seems to be quite limited.

Dentists

According to the relevant reports, there were 4647 dentists working in Belarus in 2006. The number of dentists has been gradually rising over the last 15 years, from 3239 in 1990 (WHO Regional Office for Europe 2007). Relative to other countries of the CIS, Belarus has maintained quite a high number of dentists per capita (Fig. 5.4). In the public sector, dental practices are usually located at the premises

Fig. 5.4 Number of dentists per 100 000 population in Belarus and selected countries, latest available year



Source: WHO Regional Office for Europe 2007.

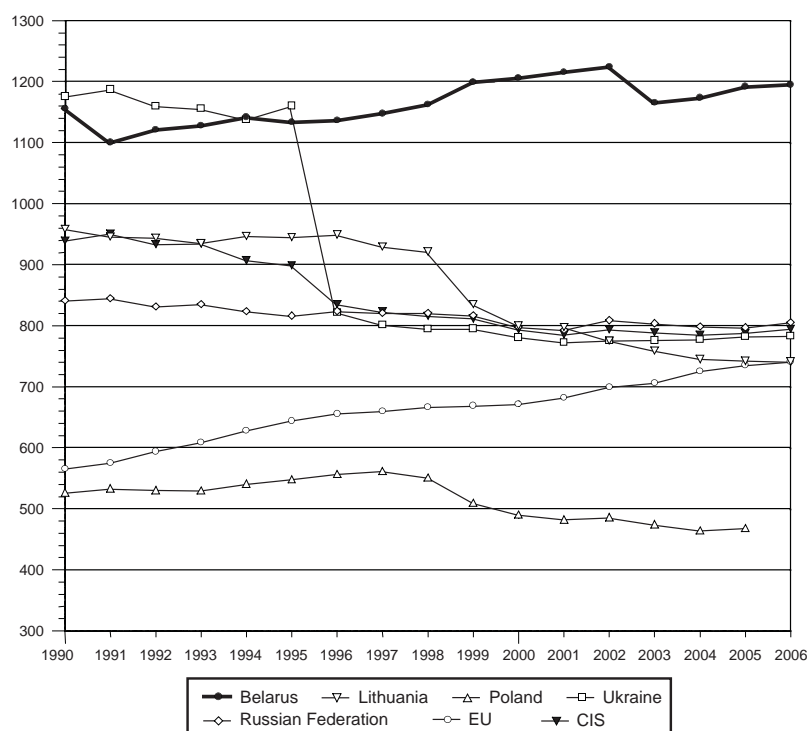
Notes: EU: European Union; TFYR Macedonia: The former Yugoslav Republic of Macedonia; CIS: Commonwealth of Independent States.

of the polyclinic. In rural areas, there is a dental surgery at the outpatient clinics (*ambulatoria*). Of all the health care sectors and specialties, dentistry has the most developed private sector. To be able to work privately a dentist should have no less than six years of practical work and, as a minimum, a first grade qualification degree, which means passing both the qualification exams every three years. The level of equipment, quality of materials and incentives for dentists working in the public sector are lower than they are in private dental practices, which has resulted in a considerable drain of dental specialists to the private sector.

Nurses, feldshers and midwives

In 2006, there were 116 337 nurses working in the health system in Belarus (118 085 in 1990) (WHO Regional Office for Europe 2007). The Belarusian system has thus retained a high per capita nurse–population rate since independence, higher than that found elsewhere in the CIS (Fig. 5.5). Indeed, Belarus has the largest number of doctors and nurses per 100 000 population

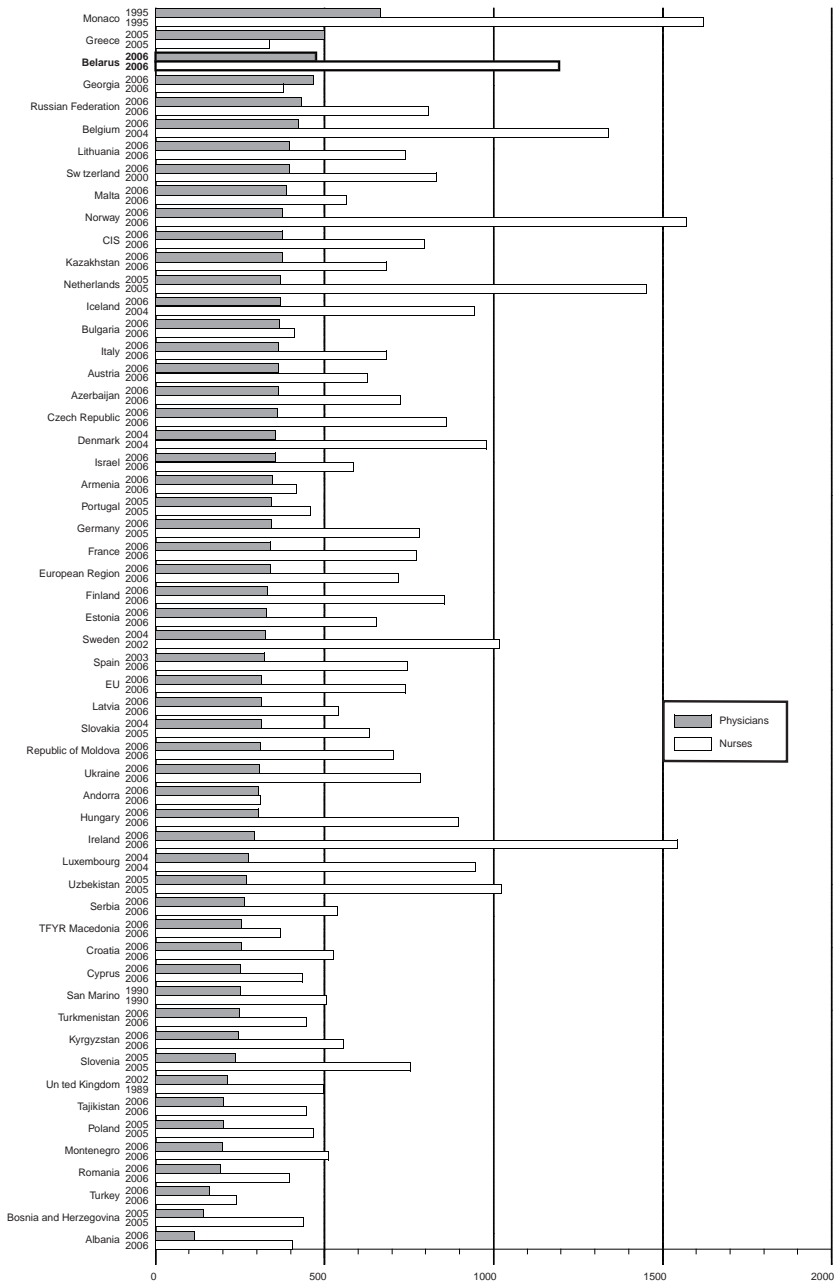
Fig. 5.5 Number of nurses per 100 000 population in Belarus and selected other countries, 1990 to latest available year



Source: WHO Regional Office for Europe 2007.

Notes: EU: European Union; CIS: Commonwealth of Independent States.

Fig. 5.6 **Number of physicians and nurses per 100 000 population in the WHO European Region, latest available year**



Source: WHO Regional Office for Europe 2007.

Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

in the whole of CEE (Fig. 5.6). The shortage of nurses in Belarus is also less marked than the shortage of doctors; on average, 97.9% of FTE positions in the country are filled, compared with 94.8% for doctors' positions. However, it is interesting to note that in 2006 the number of students studying medicine at the Belarusian State Medical University (2585) was more than the number of students entering to study nursing (2299) (Zharko 2007). There are more than 70 postgraduate specializations for nurses; from dental nurses to anaesthesia nurses working in the hospital sector.

There is no straightforward information on the number of feldshers or midwives given in the annual reports of the Ministry of Health. There has also been some shift in the name of the specialization. From 2003 there are two main specializations after basic nursing training has been completed at medical college: a nurse and feldsher-midwife. The seldom encountered specialization of feldsher-laboratory assistants also exists within secondary medical education. A large proportion of feldshers are employed in the ambulance network, at the FAPs and elsewhere in primary care (outpatient clinics and polyclinics). The main difference between a feldsher and a nurse is that a feldsher is able to make (and is responsible for) diagnoses and can prescribe medication, within certain conditions, for example, if there is no doctor available in the ambulance or in the outpatient clinic (*ambulatoria*). Midwifery used to be a separate specialty. Most midwives are employed in primary care at the outpatient clinics and in women's clinics assisting gynaecologists. Midwives also work in maternity hospitals (*rodylnye doma*). Midwives in primary care are responsible for cervical cancer screening (performing annual pap smears for all women aged over 18 years), routine antenatal check-ups and the monitoring of women during their pregnancy.

There are no available statistics on complementary medicine and the numbers of osteopaths, homeopaths and so on, working in the country (see Section 6.12 *Complementary and alternative medicine*).

Planning of health care personnel

As mentioned in Chapter 4 *Regulation and planning*, the major challenge in the planning of health care personnel in Belarus is to address the sub-optimal distribution of personnel across the different sectors of health care, in circumstances where there is overall a sufficient or even excessive number of trained staff. The major mechanism for workforce planning is still the regulation of the number of medical students by restricting the number of places on medicine courses. The priority of the Ministry of Health is to reduce the shortage of primary care doctors (district internists, district paediatricians and GPs). The number of medical students most likely to be appointed to work in primary care has risen since the early 2000s and now amounts to 2585 of

the medical students admitted to the four medical universities in the country (Zharko 2007). To ensure more even distribution of primary care doctors, especially in deprived rural areas, the Government has reintroduced the system of an obligatory 2-year appointed placement (*raspredelenie*) as the first working place in primary care sector for medical graduates. Measures have also been taken to increase the income of the primary care doctors by 40% of the basic salary. After the last salary increase, however, the remuneration level is still only approaching a middling salary for qualified industrial workers. The number of young doctors leaving primary care after completing their obligatory 2-year placement is high, up to 80%, and the doctors that leave continue to increase the number of narrow specialists in the country.

There is also a comparative shortage of the main polyclinic specialists (surgeons, ENT, ophthalmologists and neurologists). The shortage is not just due to falling numbers of specialists working in primary care: increasing demand is also a factor; the workload has increased; and on average there were 12.7 outpatient visits per capita in the country in 2006 (Zharko 2007). A recent study found that approximately 15–22% of the working time of all specialists working in polyclinics is spent conducting the administratively introduced “preventive health check-ups” for workers, students and children who are basically healthy (Kashtal’yan 2005).

The specialists working in polyclinics are retrained primary care doctors already working in the polyclinics on short-term (4-month) initial specialization courses at BelMAPO. The number of training places for more in-depth specialist training through 2-year clinical *ordinatura* training courses is regulated by the Ministry of Health according to an annual plan.

There are no official data on the number of medical staff leaving to work in foreign countries. However, some published surveys show a considerable loss of young doctors who leave the health sector, or go to work as pharmaceutical representatives for the pharmaceutical industries in large cities. In large cities there is also a considerable flow of qualified doctors into the private diagnostic centres; in Minsk there are 1400 doctors working in the private sector (Gabasova 2006).

Training of health care personnel

There are four medical universities in Belarus that provide basic medical training for doctors. There is also a separate institution (BelMAPO), which coordinates all postgraduate or continuous medical education for doctors and for some nursing specializations. There are no private profit-making or non-profit-making institutions in the health education sector. However, at the time of writing up to

15% of students in the state-owned universities and medical colleges pay their own fees (see below). Medicine is quite a popular career among young people, and on average there are 2.5–3 applicants for each training place. Traditionally, approximately 70% of students who enter the medical universities each year are women. To study medicine, the applicants have to pass the centralized entrance tests which are set and marked at national level. Only those with the comparatively better results can study for free, which is approximately 75–80% of the students. There is also a system whereby approximately 15–20% of students can be admitted to study medicine on a self-funding basis, providing their test results, while somewhat lower than the required score to ensure funding, are not lower than a certain “pass” level.

Students entering the medical universities have to choose the type of medical faculty in which they wish to study. There are five major faculties: the curative faculty (*lechebnoe delo*), the paediatric faculty, the dental faculty, the medico-prophylaxis faculty and the pharmaceutical faculty. The choice of faculty, to a large extent, determines their future medical careers and places some limits on their career paths from the earliest stages.

The most popular and universal faculty is the curative faculty. It provides basic medical education (six years in duration) for doctors who will treat adults. During the 6-year study period there is a *subordinatura* that divides the students into three streams: internal medicine (the most popular), surgery and gynaecology. After six years of study and passing the state medical exams, the graduate receives a medical diploma with the specialty of physician, and is allocated a hospital placement for one year of practical training (*internatura*), as well as an obligatory 2-year placement (most likely in a primary care facility) as their first job. Basic medical training in the paediatric faculty is also six years in duration but graduates are trained in paediatric surgery, internal medicine for children and childhood disease management, and their medical diploma gives their specialty as paediatrician. This basic training is followed by the same system of 1-year *internatura* and obligatory 2-year work placement (again, most likely in primary care) as their first job. In principle, if there is a need to retrain an adult internist as a paediatrician, this can be carried out within the continuous medical education scheme on an initial 4-month paediatric specialization training course.

The dental faculty offers five years' basic medical education, with the same 1-year hospital internship and 2-year obligatory appointment (most likely in primary care) as the trainee's first job. The medico-prophylaxis faculty offers a 6-year basic medical education course and graduates are then clinical hygienist-epidemiologists. They also have a 1-year clinical *internatura* and 2-year obligatory appointment (for their first working placement), but for this type of graduate the placement is usually in a Sanitary-Epidemiological

Centre. The graduates can also work as doctors in clinical laboratories. In the pharmaceutical faculty the basic medical training takes five years. Graduates receive the diploma of pharmaceutical chemist (*provisor*). They also have 1-year period of practical training and an obligatory appointment to their first working placement.

The obligatory appointment to the first working placement is a reintroduced Soviet practice, which attempts to tackle the uneven distribution of human resources and the shortage of primary care doctors in both rural areas and in the cities. The regulations in place at the time of writing allow the graduate to reimburse the State for the cost of six years of basic medical education if the young doctor refuses to go to their allocated placement after receiving their medical diploma.

The differences between primary care doctors can first be observed during the basic medical education, as there are separate faculty structures from the very first year of study. In 1994 there was an unsuccessful attempt to merge the paediatric and internal medicine faculties to enable students to train as GPs, but in 1998 the paediatric faculties were reopened as separate structures. The status and the training requirements of primary care doctors are the lowest in the health system. Every graduate from a medical university is supposed to be able to work in primary care with very limited outpatient training, through the 2-year obligatory work placement scheme. The profession of the primary care doctor is therefore still seen as a starting point for a career as a narrow specialist, rather than a career choice in itself.

The training of GPs started in 1999 within the framework of continuous medical education for PHC doctors. The training initially met the need to train more universal PHC doctors working in rural areas, because many doctors in rural areas were already working on their own, covering both adults and children, after being formally trained either as district internists (for adults) or district paediatricians. A department of general practice was opened at BelMAPO to coordinate the retraining of the district internists and district paediatricians into GPs. The training now takes six months. Since 2000, the Ministry of Health has been striving to introduce general practice in all rural areas of Belarus, covering 30% of the total population (see Section 6.3 *Primary/ambulatory care*).

Specialization for doctors can be achieved in two ways. The first is an initial period of specialization that takes 3–4 months. This can take place after the six years of basic medical education (and subsequent granting of the medical diploma) and one year of practical training (*internatura*). A request from the prospective specialist's polyclinic or other medical institutions is also needed for them to enter the initial specialization course. Most narrow specialists

working in the polyclinics follow this path of specialization. The second means of specialization and further training is through a clinical *ordinatura*, which is to some extent similar to a residency (specialist training) in western European countries, lasting two years and providing the more profound clinical expertise necessary to work as the head of a clinical department. Clinical *ordinatura* training is carried out by the medical universities and at BelMAPO.

Minimum standards exist for continuous medical education for practising doctors. Doctors are obliged to follow two 14-day upgrading courses, with a minimum of 80 learning hours, in every 5-year period. There are also financial incentives to attend upgrading courses at least at the minimal requirement level. Educational standards are elaborated by the medical universities on behalf of the Ministry of Health and are approved by the Ministry of Education.

The training of nurses and feldshers is carried out by 17 medical colleges in Belarus. Nursing is still a very popular career, with the number of applicants in some medical colleges higher than for the medical universities (6–7 applicants for one training place). The students can enter the medical college either with incomplete secondary education at the age of 15 years, or after completion at the age of 17 years. Since 2002 there have been big changes in the curriculum and the official list of specializations for nurses. Traditionally, nurses were required to complete two years of training, while for feldshers and midwives the duration was three years. However, from 2002 medical training for nurses and feldsher-midwives has been the same: 2 years and 10 months for both fields. The specialization of feldsher-midwife was the result of merging two separate training streams into one. There are also separate faculties for dental assistants and medico-prophylaxis faculties for the training of feldsher-laboratory assistants and assistant epidemiologists. Nurses and feldshers are also subject to the compulsory 2-year work placement upon graduation. After beginning their allocated first work placement, the young nurse as a rule attends a course of initial specialization at BelMAPO or one of the medical colleges that also run continuous medical education programmes for nurses.

Registration/licensing

There are no central registers or specific licensing of qualified practitioners in Belarus as yet. However, the employment of a specialist requires a number of documents that confirm the medical specialist's qualifications, such as their medical diploma, certificate of practical training (*internatura*) and certificate of initial specialization or clinical residency (*ordinatura*). The system of re-accreditation in place requires a minimum of 80 learning hours every 5 years under the system of upgrading courses specially organized by

BelMAPO. Doctors receive extra bonuses for further specialist qualifications (see below) but can lose these if they fail to attend the continuing professional education courses. In theory, a doctor could practise after completing just the initial specialist training, but due to the system of salary bonuses, this happens very rarely.

Doctors' career paths

The career path of the doctors working in outpatient settings starts after graduating from either the curative or the paediatrics faculty. After receiving the medical diploma, there is one year of practical training (*internatura*), mostly in a hospital setting, in one of the three major streams (internal medicine, surgery and gynaecology, or in paediatrics for graduates from the paediatrics faculty). Most students receive an *internatura* in internal medicine or in paediatrics. At the same time as receiving their diploma, the process of allocating the 2-year obligatory first work placements begins, most often in primary care settings, as mentioned earlier. After the obligatory placement in primary care, most of the young doctors choose to pursue initial specialization or clinical *ordinatura* and follow specialist career paths, starting with working as a specialist in a polyclinic then subsequently moving to the hospitals as they become more qualified. The alternative is to remain a specialist PHC doctor. If doctors stay in the same specialization, there is a system of increasing qualification grades which are linked to salary bonuses. There are four qualification grades for specialists: no qualification grade (practical experience under three years); a specialist of the second qualification grade (3–6 years of practical work and theoretical exam passed); specialist of the first qualification grade (six years of practical work and theoretical exam passed); and specialist of the highest qualification grade (nine years of practical work and theoretical exam passed). Once a doctor has the first qualification grade, they can be promoted to head of department. After this, some doctors choose a career as a head of the facility, which implies a shift of specialization to that of health care manager. The career path of doctors in the hospital settings also begins in primary care, with the subsequent initial primary care specialization and, after a few years, employment in a hospital. There is also the same system of formal approval of qualification grades from no grade, to the second, the first and the highest grade.

The promotion of doctors is influenced by the administration of the hospitals at which they work. The hospital administration is interested in increasing the number of doctors with high qualification grades for their reports. Although most of the documentation necessary for promotion through the grades (such as references and work result reports) is signed by the hospital administration,

promotion is more often automatic, providing the doctor is prepared to go through the theoretical exams. The exams for the highest qualification grade take place at BelMAPO and at the office of the regional health care authorities for lower grades (the second and the first).

As mentioned earlier, the most considerable drain of medical specialists is from primary care. In spite of efforts to increase the salaries of primary care doctors – now 20–30% higher than the salaries for specialists working at the polyclinics – the workload, responsibilities and working conditions remain unattractive to most young doctors.

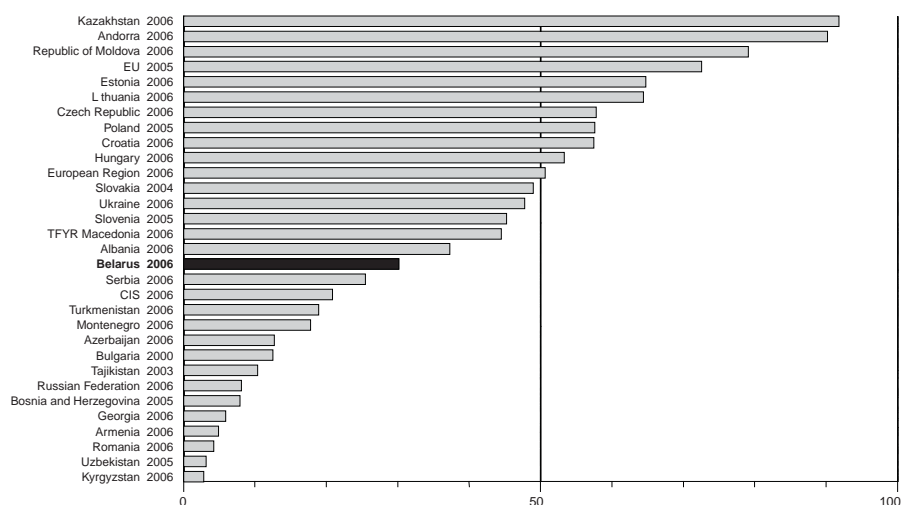
Other health staff career paths

The nursing career path starts after completing the 2-year-and-10-month training programme leading to the nursing diploma and the obligatory first appointment into positions as requested by regional health care authorities. There are numerous sub-specializations within the core nursing specializations. The nurse enters the initial specialization course in the requisite field, as required by the relevant employer organization, and there are minimum requirements for continuous medical education for nurses consisting of at least one upgrading theoretical course (80 hours) every five years. There is also a system of qualification grades from no grade to the highest. A small proportion of nurses go into management positions as the head nurse of a polyclinic or hospital.

Pharmacists

There were 2930 pharmacists working in Belarus in 2006; a per capita rate of 30.1 pharmacists per 100 000 population. The number of pharmacists has fallen since independence; in 1990 there were 3261, or 33.6 per 100 000 population (WHO Regional Office for Europe 2007). While the number of pharmacists per capita in Belarus is above the average for the CIS, it is still quite low by comparison with EU levels (Fig. 5.7). This follows a brief boost in the number of pharmacists following independence, when there was a period of uncontrolled growth in the number of private pharmacies in the country. The number of pharmacists has fallen following the tighter regulation of pharmaceutical care in 2001–2002 (see Section 6.6 *Pharmaceutical care*).

Fig. 5.7 Number of pharmacists per 100 000 population in Belarus and selected other countries, latest available year



Source: WHO Regional Office for Europe 2007.

Notes: EU: European Union; TFYR Macedonia: The former Yugoslav Republic of Macedonia; CIS: Commonwealth of Independent States.

6. Provision of services

6.1 Public health

The system of public health and communicable disease control (CDC) is integrated into the main levels of the Government, from the district level up. The District Sanitary-Epidemiological Centres are the cornerstones of the public health system within the districts and they fulfil a broad range of functions on the prevention of communicable diseases. The District Sanitary-Epidemiological Centres are supervised by the district authorities and the Regional Sanitary-Epidemiological Centres. The Regional Sanitary-Epidemiological Centres are supervised by the regional authorities, the Ministry of Health and the Office of the State Chief Doctor for Sanitary Medicine of the country, who is also the Deputy Minister of Health on epidemiological and public health issues.

The main responsibilities of the District Sanitary-Epidemiological Centres are monitoring and the implementation of current regulations on “sanitary security” (environmental health) in shops, catering outlets (cafés, restaurants, canteens and so on), kindergartens, schools and health care facilities (for both inpatient and outpatient care). Another core responsibility is to monitor the implementation of the immunization programme for children and adults, which is considered to be one of the most efficient in the CIS.

There is also a national institution – the Republican Sanitary-Epidemiological Centre that coordinates the prevention of specific diseases, such as HIV infection, and the promotion of healthy lifestyle issues. The prevention and treatment of TB rely mainly on the network of 25 anti-TB clinics and the primary care sector (Ministry of Health of the Republic of Belarus 2006). The Sanitary-Epidemiological Centres are staffed with doctors specializing in CDC, called clinical hygienist-epidemiologists, and nurses (assistant epidemiologists).

In 2005, there were 1757 CDC doctors working in all structures of the public health system in Belarus (Ministry of Health of the Republic of Belarus 2006). CDC doctors are educated at a separate faculty of preventive medicine (see Chapter 5 *Physical and human resources*), and undergraduate training takes six years. However, graduates of the medico-prophylaxis faculty can never become clinicians dealing directly with patients. They can work in Sanitary-Epidemiological Centres, other public health and research institutions or in a variety of laboratories. The nurses (assistant epidemiologists) receive initial specialization training in this field after completing basic nursing training.

Environmental health and CDC are carried out in two ways: active monitoring checks on all premises open to the public, and the registration of any cases of notifiable communicable disease. All health care facilities should inform the District Sanitary-Epidemiological Centres about any cases of notifiable communicable disease or infestation (scabies, head lice, gastroenteritis, all childhood infections, diphtheria and so on). After receiving the information the CDC doctor investigates the reasons for and sources of the infection/infestation and possible measures to limit the outbreak.

Sanitary regulations are initiated by the Sanitary-Epidemiological Centres through a system of directives (*prikazy*) from the Office of the State Chief Doctor for Sanitary Medicine within the Ministry of Health. However, the range of sanitary regulations needs to be revised, as many are now outdated and impractical, such as the use of ultraviolet lamps for air disinfection purposes in all facilities where injections are given, and using four separate cotton swabs with alcohol with every intramuscular injection. A disproportionate amount of time and resources are also invested in the prevention of the most rare communicable diseases, for example, all health care facilities must be routinely inspected to ensure they have anti-plague and anti-cholera suits and medicine kits, although there are no natural reservoirs of either disease in Belarus.

There is a growing understanding of the need to expand health promotion and health education in Belarus. However, the traditional priority given to communicable disease prevention overshadows any health promotion activities relating to noncommunicable diseases or ill health. There are insufficient staff at the Sanitary-Epidemiological Centres to implement health promotion programmes as well as conducting the extensive CDC efforts. According to current Orders from the Ministry of Health, primary care doctors should spend six hours of their working time giving lectures on health to the population and then report these health education activities to the District Executive Health Committee. This practice has been carried over from the Soviet era, but its impact on health behaviours has not been fully evaluated.

At the national level there are a number of factors which have had a major influence on the practice of public health. Belarus was one of the first CIS countries to sign up to and ratify the WHO anti-tobacco convention, although the pace of implementation has been slow. There is also a State Programme for the prevention of alcohol abuse, as alcohol is recognized as being one of the major health hazards in the country. In addition, a State Programme to promote healthy lifestyles exists, including measures to stimulate more physical activity and sports at the local level and an increasing amount of social advertising targeting adolescents in order to inform them of the dangers of smoking and alcohol abuse. There are numerous international aid projects (WHO and UNDP programmes) assisting in the prevention of HIV infection and TB that are carried out in cooperation with the Ministry of Health and nongovernmental organizations. This is particularly important as Belarus is one of the countries with a high burden of TB in the WHO European Region (De Colombani 2007).

Immunization and child health monitoring activities are carried out in the PHC setting either by district paediatricians (in the cities) or GPs (mostly in the rural areas). There is a national childhood immunization programme and all routine immunizations are free of charge for all (see Section 1.4 *Health status* for full details of immunization package). Every newborn is to be seen by their primary care doctors three times during their first month and at least once a month up to the age of one year. In planning and implementing the immunization scheme, primary care doctors are supported by the primary care paediatric nurse who visits the children at home. Immunization and monitoring of child health are considered to be the major responsibilities of district paediatricians and GPs. These activities are covered in their job description and have no extra funding incentives or bonuses attached. All vaccines are purchased from the central budget and distributed through the District Sanitary-Epidemiological Centres.

The strength of preventive medicine has always been considered to be the main feature and the key advantage of the Semashko system. However, during the past decades in Belarus, society in general and the health system in particular have been ignoring primary prevention in terms of promoting healthier lifestyles. The health system has been concentrating on secondary prevention activities, in terms of early detection of diseases and treatment, rather than on the primary prevention of noncommunicable diseases. The secondary prevention approach has been realized through a broad range of screening initiatives. Nearly all the main narrow specialties have initiated elaborate screening programmes, the implementation of which is delegated to primary health care.

Cervical cancer screening (pap smears) is carried out annually for all women aged 18 and over and, according to official reports, covers almost 90% of the female population. Fluorography (small format X-ray of the chest) covers almost 95% of the adult population (from the age of 17 years). The fluorography screening programme for TB detection is not unequivocal in terms of cost-efficiency and reaching socially excluded groups. Although low by comparison with CIS countries, the TB incidence rate in Belarus is high by European standards, at 54.3 per 100 000 population in 2005 (WHO Regional Office for Europe 2007).

Opportunistic screening for hypertension means all adults routinely have their blood pressure checked during any contact with PHC. Oncology specialists introduced opportunistic screening for breast cancer for all female patients visiting a primary care doctor by palpation of the breast irrespective of the primary reason for the clinical encounter. There is also a cancer screening checklist for the possible first symptoms of cancer of the stomach (loss of weight, appetite), rectum (bleeding) and skin cancers, which should be completed annually. Any cancer diagnosis leads to the patient records being retrospectively analysed by oncologists to check whether all the opportunistic cancer screening took place in the primary care settings in the proper way.

Cardiologists initiated opportunistic annual electrocardiogram (ECG) screening for all patients over 40 years of age as a possible measure to combat ischaemic heart disease in the general population, but the efficacy of this screening programme has not yet been evaluated and it is not common practice elsewhere in the world. Ophthalmologists have initiated opportunistic screening for glaucoma by annually measuring the eye tonometry in the primary care sector for all patients over 40 years of age. District Sanitary-Epidemiological Centres are required to conduct opportunistic screening for scabies and head lice in all contacts, and the checks should be noted in patient records. Patient records are regularly checked at random by the relevant specialists to ensure compliance with current screening procedures.

Overall, these screening programmes have not proved successful. While much attention has been paid to case detection, less energy is put into follow-up treatment or encouraging patient compliance. The evidence base for many initiatives is not always sound; the implementation has been problematic due to shortages of both staff and time; and some key target groups are reluctant to participate in screening. At the time of writing, screening programmes are also not separately financed, which has proved a weakness in their implementation. There is no tradition of critically evaluating proposed screening measures in terms of evidence-based medicine, cost-effectiveness or potential negative side-effects of screening. The administrative pressure to fulfil planned

target indicators can also negatively impact on the reliability of data on preventive activities.

There are no initiatives or programmes to reduce the impact of poverty on health, as this is not a priority in the health care sector and income differentials in Belarus are relatively narrow. The most prominent public health issues to be tackled outside the health system have been road traffic safety and social care for children in families with alcoholic parents. Data on the impact of measures taken have not yet been published.

Particularly significant public health issues, including TB and HIV/AIDS, are tackled through vertical programmes managed and executed in parallel to the main statutory system. Vertical programmes in Belarus are managed and funded directly from the central Ministry of Health rather than local government and have contributed to significant fragmentation and duplication of care. In order to promote integrated prevention and care services for these public health priorities, there have been moves for aspects of the vertical programmes to be integrated into primary care, but there are significant barriers to integration, such as the existing workload and status of GPs, and resistance from narrow specialists in the parallel services provided by vertical programmes.

6.2 Patient pathways

Patient pathways are relatively standard across the country in both rural and urban areas. Two examples of patient pathways are provided in Boxes 6.1 and 6.2, showing different routes into secondary care through the emergency care system (see Section 6.5 *Emergency care*) and the primary care system (see Section 6.3 *Primary/ambulatory care*).

Box 6.1 An example of a patient pathway: emergency care

A man at home experiencing the symptoms of a heart attack would take the steps outlined here.

- An ambulance would be called by the patient himself or one of his relatives.
- In large cities, a specialist cardiology ambulance would give the case priority and attend. Elsewhere, it would be an emergency car with a doctor and feldsher.
- The ambulance doctor would perform an ECG and perform emergency first aid *in situ*, including the administering of painkillers, nitrates, anti-shock measures and setting up an intravenous drip as necessary.
- The patient would then be transported to the cardiological or intensive care department of the nearest hospital.

Box 6.2 An example of a patient pathway: a referral from primary to secondary care

A woman in need of a hip replacement due to arthritis would take the steps outlined here.

- During a free consultation with the primary care internist in a city (or the GP in a rural area) with whom she is registered, the internist or GP will conduct a preliminary assessment of the hip problem and conduct all the obligatory routine screening activities: blood and urine tests, fluorography and consultation with the primary care gynaecologist for a pap smear test. After these obligatory routine screening procedures have been completed, the patient will be referred to the surgeon working in the central district polyclinic. In the cities, there could be a surgeon working in the same polyclinic as the internist, as well as a gynaecologist and X-ray facilities.
- A polyclinic surgeon will order an X-ray examination of the hip joint and most likely also refer the patient for a consultation with a rheumatologist working in the same polyclinic, in order to exclude specific causes of the arthritis.
- After conducting the necessary biochemical tests for excluding different rheumatological diseases, the rheumatologist will send the patient back to the surgeon.
- The polyclinic surgeon will then refer the patient to the specialists working at the secondary/tertiary level: either the orthopaedic/traumatology department of the regional hospital or the National Traumatological Centre if the patient is in Minsk.
- The patient will be seen the next day as an outpatient at the regional traumatology department following referral from the central district polyclinic surgeon. Most likely the hip joint X-ray will be performed again. If a replacement is indicated, the patient will be put on the waiting list for a planned operation. The operation is most likely to happen within 6–12 months. The traumatology surgeon will advise her on any medications she may need in the meantime.
- Before the date scheduled for her surgery, the patient has to go to her internist/GP to have the laboratory tests repeated (blood and urine analysis, HIV testing and ECG) and if the fluorography or pap smear tests are due, these will also be carried out. The internist/GP then writes a letter to say that there are no contraindications to the patient undergoing the surgery.
- On the date scheduled for surgery, the patient will be admitted to hospital, and most likely the laboratory tests and ECG performed by the internist/GP will be repeated. If there are no contraindications, the surgery will go ahead as planned.
- After surgery, the internist/GP will receive a discharge summary.
- The internist/GP will be called for a house visit for any necessary surgical after-care.

All consultations and the surgery itself are free of charge. In general, there is no appointment system for consultations with the specialists – patients turn up and queue. The patient will be seen as an outpatient on the same day that she presents herself with her complaint, but the waiting time to see the doctors at the primary care level or after referral to specialists could be as long as 1–4 hours.

6.3 Primary/ambulatory care

PHC in Belarus has been in transition since the late 1990s as the country has experimented with different models of organizing it. Consequently, there are two basic forms of care in the primary care system, with the traditional polyclinic

system in the cities and the emergence of general practice in the rural areas and the outskirts of some cities. All primary care facilities are state owned. They are financed and controlled by the district Regional Health Care Departments that are usually based at the district hospitals (Zharko et al. 2007b).

Feldsher-midwife points and outpatient clinics

In remote rural areas primary care is organized at the premises of FAPs and outpatient clinics (*ambulatorii*), where GPs, district internists and district paediatricians, along with a team of nurses, are employed to provide primary outpatient care. In some remote rural areas the outpatient clinics have 15–30 beds; these are more often called rural community hospitals (*uchastkovaya bolnitsa*) and some of them have been reorganized into hospitals providing long-term nursing care. In addition, there is an ambulance service covering a high proportion of out-of-hours and emergency care.

FAPs are very small health care facilities, in which only one medical professional (a feldsher-midwife) is employed with the support of one auxiliary staff member (a cleaner). FAPs are placed in the remote rural areas, where the local population is not large enough to warrant employing a doctor. In 2005 the overall number of FAPs was 2475 (Ministry of Health of the Republic of Belarus 2006). Between 2001 and 2006 the number of FAPs was reduced by 12% (from 2834 in 2001) to rationalize resource use, but also because the conditions in some FAP premises were too basic. In 2003, it was reported that 70% of FAPs were without running water; 77% were not connected to the mains sewerage system and 80% lacked central heating (Tsybin et al. 2003). The feldshers at the FAPs are usually the first point of contact for minor diseases and common chronic illnesses, and they carry out home visits. Because of the substantial distances involved, in emergencies an ambulance will go to a distant location if the feldsher has called it. FAPs usually also have the important function of ensuring pharmaceutical supply to the community, as they are a part of the district state-owned pharmacy network. Until 2006, feldshers were also responsible for implementing immunization programmes and Mantoux tests for TB in children. However, this function was abandoned by the Ministry of Health after a high-profile case of vaccines being confused in one FAP. Current regulations require all immunization programmes to be implemented under the direct supervision of a primary care doctor. The FAPs are usually attached to the nearest outpatient clinic with a PHC doctor. The patient does not have to be referred by the feldsher to the primary care doctor and if necessary, the patient can go directly to the primary care doctor in the nearest outpatient clinic.

In rural areas, primary care doctors are most often employed in outpatient clinics (*ambulatorii*), of which there are 604 (Ministry of Health of the Republic

of Belarus 2006). GPs (retrained district internists or district paediatricians) work in 70% of rural outpatient clinics, while the remainder are still staffed with separate doctors for children and adults. The full team of medical professionals working in a rural outpatient clinic consists of at least one primary care doctor, a dentist, a feldsher, a midwife, 2–3 nurses, a physiotherapy nurse, a feldsher-laboratory assistant and auxiliary staff (cleaners, drivers, helpers for seasonal heating needs and so on). There are no available data on the number of solo GP practices but this is likely to be the case in more than half of the 604 rural outpatient clinics in operation. The general condition of the outpatient clinics – particularly when compared with the condition of the FAPs – has been much improved and will continue to be improved over the course of the State Programme for the Revival and Development of Rural Areas. However, an indication of the scale of work that needs to be done under the State Programme is that in 2003 11% of outpatient clinics lacked tap water, 19% were not connected to the mains sewerage system and 35% lacked central heating (Tsybin et al. 2003).

Norms and regulations

The number of staff working in a rural outpatient clinic depends on the size of the local population and norms for staffing levels are centrally determined by the Ministry of Health. One FTE GP is required for 1300 of the attached mixed population (both children and adults), one FTE district paediatrician is required for 800 children up to 18 years of age, and one FTE district internist is required for 1800 adults. Rural outpatient clinics are where almost all basic primary care services are delivered, including general medical care for children and adults, minor surgery and minor traumas, midwife-led antenatal care (deliveries are carried out in hospitals), postnatal care, sick leave certification and immunization.

The 24-hour availability of services in remote rural areas is not formally financed or regulated. In remote areas with just FAPs or rural outpatient clinics, an ambulance can only be called by a medical professional (doctor, feldsher or nurse). There are no extra payments for being available on an on-call basis; the only bonus is for staff working in a rural area, which amounts to an extra 20% of the country's minimum salary tariff or US\$ 20 per month.

Polyclinics

In the five regional cities and the capital, Minsk, almost all primary care is provided through the two parallel networks of polyclinics, often situated in separate buildings: children's polyclinics and adult polyclinics with women's

(gynaecological) consultation units. There are 374 children's polyclinics or departments within hospitals, 482 adult polyclinics and 326 women's consultation units (Ministry of Health of the Republic of Belarus 2006). The polyclinics in the cities have large catchment areas and are responsible for 10 000–100 000 or more of the resident population. Urban polyclinics have at their disposal the main categories of narrow specialists for outpatient consultations (surgeon, ENT specialists, ophthalmologists, neurologists, endocrinologists, cardiologists and gynaecologists in adult polyclinics) and main diagnostic facilities (laboratory, X-ray, ultrasound and endoscopy). There are separate parallel networks of specialists and diagnostic facilities for adults and children, which leads to the duplication of diagnostic facilities at hospitals which have both adult and paediatric specialists. This helps to explain why a comparatively large number of narrow specialists are needed in both the polyclinic networks and hospitals. Duplicating diagnostic services and then maintaining parallel diagnostic facilities is very costly and a source of great inefficiency in the system in urban areas, but hospital specialists complain about the quality of diagnostics at the polyclinic level so they like to repeat diagnostic tests.

In urban areas, primary care for children is organized in children's polyclinics. A full-time district paediatrician deals with 800 children (those aged under 18 years) and is the first point of contact for children with health problems and childhood disease prevention programmes. However, because of the shortage of district paediatricians in primary care, the mean number of children attached to one district paediatrician is higher and could be as high as 1000–1300. District paediatricians at the polyclinics are assisted by a primary care paediatric nurse, who is also available for home visits for children under 1 year as part of routine surveillance. As a rule, there is also a separate nurse in the polyclinic who is responsible for planning and implementing the immunization programme following the necessary consultation with a district paediatrician. Children's polyclinics do not have inpatient departments but are served by full-time narrow specialists (paediatric surgeon, paediatric orthopaedic specialist, paediatric neurologist, paediatric ENT specialist, paediatric cardiologist and paediatric endocrinologist). Every child is supposed to be seen by all main specialists annually for a general check-up. Over-investigation and over-treatment is common after the annual screening of children by narrow specialists.

District paediatricians are also responsible for the illness certification of children and authorizing parental sick leave to care for ill children. According to regulations in place at the time of writing, only paediatricians can authorize absences from school or kindergarten in the event of ill health. As a direct consequence, district paediatricians have a very heavy workload, seeing 40–50 children and having 8–30 home visits per day, much of which is in connection with the certification and authorization of sick leave. Children's polyclinics are

usually open from Monday to Saturday from 08:00 to 18:00. Out-of-hours cover is provided by district paediatricians or feldshers on call through the ambulance service. Children with minor traumas or minor injuries go to the paediatric surgeon at their polyclinic, who can diagnose (using X-rays) and treat minor fractures. District paediatricians are also responsible for conducting the regular preventive check-ups in kindergartens and schools and these professionals are expected to spend six hours each month giving lectures on health education for children.

Primary care for adults is delivered through adult polyclinics, which are usually situated in another building away from the children's polyclinics. Originally, outpatient care for children and for adults were separated in order to protect children from contracting infectious diseases from the adults and to reduce the burden on primary care doctors. These are also the most commonly used arguments against introducing GPs into the cities. The first contact for adults should be the district internist (*terapeft*). There should be one district internist per 1800 adult population attached to a polyclinic. Due to the shortage of district internists in primary care, the adult population could be as high as 2000–2500 per district internist, or even more. For anything other than internal diseases, patients can self-refer to the other narrow specialists in the same polyclinic (adult surgeon, neurologist, ENT specialist, ophthalmologist, gynaecologist, endocrinologist and cardiologist).

Most often, women's clinics (326 in 2006) are simply separate departments within the adult polyclinic building; however, in large cities they are sometimes located in a separate building. Women's clinics are staffed by general primary care gynaecologists and more specialized gynaecologists who are often split into the following sub-specialties: gynaecologist-mammologist, gynaecologist-coloscopist, gynaecologist for ultrasound diagnostics, paediatric gynaecologist and sometimes a gynaecologist-endocrinologist). Female patients do not require any referral from their primary care gynaecologist and can visit a specialist gynaecologist about any gynaecological complaints and during pregnancy for monitoring purposes. Medical abortions are delivered in the outpatient setting, in the women's clinics. Maternity services are provided in specialized maternity hospitals (*rodilnye doma*).

Routine prevention and administrative tasks

Large sections of the population are required to have preventive health checks with the main specialists (neurologist, ENT specialist, surgeon, ophthalmologist, endocrinologist and gynaecologist). Children under 1 year of age are seen twice by all the main specialists and then annually from 1 year; pregnant women have two full preventive health checks in the course of their pregnancy. Annual

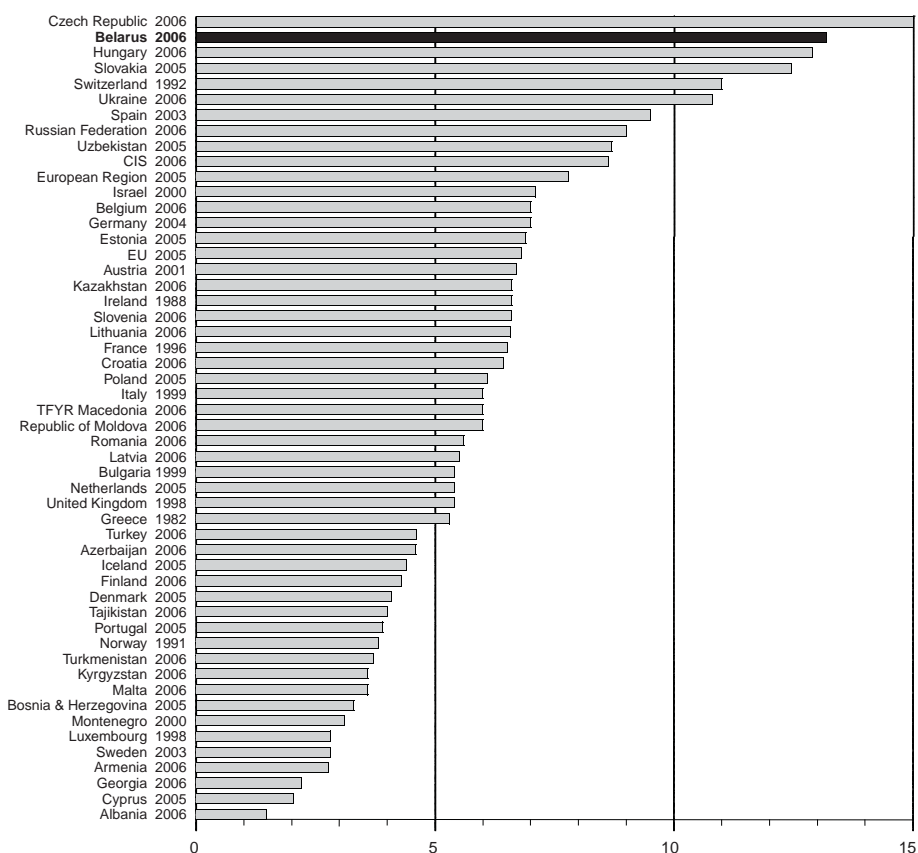
check-ups are also provided for school children, students, war veterans, all patients from the contaminated areas of the Chernobyl zone, drivers, patients with chronic diseases such as hypertension or diabetes, and certain workers in certain jobs. Such complex health checks account for approximately 15–22% of the workload of the narrow specialists at polyclinics, although their efficacy has not been tested (Kashtal'yan 2005). The large number of routine check-ups is one reason why there is such a high number of outpatient visits per capita per year (Fig. 6.1); in 2006, the average number of visits were 13.2 per capita (WHO Regional Office for Europe 2007). At the macro level this practice also results in a comparative shortage of narrow specialists and big queues in the polyclinics.

District internists are formally responsible for the overall care of the patient. One of their main duties is to authorize sick leave from the first day of illness, and this results in a large unplanned workload and a large number of home visits, which could amount to 30 per day during an influenza outbreak. The district internists are also responsible for the immunization of adults against diphtheria and tetanus (every 10 years) and for implementing opportunistic screening procedures (see Section 6.1 *Public health*), such as the annual monitoring of patients for TB by fluorography and annual cancer check-ups by the gynaecologist (pap smear and palpation of the breast). Just like the district paediatrician, the district internist is required to spend at least six hours per month giving health education lectures. District internists are assisted by a primary care nurse who sits in the consultation room throughout consultations. The nurse is involved in a substantial amount of statistical reporting to all the main specialists regarding morbidity figures and performance in the relevant population area. This large amount of paperwork is of the major issues in primary care which needs to be tackled in the longer term; a national survey conducted in 2005 found that the vast majority of primary care doctors felt overloaded with administrative detail (Rousovich et al. 2006).

Access to and range of provided services

Because the gatekeeping function of the district internist is virtually absent, narrow specialists in polyclinics are frequently called primary care specialists by Belarusian health managers. In fact, the gatekeeping function has been usurped by the narrow specialists of the polyclinics who can refer the patients (or not) to specialist secondary care at the hospitals. Primary care doctors can also refer the patients directly (without the patient needing to consult the relevant primary care specialist) to hospital departments for internal medicine or infectious diseases, as well as to other departments in emergency cases (appendicitis, trauma, poisoning and so on).

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



Source: WHO Regional Office for Europe 2007.

Notes: CIS: Commonwealth of Independent States; EU: European Union; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Formally, if there is more than one doctor working at a primary care facility, patients are free to choose which PHC doctor they prefer. If the patient is not satisfied with her/his doctor, the district executive health committee could register them with another doctor, but this seldom happens and the “popular” doctors have no incentives to register more (often more demanding) patients from neighbouring communities.

Since the late 1990s there has been ongoing reform of the PHC sector in Belarus. One of the main reasons for primary care reform has been the growing realization that the extensive and expensive increase in the number of hospital beds and specialists has had a very limited impact on population health (Zharko 2007). WHO has also been influential through its presentation of the evidence showing the general practice-oriented model to be more efficient in terms of some health indicators and in the use of resources. However, there are also unrealistic expectations of the general practice-oriented model in terms of its capacity to deliver dramatic improvements in, for instance, life expectancy or child mortality without other developments in society.

A national survey conducted in 2005 found that GPs spend longer in consultations than district internists and they are much more involved in the treatment and follow-up of diseases (Rousovich et al. 2006). However, the same survey found that overall patients were satisfied with the accessibility of primary care services and their primary care doctors – irrespective of whether they were district internists or GPs. The satisfaction with primary care services was notably higher in rural than in urban areas, and rural respondents were much more positive about both the doctors and nurses providing their primary care than urban respondents (Egorov et al. 2006). Indeed, the effect of geography was more significant than whether or not the patient’s doctor had retrained as a GP, in terms of patient satisfaction.

One of the positive features of PHC in Belarus is the even geographical distribution of health care facilities throughout the country in both rural and urban settings. However, the challenge in both the rural and urban areas is to recruit and retain primary care doctors. Making the work of primary care doctors more attractive in terms of material and moral motivation is a real challenge. Ensuring the mechanisms to enable a real shift in financing to the primary care sector and away from specialist tertiary and hospital sectors is also a difficult challenge, as the lobbying capacity of the specialist tertiary sector is so well developed. By contrast, the primary care sector has been singularly unsuccessful in lobbying to end inefficient activities and protocols, such as excessive paper reporting, simplification of sick leave certification for common diseases, mandatory check-ups by all polyclinic specialists and so on. The other remaining challenge is to improve the training of PHC doctors

and the recruitment and selection of doctors willing to work in primary care, as opposed to the model that is in place obliging inexperienced young doctors to work in primary care.

6.4 Secondary care (specialized ambulatory care/ inpatient care)

Secondary care is organized on a territorial basis, with a designated hospital serving each district and region and funded through the local authority. District hospitals provide general secondary-level services, such as general medicine and surgery, obstetrics and a wide range of specialties. More complex cases can be referred to the regional hospital, which specializes either in adult or in paediatric care, and where a fuller range of specialties are offered. Each district and region also has a secondary care-level outpatient polyclinic delivering specialist care for patients in the community. In larger urban centres these outpatient polyclinics are either for adults or for paediatric services, and in the largest cities there are outpatient polyclinics specifically for women's services or dental care. Tertiary care is provided through single-specialty hospitals, research institutes and teaching institutes which have their own beds. Tertiary-level services are concentrated in Minsk, but there are some single-specialty hospitals in regional capitals which offer maternity services, orthopaedics and so on.

All hospitals are publicly owned and directly managed by the relevant territorial level of government. At the secondary level they are owned by the district or regional Executive Health Committee, while tertiary-level hospitals are owned by the Ministry of Health directly. There are no privately owned hospitals in Belarus. Specialized ambulatory services and secondary care are provided according to an integrated method, as clinicians are directly employed. Tertiary care-level specialists work out of outpatient departments of hospitals or in single-specialty hospitals, but specialists also work in primary care in urban polyclinics (see Section 6.3 *Primary/ambulatory care*).

In 2006 there were 705 hospitals in Belarus, down from 874 in 1990 and 830 in 2000, when hospital funding shifted to per capita criteria from capacity-based allocation (WHO Regional Office for Europe 2007). After initial reductions in the number of hospital beds following independence, bed numbers actually started to rise at the end of the 1990s, prior to this funding reform. Nevertheless, at 11.1 beds per 1000 population in 2006, Belarus still has by far the largest hospital sector in the CIS, the average for which was 8.5 per 1000 population in 2006; the EU average was 5.8 per 1000 population (WHO Regional Office for Europe 2007). Although the average length of stay fell from a high of

15.5 days in 1997 to 11.8 days in 2006 (which is relatively low for countries of the CIS, the average for which was 12.8 days in 2006), hospitalization rates are extremely high at 28.4 inpatient care admissions per 100 population, with the CIS average for 2006 being 20.5 per 100 population and the EU average being 18.0 per 100 in 2005 (WHO Regional Office for Europe 2007). Utilization rates in Belarus are therefore among the highest in Europe and indicate the continuing dominance of inpatient care over primary care in the country's health system (see Section 5.1 *Physical resources*, Subsection *Capital stock and investments*). The latest official figures for 2007 indicate that the number of hospital beds and utilization rates are also creeping higher (Zharko 2008).

There are also problems with the integration of primary and secondary care. The duplication of diagnostic and laboratory services for outpatients at the polyclinics – who are then referred as inpatients to the hospital – is widespread, as diagnostic procedures carried out in primary care are often considered to be of inferior quality (see Section 6.3 *Primary/ambulatory care*). Diagnostic tests available in the private sector are mainly limited to ultrasound, endoscopy and laboratory diagnostics on a fee-for-service basis. A large proportion of patients choose to pay for ultrasound diagnostics, partly due to advertisements, but also because fee-for-service providers provide a more pleasant environment for patients.

There has been only limited success in shifting the balance in favour of primary care. Change has been incremental, so there has not been a radical reorganization or rationalization of the hospital sector and hospitals continue to consume the lion's share of health care resources. The reductions in hospital beds and closure of hospitals have happened predominantly in rural areas and in psychiatric care (see Section 6.10 *Mental health care*). Nevertheless, the Ministry of Health is seeking to further reduce excess capacity in the health system and thus free up resources to invest in technologies which will substitute inpatient care, as well as better maintaining health care infrastructure. Proposals for future development include the development of day care, home care and day surgery in order to better use resources in specialized outpatient and hospital care and to reduce the number of surplus hospital beds (Zharko 2008).

6.5 Emergency care

Belarus has an ambulance-centred system of emergency care, which also covers out-of-hours primary care, so coverage is available 24 hours a day, 365 days a year. Every year, almost a third of the population call an ambulance, and in 2006 the call-out rate for ambulances was 293 home visits per 1000 population

(Zharko 2007). For this reason, and because the doctors and feldshers working in the emergency care sector are also the medical professionals that are the first point of contact for patients, the ambulance system in Belarus is considered to be part of PHC. There are 178 Ambulance Service Centres in the country, which are usually situated in a separate building away from the hospital in the large cities or are connected to hospitals or polyclinics in the smaller district centres. Approximately 786 ambulance teams are available to carry out home visits every day (Tsybin, Pavlovich & Malakhova 2003). Of these 786 ambulance teams, 346 are led by doctors, including 113 specialized teams (intensive care, cardiac, paediatric, neurological and psychiatric) and 440 ambulance teams led by feldshers. The ambulance teams consist of a doctor (district internist, district paediatrician or narrow specialist in the specialized ambulance teams) or a feldsher, a nurse and a driver. In the cities, the ambulance service answers patient calls out of hours (evenings, weekends and national holidays), thus contributing to the polyclinic network of primary care in the urban setting.

The ambulance service is one of the major expenses of the district health care budgets, accounting for, according to some estimates, up to 10–15% of overall expenditure on health care. There is also a great deal of evidence that the ambulance service is misused and called too frequently for non-emergency cases. In many cases, the ambulance service is being used as free patient transportation for patients with relatively minor injuries, such as uncomplicated arm fractures or wounds needing stitches. Misuse of the ambulance service for the transportation of intoxicated patients is also common practice. A considerable proportion of ambulance time (8–9% of visits) is used to provide morphine injections to cancer patients (palliative care treatment out of hours), as it is illegal for patients to keep morphine stocks at home (see 6.9 *Palliative care*).

The ambulance service has always been the first point of contact with the health system out of hours, and this accounts for much of the ambulance service utilization. For instance, of 3.66 million ambulance home visits in 2002, the hospitalization rate was only approximately 16% (Tsybin, Pavlovich & Malakhova 2003). In many cases, the ambulance team merely conducted very simple diagnostic tests and treatment or just gave the patient reassurance. The mean estimated cost to the health system for one home visit by the ambulance team is the equivalent of one tenth of a polyclinic doctor's monthly salary. The core problem facing the ambulance service is the need for expensive maintenance of transport and equipment to maintain the whole system with the considerable burden of inappropriate use of what is such an expensive specialized service. Approximately 25% of the ambulances have been in operation for over 10 years and need to be replaced (Tsybin, Pavlovich & Malakhova 2003). There is also a considerable staff drain of doctors from emergency care to other health care

sectors because of the low status of emergency care. Consequently, an increasing number of ambulances have been staffed by feldshers rather than doctors.

The Ministry of Health is trying to reduce the number of home visits by ambulances through better cooperation with polyclinic doctors who are not allowed to conduct emergency visits on their own during their regular working hours. The main challenges for reform of the ambulance service are to reduce the inappropriate use of resources and investing in other, more flexible types of out-of-hours care, such as telephone consultations with follow-up, and developing new types of on-call duties for polyclinic doctors with sufficient incentives to encourage participation (Malakhova et al. 2007b).

6.6 Pharmaceutical care

For 2006, one of the minimum social standards in health care was that there should be 1 pharmacy for every 8000 members of the population. According to internal Ministry of Health data, this minimum was easily achieved, as there was 1 pharmacy per 1802 population. After a period of uncontrollable growth in the number of private pharmacies in the 1990s (after the severe shortage of medicines following the collapse of the Soviet Union), from 2001 to 2002 measures were taken to regulate the pharmaceuticals market, which resulted in the closing of very small private pharmacies that could not meet the requirements of the new legislation. There are two types of pharmacy: state-owned pharmacies and private pharmacies. State-owned pharmacies can sell medicines to patients who are not eligible for any reductions and therefore pay full costs for pharmaceuticals, as well as providing patients from special categories with free or with reduced-price prescriptions according to the current legislation (those living with certain chronic diseases, aged over 70, disabled, children aged under 3 years, veterans and so on). Local authorities then reimburse the pharmacy for the cost of the reductions for medicines provided to these special categories of patient. State-owned pharmacies also have a network of kiosks for distribution of medicines at primary care facilities. Any psychotropic medicines may only be distributed through the state-owned pharmacies, not privately owned pharmaceutical providers. Private pharmacies are relatively small scale, only selling medicines at full cost, and cannot provide reduced-cost or free prescriptions. Pharmaceuticals prescribed to inpatients are provided free of charge.

There is some capacity for pharmaceuticals manufacturing in Belarus, and the Ministry of Health is looking to increase capacity in order to reduce the drugs bill; the domestically produced pharmaceuticals are not yet Good Manufacturing

Practice (GMP) compliant, so they are not for export and supply the Belarusian market only. Nevertheless, approximately 70% of pharmaceuticals consumed in the country are imported. The Ministry of Health imports essential pharmaceuticals for the treatment of socially important diseases (such as TB, diabetes, cancer, HIV/AIDS and so on), as well as for vaccination programmes. The Ministry of Health retains regulatory responsibility for the quality of all pharmaceutical products and all manufacturers, importers and distributors must be licensed irrespective of ownership. The importing of pharmaceuticals is particularly closely regulated and there are regular inspections which can result in distributors losing their licence if they are found to be supplying “fake” medicines. The poor quality of many pharmaceuticals available on the market led to the Ministry of Health issuing a new decree in 2002 ordering extensive testing for all batches of pharmaceuticals, both imported and locally produced, before they enter the market. The main pharmaceutical regulatory agencies all operate under the Ministry of Health as state enterprises. “Belbiopharm” is the main domestic pharmaceutical manufacturer, “Belpharmacia” is the main distributor of pharmaceuticals (both retail and wholesale) and the “Centre for Expert Examinations and Testing in Health Care” is the body in charge of licensing, registration and regulation of pharmaceutical products, including quality control and import permits. Pharmaceutical importers and distributors themselves are licensed by the Administration on Licensing of the Ministry of Health.

The import and purchase of pharmaceuticals for socially important diseases are carried out centrally through the Ministry of Health in order to keep down costs attributed to the budget and patients. Purchasing in the state-owned pharmacies is guided by an essential drugs list which is based on WHO recommendations. Pharmaceuticals for state-owned pharmacies are ordered by the regional governments through the state distribution network. End prices for patients are determined by the central Government. The Ministry of Health aims to keep costs down through the use of generic pharmaceuticals, the implementation of tendering procedures and the supply of pharmaceuticals to retailers at cost price. Cost-containment through restrictions or protocols for prescribing in primary care have not been comprehensively introduced. Total pharmaceutical expenditure as a percentage of total health expenditure was 16.4% in 2006, and of total pharmaceutical expenditure, only 14.8% was public pharmaceutical expenditure (WHO Regional Office for Europe 2007). Paying for pharmaceuticals as an outpatient accounts for most of the out-of-pocket costs for patients in Belarus, but there are large regional differences in per capita consumption levels, with those in urban areas spending nearly 10 times as much on pharmaceuticals as those living in rural areas.

6.7 Long-term care

The practice of using hospital beds for social care has now been formalized and inpatient care in rural hospitals has been reorganized to provide long-term care, particularly for the elderly through the winter months. In 2006 there were 286 community rural hospitals which have both inpatient and outpatient functions. In practice they are rural outpatient clinics with 15–30 beds for the simple inpatient care of elderly and intermediate care patients with chronic diseases. As of 2006, 104 community rural hospitals had been reorganized as small-scale hospitals for long-term nursing care (Zharko 2007). These hospitals for nursing care are run by a doctor or head nurse.

The target group for these hospitals is rather broad, ranging from elderly lonely patients with chronic diseases to palliative care for patients who have no relatives to care for them. The indications for hospitalization could be of a medical nature (for example, after a stroke in elderly patients), in which case hospitalization usually lasts for about 21 days and care is free of charge to the patient. Where there are also social indications (for example, the will of the patients themselves or their relatives for them to be admitted), the patient could be admitted to these hospitals for 1–6 months, usually in the winter if elderly patients cannot cope with heating their houses. For these cases the hospital receives a fixed amount (70–80%) of the patient's state pension to put towards the cost of their care. Patients retain a small proportion of their pensions and benefits in order to cover personal expenses. To a certain extent, the hospitals for nursing care were developed in response to the numerous complaints from the local population and local authorities about the worsening accessibility of health care in rural areas after the closure of small-scale rural hospitals.

Long-term care for the disabled is the responsibility of the Ministry of Social Welfare. Patients who are broadly capable of independent living are supported by care workers (*sotsrabotniki*), otherwise most people in need of long-term care are looked after either by family members or in state care homes (*internaty*). As with the nursing wards in hospitals, patients pay for their care from their pensions and welfare benefits, but this is rarely enough to cover the full cost of care.

6.8 Services for informal carers

There are care workers to assist families looking after registered disabled relatives. These services are provided through the Ministry of Social Welfare.

However, services are not comprehensive and do not cover families looking after elderly relatives, although it is possible to use the “social beds” on nursing wards for respite care (see Section 6.7 *Long-term care*).

6.9 Palliative care

Some limited palliative care services in Belarus are provided through the statutory health system and operate from polyclinics, and measures have been taken to develop the infrastructure of the palliative care. As it is illegal to keep morphine stocks in the home, polyclinic community nurses are required to carry out home visits to provide injections of narcotic painkillers (usually morphine) to palliative care patients during working hours, while ambulance teams provide out-of-hours cover (see Section 6.5 *Emergency care*). Doctors can prescribe a patient with up to 70 mg of morphine weekly, but this is administered by injection only; oral preparations are unavailable at the time of writing. However, in 2006, the Ministry of Health made possible the use of transdermal analgesic plasters with Fentanyl for pain control in cancer patients. There are very limited inpatient or day care hospice facilities in Belarus, although there is also some provision available for long-term care through the “social beds” (see Section 6.7 *Long-term care*).

There is one well-established NGO – the Belarusian Children’s Hospice – which provides paediatric palliative home care services in Minsk, Brest, Vitebsk, Mogilev, Gomel and Pinsk, along with one mobile adult service. The NGO came about out of the need for paediatric palliative care services in the aftermath of the Chernobyl disaster, as more children were presenting with cancers and blood disorders. The limited statutory services focus on pain control predominantly for cancer patients, but the Belarusian Children’s Hospice also provides bereavement support services for families (EAPC 2006). The work of the Belarusian Children’s Hospice is supported by volunteers, but it would appear that most work with patients is carried out by salaried clinical staff and the training of clinical staff is a significant part of the NGO’s work (EAPC 2006).

Belarus is a signatory of the Poznan Declaration (1998) and is a member of the Eastern and Central European Palliative Care Task Force (ECEPT), but there do not appear to be any national palliative care associations in the country thus far (International Observatory on End of Life Care 2002). Although palliative care is not a very high-profile concern in health care reform or policy development at the time of writing, the Minister of Health has pledged to open eight hospices by 2010 (Zharko 2008).

6.10 Mental health care

Mental health services in Belarus are publicly owned and integrated directly within the mainstream health system, but services still operate independent of primary and secondary health care in specialist psychiatric or narcological facilities. Some specialist care is provided for adults in polyclinics where there is a neuropathologist in attendance, but ambulatory care for mental health services is generally rendered through psychiatric or narcological clinics, and inpatient care (usually for psychosis) at psychiatric hospitals. Under the Semashko system, in mental health services the emphasis was on inpatient treatment at the secondary care level, rather than case management through outpatient centres or PHC, which is now the aim for mental health service provision in Belarus and mental health care is an area of the health system which has seen significant, albeit incremental change since independence in 1991. The long-term plan is to establish a network of outpatient clinics, psychotherapeutic facilities and psychosocial care at each central district polyclinic, as well as integrating psychiatric care into general practice, developing cooperation with social services and NGOs. Nevertheless, although prevention of mental illness is covered in the national health strategy and reform plans, Belarus does not have a specific national mental health policy or programme (WHO 2005).

According to internal Ministry of Health data, the number of psychiatric hospitals in Belarus has fallen from 17 in 1995 to 14 in 2005; the number of psychiatric hospital beds per 100 000 population has been reduced from 99.3 in 2001 to 70 in 2006 (WHO Regional Office for Europe 2007). Internal data also suggest that the average length of stay in inpatient centres has also fallen significantly from an average of 60.6 days in 1995 to 35.5 days in 2005, while the number of patients under the care of psychiatrists has increased from 223 489 in 1995 to 282 888 in 2005. The aim of current reform strategies is to refocus mental health in the country onto outpatient rather than inpatient care, and to integrate services with primary care. Consequently, there has been a modest expansion in the number of psychiatric outpatient clinics in the country, but the bulk of care still takes place in a hospital setting. There are no community care facilities, and community care services are not yet developed. As is the case elsewhere in the health system, services for adults and children are run in parallel and psychiatrists are trained to work either with adults or with children. Children's mental health outpatient clinics are based either in psychiatric hospitals or in general children's hospitals.

Much of the demand for psychiatric services is now linked to substance abuse, and there is growing concern over the level of alcoholism in the country, which appears to have been rising since 2000. The prevention of suicide is also a significant concern for mental health services, particularly in rural areas.

However, there is a need to improve the training of both medical undergraduates and PHC doctors in psychiatry and narcology in order to integrate psychiatric services, as well as a need to attract and retain mental health service staff. Internal data from the Ministry of Health show that the number of psychiatrists working in Belarus has fallen from 858 in 1995 to 724 in 2005 and the number of psychiatric nurses working in the system has fallen from 2516 in 1995 to 2302 in 2005. However, the number of psychotherapists has increased from 90 in 1995 to 172 in 2005 and the number of psychologists from 51 in 1995 to 141 in 2005. There are no specific psychiatric or mental health social workers in the system (WHO 2005). Staff shortages are one of the key reasons why the development of outpatient psychiatric services, including day care centres and psychiatric surgeries (especially for children), has been so slow. There is also a continuing tendency to frame mental health issues in very biophysical terms, to the neglect of psychosocial approaches for more integrated and holistic care.

Legislation is in place on psychiatric care to protect the rights of those with mental health problems, specifically the 1999 Law on Psychiatric Care and Guarantees for the Rights of Citizens Receiving Care. Those with severe mental health problems also have access to disability benefits. There has been little progress in reducing the stigma attached to mental health problems, but pressure for change in other countries has often come from the nongovernmental sector, which is not involved in mental health care in Belarus.

6.11 Dental care

There are both private and state dental services in Belarus. State dental services are provided through the primary care network, with specialized dental polyclinics in the larger towns and cities. Almost all rural outpatient clinics are also supposed to provide dental services and be staffed by dentists. However, there has been a large migration of dentists to the cities. Those that remain in rural polyclinics have to work with outdated technologies and equipment.

Dental services and dental prostheses are not generally considered to be part of the state package of health care to be provided free of charge under the Constitution; consequently, there are significant co-payments for those patients not considered to be from especially vulnerable groups (such as children, pregnant women, pensioners and so on). The level of co-payments is determined by the Ministry of Health. Private dental services are concentrated in the cities and often cover cosmetic dental treatments. As private health providers, non-state dental practices are closely regulated, prices are determined by the Ministry of Health and are closely monitored by local government. These services have

proved popular and there is a considerable drain of staff from the state to the private sector (see Section 5.2 *Human resources*, Subsection *Trends in health care personnel*).

A schools-based oral health programme is active in all regions of Belarus, but recent surveys have revealed a high level of dental caries among children and poor knowledge of caries prevention among parents (Bondarik & Leous 2004). There is also a distinct urban–rural split in both oral health status and knowledge about oral health, with children in urban areas having better oral health overall and their mothers having greater knowledge of caries prevention and oral hygiene (Bondarik & Leous 2004). This same survey also provided some indication of access and availability of dental health services, as 76.7% of children and 60.8% of mothers in urban areas reported having had a dental check-up in the past 12 months compared with 80.7% of children and 65.1% of mothers in rural areas (Bondarik & Leous 2004).

6.12 Complementary and alternative medicine

The only complementary therapy available through the state health system is acupuncture, and it is used relatively widely. Otherwise, complementary therapies such as massage, herbalism and homeopathy are available, but only through private clinics on a fee-for-service basis. There are no available data on popular alternative and complementary therapies in Belarus.

6.13 Health care for specific populations

Those affected by radioactive contamination from the Chernobyl nuclear power station accident in 1986 form a specific population with its own health care needs and services, much of which relate to close health monitoring, particularly of young people who were children or *in utero* at the time of the accident. This sector of the population can access extra services and their entitlements are defined in the Law on the Social Protection of the Population Suffering from the Consequences of the Chernobyl Accident (22 February 1991, No. 634-XII). The regions most seriously affected by the radioactive contamination in Belarus are Mogilev and Gomel, where there was a sharp increase in cases of childhood thyroid cancer, which is otherwise rare (Demidchik et al. 2006; Jacob et al. 2006). Consequently, for young people living in Gomel and Mogilev regions there is also an extra screening programme using ultrasound checks to detect thyroid cancer, although increased general

awareness of the disease among health care personnel working in these regions means that many cases are identified at the primary care level or in routine school health checks. Thyroid cancer cases in Belarus are often detected very early and while tumours are still small, and all cases are treated in the National Scientific-Practical Centre for Thyroid Tumours in Minsk (Jacob et al. 2006).

There are also higher levels of stress-related ill health in this population, which manifests itself in substantially higher rates of health complaints and psychological distress, although not in poorer clinical health status (Havenaar et al. 2003). The health status of people living in these regions has been intensely scrutinized both by national and international research groups. In 1993, in order to track the health consequences for those affected by the Chernobyl accident, the Belarusian State Chernobyl Register was established to collate health data on those living in the most contaminated areas at the time of the accident and the surviving liquidators living in Belarus.

7. Principal health care reforms

7.1 Analysis of recent reforms

There have been many policy initiatives to reform the health system in Belarus, but the most notable feature of the reform programme has been its incremental nature (Malakhova 2004). Potential reforms are discussed for a long time before they are introduced by law, decree and ministerial circulars for implementation, and some reforms have been discussed at length without ever being fully implemented. Therefore the focus in this chapter is on two programmes which have had a profound impact on the Belarusian health care system, if not immediately: the reforms to the methods of health care financing in 2000, and the Concept on the Development of Healthcare in the Republic of Belarus 2003–2007, which has guided the reform programme in the recent past.

Decree on the Improvement of Financing Mechanisms in Health Care

The Council of Ministers Decree on the Improvement of Financing Mechanisms in Health Care (No. 1225, 10 August 2000) was followed by the joint Ministerial Circular from the Ministry of Health and the Ministry of Finance (No. 40/101, 29 September 2000), which served to roll out per capita financing for health care nationwide following the piloting of new financing mechanisms in the Vitebsk region. The Vitebsk pilot involved the Ministries of Health and Finance working with the Vitebsk *oblast* council to test more efficient ways of redistributing resources to prioritize primary care and prevention services and to introduce both per capita financing mechanisms for services and contracting for primary care doctors. The Decree and Circular defined the annual norms (both national

and for each region individually, including the city of Minsk) for planning the health care budget. These mechanisms were reiterated in circulars and decrees and implemented in 2004. The aims of the Ministerial Circular were to:

- improve the efficient use of resources, prioritizing PHC and prevention services over hospital care as the more economic form of providing health services to the population;
- concentrate resources on priority areas of health care, ensuring those which have the greatest socioeconomic and clinical impact are prioritized;
- accomplish a territorial redistribution of resources to address inequalities in the size, condition and accessibility of medical services;
- increase the independence of health care management organs and health care facilities in allocating resources assigned to them from the health care budget; and
- reduce the disproportion in the provision of ambulatory and hospital facilities for different populations, thereby addressing inequalities in access and quality of medical care in different regions.

The aims were ambitious, and have yet to be fully realized, but the changes this reform brought to health care financing were highly significant as they were actually implemented (if only in part) and they were the first real steps away from input-based financing mechanisms (see Section 3.4 *Pooling of funds*, Subsection *Mechanisms for allocating funds among pooling/purchasing agencies*).

Concept on the Development of Healthcare in the Republic of Belarus for 2003–2007

The Concept for 2003–2007 was adopted by Resolution No. 1276 of 8 October 2003 by the Council of Ministers and has acted as the guiding document for health care reform since 2003. The Concept reiterates the key features of the Belarusian health care system – universal access to free health care, financed from the state budget – but it was envisaged as a document which would guide the transition to a new model in which PHC would become the main priority and resources would be allocated accordingly. The key reforms outlined in the document were:

- rolling out per capita budgeting according to agreed norms for the financing of health services;
- developing and implementing regional programmes;
- restructuring the health system in order to introduce resource-saving technologies;

- prioritizing the most cost-effective activities;
- standardizing medical technology and creating a unified management system for high-quality care;
- improving the pay of health care personnel by making payment dependent upon output;
- defining priorities for all health care sectors to have the greatest impact on the most significant health care issues affecting the working-age population (namely cardiovascular diseases, stroke, accidents and so on);
- improving prevention strategies and health education;
- continuing the struggle against TB, alcoholism, drug addiction and STIs;
- creating a unified IT system for the health service; and
- developing the necessary legislative base for the introduction of a new health care financing model.

The Concept was ambitious and all-encompassing in its scope, and not all of its aims have been achieved, but significant aspects of the programme have been implemented. It was under this Concept that many rural hospitals were reorganized as social care facilities and primary care facilities in rural regions were consolidated as GP-led health centres. The aim was to strengthen the quality of primary care services, and thus reduce the number of unnecessary hospitalizations, emergency calls and appointments with narrow specialists. The main barrier to achieving this has been patient distrust of the GP system and a severe shortage of doctors at the primary care level; in essence, resource allocation in the health care system still favours hospital care over primary care despite these reform efforts, and primary care is still considered to be of low prestige.

The Concept fits with the State Programme for the Revival and Development of Rural Areas, which aims to narrow gaps in the standard of living between rural and urban households. As part of this Programme and the Concept, there has been significant investment in improving both the quality and accessibility of health care services in rural areas, namely a significant expansion in the number of primary care facilities and capital investment to improve the state of repair of 113 rural health care facilities (Zharko 2007). The Concept also included major investment in intensive care units and operating theatres at district hospitals and in maternity hospitals across the country (see Section 5.1 *Physical resources*, Subsection *Capital stock and investments*). The aspects of the Concept which have yet to be fully implemented include those which aimed to improve the technical efficiency of the hospital sector and those which aimed to restructure the way in which health care personnel were paid.

7.2 Future developments

At the time of writing a new Concept for Healthcare in the Republic of Belarus from 2008 is being developed and the more specific content of the new Concept has not been made public. It is very unlikely that the basic aims of the system – to provide universal access to health care funded by the State from general taxation – will change, but reform priorities for the Ministry of Health include possible changes to the way in which the system is to be financed. There is increasing pressure to improve the efficiency of the system and cut unused capacity in the hospital sector; therefore, the Minister of Health is looking to shift from input-based to output-based funding mechanisms. It is hoped that the financing of secondary and tertiary care will be based on global budgeting – with the tariffs based on the cost of treating one patient according to different classifications of disease – or on the use of tariffs linked to diagnostic groups. It has also been argued that health facilities should have the freedom to spend any revenue raised from providing fee-for-service procedures. The expansion of such “private” services (*platnye uslugi*) through state-owned complementary providers (*Unitarnye predpriyatiya*), which are often attached to the mainstream health care delivery system, has become a priority in Ministry of Health policy development.

In order to address problems with human resources, it is hoped that health care personnel will be paid more and that their pay will better reflect the individual’s qualifications, workload, performance and responsibilities. There has also been some discussion of expanding the role of nurses so that fewer doctors would be needed, particularly in the care of people with chronic conditions. The inefficiency of having such a large hospital sector is widely acknowledged, but it is not yet clear how Belarus can move forward in rebalancing the system in favour of primary care. In regulation and planning, it is likely that more treatment protocols for different disease groups will be developed and rolled out nationwide for implementation at the primary care level. The incremental nature of health care reform in Belarus means that it is unlikely that any changes will happen in the short term. Given the size and influence of the hospital sector, it will be important to ensure that all stakeholders in secondary and tertiary care are actively involved in the reform process.

8. Assessment of the health system

8.1 The stated objectives of the health system

The explicit objectives of the health system are rooted in the Belarusian Constitution, which guarantees citizens universal access to health care services, free at the point of use. Implicit objectives for the health system include protecting the health of the economically active population and addressing demographic concerns about low birth rates, high mortality rates and the shrinking Belarusian population. In this way, the health system is viewed as the key actor in preserving the country's demographic security, as evidenced in the National Programme on Demographic Security of the Republic of Belarus for 2007–2010.

8.2 The distribution of the health system's costs and benefits across the population

As the Belarusian health system has managed to maintain universal access to services for all citizens, patients in similar circumstances receive a similar level of care, but it is hard to ascertain whether patients in similar circumstances pay similar amounts in taxes, as revenue for health care are raised primarily through tax paid by enterprises rather than individuals. Similarly, it is difficult to evaluate the fairness of the Belarusian taxation system, as it has not been as intensively researched as systems in other countries of the CIS, which have moved further towards a market economy. Nevertheless, relative to other countries in the CIS it is likely that the Belarusian revenue collection system has greater vertical equity, given that the society is more equitable as measured

by its Gini coefficient of 0.326 in 2005 (see Section 1.2 *Economic context*). It is most unlikely that a Belarusian citizen would experience catastrophic levels of direct health costs if he or she fell ill.

Good horizontal equity is also indicated by the relatively low levels of out-of-pocket payments for services and high levels of utilization. According to a survey conducted in 2001 in eight countries of the CIS, Belarusian citizens reported the highest level of health care utilization (65.7% of respondents had consulted a medical professional in the past 12 months) and the lowest level of out-of-pocket payments (only 8% had paid for their consultation with money or gifts) (Balabanova et al. 2004). Given the stability of the system and the slow incremental reform efforts since the survey was conducted, it is very likely that these results still hold true.

Despite the extensive network of facilities in Belarus, there are still considerable inequalities in the distribution of personnel and high-quality facilities between urban and rural populations. In rural areas there are still primary care facilities which do not have adequate access to hot and cold running water, and many facilities are severely understaffed. However, the Government has acknowledged these problems and has taken clear steps towards improving health infrastructure in rural areas under the State Programme for the Revival and Development of Rural Areas. The only other potential inequity is in access to what were considered to be higher quality services, available through the parallel health systems and funded through different branch ministries and some enterprises. These parallel services still exist, and patients still consider them to be of higher quality, but access to these services is restricted to current or retired employees of the ministries or enterprises and their families, unless the patient has extremely good connections.

8.3 Efficiency of resource allocation in health care

Despite efforts to reorientate resource allocation in the Belarusian health system to primary care and prevention away from specialist and inpatient care, the hospital sector continues to absorb most of the financial, physical and human resources available. The shortage of health personnel in primary care, both in urban and particularly in rural areas, is an especially acute problem considering that there is no shortage of medical students or new graduates; the hospital sector continues to absorb trainee specialists, while polyclinics struggle to fill empty posts. The cost of maintaining the large hospital sector has also meant that areas of the health system which were weak under the Semashko system (such as mental health care, palliative care and long-term care) have not seen much

investment from the State. Recent moves to reopen rural hospitals as centres for intermediate and long-term nursing care (predominantly for local elderly residents) have served to address this particular need, but provision for the urban population is still underdeveloped. There has also been underinvestment in mental health services, despite suicide and self-inflicted injury being a leading cause of premature mortality (at 28.1 per 100 000 in 2005) (WHO Regional Office for Europe 2007). Recently, there have also been discussions about integrating mental health services into PHC in order to develop community-based services and better address this need, but such developments are still in their nascent stages and once again, a shortage of personnel is a serious issue in this respect.

The hospital sector still has strong lobbying power, so programmes for capital investment, for example, focus efforts on improving specialist facilities, such as intensive care units, operating theatres, national centres for cardiology, neurology and so on. Only primary care facilities in rural areas have received significant investment, and this was from a very low base (see above). Consequently, resource allocation in the Belarusian health care system is still driven more by political and historical priorities than by population needs.

8.4 Technical efficiency in the production of health care

Maintaining the Belarusian health care system is expensive, as it is still based on the maximalist principles of the previous Semashko system. There is significant duplication in the hospital sector, which means there is considerable excess capacity absorbing resources (particularly human resources) that are desperately needed in the primary care sector. There are few incentives for providers in the Belarusian health care system to improve the technical efficiency of the system, despite this being the core aim of the Belarusian health care reform programme.

8.5 Quality of care

The Ministry of Health has introduced a wide range of protocols to be implemented at the primary care level in order to assure the quality of care received by patients who have increasingly high expectations (see Section 4.1 *Regulation*, Subsection *Regulating quality of care*). However, the current

standards emphasize – and therefore increase – the number of diagnostic procedures and consultations with the numerous narrow specialists, rather than providing a critical review of diagnostics and treatment from the point of view of cost-effectiveness or evidence-based medicine. The impact of extensive diagnostic and treatment protocols on the quality of care produced has not been sufficiently investigated.

8.6 The contribution of the health system to health improvement

Improvements in infant mortality rates, particularly early neonatal deaths, would indicate improvements in the quality of maternity services in Belarus since independence. There have also been modest improvements in other indicators for mortality amenable to medical intervention, such as the premature mortality rate for diabetes (that is, age 0–64 years), which was 3.6 per 100 000 in 1991 and fluctuated widely through the 1990s, but has been steadily falling since 1999 to 2.5 per 100 000 in 2005 (WHO Regional Office for Europe 2007).

The public health system has proved extremely efficient in implementing immunization programmes – a traditional strength in Semashko systems – but there has been less success in addressing the main causes of premature mortality in Belarus. Cardiovascular diseases are the leading causes of premature death, and the public health system faces the challenge of addressing high levels of alcohol and tobacco consumption in order to significantly improve the health of the population and prevent premature deaths. In common with other countries in the CIS, Belarus also faces a double epidemiological burden of premature mortality from noncommunicable diseases, and a growing problem with communicable diseases, particularly TB.

Even modest improvements in the population's health status or demographic circumstances from year to year are embraced by policy-makers in the Ministry of Health as evidence that recent initiatives and the health system as a whole are working well, as these are considered to be the key success indicators (Zharko 2008). However, increases in the birth rate and decreases in the death rate for various diseases are also influenced by factors beyond the control of the Ministry of Health, and a downturn in the economic situation could compromise those recent modest gains.

9. Conclusions

Belarus has managed to maintain a health care delivery system that provides a comprehensive package of care to the entire population, which is generally free at the point of delivery. This achievement is remarkable given the economic crisis the country experienced in the 1990s and is all the more commendable when seen in the context of the disruptions experienced in other countries of the former Soviet Union. The stability in service provision was achieved by introducing incremental reforms to the inherited Semashko system. Despite significant continuing concerns about the health status of the population, there have been significant improvements in some key indicators, most notably in the falling maternal and infant mortality rates. However, the incremental approach has not yet been so successful in reducing excess hospital capacity, improving service quality, developing primary care, or tackling noncommunicable diseases. The necessity of moving forward with the reform programme, even at an evolutionary rather than revolutionary pace, is now evident in the cost of maintaining a system which relies so heavily on inpatient care.

One of the main reasons for the ongoing reforms to primary care has been the growing realization that the extensive and expensive increase in the number of hospital beds and specialists has had a very limited impact on population health. Another reason is the growing dissatisfaction of the population with the overcrowded and impersonal primary care services and with the busy and burnt-out PHC doctors. However, there are also unrealistic expectations of the general practice-oriented model in terms of its capacity to deliver dramatic improvements in, for instance, life expectancy or child mortality without other developments in society.

The Belarusian experience shows that, given the right economic circumstances, an incremental approach to economic and health care reform can

sustain access to health care for the population and protect population health from some of the harshest aspects of socioeconomic transition. However, it is not clear how these gains can be sustained if there is an economic downturn and whether the quality and efficiency of services can be improved without more fundamental changes.

A key challenge is to improve the technical efficiency of the health system by reducing excess hospital capacity and consolidating improvements made in primary care. The main challenges in achieving this in Belarus come from the maximalist approaches which still apply; many policy-makers are still working from the basis of a Semashko mindset in the use of social standards for the minimum number of doctors, pharmacists and so on, per 100 000 population, when in reality the key problem is not the shortage of such facilities or personnel, but their oversupply or distribution. Similarly, although on paper there is a very strong commitment to redirecting resources away from inpatient towards outpatient care and strengthening primary care as the more efficient model given the population's health needs, in practice it is secondary and tertiary care which absorb most of the funds and have the largest influence on how the health system should work. For example, tackling noncommunicable diseases focuses on screening and treatment rather than primary prevention, and the screening protocols are developed by tertiary care-level specialists in treatment, rather than public health specialists in screening programmes.

The remaining challenges faced by policy-makers in Belarus can be summarized as follows:

- refining the universal PHC model in the cities and in the rural areas;
- reducing unused bed capacity in medical facilities;
- streamlining specialist care at polyclinics and hospitals to avoid multiple duplication of diagnostic and human resources;
- developing resource-saving technologies (such as outpatient care, day care and day surgery);
- ensuring treatment and diagnostic procedures are evidence based;
- optimizing ambulance care services and out-of-hours care;
- abandoning non-health care functions that primary care doctors are obliged to fulfil (for example sick leave authorization procedures for short-term absence at work and so on);
- shifting financing to primary care and introducing new forms of incentives for health care professionals;
- rolling out IT systems throughout the health system;
- improving health care management at all levels;

- concentrating high-technology specialist services at the national level; and
- improving coordination and integration across levels of care.

Alongside the stability that an incremental approach to reform affords, it also makes it possible for policy-makers to build consensus to ensure that once reforms are passed into law, they can be implemented more swiftly. This is a real opportunity for the involvement of stakeholders at all levels of care to become involved in the development of future reform programmes.

10. Appendices

10.1 References

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10.2 Web sites

President of the Republic of Belarus official web site – includes links to sites for all the Regional and District Executive Committees (Russian, Belarusian and English versions):

<http://president.gov.by/>

Republic of Belarus Ministry of Health (Russian and English versions):

<http://www.minzdrav.by/>

Meditsinskii vestnik [Medical bulletin] – weekly newspaper published by the Ministry of Health (Russian only):

<http://www.medvestnik.by/>

Voprosy Organizatsii i Informatizatsii Zdravookhraneniya [Issues of Organization and Informatization of Healthcare] – academic journal published by the Ministry of Health (Russian only):

<http://www.minzdrav.by/med/article/j0.php>

10.3 HiT methodology and production process

The Health Systems in Transition (HiT) profiles are produced by country experts in collaboration with the Observatory's research directors and staff. The profiles are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources, and examples needed to compile HiTs. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The most recent template is available online at: http://www.euro.who.int/observatory/Hits/20020525_1.

Authors draw on multiple data sources for the compilation of HiT profiles, ranging from national statistics, national and regional policy documents, and published literature. Furthermore, international data sources may be incorporated, such as those of the Organisation for Economic Co-operation and Development (OECD) and the World Bank. OECD Health Data contain over 1200 indicators for the 30 OECD countries. Data are drawn from information collected by national statistical bureaux and health ministries. The World Bank provides World Development Indicators, which also rely on official sources.

In addition to the information and data provided by the country experts, the Observatory supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the European Health for

All database. The Health for All database contains more than 600 indicators defined by the World Health Organization (WHO) Regional Office for Europe for the purpose of monitoring Health for All policies in Europe. It is updated for distribution twice a year from various sources, relying largely upon official figures provided by governments, as well as health statistics collected by the technical units of the WHO Regional Office for Europe. The standard Health for All data have been officially approved by national governments. With its July 2008 edition, the Health for All database started to take account of the enlarged European Union (EU) of 27 Member States.

HiT authors are encouraged to discuss the data in the text in detail, 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 profile consists of 10 chapters.

- 1 Introduction: outlines the broader context of the health system, including geography and sociodemography, economic and political context, and population health.
- 2 Organizational structure: provides an overview of how the health system in the country is organized and outlines the main actors and their decision-making powers; discusses the historical background for the system; and describes the level of patient empowerment in the areas of information, rights, choice, complaints procedures, safety and involvement.
- 3 Financing: provides information on the level of expenditure, who is covered, what benefits are covered, the sources of health care finance, how resources are pooled and allocated, the main areas of expenditure, and how providers are paid.
- 4 Regulation and planning: addresses the process of policy development, establishing goals and priorities; deals with questions about relationships between institutional actors, with specific emphasis on their role in regulation and what aspects are subject to regulation; and describes the process of health technology assessment (HTA) and research and development.
- 5 Physical and human resources: deals with the planning and distribution of infrastructure and capital stock; the context in which information technology (IT) systems operate; and human resource input into the health system, including information on registration, training, trends and career paths.
- 6 Provision of services: concentrates on patient flows, organization and delivery of services, addressing public health, primary and secondary health care, emergency and day care, rehabilitation, pharmaceutical care, long-term care, services for informal carers, palliative care, mental

- health care, dental care, complementary and alternative medicine, and health care for specific populations.
- 7 Principal health care reforms: reviews reforms, policies and organizational changes that have had a substantial impact on health care.
 - 8 Assessment of the health system: provides an assessment based on the stated objectives of the health system, the distribution of costs and benefits across the population, efficiency of resource allocation, technical efficiency in health care production, quality of care and contribution of health care to health improvement.
 - 9 Conclusions: highlights the lessons learned from health system changes; summarizes remaining challenges and future prospects.
 - 10 Appendices: includes references, useful web sites and legislation.

Producing a HiT is a complex process. It involves:

- writing and editing the report, often in multiple iterations;
- external review by (inter)national experts and the country's Ministry of Health – the authors are supposed to consider comments provided by the Ministry of Health, but not necessarily include them in the final version;
- external review by the editors and international multidisciplinary editorial board;
- finalizing the profile, including the stages of copy-editing and typesetting;
- dissemination (hard copies, electronic publication, translations and launches).

The editor supports the authors throughout the production process and in close consultation with the authors ensures that all stages of the process are taken forward as effectively as possible.

10.4 About the authors

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Andrei Fomenko is a forensic medicine professional, specializing in the expert assessment of medical malpractice claims. He has publications covering patients’ rights and safety issues, and has worked as a consultant on projects run by UNDP, Joint United Nations Programme on HIV/AIDS (UNAIDS), Euro-Asian Initiative for Patient Safety and other international organizations.

The Health Systems in Transition profiles

A series of the European Observatory on Health Systems and Policies

The Health Systems in Transition (HiT) country profiles provide an analytical description of each health care system and of reform initiatives in progress or under development. They aim to provide relevant comparative information to support policy-makers and analysts in the development of health systems and reforms in the countries of the WHO European Region and beyond. The HiT profiles are building blocks that can be used:

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

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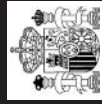
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Key

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

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