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Uzbekistan

Health system review

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Health Systems in Transition

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Uzbekistan:

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Preface

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

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

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

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

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

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

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

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

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Bank for the data on health expenditure in central and eastern European countries. Thanks are also due to national statistical offices that have provided data. The HiT reflects data available in August 2014, unless otherwise indicated.

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The Observatory team working on HiTs is led by Josep Figueras, Director, Elias Mossialos, Martin McKee, Reinhard Busse, Richard Saltman, Ellen Nolte, Sarah Thomson and Suszy Lessof. The Country Monitoring Programme of the Observatory and the HiT series are coordinated by Gabriele Pastorino. The production and copy-editing process of this HiT was coordinated by Jonathan North, with the support of Caroline White, Sophie Richmond (copy-editing) and Pat Hinsley (typesetting).

List of abbreviations

ADB	Asian Development Bank
CIS	Commonwealth of Independent States
CT	Computed tomography
DALY	Disability-adjusted life years
DOTS	Directly observed treatment, short-course
EU	European Union
FAP	*Feldsher*–midwifery post
GDP	Gross domestic product
GP	General practitioner
ICD	International Classification of Diseases
IT	Information technology
KfW	German Reconstruction Credit Institute
NGO	Nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
PhD	Doctor of Philosophy
PPP	Purchasing power parity
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VHI	Voluntary health insurance
YLL	Years of life lost

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Abstract

Uzbekistan is a central Asian country that became independent in 1991 with the break-up of the Soviet Union. Since then, it has embarked on several major health reforms covering health care provision, governance and financing, with the aim of improving efficiency while ensuring equitable access. Primary care in rural areas has been changed to a two-tiered system, while specialized polyclinics in urban areas are being transformed into general polyclinics covering all groups of the urban population. Secondary care is financed on the basis of past expenditure and inputs (and increasingly "self-financing" through user fees), while financing of primary care is increasingly based on capitation. There are also efforts to improve allocative efficiency, with a slowly increasing share of resources devoted to the reformed primary health care system. Health care provision has largely remained in public ownership but nearly half of total health care expenditure comes from private sources, mostly in the form of out-of-pocket expenditure. There is a basic benefits package, which includes primary care, emergency care and care for certain disease and population categories. Yet secondary care and outpatient pharmaceuticals are not included in the benefits package for most of the population, and the reliance on private health expenditure results in inequities and catastrophic expenditure for households. While the share of public expenditure is slowly increasing, financial protection thus remains an area of concern. Quality of care is another area that is receiving increasing attention.

Executive summary

Introduction

Uzbekistan is a central Asian country that became independent in 1991 with the break-up of the Soviet Union. It has a population of 30.2 million (as of 2013), about half of whom live in rural areas. The country has 14 administrative divisions: 12 regions (*viloyats*), one autonomous republic (Karakalpakstan, at the north-western end of the country) and one administrative city, the capital Tashkent. The local administrative levels are *tumans* (*rayon* in Russian, district in English) and cities.

Life expectancy at birth in 2012 was recorded in official statistics at 70.7 years for males and 75.5 years for females. However, World Bank estimates are lower, suggesting a male life expectancy at birth of 64.8 years and a female life expectancy of 71.5 years. The discrepancy is due to a combination of factors, in particular under-reporting of infant mortality, as well as differences in definitions, methodology and sources (with the World Bank estimates being based on survey data).

Diseases of the circulatory system (mainly ischaemic heart disease and cerebrovascular disease) are the most common causes of death in Uzbekistan. The mortality rate from diseases of the circulatory system has increased in Uzbekistan since the 1980s, a development that mirrors the trends in other countries of central Asia and the Commonwealth of Independent States (CIS), but contrasts with trends in western Europe, where mortality from this group of causes of death has continuously declined in recent decades. Also similarly to other countries of the region, there has been a resurgence of tuberculosis in the years after independence, as well as an increase in multi-drug and extensively drug-resistant tuberculosis, and HIV infections have increased steeply in the 2000s and early 2010s.

Organization and governance

The state-run health system consists of three distinct hierarchical layers: the national (republican) level, the *viloyat* (regional) level, and the local level made up of rural *tumans* (districts) or cities, with a relatively small private sector.

The Ministry of Health (with a total staff of 88) is the major player in organizing, planning and managing the Uzbek health system. Regulation remains the almost exclusive prerogative of the government, with little or no role played by nongovernmental organizations (NGOs) or professional associations. As the government-owned health system still largely follows the integrated model (with the government being the principal payer and provider of health services), almost all health workers are government-salaried employees.

Although the government initially left the private sector free to develop, with only limited oversight, following an increase in unnecessary, unsafe or substandard care in the private sector, the government has significantly limited the type of services that can be provided in the private sector, in particular with regard to complex surgical procedures. Regulatory oversight has also been strengthened, allowing the Ministry of Health to conduct unannounced inspections. Patient rights and patient choice have been set out by law, but are still underdeveloped in actual practice.

Financing

Uzbekistan spends a comparatively low share of its gross domestic product (GDP) on health, amounting to an estimated 5.9% in 2012. This was below the average of the WHO European Region of 8.3%, but slightly above the average for the central Asian republics of 5.2%. While the share of public sector expenditure has increased in recent years, private expenditure remains substantial. In 2012, public sources (mostly raised through taxes) accounted for 53.1% of total health expenditure, while 46.9% came from private sources, mostly in the form of out-of-pocket expenditure. Voluntary health insurance does not play a major role.

The basic benefits package guaranteed by the government includes primary care, emergency care, care for "socially significant and hazardous" conditions (in particular major communicable diseases, plus some noncommunicable conditions such as poor mental health and cancer), and specialized (secondary and tertiary) care for groups of the population classified by the government as vulnerable. It thus excludes secondary and tertiary care for significant parts

of the population. Pharmaceuticals for inpatient care that forms part of the basic benefits package are included in the package. Outpatient pharmaceuticals are not covered, except for 13 population categories, including veterans of the Second World War, HIV/AIDS patients, patients with diabetes or cancer, and single pensioners registered by support agencies.

Payments for health services are both formal and informal. Formal payments have been increasingly introduced and now account for a major share of revenue, in particular for health facilities that are expected to finance themselves largely through user fees rather than allocations from the state budget. This approach is being increasingly encouraged for secondary and tertiary care facilities. There is also anecdotal and survey evidence of informal payments, in particular for secondary and tertiary care. Other sources of funds include technical assistance programmes by multilateral and bilateral agencies.

The government pools and allocates public funding for health care. There is a distinct divide between national (republican) and subnational (*viloyat*, *tuman* or city) governments with regard to health financing. The national government is responsible for the financing of specialized medical centres, research institutes, emergency care centres and national-level hospitals. Regional and local governments are responsible for expenditures related to other hospitals, primary care units, sanitary-epidemiological units and ambulance services. Primary care in rural areas is now financed on a capitation basis and primary care in urban areas is expected to follow by 2015. Specialized outpatient and inpatient care is financed on the basis of past expenditures and inputs, as well as, increasingly, "self-financing".

Health workers in the public sector are salaried employees and paid according to strict state guidelines. However, there are efforts to increase the flexibility of health care providers in reimbursing health professionals. Salaries of physicians in the public sector ranged from US$ 300 to US$ 600 per month in 2014 and salaries of nurses are even lower. These salary levels are considered insufficient to cover the cost of living (although some providers on "self-financing" schemes are able to pay substantially better salaries).

Physical and human resources

The years since independence have seen substantial reductions in the number of beds in acute care hospitals and further cuts are envisaged. In terms of acute care hospital beds per population, the country now ranks below the averages for the central Asian countries and the CIS. There has also been a decline in

the number of physicians per population, which is now also below the average for the central Asian countries, while the number of nurses per population has remained largely constant in the last two decades and is now the highest in the central Asian region.

There is one medical academy, four medical schools and three regional branches, all of which are state-owned. Four main faculties for the training of medical doctors in medical schools exist: treatment (general medicine), treatment with an emphasis on teaching skills (pedagogy of general medicine), general paediatrics and sanitary-epidemiology. There are 72 professional colleges offering basic nursing training. Medical education has been revised, with an extension of undergraduate medical education from six to seven years and the replacement of early specialization with a more generalized orientation. Graduates are now qualified as general practitioners. The training of nurses has been extended to two years for nursing students with high school certificates and to three years for students with secondary school certificates.

Provision of services

In the area of public health, the sanitary-epidemiological services have retained their traditional focus on environmental health services, food safety and controlling communicable diseases. However, new players have emerged, including the separate and nationally-organized centres for HIV/AIDS, the Institute of Health and Medical Statistics, primary health care units, NGOs and international agencies (such as WHO, UNICEF [the United Nations Children's Fund], UNFPA [the United Nations Population Fund] and the World Bank).

Primary care services are provided by public primary care facilities and outpatient clinics of public secondary and tertiary institutions (as well as private outpatient clinics). In rural areas, the first point of contact is a rural physician post (in a shift from previous *feldsher*–midwifery posts), while secondary outpatient care is provided by outpatient clinics of district hospitals.

In urban areas, primary health care and selected secondary care services are provided by polyclinics, with catchment populations of between 10 000 and 80 000 people. All types of polyclinics (previously separate for adults, children, and polyclinics specializing in women's health) are currently being transformed into family polyclinics which provide primary care for all groups of the (urban) population. Specialists in urban family polyclinics are expected to be gradually replaced by general practitioners (GPs).

In rural areas, the first points of contact for patients seeking secondary care from the public sector are district hospitals, the larger ones with multi-specialty outpatient units. In urban areas, regional and city hospitals deliver inpatient care for the population. At regional level, many disease categories and population groups are treated in separate hospitals. These include children's hospitals, tuberculosis hospitals, hospitals treating sexually transmitted and dermatological diseases, neurological and psychiatric hospitals, cardiology and emergency hospitals. Tertiary inpatient care is generally provided in large hospitals and research institutes and centres at the national level.

Emergency care services have undergone significant reforms and a network of emergency departments has been organized throughout the country within the existing inpatient facilities at the local, regional and national level. Health reforms introduced the concept of formally free and accessible emergency care for all, which seems to have led to an overload of emergency services; this is also because the emergency care system is considered to be much better provided with equipment, medical aids and devices, and medications than other public health providers.

Quality evaluations are mainly limited to public facilities and focus mostly on structural aspects rather than outcomes, while process evaluations are generally not carried out. Structural evaluations of the state of health facilities and equipment are undertaken by agencies of the Ministry of Health, but it is not clear how outcome measures gathered during these evaluations (mostly related to hospital mortality and complications) are fed back to the facilities which have been evaluated. Some institutions, especially tertiary-level providers, have developed their own institutional frameworks for outcome and process evaluations, and how they can be used to improve the services provided. While no national study on the quality of inpatient care seems to have been conducted so far, anecdotal evidence suggests that many medical practices are outdated, and the quality of care can vary significantly from institution to institution.

In the area of pharmaceutical care, state pharmacies have now been almost completely privatized. The country has adopted a long-term strategy for self-sufficiency in essential drugs and blood products to overcome its reliance on expensive imports. A large share of expenditure on pharmaceuticals is paid privately.

Principal health reforms

Over the past two decades, Uzbekistan has initiated several major health reforms, with the aim of improving health care provision, governance and financing. Areas of reform included primary care (initially in rural areas), secondary and tertiary care, and emergency care. Primary care has been changed from a multi-tiered to a two-tiered system, the training of GPs has been initiated and the financing of primary care is increasingly based on capitation. There are also efforts to introduce new approaches to maternal and child health, public health, noncommunicable disease prevention and control, and monitoring and evaluation. In secondary and tertiary care, capacities have been scaled back and new governance and financing arrangements for pilot tertiary care facilities introduced. Reforms of medical education have also been initiated.

Assessment of the health system

Although there are only limited system-wide data available on health system performance, a number of trends and challenges can be identified. The country has undertaken major efforts to improve the efficiency of the health system, ensure an equitable distribution of health facilities and protect vulnerable groups of the population from catastrophic health expenditure. Despite an increasing share of public expenditure on health, the high share of out-of-pocket payments and the limited scope of the benefits package to include only primary and emergency care mean that financial protection of the population from the consequences of ill health is still limited, with resulting problems for health equity and access to services. Quality of care is increasingly recognized as a problem, with ongoing efforts to update treatment protocols, and to revise medical education, continuous professional development, and quality assurance and improvement frameworks. There are also efforts to improve allocative efficiency, with a higher share of resources devoted to the reformed primary health care system. Other challenges to health system performance in Uzbekistan include the practice of informal payments and the fact that user experience has so far been a rather neglected area of health service provision.

1. Introduction

Uzbekistan is located in central Asia, with a population of 30.2 million in 2013. About half of the population lives in rural areas. The state is headed by the President who is elected for a term of five years. The country has 14 administrative divisions: 12 regions (*viloyats*), one autonomous republic (Karakalpakstan) and one administrative city, the capital Tashkent. Lower administrative levels are *tumans* (*rayon* in Russian, district in English) and cities. Life expectancy at birth in 2012 was recorded in official statistics at 70.7 years for males and 75.5 years for females. However, estimates by international agencies are lower, suggesting a male life expectancy at birth of 64.8 years in 2012 and a female life expectancy of 71.5 years. Diseases of the circulatory system (largely ischaemic heart disease and cerebrovascular disease) are the most common causes of death in Uzbekistan.

1.1 Geography and sociodemography

Uzbekistan is a landlocked country located in central Asia (Fig. 1.1). It is bordered to the north and north-east by Kazakhstan, to the west and south-west by Turkmenistan, to the south by Afghanistan and to the east by Tajikistan and Kyrgyzstan. Uzbekistan's territory is 447 400 km^2. Its terrain is a combination of sandy deserts, intensely irrigated river valleys, and mountains. The climate is continental, with long hot summers and short mild winters.

Uzbekistan's population has been growing continuously in recent decades, reaching 30.2 million in 2013. Although the population structure is still young, with 28.2% of the population aged 0–14 years in 2013, this share has been steadily decreasing since 1980. According to national statistics, based on recent

Fig. 1.1
Map of Uzbekistan

Source: United Nations Cartographic Section.

changes in calculation procedures by the State Committee on Statistics, the share of the population living in urban areas was 51.2% in 2012. This is a much higher share than that estimated by the World Bank, which is based on World Bank population estimates and urban ratios from the United Nations *World Urbanization Prospects* (Table 1.1).

Table 1.1
Trends in population/demographic indicators, 1980–2013, selected years

	1980	1990	1995	2000	2005	2010	2012	2013
Population, total (millions)	16.0	20.5	22.8	24.7	26.2	28.9[a]	30.0[a]	30.2
Population, female (% of total)	50.8	50.5	50.3	50.2	50.2	50.0[a]	49.9[a]	
Population ages 0–14 (% of total)	41.2	41.0	40.1	37.3	33.2	29.3[a]	28.2[a]	
Population ages 65 and above (% of total)	5.1	4.0	4.2	4.3	4.7	4.1[a]	4.0[a]	
Population growth (annual %)	2.6	2.1	1.8	1.4	1.2	1.7[a]	1.5	1.6
Population density (people per sq km of land area)	37.7	48.2	53.6	57.9	61.5	62.4[a]	66.8[a]	
Fertility rate, total (births per woman)	5.1	4.1	3.6	2.6	2.4	2.3[a]	2.2[a]	
Birth rate, crude (per 1 000 people)	33.9	33.7	29.8	21.4	20.4	22.0[a]	21.0[a]	
Death rate, crude (per 1 000 people)	7.5	6.1	6.4	5.5	5.4	4.8	4.9[a]	
Age dependency ratio (% of working-age population)	86.2	81.9	79.7	71.2	61.2	61.1	61.7	
Urban population (% of total), World Bank estimate	40.8	40.2	38.4	37.4	36.7	36.2	36.2	36.2
Urban population (% of total), national statistics[a]						51.2	51.2	
Literacy rate[b]	97.8	98.7	98.9	98.6		99.4		

Sources: World Bank, 2014; [a]State Committee on Statistics, 2013; [b]WHO Regional Office for Europe, 2014a.

1.2 Economic context

Uzbekistan's economy is mostly oriented towards services and industry, with a diminishing share of GDP generated by agriculture. Despite being a dry and landlocked country, 11% of Uzbekistan consists of intensely cultivated, irrigated river valleys.

After the break-up of the Soviet Union, Uzbekistan experienced a significant fall in its GDP. Since then, GDP has been increasing again, with annual growth rates exceeding 8% in 2007–2012. In 2013, 49% of GDP was generated by services, 32% by industry and 19% by agriculture (Table 1.2).

Table 1.2
Macroeconomic indicators, 1990–2013, selected years

	1990	1995	2000	2005	2010	2011	2012	2013
GDP (current US$, million)	13 361	13 351	13 760	14 308	39 333	45 324	51 183	56 796
GDP, PPP (current international $, million)	40 429	36 989	48 529	70 938	117 235	129 459	142 524	156 256
GDP per capita (current US$)	651.4	585.9	558.2	546.8	1 377.1	1 544.8	1 719.0	1 878.1
GDP per capita, PPP (current international $)	1 971	1 623	1 969	2 711	4 105	4 413	4 787	5 167
GDP growth (annual %)	1.6	-0.9	3.8	7.0	8.5	8.3	8.2	8.0
General government final consumption expenditure (% of GDP)	25.4	22.3	18.7	17.6	23.5	22.7	22.7	
Industry, value added (% of GDP)	33.0	27.8	23.1	23.2	32.5	32.6	32.3	
Agriculture, value added (% of GDP)	32.8	32.3	34.4	28.0	19.1	19.1	18.9	
Services etc., value added (% of GDP)	34.3	39.9	42.5	48.9	48.4	48.3	48.8	
Labour force, total, thousands	7 183	8 034	9 213	10 447	12 196	12 675	12 999	
Unemployment, total (% of total labour force)		11.2	11.3	11.4	11.4	11.4	11.3	

Source: World Bank, 2014.

1.3 Political context

The constitution of Uzbekistan of 1992 defines the country as a democratic republic with state power divided between the executive, legislative and judicial branches of government. Uzbekistan has 14 administrative divisions: 12 regions (*viloyats*), one autonomous republic (Karakalpakstan) and one administrative city, the capital Tashkent (Republic of Uzbekistan, 1992).

The state is headed by the President who is elected by direct vote. The current President is Islom Karimov, who has held this position since March 1990, when he was elected President by the then Supreme Soviet. The last presidential elections took place in 2007, when President Karimov was re-elected with 88% of the vote.

The legislative system is represented by the Parliament (*Oliy Majlis*), which is the highest representative body in the country. Uzbekistan has a bicameral Parliament which is elected and appointed for a five-year term. It consists of:

- an Upper House or Senate with 100 members, 84 of whom are elected by *viloyat* governing councils (six from each administrative division) and 16 of whom are appointed by the President;
- a Lower House or Legislative Chamber with 150 members, who are elected by popular vote.

The executive branch of government is represented by the Cabinet of Ministers, which consists of the Prime Minister, the deputy prime ministers, the heads of ministries, government agencies and bodies, and regions (*viloyats*), and the head of government of the Karakalpakstan Autonomous Republic. The Cabinet of Ministers is formally headed by the Prime Minister; it is accountable to the President and the Parliament (Republic of Uzbekistan, 1992, 2003).

Viloyat governments are represented by *viloyat* councils, which consist of elected members and are headed by governors (*khokims*). *Viloyat* governors and the Governor of Tashkent are nominated by the President, subject to approval by the respective councils. Governors of *tumans* (*rayon* in Russian, district in English) and cities in each *viloyat* are appointed by the *viloyat* governor, subject to approval by local (*tuman* or city) councils. Councils at the *viloyat*, *tuman* or city level are elected through popular vote for terms of five years. The governors of *viloyats*, *tumans* and cities along with the respective councils are the highest authorities of the respective territories.

All courts in Uzbekistan are *de jure* independent from the legislative and executive governments, political parties or any community or social groups (Republic of Uzbekistan, 1993). The chairperson and the judges in the Supreme Court and the Constitutional Court are nominated by the President, subject to approval by the Upper House of Parliament. All other judges (at *viloyat*, *tuman* and city courts) are appointed by the President upon nomination by a special selection committee. Judges in the Karakalpakstan Autonomous Republic are elected by the Karakalpak Parliament upon nomination by the chairperson of the Karakalpak Parliament, subject to approval by the President (Republic of Uzbekistan, 1993).

Uzbekistan is a member of WHO, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Development Programme (UNDP) and a number of financial organizations that invest in the health sector, such as the World Bank and the Asian Development Bank (ADB). In 2012 Uzbekistan acceded to the WHO Framework Convention on Tobacco Control.

1.4 Health status

Infant and child mortality rates recorded in official statistics in central Asia and the Caucasus underestimate actual mortality, and official life expectancies are consequently higher than life expectancies estimated by international agencies, as the latter take account of survey data (Roberts, Karanikolos & Rechel, 2014).

Uzbekistan is no exception. According to World Bank estimates (World Bank, 2014), life expectancy at birth was 68.1 years in 2012, with 64.8 years for males and 71.5 years for females (Table 1.3). This was lower than the official rate of 70.5 years in 2005 (the latest available year reported by Uzbekistan to WHO) (WHO Regional Office for Europe, 2014a) and lower than the life expectancy at birth recorded by the State Committee on Statistics for 2012, which put male life expectancy at birth at 70.7 years for males and at 75.5 years for females (State Committee on Statistics, 2013).

Table 1.3

Mortality and health indicators, 1980–2012, selected years

	1980	1990	1995	2000	2005	2010	2012
Estimated life expectancy at birth, total (years)	65.3	66.7	66.3	66.9	67.3	67.9	68.1
Estimated life expectancy at birth, male (years)	61.8	63.6	63.2	63.8	64.1	64.6	64.8
Estimated life expectancy at birth, female (years)	68.9	70.0	69.6	70.3	70.7	71.3	71.5
Life expectancy at birth, total (years), national statistics[b]	67.2	69.7	67.9	69.6	70.5	72.9[a]	73.1[a]
Life expectancy at birth, male (years), national statistics[b]	63.6	66.3	65.0	67.0	68.2	70.6[a]	70.7[a]
Life expectancy at birth, female (years), national statistics[b]	70.4	72.9	70.7	72.2	73.0	75.1[a]	75.5[a]
Estimated mortality rate, adult, male (per 1 000 male adults)	245.1	241.9	251.6	249.2	246.9	241.7	239.2
Estimated mortality rate, adult, female (per 1 000 female adults)	121.4	131.2	143.8	143.4	141.7	137.2	134.9

Sources: World Bank, 2014; [a]State Committee on Statistics, 2013; [b]WHO Regional Office for Europe, 2014a.

The difference between officially recorded rates on infant mortality and estimates based on survey data is due to several reasons (Aleshina & Redmond, 2003; World Bank, 2004). One reason is the misreporting of births and infant deaths by medical staff, partly due to the fear of consequences by medical personnel (Measure DHS, 2002). Other reasons are differences in definitions of indicators and estimation methods used. According to World Bank estimates (World Bank, 2014), infant mortality had declined to 34.4 deaths per 1000 live births by 2012 (Table 1.5). This contrasts with an officially recorded rate of 9.8 deaths in 2012 (State Committee on Statistics, 2013). The Ministry of Health piloted the WHO live birth definition since 2003 and formally adopted it in 2010 (Ministry of Health, 2010). However, the international definition is not yet applied to the data reported by the State Committee on Statistics, causing a significant discrepancy between official vital statistics and international estimates by agencies such as WHO and the United Nations Inter-agency Group for Child Mortality Estimation.

Diseases of the circulatory system (in particular ischaemic heart disease and cerebrovascular disease) are the most common causes of death in Uzbekistan (Table 1.4). The mortality rate from diseases of the circulatory system has increased in Uzbekistan since the 1980s, a development that mirrors the trends in other countries of central Asia and the CIS, but contrasts with trends in western Europe, where mortality from this group of causes of death has continuously declined in recent decades.

Table 1.4

Main causes of death, selected years, age-standardized death rates per 100 000 population, 1981–2005, selected years

Causes of death (ICD-10 classification)	1981	1990	1995	2000	2005[a]
All causes	1 096.6	1 060.1	1 272.0	1 189.5	1 149.2
Communicable diseases					
All infectious and parasitic diseases (A0–B99)	42.3	30.9	33.8	28.0	21.3
Tuberculosis (A15–A19)	18.8	12.8	16.3	21.3	16.4
HIV/AIDS (B20–B24)			0.0	0.0	0.2
Noncommunicable diseases					
Malignant neoplasms (C00–C97)	117.7	119.2	96.9	84.7	77.4
Colon cancer (C18)	5.7	6.2	4.8	4.2	3.9
Cancer of larynx, trachea, bronchus and lung (C32–C34)	16.0	18.5	14.7	11.7	11.6
Breast cancer (C50), females	8.2	10.6	10.5	11.4	11.6
Cervical cancer (C53), females	5.4	4.7	5.5	4.2	5.7
Diabetes (E10–E14)	5.7	11.8	25.1	22.5	30.2
Mental and behavioural disorders (F00–F99)	3.3	1.7	6.2	3.2	1.7
Circulatory diseases (I00–I99)	575.6	600.2	781.9	772.3	754.2
Ischaemic heart diseases (I20–I25)	365.5	379.8	476.1	449.3	380.9
Cerebrovascular diseases (I60–I69)	154.9	164.5	209.2	192.1	177.9
Respiratory diseases (J00–J99)	154.8	110.8	117.7	93.8	66.4
Digestive diseases (K00-K93)	53.4	52.1	67.7	62.2	66.7
External causes					
Transport accidents (V01–V99)	18.3	23.1	10.6	11.0	11.4
Suicide (X60–X84)	10.7	10.3	9.5	9.7	5.5
Ill-defined and unknown causes of mortality (R95–R99)					0.9

Sources: WHO Regional Office for Europe, 2014b.
Note: [a]Last available year reported by Uzbekistan to the WHO Regional Office for Europe is 2005.

The age-standardized death rate from noncommunicable diseases in 2008 amounted to 937.8 per 100 000 population, with a large proportion of deaths (54.0% among males and 39.1% for females) occurring under the age of 70 years (WHO, 2010). Out of all deaths due to noncommunicable diseases in 2008, about 77% can be attributed to cardiovascular diseases, 7–8% to cancers, and

3–4% to respiratory diseases (WHO, 2010). At the same time, mortality from digestive diseases has increased notably in the country, much of which is due to chronic liver disease and cirrhosis.

The maternal mortality rate in Uzbekistan has also followed a development similar to trends in other former Soviet countries, declining to an official rate of 20.2 maternal deaths per 100 000 live births in 2012. However, a maternal death is considered to have arisen from a criminal offence and is subject to criminal investigations by the prosecutor's office, creating an incentive for under-reporting in official statistics. WHO estimated maternal mortality at 36 per 100 000 live births in 2012 (Table 1.5).

Table 1.5

Maternal, child and adolescent health indicators, 1980–2012, selected years

	1980	1990	1995	2000	2005	2010	2012
Perinatal mortality per 1 000 live births		19.6	13.7	10.3	8.8	11.3[a]	10.7[a]
Neonatal mortality per 1 000 live births (World Bank estimate)		20.7	19.8	18.3	16.1	14.2	13.5
Neonatal mortality per 1 000 live births (national statistics)[a]						6.6	6.1
Infant mortality per 1 000 live births (national statistics)	42.9	34.3	26.3	19.1	15.0	11.1[a]	9.8[a]
Infant mortality per 1 000 live births (World Bank estimate)	86.9	60.5	56.9	51.3	43.1	36.7	34.4
Under-5 mortality per 1 000 (national statistics)[a]						14.8[a]	13.8[a]
Under-5 mortality per 1 000 (World Bank estimate)	111.2	73.8	69	61.4	50.6	42.5	39.6
Maternal mortality rate per 100 000 live births	41.2	34.1	33.0	34.5	29.2	21.0	20.2[a]
Maternal mortality rate per 100 000 live births (estimate)		66	54	48	44	40	36
Adolescent fertility rate (births per 1 000 women ages 15–19) (World Bank estimate)	41.0	55.9	56.4	50.0	49.3	42.8	38.8
Abortions per 1 000 live births	290.8	309.6	135.0	103.7	85.3	66.0[a]	62.0[a]

Sources: WHO Regional Office for Europe, 2014a; World Bank, 2014; [a]State Committee on Statistics, 2013.
Note: 1981 instead of 1980 for abortions, infant and maternal mortality, 1991 instead of 1990 for perinatal mortality.

Due to Ministry of Health immunization protocols and strict control of compliance, immunization rates have been traditionally high in Uzbekistan. However, similar to other countries of the region, there has been a resurgence of tuberculosis in the years since independence, as well as an increase in multi-drug and extensively drug-resistant tuberculosis, and HIV infections have increased steeply in the 2000s and early 2010s. Access to safe water remains another major problem, with significant differences across Uzbekistan's regions.

2. Organization and governance

Most health care providers in Uzbekistan are public. The state-run health system consists of three distinct hierarchical layers: the national (republican) level, the *viloyat* (regional) level, and the *tuman* (district) or city level. The private sector is still small and mainly comprises pharmacies, small practices, and institutions involved in health care delivery or the production and supply of pharmaceuticals or medical equipment.

The key players involved in organizing and managing the public sector health system in Uzbekistan are the President, the Cabinet of Ministers, the Supreme Assembly (Legislative Chamber and Senate), the Ministry of Health, the Ministry of Finance, *viloyat* and *tuman* health authorities and the network of health facilities. The Ministry of Health is the major player in organizing, planning and managing the Uzbek health system. Although the Ministry of Health to some extent exercises managerial and regulatory functions over all actors in the health system, only national-level institutions are directly managed by, and accountable to, the Ministry of Health. For all other institutions, these administrative and regulatory functions are performed by other agencies, such as *viloyat*, city and *tuman* health authorities, which are part of the respective subnational administrative layer.

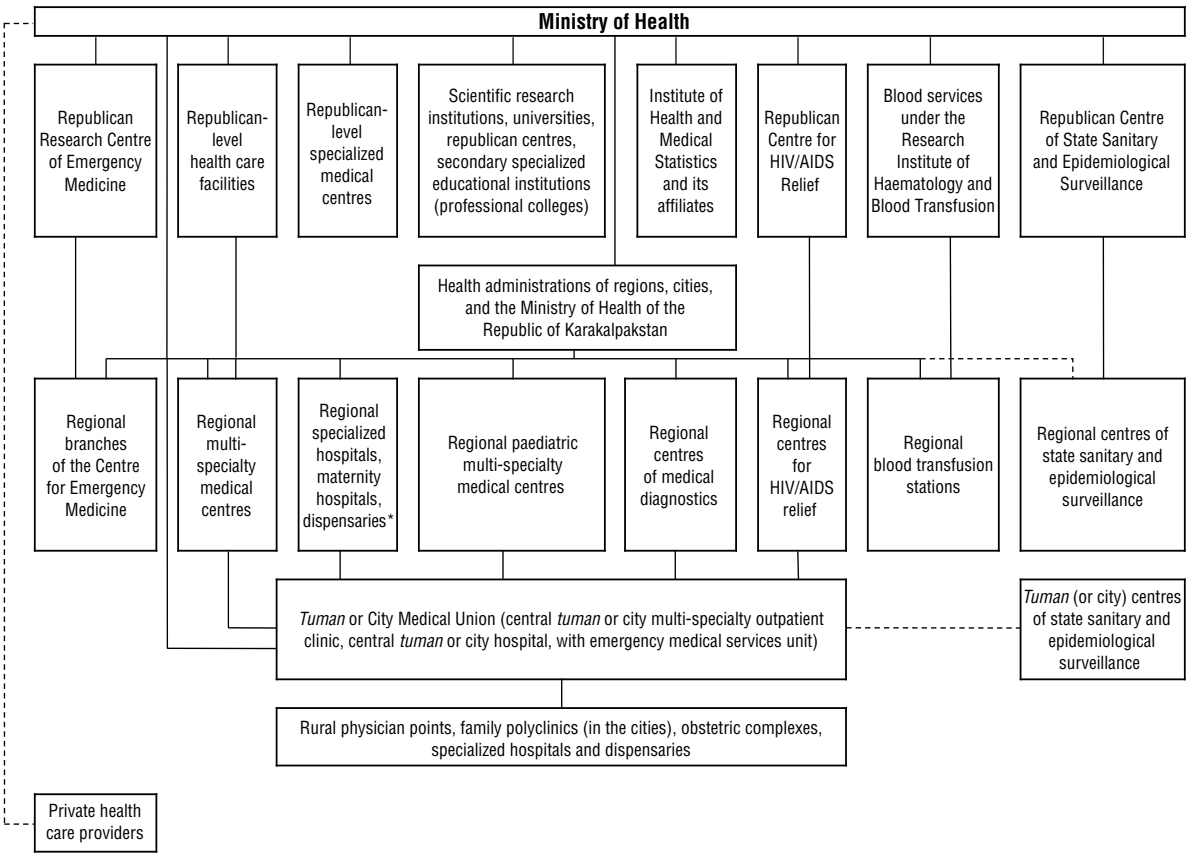
Regulation is almost the exclusive domain of the government, with little or no role played by NGOs or professional associations. As the government-owned health system largely follows the integrated model (with the government being the principal provider and purchaser of health services), almost all health workers are government-salaried employees. Following an increase in unnecessary, unsafe or substandard care in the private sector, the government has significantly limited the type of services that can be provided in the private sector, in particular with regard to complex surgical procedures, and regulatory oversight has been strengthened, allowing the Ministry of Health to conduct

inspections without prior approval from the Cabinet of Ministers. Patient rights and patient choice have been set out by law, but are still not well implemented in practice.

2.1 Overview of the health system

Based on managerial and regulatory functions as well as accountability, the state-run health system falls into three distinct hierarchical layers: the national (republican) level, the *viloyat* (regional) level, and the *tuman* (district) or city level (Fig. 2.1). The highest hierarchical layer is formed by the Ministry of Health and other national institutions. The private sector is still small and mainly comprises pharmacies, physicians working in small practices, and institutions involved in health care delivery or the production and supply of pharmaceuticals or medical equipment (President of Uzbekistan, 1998, 2007c).

Fig. 2.1
Overview of the health system



Note: *Dispensaries are medical facilities charged with screening for, identifying and managing specific conditions or groups of conditions. They were an integral part of secondary and tertiary health care before the dissolution of the Soviet Union and are still in place in many former Soviet countries.

2.2 Historical background

In the Soviet health system, almost all health services were delivered through the public sector. While all citizens enjoyed access to health care free at the point of delivery and a wide range of medical services were available for all, the Soviet model of health care contained several structural weaknesses. It proved to be effective in tackling infectious diseases, but major system problems surfaced with a change in the burden of diseases (Rowland, 1991). Weaknesses of the Soviet health system included an emphasis on quantitative indicators, with limited attention to outcomes and the quality of care, as well as inflexible management and financing arrangements.

Another weakness of the Soviet health system was related to health spending. Soviet health spending had been significantly lower than in other developed nations. Furthermore, it was heavily biased towards secondary care. In the mid-1980s, Uzbekistan had almost twice as many hospitals per 100 000 population (7.89 in 1985) than those countries that joined the European Union (EU) before May 2004 (the EU15) (3.87 in 1985). Primary care was neglected and did not fulfil the role of a gatekeeper for higher levels of care. The ineffective use of resources was exacerbated by inefficient hospital procedures, with diagnostic investigations requiring hospital stays of up to seven days (Rowland, 1991).

Although the Soviet health system had a comprehensive network of health facilities, it faced major problems related to their operation. Facilities were poorly equipped and maintained, and a shortage of medical supplies existed throughout the system. In rural areas, 27% of hospitals did not have sewerage and 17% did not have running water. Health personnel were inadequately trained and poorly paid, with physicians receiving about 70% of the average salary of non-farm workers (Rowland, 1991). With the dissolution of the Soviet Union, independent Uzbekistan was confronted with the legacies of the Soviet health system, while undergoing significant economic, social and political transformations.

2.3 Organization

The key players involved in organizing and managing the health system in Uzbekistan are the President, the Cabinet of Ministers, the Supreme Assembly (Legislative Chamber and Senate), the Ministry of Health, the Ministry of Finance, *viloyat* and *tuman* health authorities and the network of health facilities.

The President and the Cabinet of Ministers, headed by the Prime Minister, are responsible for developing national health policies. Presidential decrees are typically strategy-setting documents that outline the vision and directions for health reforms. These decrees are then followed by documents issued by the Cabinet of Ministers and the Ministry of Health that elaborate on specific steps and measures needed to align the health system with these broad visions and directions.

The Cabinet of Ministers decides on the financing of health care programmes and medical research, monitors environmental health, ensures a standard system for the collection and processing of health data and coordinates and supervises the activities of all government bodies concerned with health protection.

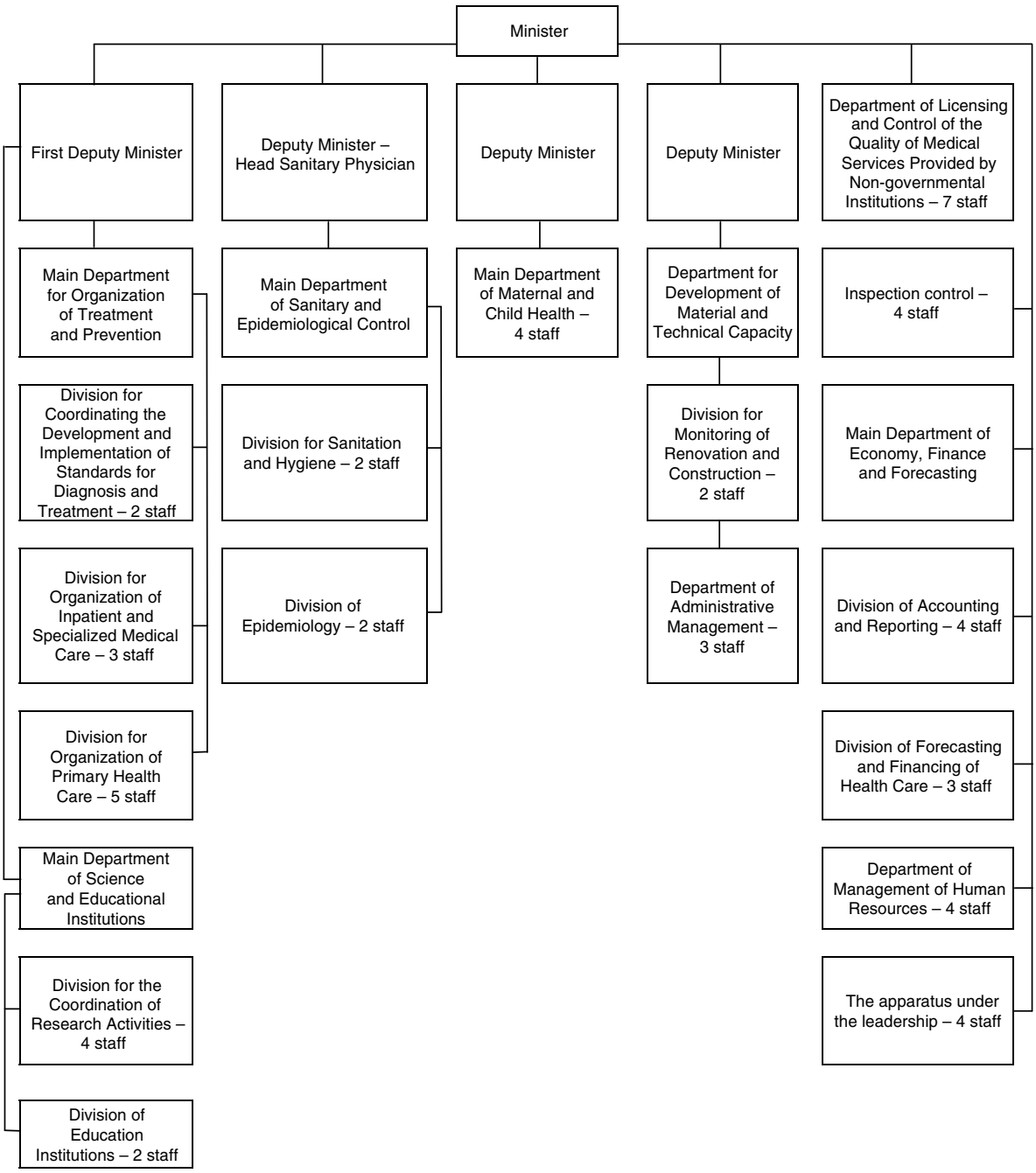
The Parliament adopts legislation on health care, approves the national health care budget and controls its execution. Health care laws are debated within the labour and welfare committees of the Parliament.

The Ministry of Finance formulates the budget to be approved by the Supreme Assembly and allocates funds to the Ministry of Health and the *viloyats*, including funds for health services and capital investments.

The public sector consists of health care providers managed by *viloyat* and *tuman* health authorities and the Ministry of Health, as well as of all the institutions owned by the state and involved in health care delivery, rehabilitation, sanitary-epidemiological services, medical and pharmaceutical education, medical research, and the production of pharmaceuticals and medical equipment. The public sector also includes health care providers and pharmacies owned and operated by state agencies other than the Ministry of Health, such as the Ministry of Internal Affairs or the military (Republic of Uzbekistan, 1996).

The Ministry of Health is the major player in organizing, planning and managing the Uzbek health system. The organizational structure of the Ministry of Health (Fig. 2.2) is described in *Presidential Decree No. 1119* of 2 June 2009 (President of Uzbekistan, 2009). The Ministry has 69 staff responsible for administration and management, not including 19 posts for secretarial and support staff. It is headed by the Minister of Health who is appointed and dismissed by the President with the approval of the Parliament. The Minister has one first deputy and three deputy ministers. The deputy ministers are appointed and dismissed by the President (President of Uzbekistan, 2009).

Fig. 2.2
Structure of the Ministry of Health



Maximum number of staff allowed 88, including managerial staff of 69 persons.

The Ministry of Health develops health care legislation and regulation, sets standards for the quality and volume of health services, monitors the quality of health care, identifies priorities for medical research, monitors population health, develops curricula for the training of health professionals, issues licences, certifies health care providers and coordinates international aid for the health sector. It also evaluates the implementation of governmental and ministerial policies (Republic of Uzbekistan, 1996).

The structure of the Ministry of Health has changed frequently during recent years. Since the first years of independence, there has been a substantial reduction in the number of departments and staff. The names of departments have also changed frequently.

- The Scientific Council under the Ministry of Health is responsible for the application of medical science in the Uzbek health system. It includes leading scientists and experts.
- The Chief Directorate of Treatment and Prevention is one of the main departments responsible for the overall management and supervision of health services. It is responsible for developing practice guidelines and protocols for preventing and treating diseases.
- The Department for the Protection of Maternal and Child Health administers maternal and child health facilities and supervises health care for children and mothers.
- The main tasks of the Department of Sanitary-Epidemiological Inspection are the monitoring of sanitation issues, the control of infectious diseases, and the supervision of all sanitary-epidemiological institutions.
- The departments for human resources and science and institutions of medical education are in charge of the education and training of health personnel and of forecasting the requirements for health personnel and human resource planning. The Department of Science and Institutions of Medical Education is also in charge of developing curricula for health care professionals in cooperation with the Ministry of Higher and Specialist Education.
- The Department of Inspection Control oversees the implementation of health reforms and the pharmaceutical supply system, and inspects legal and reporting documents processed by other departments in the Ministry of Health. Health facilities are regularly inspected by clinical specialists and heads of health departments with the aim of ensuring that health facilities meet normative targets and comply with central regulations.

The highest hierarchical layer of the Uzbek health system also comprises health care delivery and research institutions. These institutions at the national level are financed and regulated directly by the Ministry of Health. Although the Ministry of Health exercises managerial and regulatory functions over all actors in the health system to some extent, only national-level institutions are directly managed by and accountable to the Ministry of Health. For all other institutions, these administrative and regulatory functions are performed by other agencies, such as *viloyat*, city and *tuman* health authorities. The institutions at the national level include:

- medical centres and research institutions;
- institutions of higher medical education: medical schools, institutions of postgraduate medical education, the Pharmaceutical Institute, and some colleges for health professionals;
- health care delivery institutions classified as being of national importance.

Fig. 2.1 illustrates the structure of the health system in Uzbekistan in 2014, as envisioned by a *Presidential Decree* in 2007. New institutions were planned to be established, but were not yet in place in 2014. For instance, new diagnostics centres were planned to be established in every regional centre.

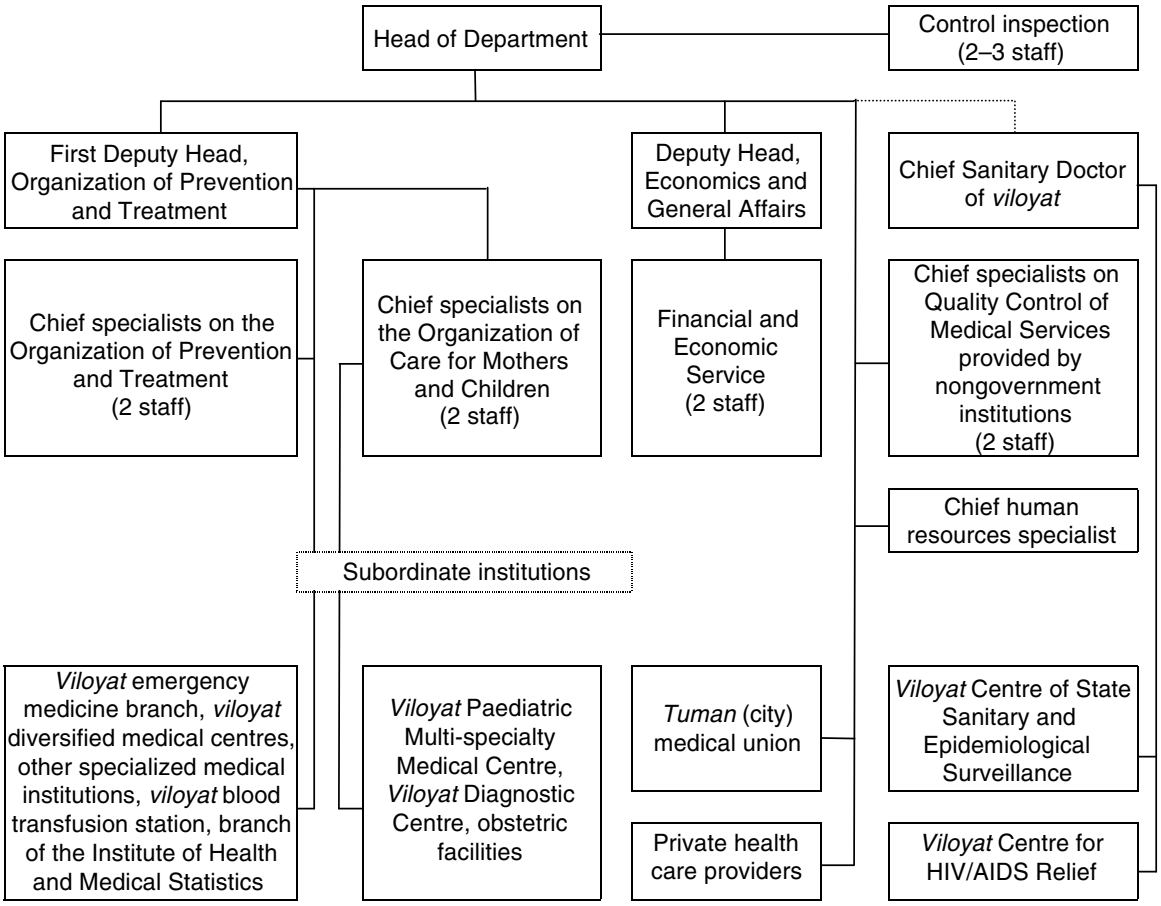
Health care institutions at the *tuman* and *viloyat* level represent the second and third managerial and regulatory layer of the Uzbek health system. At the *viloyat* level, each of the 13 regional units (12 *viloyats* and Karakalpakstan Autonomous Republic) and the City of Tashkent have an administration called a *khokimiat* (Cabinet of Ministers in Karakalpakstan) headed by a *khokim* (governor; Head of the Cabinet of Ministers in Karakalpakstan). These heads of government are appointed by the President.

Viloyat governing bodies form a new system of regional administration and have replaced the executive committees of the *viloyats* and the municipal authorities of the former Soviet system. Their finance departments collect a significant share of government revenue, of which they keep a proportion.

The next hierarchical level of administration is formed by *tuman* governments, which are headed by a *tuman khokim*. These *tuman* governments are increasingly responsible for administering funds for social assistance and for managing health and social services.

Regional health care is managed by the respective health departments within the *viloyat* government. These regional health authorities form part of the statutory health system and are accountable to their respective *viloyat* government and the Ministry of Health (Cabinet of Ministers, 1999a). They coordinate and control activities of health-related institutions in their territory, whatever the form of ownership (Cabinet of Ministers, 1999a). Regional health authorities also supervise *viloyat* health care providers and institutions that form part of the third hierarchical layer of the health system and are accountable to *tuman* or city health authorities. Fig. 2.3 shows the organizational structure of regional health departments.

Fig. 2.3
Organizational structure of regional health departments



Note: The maximum number of managerial staff allowed in *viloyat* health departments is 14–15 persons.

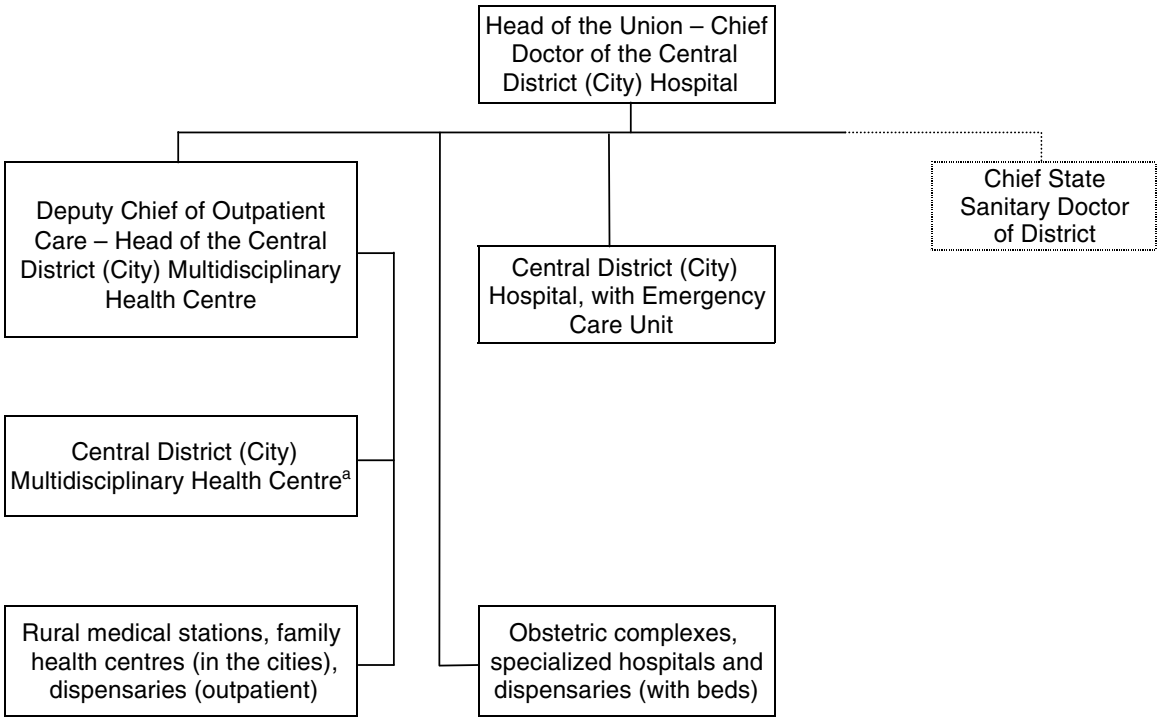
Every *viloyat* consists of a number of rural *tumans* and urban territorial units. Only cities with a significant population or classified as *viloyat* centres are considered to be separate urban territorial units. These urban territorial units have their own health departments, accountable to the city government and *viloyat* health authorities. Smaller towns and rural areas are included in the *tuman* government system and their health institutions are supervised by *tuman* health departments.

State-run health care at *tuman* level consists of central *tuman* hospitals, central multidisciplinary *tuman* outpatient clinics (polyclinincs) and a network of rural physician centres providing primary care to the population covered. In recent reform initiatives, *tuman* health departments have been renamed and transformed into *tuman* medical unions. These *tuman* medical unions are now expected to comprise central *tuman* hospitals, multidisciplinary outpatient clinics and primary care units. Previously, outpatient clinics were mostly stand-alone clinics that were not considered part of a central *tuman* hospital. Under the

new concept, central *tuman* hospitals and multidisciplinary outpatient clinics are conceptualized as a single functional entity. Multidisciplinary outpatient clinics are now being relocated close to central *tuman* hospitals; they are anticipated to collaborate closely with hospital staff. *Tuman* medical unions also have an emergency medicine unit within their respective central *tuman* hospital. The head of the central *tuman* hospital is also the head of the *tuman* medical union and is responsible for the health of the *tuman* and its health services. This includes sanitary-epidemiological services, as the head of the *tuman* unit for sanitary epidemiological services is nominally accountable to the head of the *tuman* medical union.

City health authorities have been renamed and transformed into City medical unions. They are responsible for the management and monitoring of state-owned health care institutions within their urban territorial unit. These institutions include the central city hospital, city hospitals, multidisciplinary outpatient clinics (polyclinics) and urban primary care centres (polyclinics). The central city hospital includes outpatient, inpatient and emergency units. The head of the city central hospital is also the head of the City medical union. Fig. 2.4 shows the organizational structure of *tuman* or City medical unions.

Fig. 2.4
Organizational structure of *tuman* or City medical unions



[a] Includes adult, child and other specialized outpatient clinics.

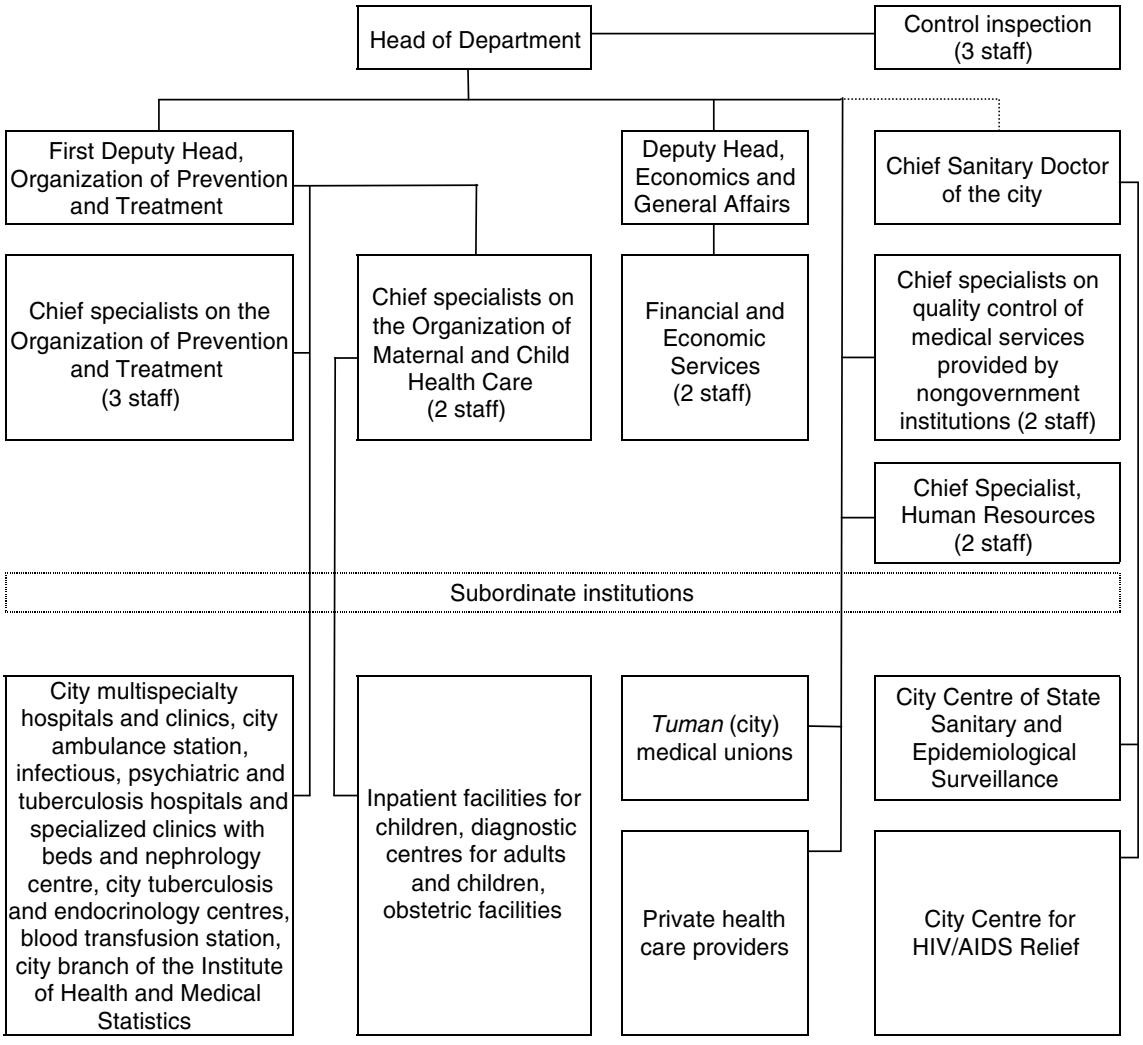
Health authorities at *tuman* or city level have little oversight over the private sector. However, given the challenges in the quality of care, the Ministry of Health and local health authorities (especially at *viloyat* level) have been given more powers in controlling the quality of care in the private sector.

While the reorganization of health care at *tuman* and city level and the establishment of *tuman* and City medical unions might improve the integration and coordination of care, it has given rise to some unforeseen challenges. The number of deputies, for example, was reduced from four to one, which has led to difficulties in the management of hospitals, hospital departments and polyclinics.

An exception to this organization of regional health systems is the City of Tashkent, the capital and largest city in the country. Fig. 2.5 illustrates the more complex organizational structure of the health department in Tashkent.

Fig. 2.5

Organizational structure of Tashkent city health department



Note: The maximum number of managerial staff allowed in the main health department of Tashkent city is 17 persons.

2.4 Decentralization and centralization

In Uzbekistan, decentralization has been approached gradually. Administrative functions have been delegated to *viloyat* health authorities, while centralized decision-making has been retained at the national level.

Devolution in the system is largely reflected in the delegation of budgetary responsibilities from the national to the *viloyat* level, while keeping a strictly vertical structure and tight national guidelines and norms, on which decisions at the *viloyat* level are based. Regional health authorities, although part of *viloyat* governments, are mainly considered to be a quasi-independent branch of the Ministry of Health. Heads of *viloyat* health authorities are appointed by the Ministry of Health, upon nomination by the *viloyat* government officials. Regional health offices are under dual accountability: to the Ministry of Health and the local government.

The Ministry of Health has closely controlled the implementation of centrally developed planning guidelines. Some *viloyats* raise some local income for the autonomous management of their health services and receive central support to meet planning guidelines.

The health system has not been exposed to extensive privatization and continues to be owned in large part by the government, with the exception of pharmacies and dental care. However, the Uzbek government has encouraged the setting up of private practices and clinics, in order to mobilize additional resources and to improve efficiency and quality. There has been a gradual increase in private health care providers since independence. Private services are based on private payment arrangements between providers and patients or third parties (such as employers, the government, or insurance companies) on a fee-for-service model. In the past, the private sector had been limited to single practitioners providing outpatient services. In 2010, new regulations were introduced that no longer allow single practices in the private sector; however, single practices in the public sector are still in place. Nowadays, the private industry has significantly expanded, with many new clinics entering the market and providing specialized outpatient, inpatient and emergency care services.

2.5 Planning

The Ministry of Health is predominantly involved in planning, managing and regulating the health services. It issues its own institutional decrees and protocols to ensure implementation of governmental aims and objectives.

These documents are developed by the relevant departments of the Ministry. The respective department is also, in most cases, responsible for monitoring and evaluation. Within the Ministry of Health, the Main Department for Organization of Treatment and Prevention is mainly responsible for the overall management of the health system, supported by the Department of Economy, Finance and Forecasting with the Department of Management of Human Resources, and the Main Department of Science and Educational Institutions. The Ministry of Health issues planning guidelines for the distribution of financial resources and the management of health care facilities at the *viloyat* level.

Budget setting and the monitoring of budget expenditure for the institutions at the national level are the responsibility of the Ministry of Health. The Department of Economy, Finance and Forecasting of the Ministry of Health works in coordination with the Ministry of Finance to ensure that assignments from the budget are spent as planned.

A new state treasury framework was set up to improve the control and monitoring of the use of public funds. The framework was rolled out nationally in 2007. In line with this new framework, all expenditures in public health facilities that are funded through state funds are registered and processed at the local treasury offices (see Chapter 3) (Republic of Uzbekistan, 2004; President of Uzbekistan, 2007a).

In the years since independence, national priority areas in health policy have included the protection of maternal and child health (Cabinet of Ministers, 2001), the prevention and control of infectious diseases, environmental protection, the development of primary health care and the strengthening of tertiary care services (President of Uzbekistan, 1998). The majority of national plans have been in the domain of health services (particularly related to structure and finance) with the implicit aim of improving accessibility, equity and quality of care.

The most prominent example of such documents is the *Presidential Decree* of 10 November 1998 on reforming the Uzbek health system (President of Uzbekistan, 1998). The document identified priority areas in the health system, including maternal and child health, the development of the private sector, quality of care, and a guaranteed package of medical services free at the point of delivery. In addition to identifying priority areas, the document also sets some clear targets to be achieved in the form of structural indicators. Examples of some of the structural indicators and objectives are:

- transformation of the sanitary-epidemiological sector into a single organizational structure within the Ministry of Health by 2000;
- transition to a two-tier primary care system in rural areas by 2005.

The document also defined the role of the Ministry of Health in the health care sector. According to the *Decree*, primary responsibilities of the Ministry should be:

- the development of a regulatory framework with quality standards in the health care sector, including monitoring of compliance;
- implementation of governmental health programmes;
- financing of primary care within a government guaranteed package of medical services;
- licensing and accreditation of health care institutions, pharmacies and health professionals;
- regulation of prices for medical services;
- licensing of pharmaceuticals.

These policies, although they include some elements of the targeted health plans, mostly emphasize structures and process inputs (such as the number of primary health care units built or the number of personnel trained). An emphasis on outcomes is lacking, possibly compromising the achievement of the ultimate goals set out by these documents: quality, efficiency and access.

2.6 Intersectorality

Although there are few specific mechanisms or structures for considering health issues in policies across sectors (one example being the Emergency Anti-epidemic Commission), the government has repeatedly used an intersectoral approach to tackle health-related issues. One recent example relates to tobacco control, building on cooperation between different government departments. Legislation enacted in 2011 requires cigarette packages to have a health warning covering at least 40% of their surface. It also prohibits tobacco advertising and the sale of tobacco products to those younger than 20 years. Smoking in public venues, such as bus or train stops, health care institutions, and educational and sport facilities has also been banned (Republic of Uzbekistan, 2011).

Other examples of intersectoral approaches are the response to HIV/AIDS and iodine deficiency. The government has developed an HIV/AIDS action plan that involves the Ministry of Health, the Ministry of Internal Affairs and local government offices (Cabinet of Ministers, 2009a). Efforts to tackle iodine-deficiency disorders include legislation that mandates iodinization of a number of food products (Republic of Uzbekistan, 2007). In general, an intersectoral

approach is often donor-driven. For instance, the Country Coordination Mechanism (CCM), led by the Deputy Prime Minister, has been established for managing Global Fund grants related to HIV, tuberculosis and malaria, and an Interagency Coordination Committee discusses immunization issues. A number of other coordination mechanisms have been established to manage various projects, such as those related to climate change and health, and the development of a noncommunicable disease strategy and action plan.

2.7 Health information management

2.7.1 Information systems

Despite efforts at modifying the system, the current data collection system is fragmented and primarily focuses on structural data, with little effort to collect process-related and qualitative data. Public health facilities are required to report data to different data collecting agencies. Five major data collection mechanisms can be identified (Olson, 2003):

1. *Ministry of Health*: the Institute of Health and Medical Statistics collects data from all public health care facilities through so-called *tuman* organizational and methodological units. The collected data are then pooled at the *viloyat* branches of the Institute of Health and Medical Statistics, and then in turn at its central office in Tashkent;
2. *Sanitary and epidemiological system*: the data collection for the sanitary and epidemiological services operates separately from the Institute of Health and Medical Statistics system. It is mainly concerned with data related to infectious diseases and hygiene and is the track most often used for decision-making purposes at all levels. Data are collected from all public health care facilities. They are first pooled at the sanitary and epidemiological units at *tuman* level, and then at the *viloyat* and national sanitary and epidemiological departments.
3. *Programmes*: national programmes develop their own reporting systems for monitoring and evaluation purposes. Examples of such a data collection systems are the Republican Specialized Research Centre for Phthisiology and Pulmonology with its nationwide dispensary system and the nationwide HIV/AIDS network;
4. *State Statistics*: the Ministry of Macroeconomics and Statistics requires separate reporting of health data through its *viloyat* and *tuman* branches. This data collection system covers indicators on mortality, births and logistics;

5. *Parallel health systems*: parallel health systems maintained by the National Security Service, the Ministry of Internal Affairs, Uzbek Airlines and other ministries or state companies use separate reporting systems. Some of the data collected by these parallel systems might, however, at some stage be incorporated into the data collection systems of the Ministry of Health or the Ministry of Macroeconomics and Statistics.

All data collection systems function independently from each other. It is not entirely clear how far the data collection systems are coordinated or if any data are pooled at the different levels of data collection. The Institute of Health and Medical Statistics is the primary data collection agency for the Ministry of Health. Although the sanitary and epidemiological services form part of the Ministry of Health and Medical Statistics, they collect data relevant to their functions of infectious control and health promotion separately from the Ministry of Health system.

Based on the collected data, the Institute of Health, which was established in 2001, produces a number of different regular reports which are distributed to relevant agencies within the Ministry of Health. All these reports are designed to facilitate decision- and policy-making at the national or *viloyat* levels, with little attention to the local (*tuman* and facility) levels. Data collection heavily focuses on quantitative indicators which might be related to the predominant use of data for planning and control purposes. Another challenge of the health information system is that a number of relevant factors are generally not taken into account or integrated during analysis, such as those related to ethnicity, income or education. The lack of analytical and statistical training for policy-makers and high-level managers, as well as the staff of the Institute of Health and Medical Statistics, further limits the extent to which health data can be used.

Data collection and pooling within the health system and by the Institute of Health and Medical Statistics is primarily done manually. The data collection process conducted by the Institute of Health and Medical Statistics is mostly limited to the public sector. At present, there are no effective tools or systems to ensure accurate collection of data in the private sector and positive incentives for accurate reporting are lacking. In addition, although the government has streamlined the data collection process in recent years, the range of indicators for which data are collected is still immense (Streveler, 2004).

In view of the recent expansion of the private sector, in which little data collection is performed, and barriers to accessing care (such as out-of-pocket payments and limited pharmaceutical coverage), some health indicators, such as on noncommunicable disease, have to be treated with considerable caution.

In order to obtain data not well captured by the public data collection system, a number of surveys have been conducted. Important examples are the Demographic and Health Surveys, conducted jointly by the Ministry of Health and the United States Agency for International Development (USAID) in 1996 and 2002, and UNICEF Multiple Indicator Cluster Surveys, conducted in 2000 and 2006.

2.7.2 Health technology assessment

In the first years after 1991, health technology assessment was mainly limited to the assessment of the safety of pharmaceuticals. The results of these assessments have been linked to the licensing procedure which granted access to the national pharmaceutical market. Assessments are carried out in two steps. First, the product is licensed to gain access to the Uzbek market or to be included in the pharmaceutical formulary. In this case, several characteristics of the pharmaceutical are taken into account, such as efficiency and effectiveness, based on the trials performed by pharmaceutical companies. Second, every lot (batch) of pharmaceuticals entering the market is assessed in terms of health and safety. Only upon approval will the retailer be allowed to sell it.

With regard to medical equipment, an assessment is now required for any equipment to enter the Uzbek market. When publicly financed purchasing is carried out centrally, the Ministry of Health or other relevant public bodies are responsible for the registration (licensing) of the equipment. Examples of such cases are the purchases conducted within the World Bank project Health II (see Chapter 6) or centralized purchasing for emergency centres. In other instances, distributors of medical equipment are required to obtain prior permission when selling on the Uzbek market.

No data are available on regular systematic assessments of clinical procedures. There seem to have been a number of unsystematic assessment initiatives at major health care institutions. While they might have affected policy-making at the institutional level, it is unclear how these assessments were performed and how their results were implemented.

With quality of care receiving more attention in recent years from Uzbekistan's government and international agencies, several initiatives have been directed towards a more systematic process of health technology assessment. The launch of the Evidence-Based Medicine Centre within the Tashkent Institute for Advanced Medical Education, which had been supported by ZdravPlus on behalf of USAID, could contribute to the entry of health technology assessments into the clinical arena. Since its launch in April 2004, the Centre has produced a number of clinical practice guidelines.

However, unified national definitions and mechanisms for developing and implementing clinical standards, guidelines and protocols are still lacking. Furthermore, the quality of the produced "guidelines" was, until very recently, often questionable. At present, a World Bank supported initiative is expected to aid in translating and adapting international guidelines on 25 noncommunicable conditions over the project cycle of Health III (see Chapter 6).

2.8 Regulation

Regulation in the Uzbek health system is the prerogative of the government, with little or no role played by NGOs or professional associations. As the government-owned health system still largely follows the integrated model (with the government being the principal provider and purchaser of health services), almost all providers are government-salaried employees. Public funds are not used for purchasing services from the private sector, for which a purchasing process per se does not exist, nor is it regulated or used as a tool.

In the private sector, the government initially strictly limited the involvement of health authorities in the operations of private providers, in order to facilitate the growth of the private sector. The role of government health agencies in regulating the private industry was mostly limited to licensing and the accreditation of professionals or institutions. Typically, inspections had to be scheduled and published beforehand, approved by the Cabinet of Ministers and only take place once every several years. This lack of oversight has led to an increased use of unnecessary, unsafe or substandard care in the private sector, which primarily works on a fee-for-service basis. The government has responded by significantly limiting the type of services that can be provided in the private sector. Furthermore, the Ministry of Health was granted increased oversight responsibilities, including unscheduled visits to private facilities.

The public sector is more heavily regulated by government agencies. Involvement varies according to the level of government. At the national level, the government is mainly concerned with strategy-setting and assessing population health, while at lower levels (the *viloyat* and *tuman* levels) it is mainly responsible for the management and implementation of national policies. As there is only limited policy formulation at local levels, the stewardship role of the government expresses itself differently at different levels. The greatest leverage is invested in agencies at the national level, while lower levels act as enforcers of nationally adopted regulations and policies.

The government-owned health system in Uzbekistan is strictly hierarchical. The most prevalent mode of regulation is policy formulation. Subordinate levels of the health system are expected to follow the policies set by higher levels. Fiscal and other forms of incentives do not form part of the system used for regulating health care providers.

The hierarchical nature of the state-owned health system is further ensured by the way in which senior posts are allocated. Almost all senior management posts at national, regional and local level are appointed by the Minister of Health. This includes, for instance, the heads of regional health authorities, district/city medical unions, tertiary care facilities at the national level, multi-specialty hospitals at the regional level, and regional paediatric hospitals. Furthermore, all these posts are subject to annual revalidations carried out by the Ministry of Health. Revalidation committees evaluate the "fitness for the post" of management personnel, based on job performance and interviews (Cabinet of Ministers, 2008).

2.8.1 Regulation at the national level

At the national level, the government regulates the health sector through a number of organizations. The Cabinet of Ministers, the President and the Parliament are involved in the development of a vision for the health of the population and directions for health care development. These bodies are the main players who set the priorities, formulate national health policies, determine means and identify sources. However, other agencies, such as the Ministry of Health, the Ministry of Finance and the Ministry of Justice, are extensively involved in the policy development process and are consulted before the final documents are adopted.

The *Law on health protection* of 1996 is the main document outlining the areas subject to regulation by different players in the health sector (Republic of Uzbekistan, 1996). The Cabinet of Ministers and the Ministry of Health are charged with responsibilities such as:

- defending the rights of individuals to health protection;
- developing the national health policy and ensuring its implementation;
- financing the health sector and programmes for the development of medical science;
- managing, coordinating and controlling the public health sector;
- controlling the sanitary-epidemiological status of the population;
- ensuring a unified system of statistical reporting in the health sector;

- defining the state-guaranteed medical package for vulnerable groups of the population.

The Ministry of Health and the Ministry of Finance are the main institutional actors involved in the development of detailed policies and regulations and the implementation plans for government priorities and objectives. They are also responsible for monitoring, evaluation and information management.

2.8.2 Regulation at local levels

Government regulation at the subnational level is carried out by *viloyat* health authorities and *tuman* or city medical unions. Regional health administrations are responsible for the management of health services in their territorial units. Regional finance departments allocate resources to health care facilities based on guidelines determined by the Ministry of Health and Ministry of Finance. Regional administrations are supposed to take responsibility for preparing strategies for the development of the health system at the *viloyat* level, and each *viloyat* establishes its *viloyat* work plan in implementing national health care priorities.

The *viloyat* health authorities are responsible for ensuring an appropriate supply of pharmaceuticals and medical equipment in their *viloyat*. They are also responsible for providing appropriate health care services to the population in their *viloyats* and directly provide sanitary-epidemiological and ambulance services. The responsibilities of the *viloyat* administration also include the provision of rehabilitation services for people with disabilities, fundraising for health activities and services, and social protection.

The Ministry of Health is responsible for the implementation of nationally set protocols and policies at the local level. Local governments can only issue local policies that do not contradict national policies. Local policies are used as regulatory tool at the local level, but carry less weight than those from the national level. On the whole, local government representatives (such as governors or health authorities) ensure implementation of and compliance with national guidelines.

According to the *Law on health protection*, local authorities are, inter alia, charged with the following responsibilities (Republic of Uzbekistan, 1996):

- ensuring compliance with and implementation of legislation in the health sector;
- ensuring the rights of individuals to health protection are met;

- ensuring access to primary health care and social care;
- controlling the quality of medical care, compliance with medical protocols, and the provision of pharmaceuticals;
- coordinating and controlling all institutions involved in health care delivery;
- creating an environment which facilitates the development of the private sector.

2.8.3 Regulation and governance of third-party payers

Currently, a very small share of health financing is channelled through third-party payers and no specific regulations or frameworks for third-party payers exist.

2.8.4 Regulation and governance of providers

There are no restrictions on the kind of private providers that can access the market for health care delivery. The only criterion is that health professionals and health care delivery institutions are licensed by the Ministry of Health and meet other requirements set out for private businesses or NGOs. Private providers are generally considered to be commercial enterprises and are governed by the same regulations and agencies, irrespective of whether they are profit-making or non-profit-making.

The governance and management structure of public providers has not changed much since the Soviet period. Hospitals are managed by the head doctor, who is exclusively responsible for all hospital activities, and clinical and non-clinical outcomes or outputs. Depending on the size and type of the hospital, the head doctor is allocated a number of deputies, responsible for clinical aspects, infrastructure and similar issues. The next level of the management hierarchy comprises the heads of departments. They are "operational managers", responsible for the day-to-day running of departments and have both clinical and non-clinical responsibilities.

Urban polyclinics have a management and governance structure similar to that of hospitals. A head doctor is responsible for the management of the clinic and, in large polyclinics, is assisted by deputies. Rural physician points, due to their small size, have a much simpler management structure, although they also have a head doctor, even when they employ only one physician. In both cases, the head doctor is the formal "manager" of the public provider.

2.8.5 Registration and planning of human resources

The *Law on health protection* stated that only those who held a graduation diploma from higher or special medical education institutions of Uzbekistan were allowed to work in clinical practice. Those who graduated from educational institutions outside of Uzbekistan had to obtain approval for their diploma, according to procedures set out by the Ministry of Health. Those who had not been practising for more than three years were required to pass retraining or attestation processes (Republic of Uzbekistan, 1996).

While licensing for employment in the public sector has stayed unchanged since independence and no additional licensing processes have been established, licences for private practice have been introduced. Licences for private clinical practice (in single or group practices) are issued by a special committee organized through the Ministry of Health. Since September 2014, an online service for licensing private health care providers has been provided.

In 1999, the Ministry of Health established a Centre for Licensing and Revalidation of health professionals. The Centre's main responsibility is to assign "attestation" qualifications. These qualifications are linked to the salary scale in the public sector and need to be renewed every three to five years.

Medical education is the main governmental tool for the regulation of the number and mix of health workers. All institutions for medical education are public and the government determines annual enrolment, as well as the annual slots for graduate and postgraduate medical education for the various specialties. There are enrolment limits for both undergraduate and postgraduate degrees. For approximately 30–40% of overall enrolment, expenses (including tuition fees and a stipend) are funded by the government, while the remaining places are self-financed by students. The number of both government-funded and self-financed enrolment places for undergraduate and postgraduate (*magistratura*) education is set by the Cabinet of Ministers based on recommendations of the Ministry of Health, while the number of places for advanced academic degrees is set by the Ministry of Health and the Ministry of Finance. This arrangement provides an easy regulatory tool to address imbalances in the supply of health professionals, as the number of new specialists depends on the number of training places. However, as evidenced by the current imbalances in the health system, other regulatory tools might be needed in the future to address this issue more effectively.

2.8.6 Regulation and governance of pharmaceuticals

The Ministry of Health exercises its regulatory role in the area of pharmaceuticals through the Department for Quality Assurance of Drugs and Medical Equipment, established in 1995. The Department develops and implements quality standards with regard to pharmaceuticals and medical equipment. It is the only state agency responsible for the quality control, standardization and certification of drugs and medical equipment.

The purchase and distribution of pharmaceuticals was the first health arena to involve the private sector. A licence from the Ministry of Health and staff qualified with degrees in pharmacy are the only prerequisites for private pharmaceutical retail. Wholesale distributors of pharmaceuticals are also required to obtain a licence issued by the Ministry of Health (Cabinet of Ministers, 1994). The Ministry of Health, however, has taken on the role of a gatekeeper to the national pharmaceutical market and has regulatory responsibilities, which include safe storage and distribution and other safety-related issues. A universal price control mechanism is enacted throughout the country, limiting profit margins of wholesalers and retailers. Wholesalers' mark-ups are limited to 20%, with retailers allowed up to 25% of the purchasing price, so that consumer prices are within a 50% ceiling of the purchase price of the wholesaler.

In 1997, Uzbekistan adopted a national policy on pharmaceuticals that provides a comprehensive framework for coordinated development of the pharmaceutical sector. The official state register of pharmaceuticals approved for medical use in Uzbekistan contains about 3900 products. The listings are based on the brand name and also indicate the international non-proprietary (generic) name. These products are officially permitted to be prescribed and used in the Uzbek health system. The register contains drugs produced in Uzbekistan, as well as drugs from other countries.

In order to register domestic products, clinical trials are necessary. To register imported pharmaceuticals, a defined set of documents must be submitted to the Department for Quality Assurance. A committee consisting of three experts reviews the documents and, based on the results, pharmaceuticals are permitted for use without clinical trials, or are required to undergo a clinical trial or a trial for bio-equivalency. The following pharmaceuticals are eligible for exemption from clinical trials:

- if they have been in medical use for more than five years, and are registered in several countries, including the country where they are produced;
- if they are produced by a pharmaceutical company registered in Uzbekistan;
- generic drugs, if registered and licensed in the country where they are produced and in several other countries, as far as bio-equivalency trial outcomes are available.

Registration of medical equipment follows a similar path.

Uzbekistan has adopted the concept of essential drug lists and has published a national essential drug formulary in 1998. The national essential drug list contains about 240 products, including over-the-counter products, and provides updated information on drugs. The list is based on the WHO model list of essential drugs. In addition, the Ministry of Health regulates the price of the 20 most basic products. All pharmacies, regardless of ownership, are required to offer these 20 products for a fixed consumer price, irrespective of purchasing costs and retail outlet ownership (Cabinet of Ministers, 1994). Pricing of all other drugs is not regulated, except by the mark-up limits already mentioned (20% for wholesale and 25% for retail). Specified groups of the population are eligible for free medications in outpatient care if they have prescriptions from public primary care facilities. In these cases, retail pharmacies are reimbursed by the respective primary care facilities (Cabinet of Ministers, 1997b).

It is unclear what criteria are used to compile the list of 20 products and whether cost–effectiveness and burden of disease are explicitly taken into account. For all other products, price regulation is based on limiting wholesale and retail mark-ups (to 20% and 25% respectively).

2.9 Patient empowerment

2.9.1 Patient rights

The *Law on health protection*, outlining the legal framework for the Uzbek health system and setting out the rights and entitlements of patients, was passed by Parliament in 1996. Article 25 states that every citizen has the right to information on the state of their health, the required diagnosis and treatment,

outcomes, and possible risks or complications. This information should be provided directly to the patient. The information cannot be shared or used without the patient's consent, except in cases in which:

- it is used with the aim of diagnosing or managing a medical condition;
- there is a danger of spreading infectious diseases;
- the information is required in the process of criminal investigations or court hearings;
- medical care is delivered to a person younger than 14 years and his or her parents or trustees will be informed;
- it is suspected that harm has occurred as a result of either an accident or illegal actions.

Whoever gains access to health information as a result of these exceptions (such as health professionals, police or judges) will be accountable for the disclosure of information for other than the mentioned reasons.

Article 24 of the same law states that every patient has the right to choose a physician and health care delivery facility. All citizens are also entitled to preventive, medical and rehabilitative care, orthopaedic devices, and social support, including financial compensation when caring for ill and disabled persons on sick leave (Republic of Uzbekistan, 1996). Citizens have the right to refuse to receive medical care, except for conditions that pose a threat to others (Republic of Uzbekistan, 1996). All government health facilities are required to display Article 24 of the *Law on health protection* in an "Information corner".

Patients seeking and receiving health care are legally entitled to:

- humane treatment by health and auxiliary staff;
- choice of physician and health facility;
- receive diagnostic and medical care in an environment that meets sanitary and hygienic norms;
- consultations with other specialists;
- confidentiality related to seeking care, state of health, or other information obtained in the process of diagnosis and treatment;
- access to a lawyer;
- compensation in cases when harm has been inflicted in the process of the delivery of medical care;

- legal action when patients' rights have been violated, either by complaining to the management of the institution, higher-ranking agencies in the hierarchy of the health system, or directly to the court.

2.9.2 Patient choice

No evidence is available on how much the population is aware of their formal right to choose a physician and a health care delivery facility, how these rights are exercised in practice and if they have any effect on the quality and efficiency of care. The choice of primary health care providers in the public sector (except for child and maternal care) is tied to the residence address stamped in the passport ("*propiska*").

2.9.3 Patient information

A comprehensive and publicly available database or mechanism to inform patients of the quality, price, type or other characteristics of the services provided by health providers in the public or private sector is currently lacking. However, the Ministry of Health web site has recently started publishing prices for various services in selected public sector facilities.

2.9.4 Complaints procedures

In 2003, the Ministry of Health issued a revision of its previous framework for dealing with patients' appeals (Ministry of Health, 2003). According to this revision, oral and written appeals have the same legal status. All appeals are received and reviewed by the Unit of Correspondence at the Ministry of Health. Once referred to the relevant department or agency, the respective head is expected to sign the letter of appeal, and indicate who is responsible for the review process, and how and when it will be processed. Once the review process is completed, the appellant must be informed of the outcomes of the process. All agencies are required to have specified times for receiving oral appeals, which follow the same pathway as written appeals. In 2013, the web site of the Ministry of Health started to accept electronic submissions of patient suggestions and complaints.

2.9.5 Patient safety and compensation

Legal actions are neither part of the system nor are there any in-built incentives to take legal action or to seek compensation. Generally, legal action is taken only in extreme cases, when involving avoidable mortality or disability.

Compensation mechanisms are not clear and might involve state-guaranteed disability support. Although official data on the number of legal actions are not available, anecdotal evidence suggests that legal actions constitute rare exceptions. The *Law on health protection* guarantees the right to compensation when harm has been inflicted (Republic of Uzbekistan, 1996). However, it is not clear if explicit mechanisms or policies for compensation have been developed following adoption of the law, or which funds should be used for compensation in cases in which the health care provider is owned by the government.

So far, there is no well-developed system for the monitoring and reporting of medical errors and safety issues. Adverse effects of drugs are also not collected centrally. There are no specialized agencies for patient safety or, more broadly, for quality of care.

2.9.6 Public participation

No specific frameworks are in place to ensure public participation in the planning, purchasing and organization of health services. Patient satisfaction surveys are not common practice within the health system.

2.9.7 Patients and cross-border health care

Anecdotally, the share of patients receiving cross-border care is increasing. A growing number of patients are reportedly going overseas for highly specialized procedures such as heart surgery, *in vitro* fertilization and neurosurgery. The main destinations for this cross-border health care appear to be India, the Russian Federation, Turkey, Germany, Israel and South Korea. However, only a minority of patients can afford care overseas, since all the expenses typically need to be covered by private out-of-pocket payments. There are several reasons for this increase in cross-border health care. The private sector is not allowed to provide certain types of services (such as surgery), leaving public facilities as the only option. Public facilities are typically less patient-centred and seem to be lacking incentives to innovate or improve quality of care. There are also procedures, such as *in vitro* fertilization, that are not legally permitted in Uzbekistan.

Cross-border health care from other countries to Uzbekistan also exists, but on a limited scale. It mainly involves patients with low or middle incomes from neighbouring countries (in particular southern Kazakhstan or southern Kyrgyzstan) who seek routine health services in large cities, such as Tashkent or Andijan.

3. Financing

Uzbekistan spends a comparatively low share of its GDP on health, amounting to 5.9% in 2012. While the share of public sector expenditure has increased in recent years, private expenditure remains substantial. In 2012, public sources (mostly raised through taxes) accounted for 53.1% of total health expenditure, while 46.9% came from private sources, mostly in the form of out-of-pocket expenditure. Voluntary health insurance (VHI) does not play a major role. The share of government expenditure devoted to inpatient care is decreasing and stood at 58% in 2010. Other sources of funds include technical assistance programmes by multilateral or bilateral organizations and development agencies.

The 1996 *Law on health protection* defined a basic benefits package to be funded by the state, which includes primary care, emergency care, care for "socially significant and hazardous" conditions, and specialized care for groups of the population classified by the government as vulnerable. Pharmaceuticals for inpatient care that forms part of the basic benefits package are covered, but outpatient pharmaceuticals are not, except for 13 population categories, including veterans of the Second World War, HIV/AIDS patients, patients with diabetes or cancer, and single pensioners registered by support agencies.

The government pools and allocates public funding for health care. The national government is responsible for the financing of specialized medical centres, research institutes, emergency care centres and national-level (republican-level) hospitals. Local (*viloyat*, *tuman* or city) governments are responsible for the financing of other hospitals, primary care units, sanitary-epidemiological units and ambulance services.

Primary care in rural areas is now paid for on a capitation basis and primary care in urban areas is expected to follow by 2015. Specialized outpatient and inpatient care is paid on the basis of past expenditures and inputs.

Health workers in the public sector are salaried employees and paid according to strict state guidelines. However, there are efforts to increase the flexibility of health care providers in reimbursing health professionals. Salaries of physicians in the public sector ranged from US$ 300 to US$ 600 per month in 2014.

3.1 Health expenditure

According to WHO estimates, total health expenditure per capita reached US$ 221 PPP in 2012 (Table 3.1). This compares to US$ 967 PPP in the CIS (2012), US$ 1463 PPP in the EU member states that joined the EU since 2004 and US$ 3852 PPP in the EU member states that formed part of the EU before 2004 (Figs. 3.2 and 3.3). Furthermore, there are large variations in per capita government expenditure on health across *viloyats*. Poorer *viloyats* generally spend less per capita on health than richer *viloyats*. For instance, in 2013, the per capita rate paid to primary care facilities in Navoi *viloyat* was twice the rate paid in Khorezm *viloyat* and about 50% higher than the national average (Ministry of Health, 2014).

Table 3.1
Trends in health expenditure, WHO estimates, 1995–2012

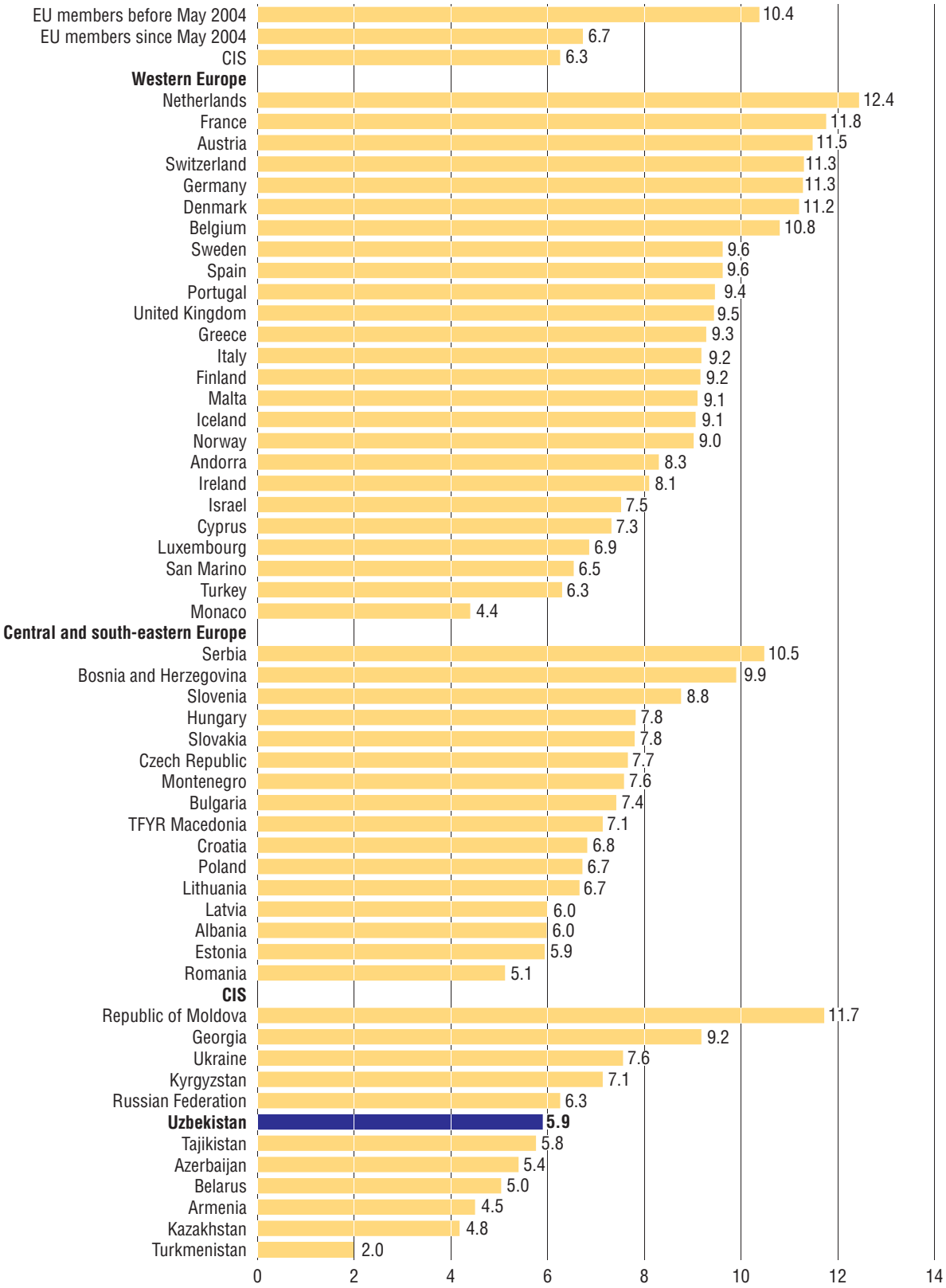
	1995	2000	2005	2010	2011	2012
Total health expenditure, PPP$ per capita	80.14	76.12	102.82	168.22	192.94	220.84
Total health expenditure as % of GDP	6.80	5.30	5.12	5.36	5.64	5.90
Public sector health expenditure as % of total health expenditure	53.04	47.52	44.56	51.88	50.92	53.14
Private sector expenditure on health as % of total health expenditure	46.96	52.48	55.44	48.12	49.10	46.88
Public sector expenditure on health as % of total government expenditure	9.46	8.70	7.34	8.60	8.98	9.70
Public sector expenditure on health as % of GDP,	3.60	2.52	2.28	2.78	2.86	3.14
Private households' out-of-pocket payment on health as % of total health expenditure	46.88	52.30	52.12	45.24	46.16	44.06
Private households' out-of-pocket payment on health as % of private sector health expenditure	99.84	99.66	94.02	93.98	94.02	94.0
VHI as % of total expenditure on health[a]			3.13	2.71	2.77	2.64
VHI as % of private expenditure on health[a]			5.64	5.64	5.64	5.64

Sources: WHO Regional Office for Europe, 2014a; [a]WHO, 2014b.

Total health expenditure was estimated to account for 5.9% of GDP in 2012. This share was low in comparison with most other countries in the WHO European Region (Fig. 3.1), but relatively high when compared to other countries in central Asia (Fig. 3.2).

Fig. 3.1

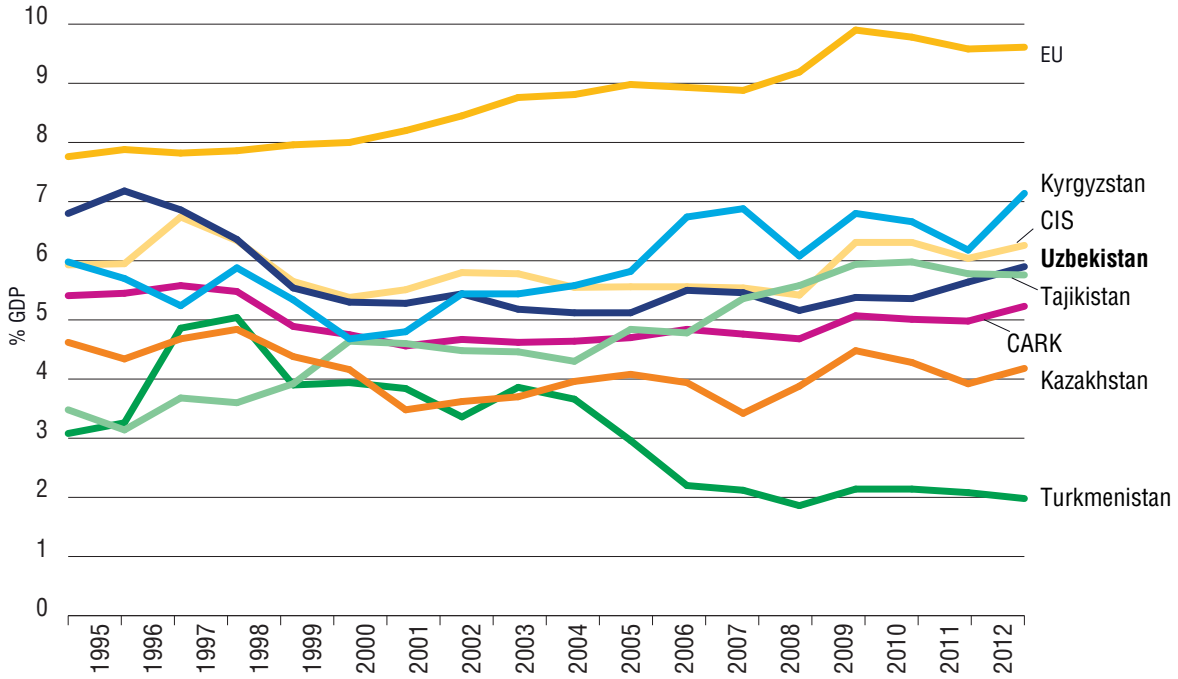
Health expenditure as a share (%) of GDP in the WHO European Region, 2012, WHO estimates



Source: WHO Regional Office for Europe, 2014a.
Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Fig. 3.2

Trends in health expenditure as a share (%) of GDP in Uzbekistan and selected countries, 1995–2012, WHO estimates



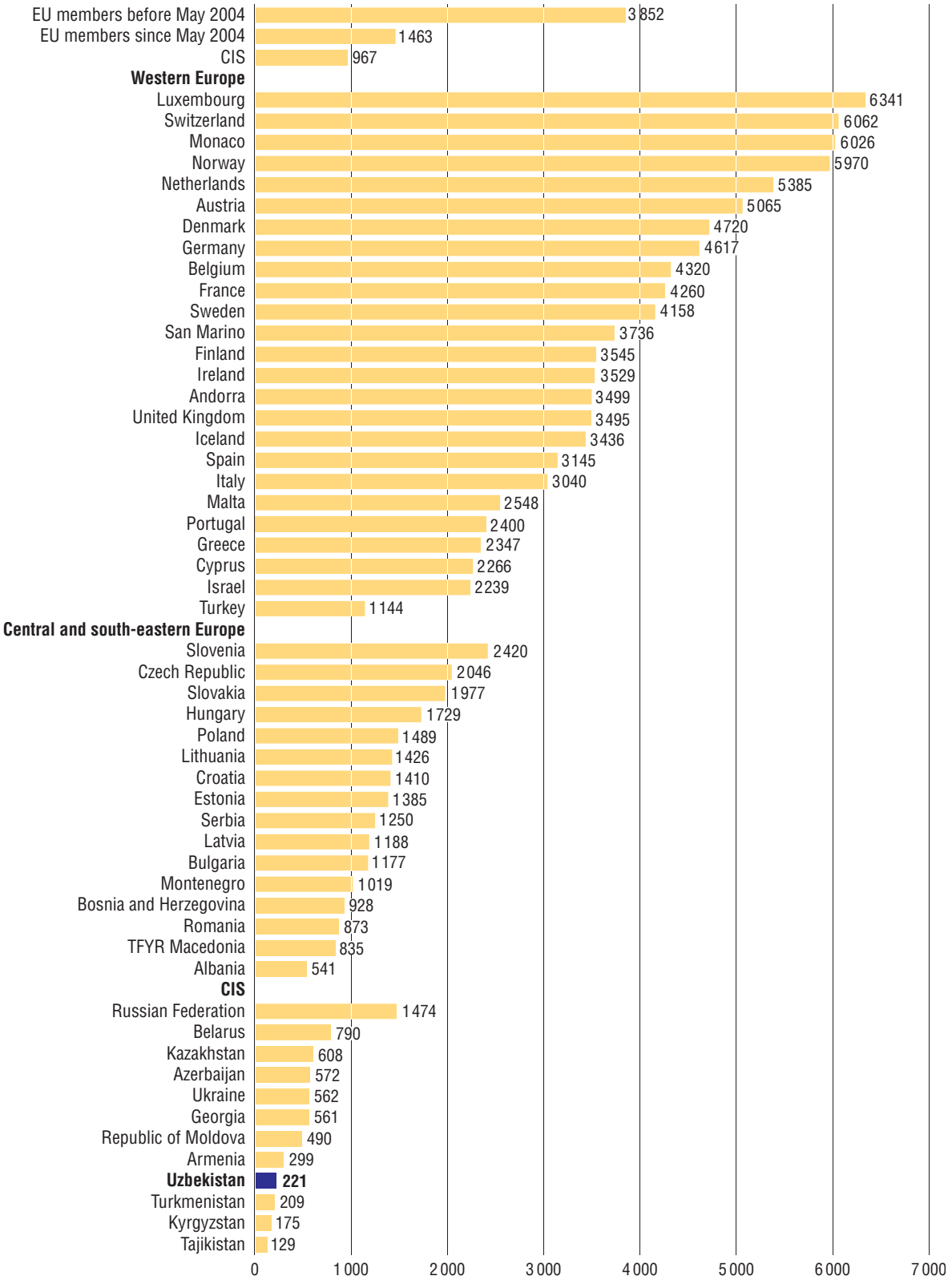
Source: WHO Regional Office for Europe, 2014a.

Just over half of total health expenditure (53.1%) in 2012 came from public sources, with private expenditure (mostly out-of-pocket payments) accounting for 46.9% (Table 3.1 and Fig. 3.4). According to these WHO estimates, the share of public sector expenditure in total health expenditure had increased from 44.6% in 2005 to 53.1% in 2012.

In 1998, 72% of total government expenditure on health was spent on inpatient services and only 16% on outpatient services. By 2010, the share of total government expenditure devoted to inpatient services had decreased to 58%, while the share devoted to outpatient services had increased to 29% (Ministry of Health, 2014).

Fig. 3.3

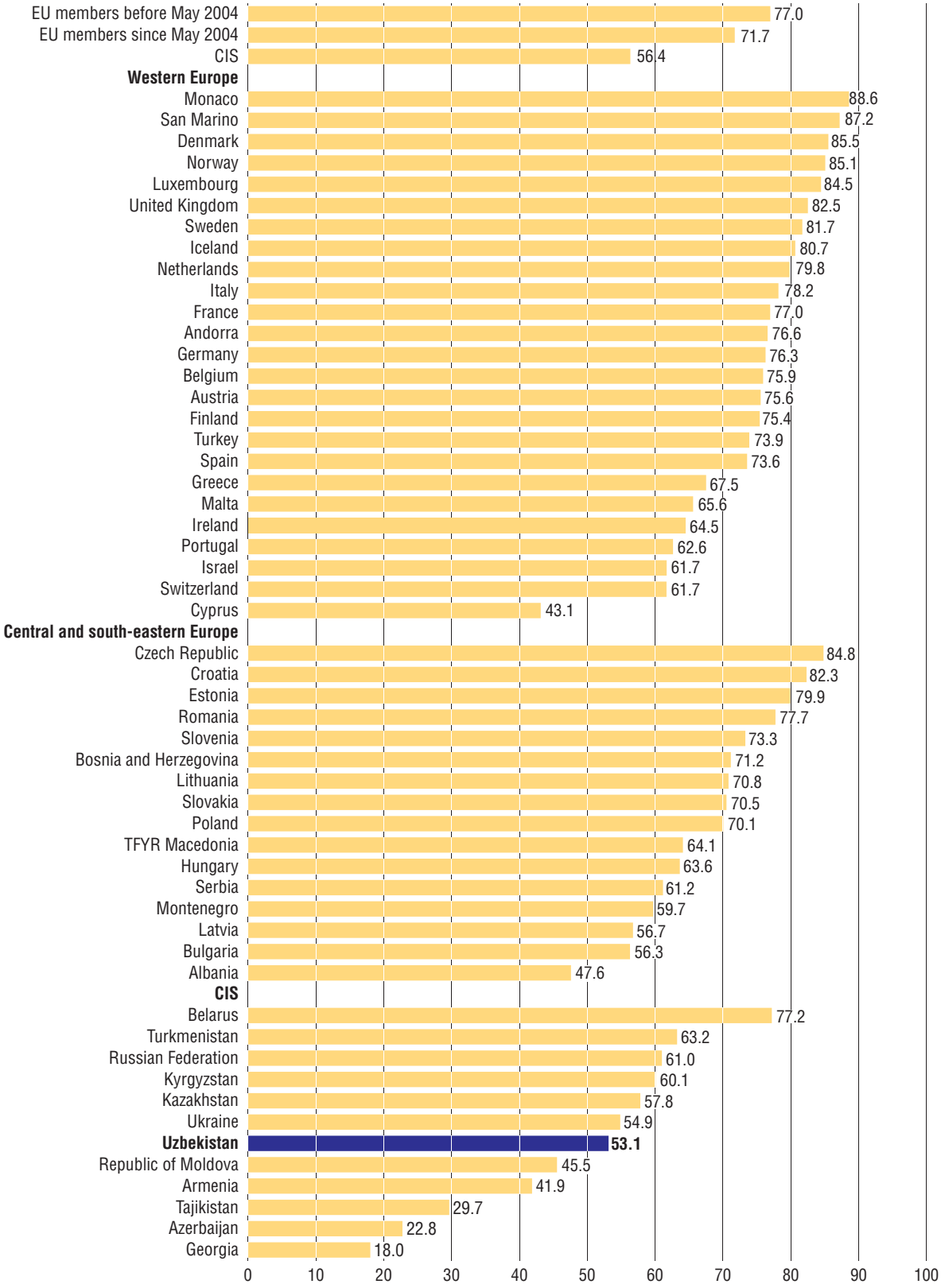
Health expenditure in US$ PPP per capita in the WHO European Region, 2012, WHO estimates



Source: WHO Regional Office for Europe, 2014a.
Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Fig. 3.4

Public sector health expenditure as a share (%) of total health expenditure in the WHO European Region, 2012, WHO estimates



Source: WHO Regional Office for Europe, 2014a.
Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

3.2 Sources of revenue and financial flows

General government expenditure (mostly raised through taxes) and private expenditure (mostly out-of-pocket) are the two main sources of revenue. A social health insurance system does not exist and private health insurance only accounted for 2.6% of total health expenditure in 2012 (Table 3.2).

Table 3.2

Sources of revenue as % of total health expenditure according to source of revenue, 1995–2012 (selected years), WHO estimates

	1995	2000	2005	2010	2011	2012
General government expenditure on health	53.0	47.5	44.6	51.9	50.9	53.1
Social security funds	0	0	0	0	0	0
Out-of-pocket expenditure	46.9	52.3	52.1	45.2	46.2	44.1
Private insurance			3.13	2.71	2.77	2.64
External resources on health	0.1	6.7	1.8	1.8	2.0	1.5

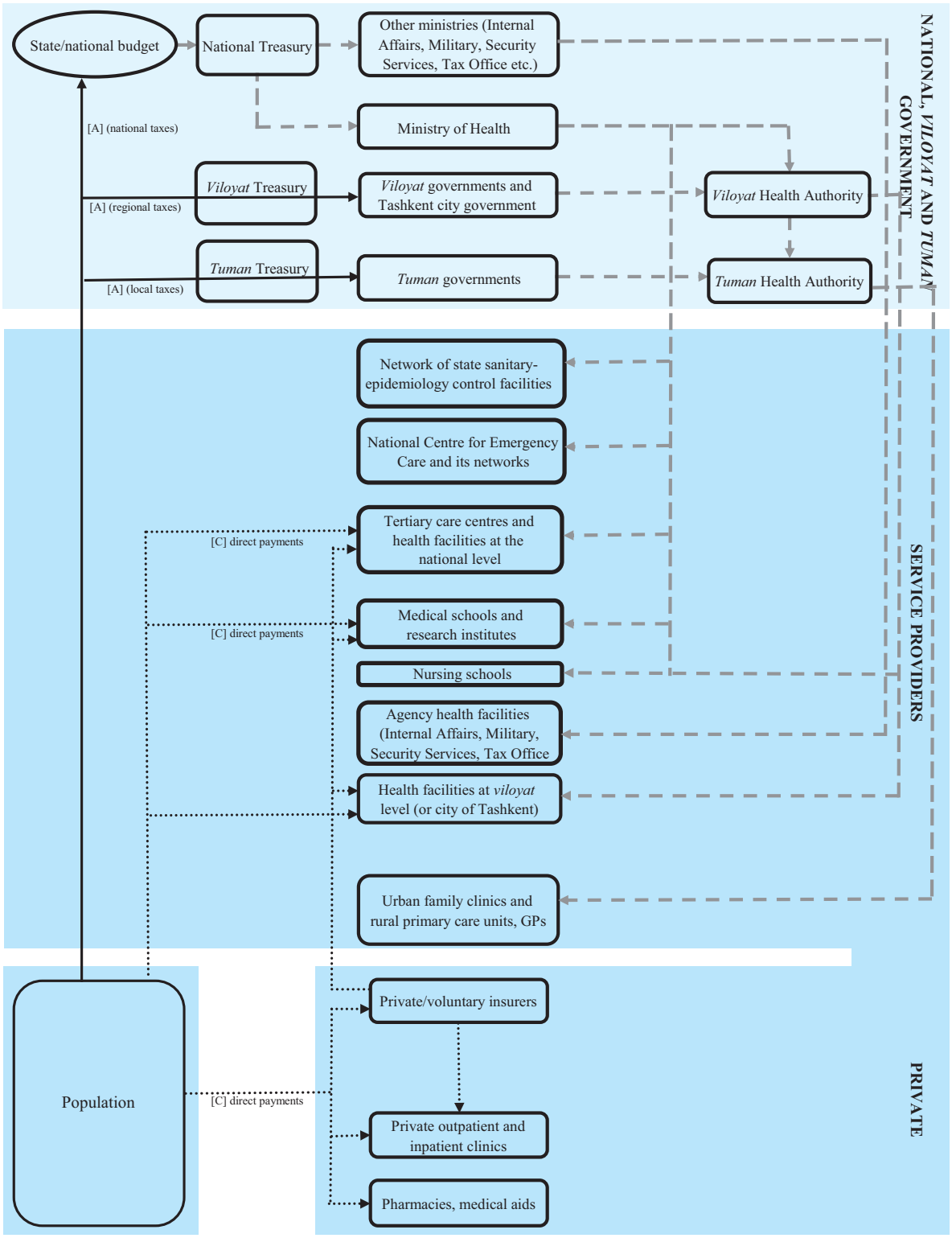
Source: WHO, 2014a.

Public sector funding originates from the state budget and strictly follows the expenditure protocols developed by the central government. Most of it flows into public facilities, while a small share is directed towards the private sector, such as through the reimbursement for outpatient pharmaceuticals for selected groups of the population.

Previously, funds originating from the state budget were transferred directly to health facility accounts and health facilities were responsible for how these funds were spent. Starting in 2007, a treasury system was introduced in Uzbekistan. Treasury offices at the national, regional and district level are now the holders of the state funds for health facilities at the national, regional and district levels respectively. Treasury offices ensure that the state funds are spent according to approved spending protocols (Cabinet of Ministers, 2007a; President of Uzbekistan, 2007b).

Public facilities have also been permitted to charge fees for services provided outside the state-guaranteed benefits package. This funding might flow from a variety of sources, including out-of-pocket payments, employer contributions or voluntary private health insurance, and funding follows the protocols set by the central government in a more flexible manner (Fig. 3.5).

Fig. 3.5
Financial flows in the Uzbek health system



3.3 Overview of the statutory financing system

3.3.1 Coverage

Uzbekistan's public health care system is nominally committed to universal coverage. The country's constitution of 1992 provides that "everyone shall have the right to receive skilled medical care" (Republic of Uzbekistan, 1992). While the constitution guarantees access to all levels of care, it does not, in contrast to the Soviet constitution, guarantee that services are free.

The *Law on health protection* of 1996 confirmed the right of citizens to health care. This right applies to all health services, including delivery, antenatal and neonatal care, paediatric services, immunization, family planning, outpatient services and specialized services. The state guarantees health protection irrespective of age, race, gender, ethnicity, religion, social status and beliefs (Republic of Uzbekistan, 1996).

The 1996 *Law on health protection* defined the services to be funded by the state (the basic benefits package) and the services to be reimbursed from other sources of funding (complementary services). All citizens have universal state coverage for the basic benefits package. While residents are entitled to the same rights in accessing health services as citizens, the law states that foreigners are guaranteed health protection in line with the bilateral international treaties of which Uzbekistan is a signatory (Republic of Uzbekistan, 1996). Refugees and foreigners are eligible for free emergency services.

While VHI has been set up in recent years by profit-making companies, no data are available on their market share in the utilization of health services, although anecdotal evidence suggests that they remain insignificant.

Prisoners, soldiers and military personal have access to parallel health services which are run outside the framework of the Ministry of Health. For cases in which specialized care is not available within these parallel services, the Ministry of Health system can be utilized. The mechanisms and financing arrangements for these rare cases are defined in special agreements between the Ministry of Health and the respective agencies.

Basic benefits package

The basic benefits package guaranteed by the government includes primary care, emergency care, care for "socially significant and hazardous" conditions and specialized care for groups of the population classified by the government as vulnerable (Republic of Uzbekistan, 1996; Mamatkulov, 2013). It thus

excludes secondary and tertiary care for significant parts of the population. Public providers offer the state-guaranteed package of medical services free of charge. All medical services outside the package are financed by non-public sources (Republic of Uzbekistan, 1996). Anecdotally, access to the basic benefits package is not fully utilized by high-income groups, who often opt for the private sector or utilize services under private arrangements.

Pharmaceuticals for the period in which inpatient care is provided are covered by the guaranteed package, provided that the inpatient care provided forms part of the basic benefits package. Outpatient pharmaceuticals are not covered, except for 13 population categories, including veterans of the Second World War, HIV/AIDS patients, patients with diabetes or cancer, and single pensioners registered by support agencies (Cabinet of Ministers, 2013; Ministry of Health, 2013a). However, the extent to which the needs of these 13 groups are covered with regard to outpatient pharmaceuticals is not clear.

The following range of primary care services are included in the basic benefits package:

- management of prevalent and emergency conditions;
- preventive and sanitary-epidemiological activities;
- initiatives in family, maternal and child health.

In 2004, as part of a document outlining the functions of primary care units, an explicit list of services covered in primary care was developed by the Ministry of Health (Ministry of Health, 2004). The document lists the conditions to be diagnosed and managed in primary care (such as chronic heart failure, bronchitis and diabetes), the diagnostic procedures to be used (such as electrocardiography), and the conditions that should be subject to rehabilitative services and continuous observation. The document also obliged primary care providers to offer health promotion and education on an individual basis.

Another group of services included in the basic benefits package is emergency care. Although an extensive network of public sector emergency care units exists, every citizen has the legal right to obtain emergency services from any health care provider, irrespective of the form of ownership (Republic of Uzbekistan, 1996). The law stipulates that all medical and pharmaceutical professionals must provide emergency care when required; they could otherwise be held legally responsible. However, issues related to the reimbursement of services in the private sector or in public facilities that use mixed financing (i.e. a combination of government funding and user fees) have so far not been clarified.

"Socially significant and hazardous" conditions include selected intestinal, respiratory, skin and blood-borne infectious diseases such as poliomyelitis, tuberculosis, leprosy, HIV/AIDS and syphilis, as well as noncommunicable conditions such as mental health problems or cancer (Cabinet of Ministers, 1997a). Patients with these conditions can receive a range of services for free.

Health services that fall outside the basic package of primary care services, emergency care and care for "socially significant and hazardous" conditions are expected to be financed from other than public funds, which include private health insurance, employer contributions, union funds and, most importantly, private out-of-pocket payments. A special complementary package is available for specified groups of the population at different levels of care.

The state-guaranteed package of medical services defined by the law in 1996 has not undergone any changes since then. It still serves as the guideline for policies and regulations related to benefits. Some of the services that form part of the basic benefits package can also be accessed on a fee-for-service basis from the private sector. In this case, however, patients will not be reimbursed for their expenses. While some services, such as primary care and endocrinology are available in the private sector, the government does not permit the provision of some other services in the private sector, such as those for communicable diseases and cancer.

Financial benefits for health conditions

In the public sector, financial benefits exist for defined categories of the population, including those on sick or maternity leave and people with disabilities or mental illnesses. Sick leave is initially granted for a period of five days. After this period, the extension of sick leave requires the approval of a special commission, which is in place in every public health care unit, except in single practices, where the extension can be granted without approval of a commission. For the duration of the approved sick leave, patients who are employed in the state sector receive benefits from the social security system in the range of 80–100% of their usual incomes; these benefits are disbursed by their respective employers. In the private sector or public facilities that use user fees, these financial benefits have to be covered by the facilities themselves.

If there is a need to extend sick leave for more than three continuous months or four months per year with interruptions, the patient's data are reviewed by a special expert commission, which is part of the social protection system and outside the influence of health authorities. The commission decides on the eligibility for financial benefits related to disability. Following a decision by the commission, the patients might be assigned to one of three disability

groups, two of which are not permitted to work. All individuals in any of the three disability groups are included in special observation registries (also called "dispensary" registries) and are eligible once a year for rehabilitative services covered by state funds. Dispensary registries are special classifications used by public providers to assist compliance with the management protocols for conditions. Patients with mental disorders are eligible for the same disability benefits, but are subject to a review by separate expert commissions, which have been set up within psychiatric clinics.

3.3.2 Collection

As mentioned above, the Uzbek health system relies on a mix of financing sources. Although taxation accounts for a major share of health financing, other sources – primarily private out-of-pocket payments –supplement or replace public sources of funds. Out-of-pocket payments were first introduced as direct payments for outpatient pharmaceuticals and inpatient meals, and were gradually extended to diagnostics and then medical services. From the second half of the 1990s, external development assistance, mostly in the form of loans, has been used to address various elements of health system restructuring. VHI, although still insignificant, has become more visible over recent years as an alternative source of health financing.

The health system of the public sector is the main beneficiary of public funding, and only an insignificant share is allocated to the private sector. Although state funding draws on a variety of sources, it is mostly derived from different types of taxes. In 2013, about a quarter of state collections came from direct taxes, about half came from indirect taxes and about one-fifth came from land and real estate taxes (Ministry of Finance, 2014). There are no taxes earmarked for health. The main tax collecting agency is the State Tax Agency. The agency has a vertical management hierarchy and is represented by branches at both the *viloyat* and *tuman* levels. The local branches at *tuman* and city level are responsible for the collection of taxes in their respective territorial units.

Formal payments

Reform initiatives have encouraged private out-of-pocket payments. Formal out-of-pocket payments can be differentiated according to whether they are charged by public or private providers. Formal out-of-pocket payments in the public sector are regulated by the relevant departments of the Ministry of Health and the regional health authorities.

Pharmaceuticals

In the Soviet period, all inpatient pharmaceuticals were generally supplied by the state at no cost to the end users, whereas outpatient pharmaceuticals were either covered by the state or available over the counter at centrally set and controlled prices. After Uzbekistan's independence, reform initiatives have limited state coverage for outpatient pharmaceuticals to a defined set of conditions and population groups (Cabinet of Ministers, 1997b). Anecdotally, most expenses for outpatient pharmaceuticals are covered by direct patient payments, although no reliable data on the share of different types of payments are currently available. The groups eligible for free outpatient pharmaceuticals are (Cabinet of Ministers, 1997b):

- seven disease groups: cancer, endocrinological and mental conditions, tuberculosis, leprosy, HIV/AIDS, and post-operative states related to cardiac interventions and transplantations;
- six population groups: single pensioners registered at the social services, participants of the "labour front" in 1941–1945, participants and people who have incurred disabilities in the Second World War, people with disabilities incurred when dealing with the consequences of the Chernobyl nuclear power plant accident, participants in international wars (such as the war in Afghanistan during the Soviet period), and retired military personnel who served in posts related to nuclear technology.

Health services

A set of initiatives has permitted direct formal payments to health care providers. The 1998 *Presidential Decree* outlined a timeframe for replacing government funding with other sources of revenue for various types of health care providers in the public sector. In the absence of a third-party payer system, direct patient payments have become a major formal source of revenue. According to data from the Ministry of Health, the ratio of revenues from formally paid services in the public sector has grown gradually in recent years.

In recent years, the government has encouraged selected tertiary care facilities to shift their revenue collection towards user fees rather than allocations from the state budget. In the Uzbek context, these health facilities are described as "self-financing". Most public facilities on the "self-financing" scheme heavily rely on user fees and direct formal payments. Between 2012 and 2015, 46 secondary and tertiary care facilities are anticipated to move towards full "self-financing", and another 57 are expected to start charging formal fees (President of Uzbekistan, 2011a). Patients utilizing public health

care institutions included in the "self-financing" scheme have to pay the price charged by the institution. The price-setting process is regulated and user charges have defined ceilings.

Cost-sharing

Cost-sharing (such as through co-payments) is almost non-existent in the Uzbek health system. Anecdotally, various forms of cost-sharing are being introduced in the VHI sector, although no reliable data on the forms and the extent of cost-sharing in this sector are available. However, in hospitals, limited cost-sharing arrangements are in place, such as for food, communal expenses, or lacking pharmaceuticals (see Chapter 5).

External sources of funds

External sources of funds are being used to support ongoing reforms and to strengthen the existing health infrastructure (see Chapter 6). These funds may take different forms, including loans, humanitarian aid, direct private investments and technical assistance grants. A number of assistance programmes are being run by international agencies. The programmes funded by the German Reconstruction Credit Institute (KfW) on equipping regional multi-specialty centres are one recent example of major external assistance programmes. Bilateral development agencies from the United States, EU member states, Kuwait, Korea and Japan are other major international donors in the health sector. Loans from international agencies included World Bank and ADB loans for primary care and maternal and child health, and a loan from the Islamic Development Bank for cancer services (see Chapter 6). Programmes from international development agencies are developed in close cooperation with the Ministry of Health to align them with governmental reform objectives.

3.3.3 Pooling of funds

In Uzbekistan, the government acts as the agency that pools and allocates public funding for health care. There is a distinct divide between national (republican) and local (*viloyat*, *tuman* or city) governments with regard to health financing. The national government is responsible for the financing of specialized medical centres, research institutes, emergency care centres, and national-level (republican-level) hospitals. Local governments are responsible for expenditures related to other hospitals, primary care units, sanitary-epidemiological units and ambulance services (Table 3.3).

Table 3.3

Health financing: division by level of government

National government	**Local governments** (*viloyat*, *tuman* or city)
All medical schools	Medical professional colleges
Institutes of advanced medical education	Hospitals
National specialty and research centres (such as for cardiology, urology or surgery)	Primary care units
National-level hospitals	*Feldsher*-obstetrical units
Republican emergency centre	Ambulance services
	Sanitary-epidemiological system
	Blood transfusion centres
	Regional emergency centres and *tuman* emergency care departments under central *tuman* hospitals

Source: Kuchkarov & Haydarov, 2004.

Health financing in the public sector involves two main elements: (a) how government health budgets are formed and (b) the allocation process to providers.

Local governments at the *viloyat* level are responsible for the financing of health facilities that provide the guaranteed package of services in the *viloyat* (including specialized outpatient and inpatient clinics, and primary care units). Local governments at the *tuman* or city level are tasked with the financing of state-guaranteed services for the population in their respective territories (including outpatient services and specialized inpatient services at *tuman* or city hospitals).

Health care providers in the public sector annually set their prospective budgets for the next year, based on inputs, norms and past expenditures. These budgets are then pooled by the respective *tuman* or city health authorities and submitted to the governments at *tuman* or city level. After approval by the *tuman* or city governments, the health budgets of all territorial units are pooled by the *viloyat* governments to establish regional government budgets.

Viloyat health budgets are calculated on the basis of the health budgets proposed by the territorial units and health care providers that are directly accountable to and financed from the *viloyat* governments. Once the proposed *viloyat* health budget has been approved by the *viloyat* governments, they are pooled at the national level by the Ministry of Health. These pooled *viloyat* health budget proposals are then merged with the budget proposals of health care providers that are directly accountable to and financed through the Ministry of Health. The merged budget is submitted to the national government (the Cabinet of Ministers and the Presidential Administration) and the Parliament for

approval and, once approved, becomes the national health budget. The new Budget Code of Uzbekistan that passed into law in 2013 provides the framework for how state budgets are formed, spent and monitored.

The financing of health care providers in the public sector follows the prospective budgets drawn up in the previous year. As finances are derived from different levels of government, shortfalls in the respective government budgets might affect health financing in the respective administrative units. Significant shortages in health funding will be generally made up for by subsidies from higher government levels.

The Soviet model of allocating state funds to public organizations was characterized by a detailed and strict budgeting process, with almost no flexibility to shift funds between different budget lines. In 1999, a governmental decree introduced major changes to the budgeting of public organizations (Cabinet of Ministers, 1999b). These changes aimed to improve the efficiency and effectiveness of budgetary allocations through increased organizational independence in management and decision-making. The new mechanism introduced a single budget line, with four subcategories. The first two subcategories are related to the funds earmarked for salaries and related expenses. The third subcategory includes funds earmarked for capital investment, which are allocated in line with the annual state investment programme. The final subcategory is named "other expenses" and covers a wide range of possible allocations. Funds allocated as "other expenses", however, have to be prioritized according to organizational needs, such as food, medications and maintenance (including gas and electricity). In addition, the purchase of "luxurious" goods and services, such as motor vehicles or imported office furniture, from these funds requires the prior approval of the Ministry of Finance (Cabinet of Ministers, 1999b).

The governmental decree also expanded the permitted sources of revenue for publicly funded organizations. Public entities are now allowed to produce and sell products or services, to let out unused space and other organizational assets, and to receive and use funds from sponsors. Half of the revenues received from rental income remains with the organization, while the other half is channelled to local government accounts.

In order to facilitate oversight of how state funds are used under the new arrangements, public organizations that receive state funding are required to have two separate accounts: one solely for state funds and the other, so-called "development and incentives accounts", for other sources of revenues.

Development accounts draw on revenues from rent, the sale of products or services, unused state funds from the previous year, and contributions from sponsors. Up to 25% of funds in development accounts can be used to supplement employee salaries or benefits. All funds from sponsors are used to strengthen the infrastructure, if no other stipulations were made by the sponsor (Cabinet of Ministers, 2007b). However, health care providers in the public sector that operate on the basis of "self-financing" face few restrictions and little oversight on expenditures.

3.3.4 Purchasing and purchaser–provider relations

In terms of purchaser–provider relations, the public sector health system follows an integrated approach, with the government being the principal provider and purchaser of health services in the public system and no formal provider–purchaser split. However, in recent years forms of reimbursement models, such as fee-for-service arrangements, are being incorporated into this approach. Health care delivery in the private sector is primarily on a fee-for-service basis and covered by out-of-pocket payments.

In the public sector, the organizational relationship between purchasers and providers of health services differs between the primary care system (rural primary care units known as SVPs) and specialized care (both outpatient and inpatient). As part of national health reforms, per capita payment has been introduced for primary health care. Under these new financing arrangements, rural primary care units are expected to provide a package of services to the enrolled population free of charge, covered by state funding on a capitation basis. This type of organizational relationship does not entirely fit any of the common organizational models. Although the rural primary care units included in the reforms are tasked with the provision of specified services for the per capita financing they receive from local governments, no contracts exist, health facilities are government owned, and all health personnel are government employees. Two mechanisms are used for the regulation of organizational behaviour: financial incentives and protocols. There are very few financial incentives for improving the efficiency and quality of care; the most prevalent mechanism for regulating behaviour continues to be the protocols drawn up by higher levels of management.

The regulation of the organizational behaviour of inpatient, specialized outpatient and emergency care providers in the public sector is much closer to the integrated model. Government funding of these providers is strictly

based on line-item budgeting, and financing mechanisms are not used as a management tool. Administrative protocols and hierarchical management are the prevalent tools for regulating organizational behaviour.

However, there are also new developments in the financing and management of inpatient care providers, such as reform initiatives covering selected tertiary and secondary care providers (see Chapter 5). These new mechanisms have changed purchaser–provider relationships, with a shift towards greater use of contracts. The selected facilities have moved from state funding towards "self-financing" on the basis of user fees and have been allowed greater autonomy in terms of management, staff planning, and service pricing and delivery. Providers are reimbursed by the Ministry of Health for the treatment of patients who qualify for state funding. All other services need to be paid for from other sources, primarily private out-of-pocket payments. Allocations from the Ministry of Health consist of annual budgets that are allocated to each provider in advance. The provider then needs to provide the matching services to eligible individuals to justify the allocated funds. These funds are thus generally not used to influence organizational behaviour, but rather to provide coverage for a selected group of eligible patients.

For some regional-level providers on the full "self-financing" scheme, no state reimbursement mechanisms are in place. For them, regulatory frameworks and administrative protocols are the main tools that shape organizational behaviour.

3.4 Informal payments

Although there is only limited hard evidence, anecdotally informal payments were already a feature of health care during the Soviet era. With the break-up of the Soviet Union, they have become more common throughout the region (Belli, Gotsadze & Shahriari, 2004).

In Uzbekistan, informal payments can be defined as payments that go unregistered. Informal private practice by publicly employed physicians is a major reason for informal payments, supplementing the low official income of health professionals. In a household survey conducted in 2007, 42% of respondents reported to have made some kind of informal payment for health services. This included voluntary gifts (in kind or cash) or payments without a receipt (World Bank, 2009).

Informal payments impede the utilization of health services, in particular for the poor. As they are more prevalent in secondary and tertiary care, poorer segments of the population face particular obstacles in accessing these levels of care. In addition, the existence of informal and formal payments can result in a poverty trap for those with serious illnesses. The likelihood of falling into impoverishment is quite high for those facing serious health problems in Uzbekistan (World Bank, 2003).

The introduction of official user fees, the greater flexibility in the use of funds and the shift towards self-financing were expected to formalize and reduce the share of informal payments. The Ministry of Health has also endeavoured to address the general lack of awareness about new policies related to benefits, rights and obligations by drawing up a protocol that obliges all health care providers to inform patients on posters displayed in health care facilities about the benefits package and prices for chargeable services. However, it is unclear whether these policies and mechanisms have reduced informal payments. There are incentives for patients to receive informal services, since the overall fee negotiated directly between the patient and the provider could be lower than official charges (World Bank, 2003, 2009).

3.5 Voluntary health insurance

VHI accounts for only a very small share of total health expenditure in Uzbekistan (Table 3.2). At present, only very few companies in the country offer this kind of insurance.

3.6 Other sources of finance

The exact volume of voluntary and charitable funding has not been documented. International charitable funds are channelled to public sector providers through the Ministry of Health.

Parallel health systems comprise a sizable share of public sector health financing and different government agencies, such as the Ministry of Internal Affairs, the national security services, and the Ministry of Defence, run their own health systems. As these health systems fall outside the framework of the Ministry of Health, precise financial data are not readily available. There is no legislation that prevents those eligible for parallel health systems from accessing

the system run by the Ministry of Health, and it is not clear if the respective agencies have internal policies for preventing their employees from utilizing the Ministry of Health system. However, as there are no official charges in the parallel health systems and there is comparatively better coverage with pharmaceuticals, few people who have access to parallel health systems seem to switch to the general public sector.

3.7 Payment mechanisms

3.7.1 Paying for health services

Payment mechanisms for health services in the public sector can be differentiated according to the types of care provided:

- prospective global budgets based on per capita payments for primary care in rural areas;
- prospective global budgets based on past expenditures and inputs for primary care in urban areas, specialized outpatient and inpatient care, and public health services in the sanitary-epidemiological system.

The introduction of capitation-based payments has been a major move away from the inherited Soviet financing framework. Primary care units in rural areas are now included in a nationwide capitation-based payment system. Financing of primary care in urban areas is to be shifted to a capitation basis by 2015. Per capita payments are paid for the covered population, with adjustments for age and gender. Importantly, under the new arrangements, these per capita rates are calculated at the *viloyat* level, which helps to spread risks more evenly and to level off the impact of geographical income differentials on health financing in primary care. The payment system does not differentiate between different health services and includes all expenses related to the running of primary care practices. The received funds can be spent according to the four budget lines set by government protocols (see above). Per capita rates are set annually by the *viloyat* government and depend on the size of the *viloyat* health budget. No protocols exist that define the share of primary care funding in the overall health budgets.

The second health financing mechanism is based on past expenditures and the inputs involved in health care delivery. The inputs that are used for the calculation of budgets are the number of beds in inpatient care and the

number of patient visits in outpatient care (urban primary care and specialized outpatient care providers). In the calculation of budgets, these inputs are linked to predefined ratios of staff to inputs. In the sanitary-epidemiological system, inputs are defined in terms of staff. Other budget items are mostly based on past expenditures, such as expenses for maintenance.

The financing mechanism initiated at selected providers of tertiary and specialized care is similar to "full-cost" reimbursement. The government annually allocates funds for each of these providers. The providers are then expected to justify allocation of these funds by providing free services to eligible individuals.

3.7.2 Paying health workers

In the public sector, health workers are salaried and paid according to strict state guidelines, which were most recently updated in 2005. The guidelines differentiate salaries depending on position (such as head, physician, nurse or unskilled worker) and qualifications (Cabinet of Ministers, 2005b; President of Uzbekistan, 2005).

The workload of each position is regulated in quantitative terms, specifying, for example, the number of patient consultations or of inpatient care beds. However, there are no explicit regulations on whether and how a higher number of consultations or better quality should be rewarded. The existing payment mechanism does not incentivize improvements in the productivity, quality and efficiency of care. Consequently, disincentives, that is, compliance with administrative protocols, remain the predominant management tool.

Minimum salaries for each position are defined by state guidelines. Salaries are generally paid from funds allocated by the state, except in facilities based on "self-financing". Higher salaries are allowed, but need to be funded from external funding accounts of health care providers. Government initiatives in recent years have aimed to give health care providers the opportunity to use financial incentives as management tools. The government decree establishing separate accounts for non-state funds in public organizations was one of the major initiatives in this direction. Up to one-quarter of the funds in these accounts can be used to supplement salaries (Cabinet of Ministers, 1999b). Organizations are free to determine the recipients and the size of supplements. However, it should be noted that, although the share of non-state funds has been increasing over recent years, they still only account for a small share of overall health funding in the public sector.

The 2005 *Presidential Decree* (President of Uzbekistan, 2005) further emphasized the role of financial incentives and aimed to introduce reimbursement mechanisms into the public sector health system that:

- take into account the personal contribution of health workers, as well as the quality and complexity of the work performed;
- help to retain health professionals in rural areas and in providers of specialized health care;
- empower the management of provider institutions to objectively evaluate and adequately reimburse health professionals.

In line with these aims, the document introduced:

- an amended financial reimbursement mechanism taking effect in January 2006, that differentiates staff reimbursement by type of provider, position, qualifications and supplemental coefficients, and builds on an existing 11-grade health sector wage grid;
- pay increases of 25% to physicians in rural primary care units (Cabinet of Ministers, 2014);
- pay increases of 25% to physicians applying new health technologies in their clinical practice;
- pay increases based on continuity of employment;
- a change in the extra-budgetary accounts of health care providers, introducing "development and financial incentives accounts".

Under these arrangements, up to 5% of the allocated public budget is channelled into the development and financial incentives account, with additional funds coming from sponsors, unutilized public funds and fees received for designated services. Funds from this account can be spent on financial incentives for staff or on the structural strengthening or reconstruction of facilities. The ratio of expenses on these two budget lines is determined by the Ministry of Health, the Ministry of Finance, and the Ministry of Labour and Social Protection, according to types of health care providers.

The latest government initiatives on shifting public facilities to "self-financing" schemes aim, in part, to increase the flexibility of health care providers in reimbursing health professionals, giving them the opportunity to use financial incentives as a management tool. One example is the management and financing pilot carried out in selected tertiary care institutions (see Chapter 6). This pilot granted the respective institutions the freedom to

determine the framework for paying employees, and to place an emphasis on incentives for efficiency, quality and productivity (Ministry of Health, 2013c). However, providers are limited in what they can do, as they are still tied to protocols by the Ministry of Finance and the Ministry of Health that were initially developed for state-funded facilities. Staff salaries still need to follow salary scales set by the Ministry of Finance. These salary scales are in turn used for calculating the prices for services. Given the limits on mark-ups for services, pilot facilities are very limited in how much funding they can generate and how well they can remunerate their staff. Where centrally set salaries are comparatively low, incentives are created for informal payments or inappropriate care, and health care providers face problems in retaining highly qualified staff. The situation is similar in the selected secondary care facilities that have been included in "self-financing" schemes.

As of August 2014, salary rates for health professionals in the public sector were comparatively low. On average, the basic monthly salaries for physicians in the state-funded public sector in 2014 ranged from US$ 300 to US$ 600, and the salaries for nurses were lower. Anecdotally, salaries in the state-funded health facilities are considered insufficient to cover the cost of living (World Bank, 2009). Some health care providers in the public sector, mostly those on self-financing schemes, pay their health professionals salaries that are several times higher than the rates in state-financed facilities, thus attracting and retaining better qualified staff. However, these health care providers only constitute a small proportion of facilities in the public sector. Financial incentives are particularly insufficient for health professionals working in primary care (World Bank, 2009).

4. Physical and human resources

The years since independence have seen substantial reductions in the number of beds in acute care hospitals and further cuts are envisaged. In terms of acute care hospital beds per population, the country now ranks below the averages for the central Asian countries and the countries of the CIS. There has also been a decline in the number of physicians per population, while the number of nurses per population has remained largely constant in the last two decades.

There is one medical academy, four medical schools and three regional branches, all of which are state-owned. Four main faculties for the training of medical doctors in medical schools exist: treatment (general medicine), treatment with an emphasis on teaching skills (pedagogy of general medicine), general paediatrics and sanitary-epidemiology. There are 72 professional colleges offering basic nursing training. Medical education has been revised, with an extension of undergraduate medical education from six to seven years and the replacement of early specialization with a more generalized orientation. Graduates are now qualified as GPs. The training of nurses has been extended to two years for nursing students with high school certificates and to three years for students with secondary school certificates.

4.1 Physical resources

4.1.1 Infrastructure

Infrastructure planning in Uzbekistan's state-owned health system is primarily the responsibility of the national government. Major investments are planned and funded by the national government, whereas small-scale capital investments also come from local governments. The national government conducts regular

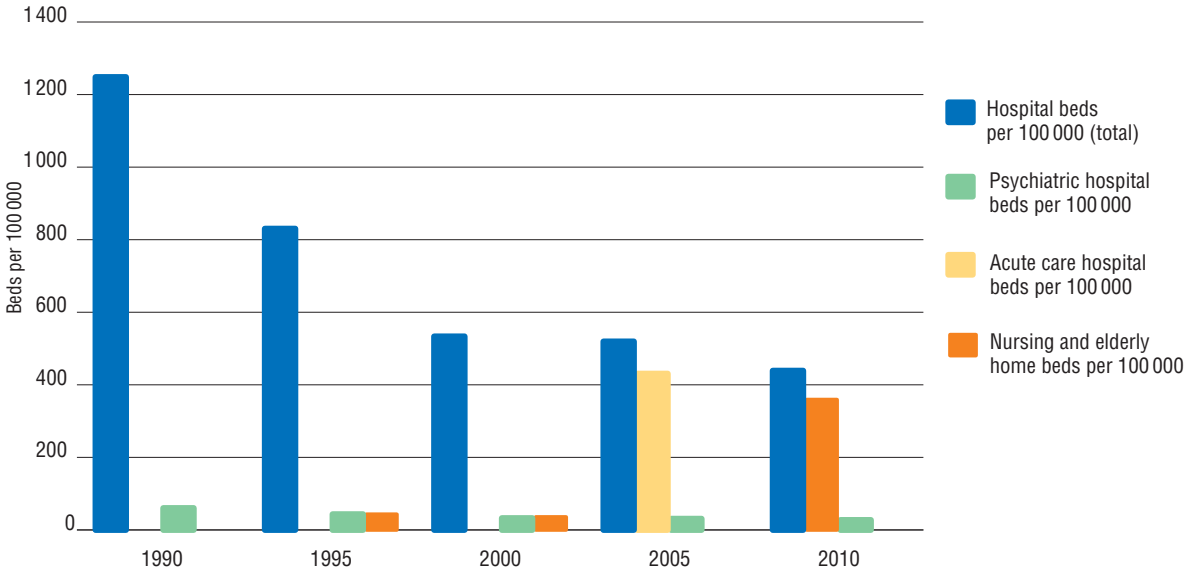
infrastructure evaluations and keeps an updated registry of inventories in public health institutions. Based on governmental priorities and on recommendations of the Ministry of Health, annual capital investments are planned and included in the state budget. The bulk of investments is channelled through national priority programmes. Some minor capital investments are being made at the *viloyat* or *tuman* level and by health institutions, depending on available resources. Examples of major infrastructure investments are the investments in primary care facilities and central *tuman* hospitals through projects funded by the World Bank loan; investments in paediatric hospitals through grants and loans from the ADB Woman and Child Health programme, the EU, UNICEF, WHO and the KfW; and investments in public health laboratories through projects of the United States Centers for Disease Control (CDC) and Defense Threat Reduction Agency (DTRA) and the Korea International Cooperation Agency. The most recent major public investments in the health sector (totalling over US$ 100 million) are planned for equipping tertiary specialty centres and the emergency care network, as well as facilities for cancer and tuberculosis care (Cabinet of Ministers, 2012a), and mental health. Government planning is also clearly visible in the trends of hospital and hospital bed numbers in the public sector in recent years.

The government does not control capital or other types of investments in the private health sector. The private sector does not receive direct subsidies from the government for capital investments. Several indirect subsidies are in place, however, such as customs tax breaks for medical equipment (President of Uzbekistan, 2007d).

The ratio of hospital beds per population (both for hospital beds overall and acute care hospital beds) has been reduced substantially over the last two decades (Fig. 4.1), in line with developments in other countries of the region (Fig. 4.2). However, these statistics only cover beds in the public sector and do not capture those in the private sector. Public sector beds can be divided into those financed from state funds and those based on self-financing. Further cuts to state-financed beds are planned for the years 2012–2015. The largest cuts are planned at the *tuman* level, with anticipated reductions of about 19%. Overall, approximately 14% of state-funded beds (17 949 out of 127 119 beds) are planned to be cut between 2012 and 2015 (Cabinet of Ministers, 2012a).

Fig. 4.1

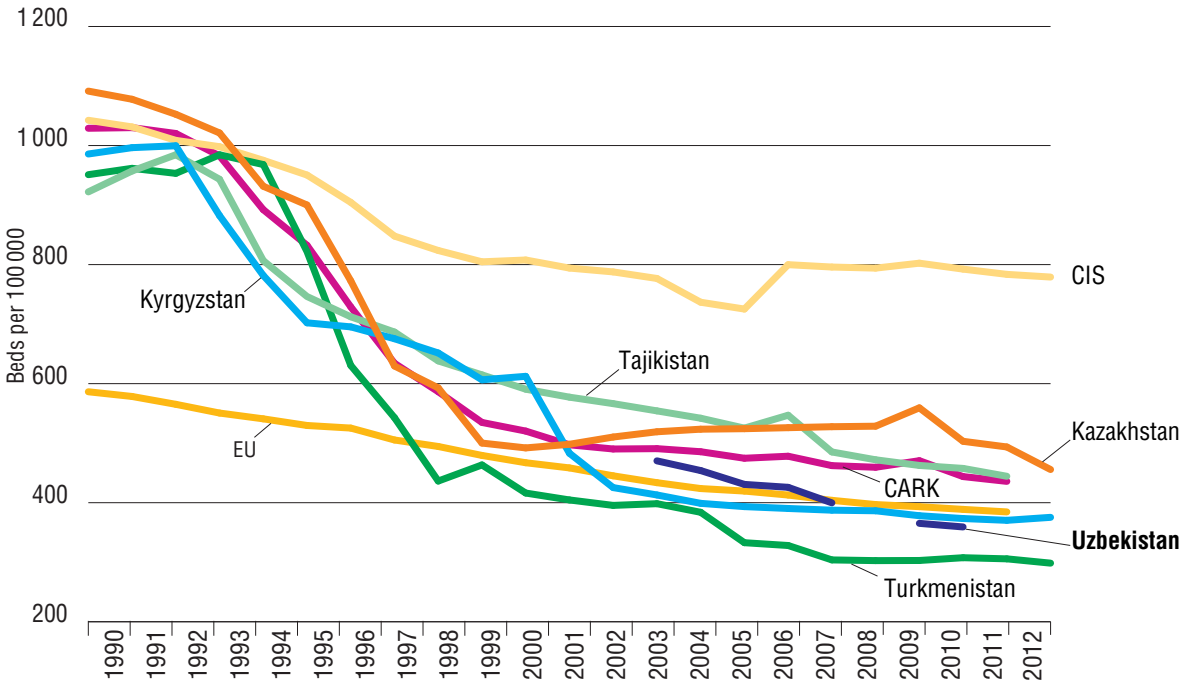
Mix of beds in acute care hospitals, long-term care institutions and psychiatric hospitals in Uzbekistan, per 100 000 population, 1990–2010



Source: WHO Regional Office for Europe, 2014a.

Fig. 4.2

Beds in acute care hospitals per 100 000 population in Uzbekistan and selected countries, 1990–2012



Source: WHO Regional Office for Europe, 2014a.

4.1.2 Medical equipment

The purchase and distribution of medical equipment, devices and aids does not have a unified institutional framework. Broadly, funds currently used for the purchase of medical equipment, devices and aids are either international loans, earmarked state funding, private capital in the private sector or, in the public sector, funds accumulated through fee-for-service schemes and sponsor initiatives.

In the public sector, a major share of large-scale purchasing is conducted using international loans, when the purchasing process follows the stipulations outlined in the loan agreement. In most cases, the Ministry of Health acts as the purchaser, either through international bidding or local purchase. Equipment, devices and aids must be approved for sale in the Uzbek market by the Department of Quality Control of Pharmaceuticals and Medical Technologies under the Ministry of Health (the national regulatory authority).

4.1.3 Information technology

Health systems in the former Soviet countries have been slow in taking advantage of information technologies (IT). Major barriers to the application of these technologies in the Uzbek health system are the lack of access to IT hardware, the costs related to the development and application of software, and a lack of expertise, capacity and awareness.

In Uzbekistan the use of IT in government-owned health institutions is very limited and mostly confined to basic electronic data collection and entry. No data are available with regard to the use of IT in the private sector. Health care users are not yet likely to use the Internet as a major tool for the selection of health care providers or for accessing health-related information, and Internet-based information or services are scarce in the Uzbek health system. However, many Russian-language Internet sites can be used by the country's bilingual population.

Recent government decrees are creating a strong impetus for the faster application of IT in state health care settings (Ministry of Health, 2012; President of Uzbekistan, 2012a). The establishment of an integrated national IT framework for the state health sector that links the Ministry of Health and *viloyat* and *tuman* health authorities is planned, to support reporting and information exchange. Electronic databases are planned to be implemented to coordinate emergency and ambulance care services, and to monitor and control selected infectious diseases, as well as blood transfusions. A number of health care providers are working on creating systems of electronic medical records at institutional level. The World Bank-funded health reform project and several donor-funded projects aim to establish nationwide electronic disease surveillance programmes.

Telemedicine has been introduced in recent years with international support. Four tertiary care institutions have been linked, giving them the option of video consultation in complex clinical situations. There are plans to link all emergency units in the country, enabling them to consult the national centre in real time when faced with complex clinical situations.

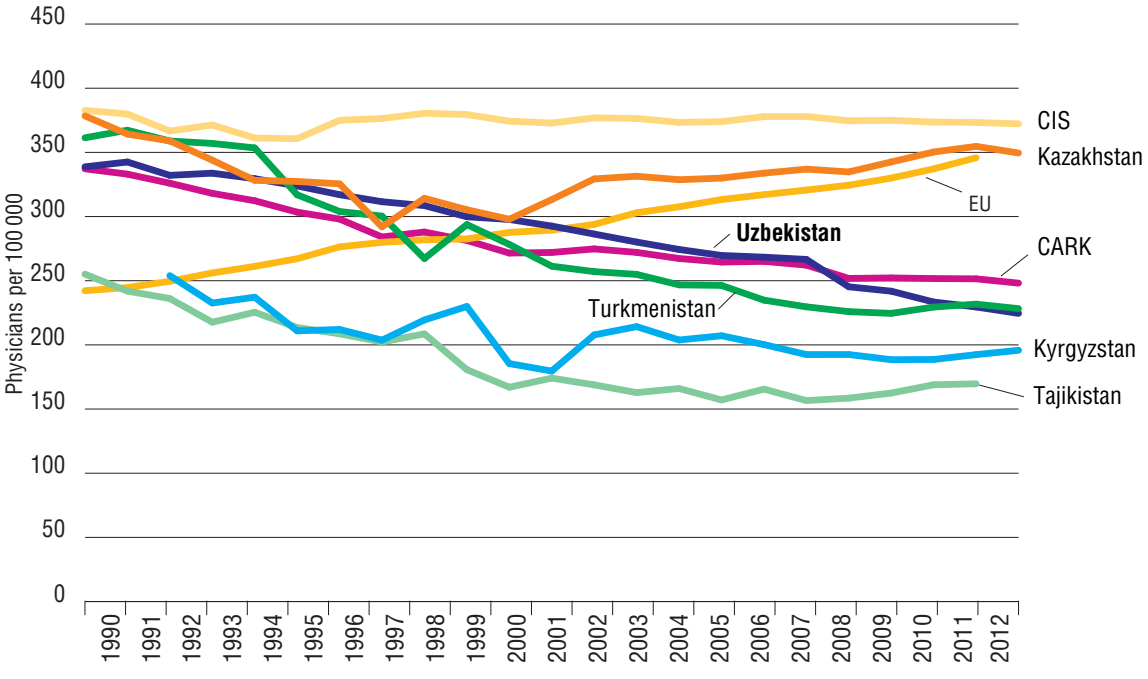
4.2 Human resources

4.2.1 Health workforce trends

A perceived surplus of physicians in the early years of independence resulted in cutbacks in the enrolment of medical schools. The number of physicians per 100 000 population has declined since 1990 and is now slightly below the average for the central Asian countries (Fig. 4.3). There has been no major reduction in the number of nurses per population and rates in Uzbekistan exceed regional averages (Figs. 4.4 and 4.6). The number of dentists per 100 000 population has declined since 1990 and is now lower than in central Asia as a whole (Fig. 4.5). The share of physicians working in hospitals declined from 63.8% in 1991 to 39.7% in 2000 and then increased to 45.3% in 2009 (WHO Regional Office for

Fig. 4.3

Number of physicians per 100 000 population in Uzbekistan and selected countries, 1990–2012

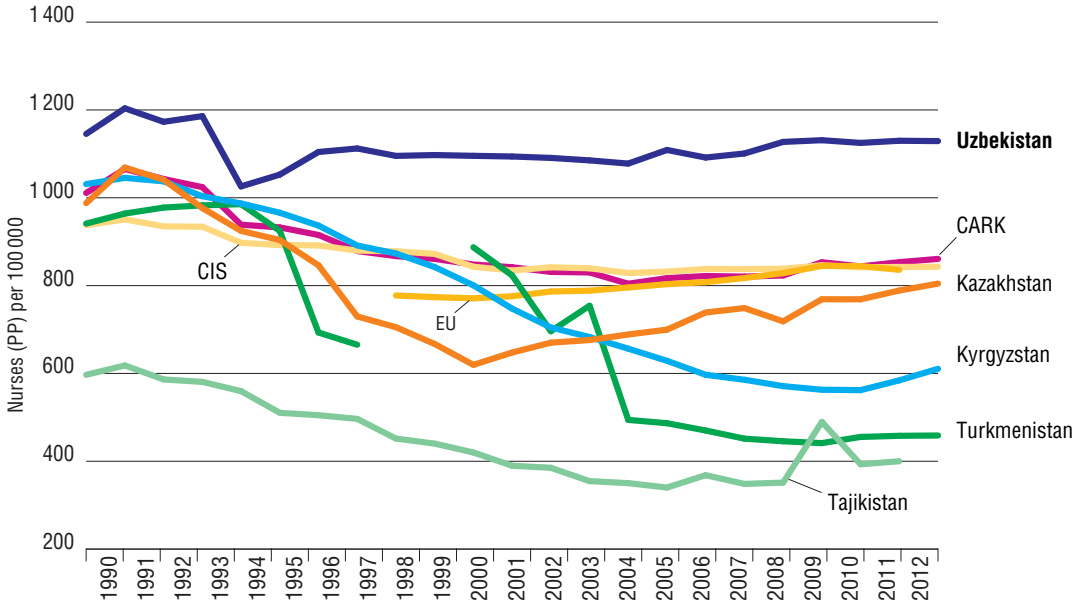


Source: WHO Regional Office for Europe, 2014a.

Europe, 2014a). However, there are significant disparities in the regional distribution of health care workers, with a concentration in urban areas and shortages in rural areas.

Fig. 4.4

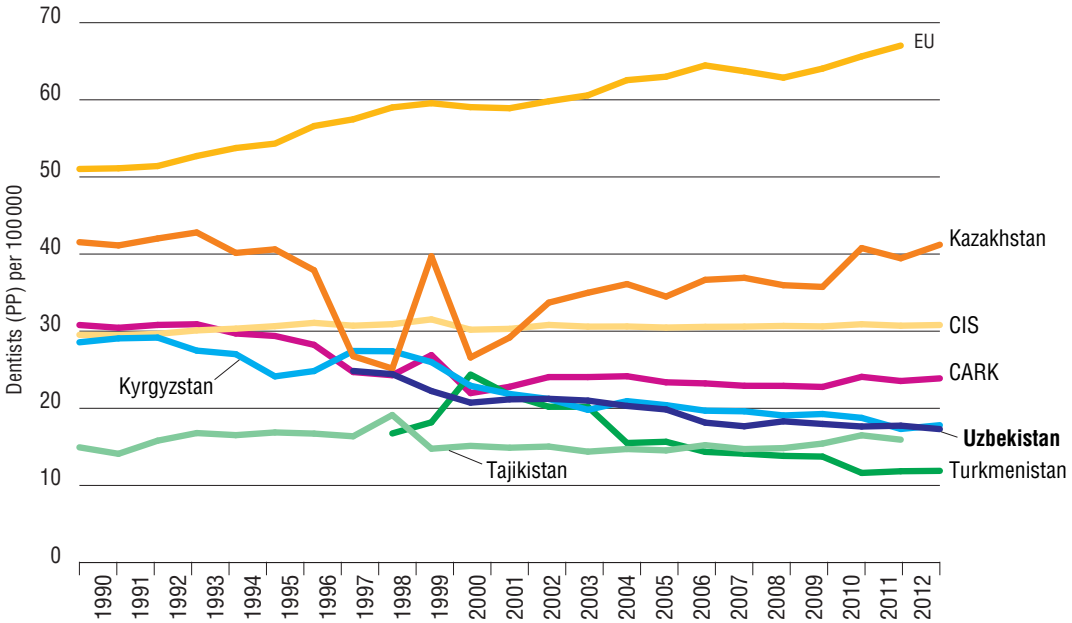
Number of nurses per 100 000 population in Uzbekistan and selected countries, 1990–2012



Source: WHO Regional Office for Europe, 2014a.

Fig. 4.5

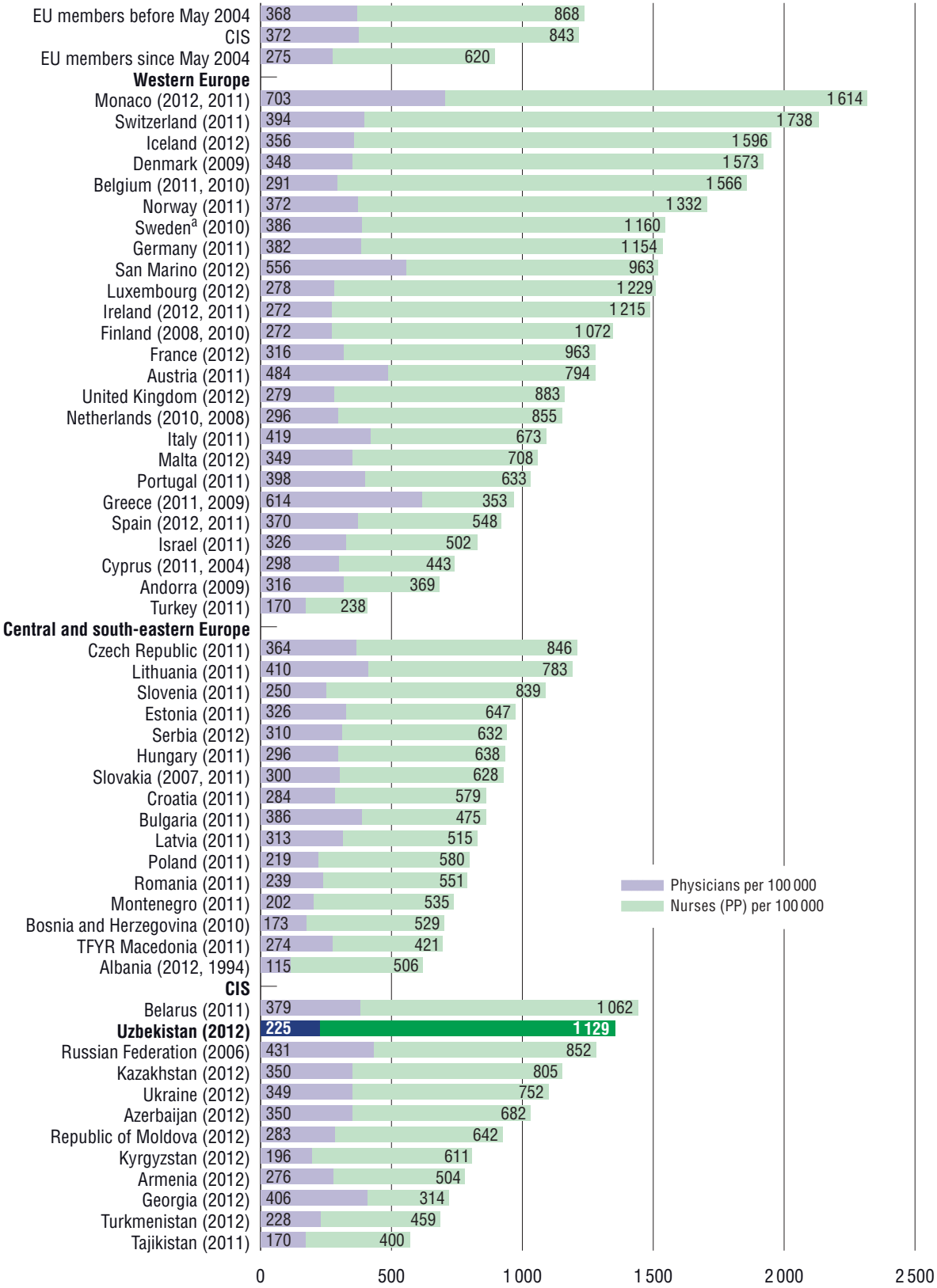
Number of dentists per 100 000 population in Uzbekistan and selected countries, 1990–2012



Source: WHO Regional Office for Europe, 2014a..

Fig. 4.6

Number of physicians and nurses per 100 000 population in the WHO European Region, 2012 or latest available year

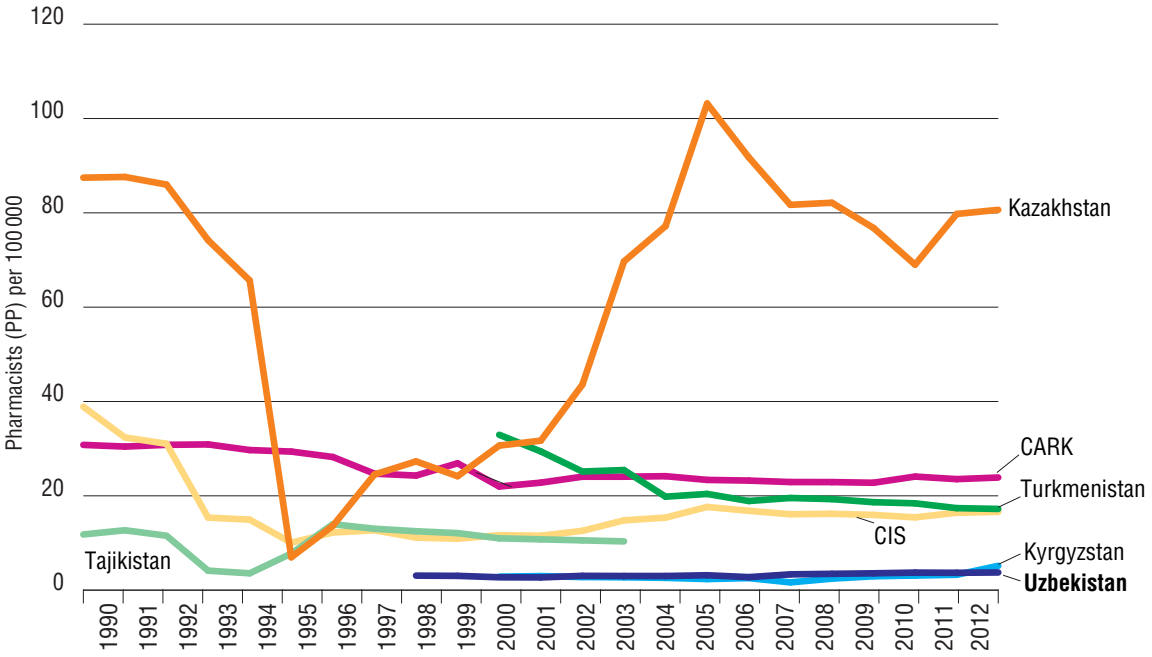


Source: WHO Regional Office for Europe, 2014a.
Notes: [a]Eurostat database. CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

The number of pharmacists per 100 000 population has been remarkably low since the second half of the 1990s (Fig. 4.7) and is at odds with an increase in the number of those graduating. This inconsistency might be due to the omission of pharmacists in the private sector (where most pharmacists are currently working) in governmental statistics.

Fig. 4.7

Number of pharmacists per 100 000 population in Uzbekistan and selected countries, 1990–2012



Source: WHO Regional Office for Europe, 2014a.

4.2.2 Professional mobility of health workers

No hard evidence exists with regard to the movement of health professionals overseas. However, anecdotally a large number of physicians has emigrated to mostly Russia and Kazakhstan, mainly due to the better economic status of physicians in these countries, the lack of language barriers and the relatively easy validation process for Uzbek medical diplomas. Much less frequently, physicians (in particular young graduates) also migrate to western countries, such as the United Kingdom, the United States and Canada, and to the Gulf countries.

4.2.3 Training of health workers

The major groups of health professionals in Uzbekistan are physicians, nurses, dentists and pharmacists. Public health professionals and managers in the health system are seen as one type of specialization within the group of physicians. All educational institutions involved in the training of health professionals in Uzbekistan are public. Currently, there is one medical academy, four medical schools and three regional branches, all of which are state-owned. Each of the four major professional groups follows a separate training pathway. Physician and dentistry training is provided in medical schools, while nursing schools provide basic nursing training. There are four main faculties for the training of medical doctors in medical schools: treatment (general medicine), treatment with an emphasis on teaching skills (pedagogy of general medicine), general paediatrics and sanitary-epidemiology. Only one medical institution, the Tashkent State Medical Academy (and its Fergana branch), provides sanitary-epidemiological training in Uzbekistan. The Tashkent Institute of Pharmacy is the only educational institution offering higher education in pharmacy. Many professional colleges, however, offer pharmacy courses leading to qualifications equivalent to pharmacy assistants. There are 72 professional colleges offering basic nursing training. Higher nursing education was introduced in the academic year 2000/2001 into Uzbek medical education and is conducted by medical schools. The postgraduate medical education system includes the Tashkent Institute of Postgraduate Medical Education (TIPME), faculties for postgraduate medical education for doctors in Andijan Medical Institute and Samarkand Medical Institute, and the Republican Centre for Advanced Education and Specialization of Mid-level and Pharmaceutical Personnel, with 12 regional branches.

Physicians

After independence, a number of changes related to the framework and content of medical education were introduced in Uzbekistan. The duration of undergraduate medical education was extended from six to seven years. Early specialization has been replaced by an orientation towards generalization. Graduates are now qualified as GPs, in contrast to the three broad specializations in the Soviet period (internal medicine, surgery or obstetrics/gynaecology). In terms of content, medical education has been gradually moving from a training based on diseases to a training oriented towards symptoms or syndromes. The development of clinical skills was identified as another priority and new assessment tools for clinical skills have been introduced in all medical schools.

At the postgraduate level, the Soviet *clinical ordinatura* (residency programmes in a sub-specialty) was planned to be replaced by a *magistratura*, which has a different duration and training structure. However, the *clinical ordinatura* framework is still largely in place. For the academic year 2013/2014, for instance, almost 1500 residency places were allocated (Ministry of Health, 2013b).

The emphasis in the *magistratura* is on the combination of mentorship and didactic learning, with a unified content for all programmes. The duration of the *magistratura* varies between two and three years, depending on the specialty, and lasts three years for most clinical specialties. *Magistratura* graduates can work as specialists both in inpatient and outpatient care and are involved in teaching activities. *Clinical ordinatura*, on the other hand, is a two-year programme and has a much more flexible structure. It does not need to meet the strict requirements set for the *magistratura*.

Graduates of the sanitary-epidemiological faculty follow a very similar track. Differences are mostly related to the course load and content, which is less clinically oriented. The duration of the programme is six years, and postgraduate training follows a structure similar to clinical medical education.

Mandatory continuing medical education is based on the requirement of obtaining a minimum of 288 credit hours every five years, of which 144 hours need to come from attending a short training course (Ministry of Health, 2005; Cabinet of Ministers, 2009c). The Tashkent Institute for Postgraduate Medical Education is responsible for the development and delivery of courses in continuing medical education. There are also departments of continuing medical education in some regional medical schools, which serve as hubs for the surrounding regions.

A set of documents, including evidence of credit hours, needs to be submitted to the Centre for Licensing and Attestation of Physicians and Pharmacists, along with a fee, for those planning to obtain *categories* (qualification grades) which are used to determine salary increases in state-owned facilities.

Nurses, midwives and nursing specialties

As part of the reforms of medical education, all nursing schools have been transformed into community colleges for health professionals. Currently these colleges offer professional education in five specialties: general nursing, treatment and preventive medicine (assistants to epidemiologists), pharmacy, orthopaedic dentistry and laboratory diagnostics. The training duration has been extended to two years for nursing students with high school certificates and to three years for students with secondary school certificates.

For an advanced degree in nursing, higher nursing education has been introduced and new faculties were launched in medical schools. The prerequisite for admission to the new programme is a nursing diploma from professional colleges. In the programmes of higher nursing education, all students can choose one of four specialization courses in the last year of their studies: internal medicine, surgery, midwifery (obstetrics/gynaecology) and management. For those graduating from programmes of higher nursing education, it will be possible to pursue Master's degrees in selected disciplines. Currently, a Master's degree in Nursing Management is offered by medical schools.

The framework for the continuing medical education of nurses is similar to that for physicians. The main entity responsible for the continuing medical education of nurses is the Republican Centre of Advanced Education and Specialization of Mid-level and Pharmaceutical Personnel, with 13 affiliated branches (one in each region). There is a mandatory requirement to attend continuing medical education courses at least once every five years, with a minimum duration of 144 hours. These courses are offered at 13 specialized regional centres for advanced medical education of mid-level health professionals.

Dentists

Dental education is provided by two medical schools in Uzbekistan, the Tashkent State Medical Academy and the Bukhara State Medical Institute. In recent years, it has been transformed into a two-level training programme, in line with the reforms in higher education. The first level consists of five years of undergraduate education, exposing students to general dentistry. The graduate level, *magistratura*, is a two-year programme which allows students to specialize in one of three broad areas: therapeutic, orthopaedic or surgical dentistry.

Pharmacists

Training in biotechnology and the pharmaceutical industry is provided in a four-year undergraduate programme. Pharmacy training follows two different programmes. In the first, students receive training only in pharmacy, while in the second they are also exposed to teaching skills, enabling graduates to hold teaching positions. Postgraduate pharmaceutical education consists of a two-year *magistratura* either in "technologies of immuno-biological and microbiological medicines" or in the "biotechnology of medicines".

Public health

A public health profession in the western sense did not exist in Uzbekistan until 2000, when the former Second Tashkent State Medical Institute initiated the introduction of a unified public health programme in line with international standards. In subsequent years, departments of public health were launched in

all medical schools, and courses in different aspects of public health (clinical epidemiology, health management and marketing) were incorporated into the undergraduate medical curriculum. A number of medical schools have launched programmes leading to a Master's degree in Public Health.

4.2.4 Relative importance of different health professionals

Similar to many other countries, the Uzbek health system rewards specialists over generalists and certain specialties (such as surgery and obstetrics/gynaecology) over others (such as general practice or internal medicine). The expansion of the private sector has played a role in changing the relative importance of specialties over recent years. Radiology, for example, was underrated during the Soviet era and the early years of independence, with an evident shortage of specialists and applicants for residency places. Over the last few years, there has been a significant increase in the number of magnetic resonance imaging (MRI), ultrasonography and computed tomography (CT) machines in the private sector. In conjunction with higher salaries in the private sector, this has led to increased demand and competition for radiology residency posts.

Clinicians with a scientific degree and involved in academic teaching are considered by the public to be providers of higher quality health care. A number of policies to change the public image of "underrated" specialties and the (monetary and non-monetary) incentives available to them have been developed, although not all of these were successful. Salaries of health professionals at primary health care level and involved in the management of tuberculosis were increased by 50% in 2011 (Cabinet of Ministers, 2011). Salaries for health professionals in state emergency care facilities were set significantly higher than those of health workers in state-funded non-emergency health facilities.

5. Provision of services

In public health, the sanitary-epidemiological services have retained their traditional focus on environmental health services, food safety and controlling communicable diseases. However, new players have emerged, including the HIV/AIDS centres, the Institute of Health and Medical Statistics, primary health care units and NGOs.

Primary care services are provided by public primary care facilities, outpatient clinics of public secondary and tertiary institutions, and private outpatient clinics. In rural areas, the first point of contact is the rural physician point, while secondary outpatient care is provided by outpatient clinics of central *tuman* hospitals. Four types of rural physician points have been determined, each with a specified number and type of personnel, space and equipment. In all cases, they are staffed by GPs, who lead the team efforts at the practice.

In urban areas, primary health care and selected secondary care services are provided by polyclinics, with catchment populations of between 10 000 and 80 000 people. All types of polyclinics (previously separate for adults, children, and polyclinics specializing in women's health) are currently transformed into family polyclinics which provide primary care for all groups of the population. Specialists in urban family polyclinics are expected to be gradually replaced by GPs.

In rural areas, the first points of contact for patients seeking secondary care from the public sector are *tuman* hospitals or *tuman* medical unions (previously called central *tuman* hospitals) with multi-specialty outpatient units. In urban areas, *viloyat* and city multi-profile hospitals deliver inpatient care for the population. At *viloyat* level, many disease categories and population groups are treated in separate hospitals. These include children's hospitals, tuberculosis hospitals, hospitals treating sexually transmitted and dermatological diseases, neurological and psychiatric hospitals, cardiology hospitals and hospitals

for emergency care. Tertiary inpatient care is generally provided in large hospitals and research institutes and centres at the national level. Emergency care services have undergone significant reforms and a network of emergency departments has been organized throughout the country within the existing inpatient facilities at the *tuman*, *viloyat* and national level.

In the area of pharmaceutical care, state pharmacies have now been almost completely privatized. The country has adopted a long-term strategy of increasing domestic drug production to overcome its reliance on expensive imports. A large share of expenditure on pharmaceuticals is paid privately.

5.1 Public health

Public health functions are performed by different agencies, including the state sanitary-epidemiological services, the HIV/AIDS centres, the Institute of Health and Medical Statistics, primary health care units and NGOs.

At the national level, the Department of Sanitary-Epidemiological Inspection of the Ministry of Health is the main body responsible for the overall control of the status of sanitation and infectious diseases in Uzbekistan. It supervises all sanitary-epidemiological institutions in the country. The Republican Centre of State Sanitary Epidemiological Surveillance is responsible for environmental health services, food safety and controlling communicable diseases. The centre is divided into two main sections: sanitation and epidemiology, reflecting the dichotomy throughout the entire sanitary-epidemiological system. The sanitation division is responsible for controlling the sanitary problems related to common industrial hazards: hygiene, radiation, food safety and related activities. The epidemiology division is responsible for preventing and combating communicable diseases. It has different units for virology, parasitology, tuberculosis and venereal diseases, cholera and plague, and "especially dangerous infectious diseases". Care related to tuberculosis, oncology, mental health, drug addiction, endocrinology and occupational conditions classified as "socially significant and hazardous" is provided by state health institutions and fully financed by public sources.

The sanitary-epidemiological system is organized vertically, with services at the national, *viloyat* and *tuman* levels. In addition to the sanitary-epidemiological centres at all levels, the sanitary-epidemiological system has a number of research institutes and centres. The Centre for the Control of Especially Dangerous Diseases is separate from the Republican Centre of State

Sanitary Epidemiological Surveillance and reports directly to the Department of Sanitary-Epidemiological Inspection of the Ministry of Health. The Research Institute of Virology and the Research Institute of Epidemiology, Microbiology and Communicable Diseases are examples of research institutes.

Mixed payment units were developed to provide paid services outside the main functions of the system. For example, households or other legal entities can use disinfection services of these units on a fee-for-service basis. Some enterprises, such as the Railway Administration, the National Air Company and the National Security Service, maintain semi-independent sanitary-epidemiological centres which are not part of the mainstream system.

Uzbekistan established a vertical infrastructure for preventing and treating HIV infection and AIDS in 1998, separating it from the sanitary-epidemiological services. The National AIDS Centre is located in Tashkent, with branches operating in each *viloyat*. The Centre has three main functions: preventing HIV infection and AIDS; analysing the epidemiology of HIV and AIDS in Uzbekistan; and treating people with HIV infection and AIDS. The *viloyat* centres primarily carry out surveillance and diagnosis of HIV/AIDS, perform health education and are gradually becoming involved in the clinical management of cases.

Health promotion and education in Uzbekistan is carried out by a number of governmental and nongovernmental agencies. Generally, most primary care providers are involved in some kind of health promotion activities, and these have been envisaged as one of the main functions of primary health care. Uzbekistan has also enacted an integrated plan for family planning, according to which polyclinics are expected to provide health education on family planning for women of reproductive age.

Preventive services are considered to be a critical part of the health care delivery process. Major governmental documents related to the reform of the health care sector have stated that preventive services are a priority area for governmental efforts (Republic of Uzbekistan, 1996; President of Uzbekistan, 1998). Immunizations and vaccinations are conducted by public primary care providers and are coordinated and controlled by *tuman* health authorities and sanitary-epidemiological units. The Ministry of Health has developed a protocol for mandatory immunization and vaccination, which is strictly monitored and controlled. In recent years, the private sector has been gradually developing new services to meet a new demand for vaccination and immunization services not covered by the public sector, such as against hepatitis A and B and influenza.

There are a number of activities aimed at improving nutrition, including iron-folate supplementation (for pregnant women, children aged 1–2 years and girls aged 12–14 years), flour fortification, vitamin A supplementation for children aged 6–59 months, and universal salt iodization.

The Institute of Health and Medical Statistics was created in 2001. It was envisaged that the Institute would become the main national player in health promotion and education. The Institute has 14 *viloyat* branches, 159 *tuman* and 15 urban health centres. The Institute has four units: the Media Relations Unit, the Editors' Unit, the Unit for Health Promotion and Education, and the Unit for Health Information.

Many international agencies, such as WHO, UNICEF, UNFPA and the World Bank, have also been involved in health promotion activities. Reproductive health, HIV/AIDS and nutrition are some of the main focus areas for these health promotion activities.

Prevention of noncommunicable diseases is one of the responsibilities of the Curative Department of the Ministry of Health. Several programmes – such as a comprehensive intersectoral national action plan on noncommunicable disease prevention and control – and the introduction of modules on violence and injury prevention and mental health into the medical education of GPs have been initiated.

Occupational health services are provided by a number of specialized institutions with inpatient, outpatient and general rehabilitation units. The role of the Ministry of Health remains related to medical aspects of care rather than to actual planning, regulation and monitoring. Major programmes outside the health sector directed at the prevention of injuries and mortality are carried out on an annual basis by the traffic units of the Ministry of Internal Affairs and the fire brigades. The programme on traffic safety includes education by traffic police in schools and advertisements in public transport, radio and television.

5.2 Patient pathways

Patient pathways differ with regard to primary and secondary care. Patients can obtain free primary non-emergency care from:

- the limited number of *feldsher*–midwifery posts (FAPs) located in hard-to-reach geographic areas, rural physician points in rural catchment areas; and family polyclinics in urban catchment areas;

- outpatient clinics of central *tuman* hospitals if living in rural catchment areas; and outpatient clinics of urban multi-specialty polyclinics if living in urban catchment areas.

The following providers can charge for the primary care services rendered:

- outpatient units of secondary and tertiary care institutions, both at *viloyat* and national level;
- private providers;
- state providers when patients are seeking care outside their registered area of residence.

When obtaining primary care services from public providers, such as primary care institutions or outpatient units of central *tuman* hospitals, some fees may be charged for diagnostic and laboratory tests. Pharmaceuticals are generally covered by out-of-pocket payments (for exceptions see section 3.2). When obtaining care directly from the outpatient unit of secondary and tertiary care institutions, the patient will have to pay service charges. Visits to private providers have to be fully paid by the patient. Price-setting in public institutions of secondary and tertiary care has ceilings defined by the Ministry of Health (with up to 25% mark-ups on the costs), whereas private providers are free to set their prices.

The right to choose health care providers was one of the early government initiatives when bringing market forces into the health care arena. The *Law on health protection* guaranteed the right to choose a physician and a health care institution (Republic of Uzbekistan, 1996). This new policy was in contrast to the Soviet model where the choice of providers was limited by the hierarchical order of the health system and based on a strict referral system. The law opened the field for competition between private and public providers based on mixed financing.

According to the 1996 *Law on health protection*, patients have the right to obtain primary care in any primary care provider throughout the country. In practice, however, the regular utilization of primary care services in an area outside the registered place of residence is problematic. The new financing mechanism, which is based on capitation and is envisaged to be implemented nationwide, will further limit universal access to primary care services by the patients' place of residence (see Chapters 3 and 6). Emergency services, however, will continue to be provided by any public primary care provider, irrespective of registration area (Republic of Uzbekistan, 1996).

Factors such as the availability of alternative providers and geographical access also play an important role in the realization of choice. About half of the population lives in rural areas where the choice of health care providers is limited mostly to public providers. No data are available, however, on the awareness of the population of their legal right to choose health care providers and how far this right is exercised.

Patients in need of inpatient care can choose any of the following paths:

- They can visit *tuman*/city hospitals, *viloyat* hospitals or any other public inpatient institution not included in the "self-financing" scheme. In this case, patients will be able to receive basic secondary care and be responsible for limited cost-sharing (such as for food, communal expenses or pharmaceuticals); specified population groups and clinical conditions are exempted from cost-sharing (Republic of Uzbekistan, 1996; President of Uzbekistan, 1998).
- They can visit public inpatient care institutions included in the "self-financing" scheme. In this case, patients will have to pay the price charged by the institution. The price-setting process is regulated and user charges have defined ceilings (see Chapter 3). If patients qualify for the government reimbursement scheme (people with disabilities, orphans, veterans, etc.), they are eligible to receive care free of charge in these institutions and expenses are reimbursed by the Ministry of Health (President of Uzbekistan, 1998). Reimbursed care, however, should not exceed 20% of the total budget of the institution (for more information on reimbursement schemes see Chapters 3 and 6).
- They can visit any private provider. In this case, patients pay the price charged by the institution. According to legal provisions, specified groups of the population might obtain inpatient care from private institutions, expenses for which will be covered by the government (see Chapter 4).

5.2.1 Referral processes

Although public primary care providers are expected in the current reform context to provide high quality and accessible primary care to the population, they face a number of challenges. Existing financial and structural arrangements do not place primary care at the centre of the Uzbek health system. Clear criteria for referrals to each level of care are often lacking and patients' pathways are often not regulated. As secondary and tertiary care are outside the state-guaranteed medical package for significant parts of the population

(see Chapter 2 for exceptions), this presents another reason for the weak link between primary and other forms of care. GPs also lack financial incentives to take on a gatekeeper role. Patients can easily refer themselves to any secondary or tertiary institution. The private industry is even less regulated in terms of referral processes. Patients can easily opt for private providers anywhere in the continuum of care without any referral.

With the introduction of new market elements into inpatient care, such as through the "self-financing" scheme and greater use of contracts (see Chapter 3), the link between primary care and inpatient care has been further loosened.

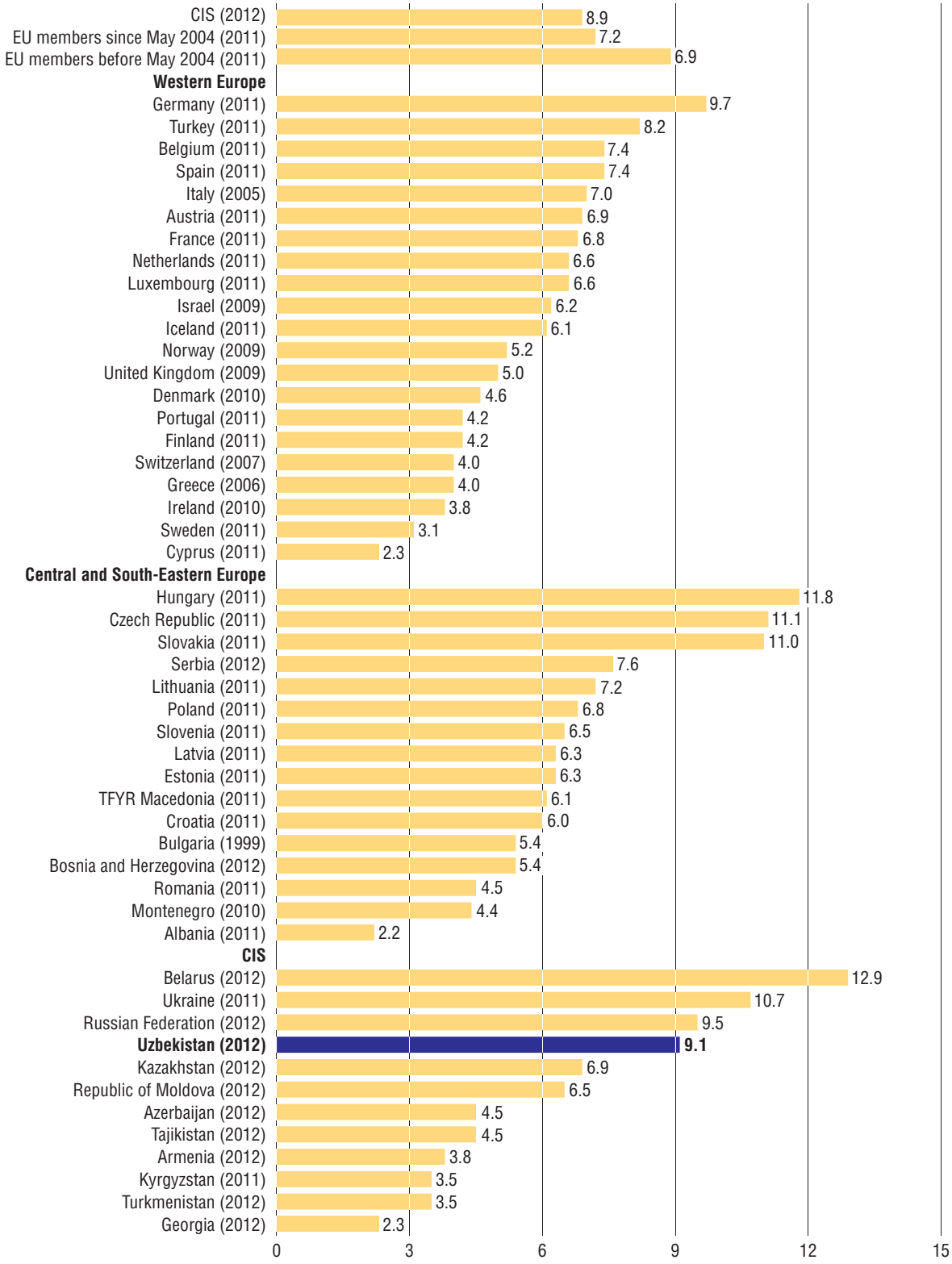
A number of initiatives were developed by the government to improve access to inpatient care for selected groups of the population. According to a newly designed system, the Ministry of Health issues permits to selected patient groups (people with disabilities, orphans and veterans) to utilize secondary and tertiary care services (President of Uzbekistan, 1998). These permits reimburse health care providers for the expenses incurred in the diagnosis and treatment of patients, within the limits of funding earmarked for this purpose. The funding of permits is determined by the government on an annual basis (Cabinet of Ministers, 2003). Patients who fall into the defined population groups have to apply to the Ministry of Health or to *viloyat* health authorities to obtain the permits, although no data are available on the number of applications or permits.

5.3 Primary/ambulatory care

Primary care has been defined in Uzbek legislation as the treatment of certain prevalent diseases, traumas and other emergency conditions; the provision of sanitary-hygienic and anti-epidemic activities; and the delivery of certain activities related to the protection of family, maternal and child health, as well as other medical-sanitary activities needed at the point of residence (President of Uzbekistan, 1998). Primary care services are provided by public primary care facilities, outpatient clinics of public secondary and tertiary institutions, and private outpatient clinics. In some cases, private arrangements can be made for private consultations by physicians in inpatient care. The number of official outpatient contacts per person and year reached 9.1 in 2012, which was high when compared to other countries in central Asia (Fig. 5.1). However, a large number of outpatient contacts in the private sector are likely to go unregistered, while the number of contacts in the public sector might be inflated to meet government benchmarks.

Fig. 5.1

Outpatient contacts per person in the WHO European Region, 2012 or latest available year



Source: WHO Regional Office for Europe, 2014a.
Notes: CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

5.3.1 Public settings

In rural areas, the first point of contact was historically the FAP, providing access to basic health care services to a catchment population of between 600 and 3000. Staff provided basic curative, antenatal and postnatal care and undertook limited disease prevention and health promotion activities, such as immunization and health education. The posts were staffed by up to three health care workers, usually including a *feldsher* and a midwife. The next level of services in rural areas, rural outpatient clinics, were staffed with an average of four physicians. They usually included a specialist in internal medicine, a paediatrician, an obstetrician and a dentist. The third level of primary care consisted of the outpatient clinics of rural territorial or central *tuman* hospitals.

This structure has been largely replaced by a two-tiered system, although a limited number of FAPs still exist. The first point of contact is the rural physician point, while secondary outpatient care is provided by outpatient clinics of central *tuman* hospitals. The number of primary care staff in this new "model" is determined by the size of the population covered. Four types of rural physician points have been determined, each with a specified number and type of personnel, space and equipment: level one will employ one physician to serve a catchment area of 1500–2500 inhabitants; level two will employ two physicians and serve 2500–3500 inhabitants; level three will provide three or more physicians to serve 3500–5500 inhabitants; and level four would represent a rural medical centre for training and education with 7–10 physicians. The number of training medical centres in rural areas is planned to be limited to one or two per *viloyat*. They will serve as education centres in general practice for physicians and nurses.

In contrast to the previously existing teams of specialists, rural physician points are staffed by GPs, who lead the team efforts at the practice. Specialist physicians are being retrained to become GPs. It is envisaged that GPs will be the first point providers of primary health care in urban and rural areas in state health facilities.

In urban areas, primary health care and selected secondary care services are provided by polyclinics, with catchment populations of between 10 000 and 80 000 people. There used to be several types of polyclinics – for adults, children, and polyclinics specializing in women's health. Recent trends in introducing general practice in rural areas are being replicated in urban areas. All types of polyclinics are currently being transformed into family polyclinics which provide primary care for all groups of the population. Polyclinic staff previously consisted of specialists in internal medicine, paediatricians and

other specialists. These specialists in urban family polyclinics are expected to be gradually replaced by GPs and, currently, specialists work alongside GPs. However, similar to the rural primary care model, *tuman* multi-specialty polyclinics will be staffed by specialists to whom GPs can refer difficult cases.

Screening is a key function of primary care units. Primary care physicians should conduct regular screenings of different segments of the population, such as school children or pregnant women. Besides, screening is required by many employers in order to employ staff or by institutions of higher education as a part of the application process. These screenings, however, are not specific enough, are often supposed to cover a broad range of conditions, and may not always be the most cost-effective or efficient clinical practice.

Medical documentation is primarily paper-based. No comprehensive evaluations of work processes in primary health care with the aim of improving efficiency and patient satisfaction seem to have been carried out. However, the most recent report by the Ministry of Health working group on the implementation of primary care reform has covered some aspects of work processes in primary care settings. Its recommendations included, for instance, improvements to patient waiting areas, new arrangements for booking appointments and revising reporting documents (Ministry of Health, 2007). However, it is unclear if any of these recommendations have been addressed.

5.3.2 Private settings

The private sector provides a much simpler framework for the delivery of primary care, which is provided by single or group practices and by outpatient units of large clinics. While data on the utilization of primary care by the types of private providers and on the scope of the care delivered are not available, anecdotal evidence suggests that most primary care in the private sector is provided by group practices in large urban areas. In rural and smaller urban areas, the prevalent form of delivery is by private practitioners or through private arrangements with physicians employed in the public sector.

5.3.3 Quality of care

Rigorous and comprehensive evaluations of the quality of care in primary care facilities are lacking. Quality evaluations are mainly limited to public facilities and focus mostly on structural aspects rather than outcomes, while process evaluations are generally not carried out. Structural evaluations of the state of health facilities and equipment are undertaken by agencies of the Ministry of Health. While no representative national survey to assess the quality of care

has been conducted so far, anecdotal evidence suggests that many medical practices are outdated (Asadov & Aripov, 2009; Expert-Fikri, 2011; Ahmedov et al., 2012).

Very few national initiatives have been carried out to improve the quality of primary care. One of these initiatives includes regular supervisory visits by secondary or tertiary-level specialists to rural primary care facilities. As part of this programme, a team of specialists provides free consultations to a large number of patients over a period of a few days.

5.4 Specialized ambulatory care/inpatient care

Specialized care has been defined by the government as care which requires special methods of prevention, diagnosis or management and involves the use of complex or sophisticated medical technologies. Only specialized physicians in health facilities licensed to render this type of care are authorized to provide specialized care. The types, volume and quality of specialized care provided in health facilities are regulated by the Ministry of Health (President of Uzbekistan, 1998).

Since Uzbekistan's independence, the delivery of public inpatient care has undergone important changes in terms of management and financing, with a process of decentralization and increased autonomy for health care providers (see Chapters 3 and 7). Structural changes were mostly related to the reduction of hospital capacities and the establishment of a new framework for the delivery of emergency care. The main rationale of hospital reform in Uzbekistan has been to introduce a clearer division of responsibilities and to achieve a better allocation of resources.

In rural areas, the first points of contact for patients seeking secondary care from the public sector are *tuman* hospitals or *tuman* medical unions (previously called central *tuman* hospitals) with multi-specialty outpatient units. *Tuman* hospitals serve a catchment area of 10 000–12 000 people and are staffed by paediatricians, specialists in internal medicine and obstetricians. They have 15–75 beds, with an average of about 45, and provide first aid and basic secondary care. Central *tuman* hospitals have about 100–300 beds and are staffed by a range of specialists. It should be noted that *tuman* hospitals and *tuman* medical unions are defined as primary care providers; they are charged with the provision of the guaranteed package of medical services. The

number of *tuman* hospitals is decreasing rapidly with ongoing reforms, and *tuman* medical unions with their multi-specialty outpatient units will eventually become the sole provider of public secondary care services in rural areas.

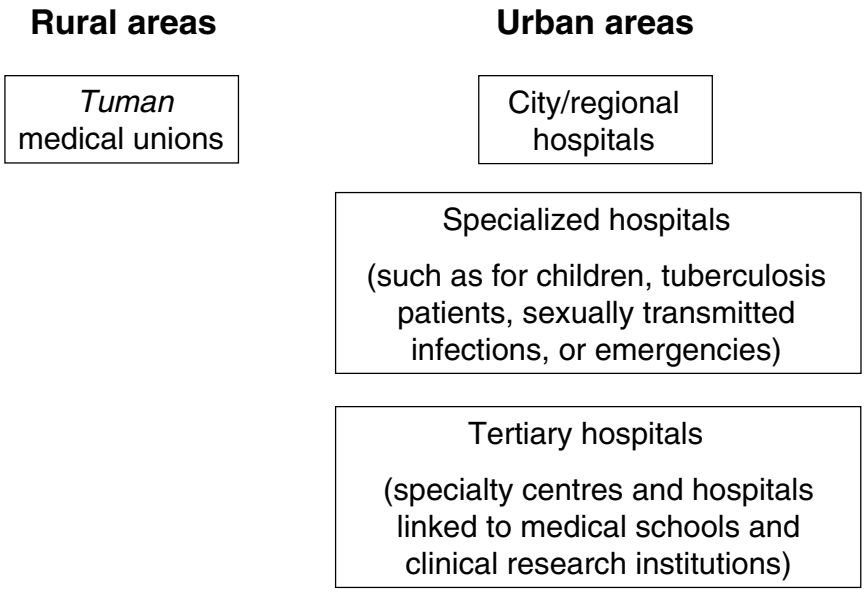
In urban areas, *viloyat* and city multi-profile hospitals deliver inpatient care for the population. For emergency care, as well as for specified categories of diseases and patients, this inpatient care forms part of the state-guaranteed package of services. Regional and city hospitals, located in the main town of each *viloyat*, have between 600 and 1000 beds and offer a range of secondary care specialists and more complex services.

Maternal and child health has been one of the priorities for Uzbekistan's health system. Most postnatal care is delivered in maternity units, the number of which has not changed much since 1997. These maternity units also provide some antenatal care. In rural areas, maternity units are now integrated into *tuman* medical unions. In urban areas, specialized care is typically provided by separate stand-alone maternity hospitals.

At *viloyat* level, many disease categories and population groups are treated in separate hospitals. These include children's hospitals, tuberculosis hospitals, hospitals treating sexually transmitted and dermatological diseases, neurological and psychiatric hospitals, cardiology and hospitals for emergency care.

Tertiary inpatient care is generally provided in large hospitals and research institutes and centres at the national level (Fig. 5.2).

Fig. 5.2
Hospital types in rural and urban areas



Although there are efforts by the government to improve access by the population to high quality care through investment in health facilities and new equipment, the public sector is clearly under-funded. Introduction of fee-for-service arrangements is expected to bring external resources into the public sector.

In the majority of public providers of specialized care, medical documentation is primarily paper-based. However, a number of specialized facilities in the public sector have now started to introduce modern IT systems.

5.4.1 Quality

Quality evaluations are mainly limited to public facilities and focus mostly on structural aspects rather than outcomes, while process evaluations are generally not carried out. Structural evaluations of the state of health facilities and equipment are undertaken by agencies of the Ministry of Health, but it is not clear how outcome measures gathered during these evaluations (mostly related to hospital mortality and complications) are fed back to the facilities which have been evaluated. Some institutions, especially tertiary-level providers, have developed their own institutional frameworks for outcome and process evaluations and how they can be used to improve the services provided. While no national study on the quality of inpatient care seems to have been conducted so far, anecdotal evidence suggests that many medical practices are outdated and the quality of care can vary significantly from institution to institution (Asadov and Aripov, 2009; Mundt et al., 2012).

5.5 Emergency care

Since independence, emergency care services have undergone significant reforms, in particular with regard to hospital-based emergency care. A network of emergency departments has been organized throughout the country within the existing inpatient facilities at the *tuman*, *viloyat* and national level. In rural areas, *tuman*-level departments with 5 to 20 beds are generally organized within central *tuman* hospitals. In urban areas, these departments are located at the urban or central urban hospital. Emergency care at the *viloyat* level is represented by separate health facilities designated as *viloyat* emergency centres. At the national level, the National Emergency Centre in Tashkent serves as the referral point.

Health reforms introduced the concept of formally free and accessible emergency care for all, which seems to have led to an overload of emergency services; this is also because the emergency care system is considered to be much better provided with equipment, medical aids and devices, and medications than other public health facilities. However, as at other levels of the Uzbek health system, the existence of informal payments has been reported. Patients can also – at their own expense – call private ambulance services, which are mostly available in larger urban areas. Evaluations of the quality of emergency care are not available. Medical documentation is primarily paper-based.

5.6 Pharmaceutical care

Since independence, Uzbekistan has faced the challenge of maintaining the supply of drugs and vaccines, while developing and implementing its own national drug policy. The gradual development of a national drug policy resulted in a clear division of the roles of the government and the private sector. The government maintained mostly regulatory functions, while production and distribution were delegated to the private sector.

Uzbekistan inherited a well-developed drug distribution system from the Soviet period. This included the centralized state pharmacy (*Farmatsija*) system and its regional divisions and pharmacies (Ilkhamov, Jakubowski & Hajioff, 2001). State pharmacies are now almost completely privatized, either as part of a joint shareholding association (Dori-Darmon, the former sole drug distributor), or as a single or group pharmacy. The relative success of privatization has helped to ensure competition and provided new opportunities for circumventing the shortages of foreign drugs. However, it is difficult to obtain up-to-date data on operational private pharmacies (such as their number or scope), as they are outside the framework of the Ministry of Health and do not report to any of the Ministry of Health agencies.

Dori-Darmon has traditionally been the main source of drugs for hospitals, but the share of private distributors has recently been growing. Each hospital places an annual order with Dori-Darmon, and deliveries are normally made on a weekly basis. Private sector supply is based on individual negotiations. Private drug distributors also supply drugs to pharmacies, polyclinics and private practices. Vaccines for the public sector are directly distributed by the sanitary-epidemiological services.

Uzbekistan has a long-term strategy for increasing domestic drug production and seeks to become self-sufficient in the production of essential drugs, infusion solutions, vaccines, blood preparations, disposable blood transfusion systems and blood substitute products. Investments were made in the domestic industry, and the aim is to apply international manufacturing standards to domestic pharmaceutical production. While estimates from different sources vary, they all report a rapid expansion of the pharmaceutical market in Uzbekistan over the last few years. In 2010, medications worth over US$ 370 million were imported. In 2012, this number increased to over US$ 530 million. The share of domestic products in the market is estimated to be 20–30%. Over 50% of sales are accounted for by generics. There are about 130 companies involved in the production of pharmaceuticals in Uzbekistan, with over 80 wholesale companies and over 5000 drugstores (Chemrar, 2013; Uzpharmsanoat, 2013; Acierto Consult, 2013).

Challenges for the purchase and distribution of pharmaceuticals include a cumbersome registration process for imported drugs, and the limited hard currency available for the purchase of drugs from abroad. Updates of evidence-based essential drug lists, as well as quality and price control for pharmaceuticals still need to be addressed.

Pharmaceuticals for outpatient care are fully covered by out-of-pocket payments, except for selected population groups and clinical conditions. Patients with oncological, endocrinological or psychiatric conditions, tuberculosis, HIV/AIDS, leprosy, cardiac surgery, and organ transplants are eligible for free outpatient pharmaceuticals. This eligibility also extends to selected groups of the population, such as veterans of the Second World War, workers disabled in the Chernobyl nuclear disaster, and single pensioners (Cabinet of Ministers, 1997b). However, no data are available on how far the need for pharmaceuticals in these groups is met.

Coverage of pharmaceuticals in secondary and tertiary care depends on the source of funding. If patients are not eligible for any reimbursement or benefit packages, the costs need to be fully met by nongovernmental sources, primarily out-of-pocket payments by patients. When patients are eligible for reimbursement by the government, they only need to pay out-of-pocket for pharmaceuticals that are not available at the health care provider (Cabinet of Ministers, 1994). Pharmaceutical expenditure as a percentage of total health expenditure has shown some strong fluctuations in the years since independence. However, public pharmaceutical expenditure accounts for a small portion of overall pharmaceutical expenditure.

5.7 Rehabilitation/intermediate care

Rehabilitation services are provided by the Ministry of Health, state companies or sectors (a legacy of the Soviet period), and the private sector (a post-Soviet development). Rehabilitation services within the Ministry of Health system are funded, regulated and managed by the Ministry of Health. More common used to be parallel rehabilitative services by state companies or sectors, which offered access to their respective state employees, but these declined in the post-Soviet period or were sold off to the private sector. Private rehabilitative institutions need to be registered with the Ministry of Health and generally operate as commercial enterprises. Over recent years, there has been a substantial increase in the number of private providers of rehabilitative services. These entities are either stand-alone facilities focusing on a combination of leisure and rehabilitative services or private clinics providing rehabilitative services in addition to medical services.

5.8 Long-term care

Long-term care in Uzbekistan is provided by social services which are outside the scope of the Ministry of Health. Financing is channelled through the Ministry of Labour and Social Protection, which also defines eligibility. Rehabilitative facilities are in place for those in need of long-term care. Exact data on the scale and scope of public long-term care are, however, not available. Private long-term care facilities are non-existent.

5.9 Services for informal carers

Limited services provided by the social care system are available for informal carers, the number of which is unknown. These services are mostly confined to a limited period of paid sick leave for carers looking after children.

5.10 Mental health

In Uzbekistan, psychiatric care is integrated into the statutory public health system and included into the guaranteed package of medical services. While it is predominantly delivered in the public sector, the stigmatization attached

to seeking mental health care might deter patients from utilizing the public sector and give rise to a demand for alternatives, which can include both private practices and private arrangements with publicly employed physicians.

Officially, the public sector is the only provider of mental health services in Uzbekistan. It is estimated that about 3% of state health funding is utilized for mental health services; of this, 89% is spent on hospital services. Mental health services in the public sector are free. Medication coverage for mental health patients is relatively well funded and approximately 80% of medications seem to be provided for free by the government (WHO-AIMS, 2007).

Since independence, some efforts have been undertaken to develop a legal framework for psychiatric care. The *Law on psychiatric services*, adopted by the Parliament in 2000, defines the minimum government guaranteed package of psychiatric and social services for mental health patients. Relevant changes have also been made to the criminal code of the country, to which a new section related to the involuntary placement of patients in psychiatric inpatient institutions has been added.

A number of initiatives were implemented in the public system of mental health care with the aim of shifting service delivery from inpatient to outpatient care. New outpatient facilities, such as centres for mental health promotion, specialized outpatient centres and child care services, were organized and new services, such as suicide prevention, were designed. A significant reduction in mental hospital beds was also implemented.

In many countries, psychologists and social workers contribute significantly to the delivery of mental health care. In Uzbekistan, social services are not closely integrated with mental health care. Psychologists, although part of the health system at the point of delivery, are not fully integrated into the health system. The training of psychologists falls outside the scope of medical education and is outside the remit of the Ministry of Health. Health professionals involved in the delivery of mental health care are included in the category of professions with occupational hazards. This entitles them to special provisions, such as a lower age for retirement, additional vacation and mark-ups on their salaries.

5.11 Dental health

In the 1990s, the private share of the dental health care market increased significantly. The expansion of the private sector was facilitated by the introduction of cost-sharing and limited capital investment in the public dental

health system. However, the entry of the private sector has mostly been limited to urban areas and the pricing of dental health care mostly targeted groups with higher than average incomes.

In the public sector, dental health care has retained many features of the Soviet period. It comprises dental surgeries in rural areas, and dental polyclinics and specialized inpatient clinics in urban areas. Dental surgeries and polyclinics operate under the auspices of *tuman* health authorities and are considered to be part of the primary care system. Dentists are government employees and, as in other parts of primary care, facilities are owned by the government. However, due to limitations in the state provision of dental materials, dentists charge patients service fees for the purpose of purchasing the needed materials. Rural dental practices are being reformed as part of ongoing primary health care reforms. These reforms envisage delivery of dental health care through the network of rural physician points, which will be staffed by dentists. Specialized inpatient dental care in the public sector is provided by general inpatient or stand-alone institutions. Both are accountable to either *viloyat* or national health authorities.

Patients can freely choose their provider, be it public or private. If a procedure is performed, they are charged a fee for the required dental materials. If there is a need for complex procedures, patients will be referred to the next level of care within the public sector, which can be a secondary or tertiary institution. Specialized care within public facilities needs to be reimbursed by the patients, unless they belong to certain specified groups, which will be reimbursed by the government. In the private sector, patients have to cover all expenses. Orthodontic services are provided under full price reimbursement arrangements by both private and public facilities.

In recent years, a number of cases of hepatitis B and C have been attributed to unsafe practices in dentistry, primarily the improper sterilization of instruments and other materials. The government has now stepped up its efforts to monitor sterilization practices in dental health care.

5.12 Alternative/complementary medicine

Alternative or complementary medicine is regulated by the same provisions as all other medical services. Health professionals providing alternative medicine need to be certified by the Ministry of Health. However, exact data on the utilization of alternative or complementary medicine are unavailable.

5.13 Health care for specific populations

5.13.1 Parallel health systems

As mentioned above, parallel health services exist for employees and officials of certain organizations, enterprises, and ministries, including the Cabinet of Ministers, the Ministry of Interior, the Ministry of Security Services, the Ministry of Defence, the Railway Administration, the Civil Aviation Administration and the National Air Company. The Union of Writers and Artists also operates its own comprehensive network of health services, and about 75 large industrial enterprises have their own health departments. All such parallel health services come under the jurisdiction and supervision of the Ministry of Health. Management and resource allocation, however, are the responsibility of the health care institutions and the organization to which they belong.

5.13.2 Maternal and child health

Almost all services for maternal and child health are provided in the public sector. Inpatient services are provided by maternity or children's hospitals or departments for the population in the respective catchment area. At the *tuman* level, services for maternal and child health are provided as part of primary care either by GPs or by specialists (paediatricians or obstetricians-gynaecologists) at central *tuman* hospitals. More specialized care is provided at *viloyat* and national level, typically by stand-alone facilities with outpatient and inpatient units.

The maternity care hospitals or departments are divided into a unit for pregnant women (which includes beds for normal deliveries and postnatal care) and a unit dealing with complications. The new structure of maternal health care also introduced a vertically integrated management and monitoring framework for maternal and child health, and respective departments are organized within *viloyat* health authorities and the Ministry of Health. The departments coordinate, manage and monitor the activities of all maternity and children's hospitals and related services.

Maternal and child health, including antenatal care, form part of the guaranteed package of services. A number of preventive and screening protocols were developed by the Ministry of Health and are strictly implemented nationwide. According to the protocols of the Ministry of Health, pregnancies are registered in the first three months, with subsequent monthly checks and

examinations until delivery. Neonatal care starts from the first day of life in delivery departments. In the first two years, the child is regularly examined by the primary care provider at set time intervals established by the Ministry of Health.

Rural physician points and polyclinics have a special registry for women of reproductive age and provide regular check-ups and screenings. All cases are first managed by primary care providers. When the primary care provider deems it necessary, patients are referred to the next level of care. In rural areas, the next level might consist of specialists at central polyclinics or maternity hospitals or units. In urban areas, polyclinics employ obstetricians/gynaecologists. Specialized outpatient care can therefore be provided at the primary care institution itself. Cases requiring inpatient care are referred to urban inpatient facilities for maternal care. Child care follows the same pathway in the public framework with public primary care providers being the first points of contact. When required, children will be referred to paediatric hospitals.

As a result of high infant and maternal mortality rates (see Chapter 1), maternal and child care have become one of the main governmental priorities in the health sector. A number of governmental programmes were developed with the aim of decreasing infant and maternal mortality, including a family planning programme. Furthermore, maternity and child health screening centres were established throughout the country and teams specialized in resuscitation and haemostasis were established at all *viloyat* centres. Extensive international support was provided for these and other initiatives. UNICEF, UNFPA, USAID and WHO assisted in the piloting of promotional and educational programmes, such as Safe Motherhood, Safe Vaccination and Breastfeeding (Borchert et al., 2010).

6. Principal health reforms

Over the past two decades, Uzbekistan has initiated several major health reforms, with the aim of improving health care provision, governance and financing. Areas of reform included primary care (initially in rural areas), secondary and tertiary care, and emergency care. Primary care has been changed from a multi-tiered to a two-tiered system, the training of GPs has been initiated and the financing of primary care is increasingly based on capitation. There are also efforts to introduce new approaches to maternal and child health, public health, noncommunicable disease prevention and control, and monitoring and evaluation. In secondary and tertiary care, capacities were scaled back and new governance and financing arrangements for pilot tertiary care facilities introduced. Reforms of medical education have also been initiated.

6.1 Analysis of recent reforms

Since independence, Uzbekistan has embarked on several reforms of the health sector with the aim of adapting to the challenges of the new social, political and economic environment. In the early years of independence, however, specific and detailed long-term plans for health reform were lacking. The first major policy document on health reform was issued in 1998 and focused on primary and emergency care systems. In the following years, reform initiatives expanded to cover secondary and tertiary care, academic training and medical science. Two underlying principles were at the basis of health reforms from the beginning, although they were not officially stated: the government intended to remain the primary player in the delivery of health services and there was an increasing shift of costs to users, particularly for services not included in the guaranteed benefits package.

Table 6.1 outlines the major health reform initiatives and policy documents to date. More detail on the reforms is provided further on in this chapter.

Table 6.1

Major health reforms and policy initiatives following independence

Major national reform policy documents

- Presidential rural social sector infrastructure initiative, April 1996
- *Law on health protection*, 29 August 1996
- *Presidential Decree on the state programme for a reform of the health care system*, 10 November 1998
- *Presidential Decree No. 3923, 19 September 2007, on the main directions of future health reforms*
- *Presidential Edict No. 700, 2 October 2007*, a follow-up document to *Presidential Decree No. 3923*, setting out the timeframe and details for the main directions of health reform
- *Presidential Decree No. 1652*, 28 November 2011, on the next steps of health reform
- *Cabinet of Ministers Decree No. 217*, 2005, on per capita financing in health care
- Welfare Improvement Strategy 2008–2010 and 2013–2015

Major primary and secondary care reform initiatives

- Project Health, World Bank (1998–2004)
- Project Health II, World Bank (2005–2012)
- Project on Woman and Child Health Development, ADB (2005–2012)
- Project Health III, World Bank (2012–2018)

Tertiary care restructuring policy documents

- *Presidential Decree No. 3214*, 26 February 2003, on reforming the tertiary care delivery framework
- *Cabinet of Ministers Decree No. 264*, 8 June 2004, follow-up document to *Presidential Decree No. 3214*, setting out the timeframe and details for the main directions of health reform
- *Cabinet of Ministers Decree No. 145*, 21 May 2009, on the organization and functional framework of tertiary care centres
- *Presidential Decree No. 1652*, 28 November 2011, on the next steps of health reform
- *Cabinet of Ministers Decree No. 91*, 29 March 2012, on capital investment plans in the health sector and reforms of the organizational framework

Maternal and child health policies and initiatives

- *Presidential Decree No. 1096*, 13 April 2009, on reform measures aimed at improving maternal and child health
- *Presidential Decree No. 1144*, 1 July 2009, on reform measures aimed at improving reproductive health
- Project on Woman and Child Health Development, ADB (2005–2012)
- Project on Improvement of Mother and Child Health Services, EU grants, 2009–2012 and 2012–2016

Major reform policies on medical science and academic training

- *Presidential Decree*, 20 February 2002, on improving science
- *Presidential Decree*, 8 August 2006, on measures to improve the coordination and management of science and technology
- *Cabinet of Ministers Decree No. 319*, 18 December 2009, on improving the framework for postgraduate medical education
- *Presidential Decree No. 4456*, 24 July 2012, on reforming the framework for the training of scientists and the granting of science degrees
- *Cabinet of Ministers Decree No. 365*, 28 December 2012, on improving postgraduate education and science

Major health policy documents

- *Law on state sanitary control*, 3 July 1992, No. 657-XII
- *Law on protection of population health*, 29 August 1996, No. 265-I
- *Law on HIV/AIDS prevention*, 19 August 1999, No. 816-I
- *Law on protection of the population from tuberculosis infection*, 11 May 2001, No. 215-II
- *Law on donation of blood and its components*, 30 August 2002, No. 402-II
- *Law on prevention of iodine deficiency*, 3 May 2007, No. 97
- *Law on restrictions on sale and consumption of alcohol and tobacco*, 5 October 2011, No. 302
- *Law on prevention of micronutrient deficiency*, 7 June 2010, No. 251
- Ratification of Framework Convention for Tobacco Control, August 2012

The reforms initiated in the second half of the 1990s and the first half of the 2000s were described in depth in the previous edition of this health system review (Ahmedov et al., 2007). The 1998 *Presidential Decree* on the state programme for the reform of the health care system laid out a master plan for future reforms of the health sector. The *Decree* identified priority areas and plans for the years 1998–2005, including primary health care reform, reforms of emergency care and medical education, and the development of the private sector. The 2003 *Presidential Decree* on further reforms of the health care sector initiated a pilot on reforming tertiary care research institutions, creating specialized centres and clinics equipped with modern technologies for diagnostics and treatment.

6.1.1 Directions of recent health reforms

In Uzbekistan, laws and presidential decrees generally set out the overall priorities and directions for health reforms. Follow-up decrees by the Cabinet of Ministers and the Ministry of Health provide more detailed guidance and information on the implementation of plans and the achievement of objectives. Since 2007, the government has issued three major policy documents (*Presidential Decree No. 3923* of 19 September 2007; *Presidential Edict No. 700* of 2 October 2007 and *Presidential Decree No. 1652* of 28 November 2011) which outline the broad directions for the next steps of health reforms in the country. Some of the most important changes these documents have triggered include:

- Dual accountability has been established for all health authorities and medical facilities. All medical facilities and health authorities are now accountable to both the Ministry of Health and their respective local government.
- Management of the state funds allocated to medical facilities was delegated to newly established treasury offices. Under this scheme, treasury offices have become the primary holders of state funds for state entities and disburse financing according to set guidelines. All medical facilities receiving state funds have become separate legal entities and work directly with local treasury offices on the utilization of state funds. Previously, regional and district health authorities were the primary recipients of state funds. They had accounting departments that dealt with the management of state funds. Levels of allocation of funds to subordinate medical facilities were to some extent based on their discretion.

A number of further reforms are envisaged by the three major health policy documents. They include the following:

- At the district level, central district multi-specialty polyclinics are anticipated to become part of central district hospitals, forming an entity that provides specialized outpatient and inpatient care under a single umbrella. Previously, central district hospitals and central district polyclinics used to function as separate entities and were also often geographically separate. Under the proposed reforms, the new entity will be called the *tuman tibbiyot birlashmasi* (district medical union) and will provide care at district level for a geographically defined population. Previously separately located central hospitals and polyclinics will be merged, so that both inpatient and outpatient care can be provided at a single facility or facilities in close proximity.
- At the regional level, regional adult and paediatric hospitals, as well as some of the specialty care clinics, are anticipated to be transformed into regional multi-specialty adult and paediatric centres. In each region, medical diagnostic centres providing outpatient care on a fee-for-service basis are being established. The medical diagnostic centres will gradually be shifted away from state funding and towards self-financing, while regional multi-specialty adult and paediatric centres will continue to rely on state funding.
- At the national level, in an expansion of earlier tertiary care pilot reform initiatives, six specialized clinical research institutes are anticipated to be transformed into new specialty centres. They will cover the following specialties: dermatology, paediatrics, obstetrics and gynaecology, internal medicine, endocrinology and pulmonology. The four existing pilot specialty centres will be shifted towards full "self-financing" and take the form of shareholding entities, although the government, by holding controlling shares, will remain a key player in their governance and management.
- It is envisaged that a framework for the annual evaluation of health care managers by specially set up working groups will be established. These annual evaluations are expected to identify poorly performing managers and, if necessary, to replace them with more qualified candidates. Detailed mechanisms for the evaluation procedure have been set out by follow-up decrees.

- Improvement of the blood donation and transfusion systems is planned through significant capital investment and new regulatory initiatives. All medical facilities are now required to use disposable items for procedures dealing with blood and its components.
- Capital investments for district and regional-level hospitals and tertiary care centres are envisaged.

The following are some of the major Cabinet of Ministers legal acts that followed the above-mentioned presidential policy documents:

- *Cabinet of Ministers Decree No. 227*, 25 October 2007, on the attestation framework for managerial staff
- *Cabinet of Ministers Decree No. 48*, 18 March 2008, on structural changes to regional health care delivery frameworks
- *Cabinet of Ministers Decree No. 145*, 21 May 2009, on the organization and functional framework of tertiary care centres
- *Cabinet of Ministers Decree No. 91*, 29 March 2012, on capital investment plans in the health sector and reforms of the organizational framework.

In addition to the reform initiatives mentioned above, a number of health reforms are currently ongoing, with changes to different elements of the health system. Primary care reforms focusing on health care infrastructure at the district level, supported by international funding, started in the late 1990s and continue to this day. In 2012, the government of Uzbekistan and the World Bank group signed two loan agreements that aim to further develop the reform initiatives at district level and expand them from primary care facilities to district-level hospitals. Tertiary care reforms initiated in the early 2000s are currently being expanded to involve six more specialty centres. A number of important initiatives were also undertaken to improve maternal and child health and medical education. Finally, the government enacted a number of laws on public health challenges that require a multi-sectoral approach.

6.1.2 Primary care reforms

Two major initiatives have been undertaken so far with the aim of restructuring primary health care in Uzbekistan. The first initiative, project Health (1998–2005; subsequently renamed Health I), was the result of a collaboration between the World Bank and the Uzbek government and piloted several new mechanisms and frameworks for the delivery, financing and management of

primary care, such as the move from a multi-tiered to a two-tiered system of primary health care, the training of GPs and nurses, and the introduction of capitation payments. The project informed the subsequent restructuring of primary health care in the country and is described in depth in the previous edition of this HiT profile (Ahmedov et al., 2007).

The second primary care initiative, consisting of the project Health II of the World Bank and the Women and Child Health Development project of the ADB (2005–2012), started to roll out the pilots throughout the country and introduced new approaches to maternal and child health, public health, and monitoring and evaluation. The World Bank and the ADB designed their projects so that they complement each other and can be implemented in parallel, while supporting the restructuring of primary health care in the country.

In 2011, the World Bank and the Uzbek government initiated another five-year project, Health III, to maintain the momentum of the two earlier health reform projects. The funds allocated to this new initiative primarily cover the costs of modernizing district-level hospitals, including both construction and medical equipment.

Project Health II (2005–2012)

This project had four components: primary care development; financing and management; public health services; and project management, monitoring and evaluation (World Bank, 2012a).

The component on primary care development envisaged the following activities:

- Reconstruction of and equipment for new rural primary care units.
- Expanding the restructuring of primary care into urban areas in the form of pilot initiatives. Up to 30 urban polyclinics were selected as pilot sites and patients were free to enrol in them.
- Intensifying the training of GPs and laboratory technicians. The training of GPs encompassed both the undergraduate level, where it involved changes of the curriculum, and the retraining of practising physicians.
- Provision of continuing medical education by two newly established centres: the Centre for Evidence-Based Medicine and the Centre for Continuing Medical Education.
- Conducting a comprehensive workforce survey.

The component on financing and management aimed to scale up the rural financing and management pilots initiated under Health I, in particular the per capita financing pilots at the primary care level. The component also aimed to develop a physician bonus system to address physician shortages in rural areas. It was envisaged that the management information system developed within Health I would be replicated nationally. In addition, capacity building in health management was supported at the undergraduate and postgraduate level, and a system of national health accounts developed.

The component on improving public health services included the following activities:

- capacity building, including the development of a national public health strategy, the establishment of a school of public health, and support for health promotion and community-driven health programmes;
- prevention of HIV/AIDS, tuberculosis and sexually transmitted diseases, including through the implementation of the national strategy on HIV/AIDS and the nationwide extension of the DOTS (directly observed treatment, short-course) approach in the management of tuberculosis;
- strengthening the public health infrastructure, including through the development of an integrated electronic surveillance database for communicable diseases, the training of laboratory staff, and the refurbishment of selected laboratories.

The component on project management, monitoring and evaluation was primarily concerned with the implementation of a Strategic Monitoring and Evaluation Plan, which had been previously developed. It also supported regular surveys and evaluations to assist implementation of the project.

The project costs were estimated at US$ 118 million, of which US$ 40 million was provided by the World Bank in the form of loans and the rest came from government funds.

Explicit performance indicators were established for three of the four project components and most goals had been achieved by 2011 (Table 6.2).

Table 6.2

Selected performance indicators for the project Health II and progress made by 2011

Performance indicators	Progress made by 2011
Primary health care development	
An increase in the number of pregnant women covered by prenatal care	99.3% in 2004 and 99.7% in 2011
An increase in the number of neonates who receive hepatitis B immunization	8% in 2001, 99.2% in 2005 and 99.3% in 2011
An increase of primary health care utilization and access	3.8 visits per capita in 2004 and 4.7 visits in 2011
Training of 2 700 GPs who work in rural physician points	898 trained physicians by 2004 and 3770 by 2011
An increase of the availability of essential pharmaceuticals at primary care level, as measured by the number of essential drugs stocked	38.9% in 2004 and 64% in 2011
Financing and management	
A decrease in hospital referrals and admissions by 10%	20% referred to hospitals in 2004 and 12% in 2011
Training of 520 health policy experts and financial managers	0 by 2004 and 1769 by 2011
Recurrent expenditures for primary care should be at least 20% of total public expenditures for health	16% in 2004 and 18.3% in 2011
The share of expenditures for primary and outpatient care should be at least 40%	41.7% in 2004 and 45.2% in 2011
Convert rural primary health care facilities to per capita financing	21.5% in 2004 and 100% in 2011
Improving public health services	
100% of pregnant women should have access to HIV testing and to treatment for prevention of mother-to-child transmission	not measured
An increase of the number of people at risk covered by HIV prevention activities by 10%	0 in 2004 and 14.3% in 2011
Adoption of a National Strategic Plan and scaling-up of the DOTS strategy throughout the country	4 regions in 2004 and all 14 regions in 2011
Training of at least 50 public health specialists and public health nurses	0 in 2004 and 54 by 2011
Project management, monitoring and evaluation	
Establishment of a monitoring and evaluation system, with a minimum of two facility surveys and two household surveys	achieved

Source: World Bank, 2012a.

Project on Woman and Child Health Development (2005–2012)

The Woman and Child Health Development project, supported by the ADB, was implemented over seven years, from 2005 to 2012 (for performance indicators see Table 6.3; see also ADB, 2012). It aimed to support the government reform agenda in primary health care and to improve the efficiency of the woman and child health care delivery system. The ADB loaned US$ 40 million in support of the project. The project was divided into several components.

The component on strengthening woman and child health services consisted of the following sub-components:

- Support the reorganization of primary care, with a specific focus on strengthening referral links for woman and child health between primary care units and central *tuman* hospitals.
- Capacity building for woman and child health services at the primary care and *viloyat* levels through procurement of equipment and the provision of training. In selected *viloyats*, 81 central *tuman* hospitals and 6 *viloyat* paediatric and maternity homes were equipped with an essential package for woman and child health services.
- The sub-component on continuing medical education focused on strengthening education for nurses and midwives. It provided training to nurses and midwives at central *tuman* hospitals and rural primary care units, with a focus on public health, prevention, nutrition and basic curative care. Some 10 000 nurses and midwives were expected to undergo training. The project also involved the retraining of approximately 2500 physicians dealing with obstetrics and paediatrics.
- The sub-component on quality monitoring supported the development of clinical pathways and referral frameworks for women and child health care. It also built supervisory capacity at the national and *viloyat* level for the monitoring and improvement of woman and child health care.
- The sub-component on health education supported the Institute of Health and Medical Statistics in the development and dissemination of health education materials on woman and child health.

The project component on strengthening finance, information and management in the Uzbek health system consisted of the following sub-components:

- The first sub-component supported the national implementation of the primary care financing and management scheme piloted under project Health I through training and capacity building. It also piloted hospital financing based on diagnosis-related groups.
- The sub-component on management information systems aimed to build a population-based health database in five *viloyats*, in coordination with project Health II. It was responsible for the development of the Uzbek National Health Data Dictionary, a computer training centre at the Institute of Health and Medical Statistics, and an internal electronic network for the Ministry of Health. The sub-component further assisted in the development of a blood bank information system.
- Support was provided to the Ministry of Health to update and strengthen national protocols ("*prikaz*") related to mother and child health.

The component on blood safety issues aimed to reform the blood storage and transfusion system to improve both efficiency and screening for blood-borne infections (such as HIV/AIDS and hepatitis). The component aimed to restructure the framework for blood storage and transfusion, improve protocols, and facilitate the establishment of a sustainable national budget for blood safety. It included the following sub-components:

- helping the government to establish a national framework on blood safety that would cover both organizational and management issues;
- a new *viloyat* blood safety framework was established and tested in one of the *viloyats*. A defined package of equipment was procured for the National Blood Centre, the Regional Blood Centre, and hospital blood banks. The project also provided reagents and supplies for the first year;
- the final sub-component supported the replacement of paid donors with voluntary, unpaid giving of blood.

Table 6.3

Selected performance indicators for the Woman and Child Health Development project and progress made by 2011

Selected performance indicators or targets	Progress made by 2011
Improved health status of women and children	
Reduce the maternal mortality rate in all project sites by 20% between 2004 and 2009	26.4% reduction between 2004 and 2011; 31.4 maternal deaths per 100 000 live births in 2004, 30.4 in 2009, and 23.1 in 2011
Reduce the infant mortality rate in all project sites by 25% between 2004 and 2009	31.6% reduction between 2004 and 2011; 15.2 infant deaths per 1 000 live births in 2004, 11.2 in 2009 and 10.4 in 2011
Reduce the under-5 mortality rate in all project sites by 25% between 2004 and 2009	30% reduction between 2004 and 2011; 21 under-5 deaths per 1 000 live births in 2004, 15.9 in 2009, and 14.8 in 2011
Reduce the incidence of moderate iron deficiency anaemia among pregnant women (27% in 1996) to 22% by 2009	not measured
Increase the contraceptive prevalence among married women (65% in 2002) to 70% by 2009	not measured
Improved efficiency, equity and financing	
Achieve unified allocation of health care resources across *viloyats* and *tumans* by 2009	
Improve recurrent resource allocations (other than salaries) for primary health care and woman and child health (15% in 2000) to 20% of the facility budget by 2009	primary health facility non-salary expenditures 5.6% in 2008 and 9.8% in 2011
Achieve financial sustainability for the blood safety programme by 2009	81% of costs of blood safety programme state-funded in 2009
Financing of rural primary care facilities based on capitation	per capita financing used in all primary care facilities
Use of the new hospital payment mechanism in pilot *viloyats* by 2009	hospital financing pilot initiated
Decrease hospital referrals from rural physician points and hospital admissions by 10% by 2009	20% of patients referred to hospitals in 2004 and 12% in 2010

Selected performance indicators or targets	Progress made by 2011
Reduce the average length of hospital stays for normal deliveries to 5 days by 2009 (9 days in 2000)	5.4 days in 2009, 5.2 days in 2011
Strengthening woman and child health services	
Increase the percentage of pregnant women receiving first antenatal care by a trained health professional in the first three months of pregnancy to 50% by 2009	39% in 1996 and 87.7% in 2010
Increase the percentage of pregnant women with anaemia receiving iron supplements by 10% by 2009	57% received supplemental iron in 2011
Increased use of birth spacing counselling by 20% by 2009	the percentage of women with birth spacing of less than two years was 8% in 2009 and 6.8% in 2010
Increase the percentage of neonates receiving hepatitis B vaccination (8% in 2001) to 20% by 2009	99.3% of neonates vaccinated in 2011
Increase the percentage of under 3-month-old infants exclusively breastfed (9% in 2002) to 20% by 2009	98.1% in 2009
Building a blood safety programme	
90% of blood used for transfusions screened for infectious diseases by 2009 (60% in 2000)	100% in 2009, no transfusion-related infections observed
National blood safety programme established by 2007	a programme was developed, but not adopted
National policy and legislation developed by 2007	seven policy documents were developed and adopted
National quality system and standards according to WHO guidelines created by 2008	developed and adopted in 2012
100% voluntary unpaid blood donation by 2009	98% in 2012
Six comprehensive *viloyat* blood centres created (none in 2002)	achieved
Patient-oriented hospital blood banks established by 2009	achieved
Clinical protocols for safe blood use established by 2007	achieved

Source: ADB, 2012.

Project Health III (2012–2018)

The project Health III has four components (for performance indicators see Table 6.4; see also World Bank, 2011) that focus on:

1. health service delivery at the levels of district/city hospitals and primary care facilities;
2. health financing and management;
3. noncommunicable disease prevention and control;
4. project management and evaluation.

It is planned that improvements of health service delivery will be carried out by equipping district- and city-level hospitals with a selected list of medical equipment, medical furniture and waste management equipment. Hospital facilities will also be re-evaluated against new construction requirements and, where necessary, improvements will be carried out. Primary health care reform in urban settings will be expanded to cover all urban primary health care facilities in pilot cities. The ten-month training programme in general practice

for primary care physicians will be continued. Clinical guidelines on a set of clinical conditions will be developed in locally accessible languages. Cascaded trainings in target facilities will be carried out to improve compliance with the new guidelines.

The component on health financing and management aims to strengthen local capacity in health financing and management issues. Improving the effectiveness of noncommunicable disease prevention and control will take the form of strengthening local capacities in health promotion. The final component envisages a number of evaluation studies to strengthen evidence-based decision-making in the health sector.

This project is by far the largest health care project implemented in Uzbekistan. Over US$ 228 million is pledged for project activities, of which about US$ 186 million will be provided by the World Bank in the form of loans, while the remainder will be covered from state funds.

Table 6.4

Selected performance indicators for project Health III

Performance indicators	Progress milestones
Improvements of hospital services and primary health care	
Equipping central *tuman* hospitals with furniture and medical and waste management equipment	100% national coverage by the end of the project life
New clinical guidelines developed and implemented by *tuman* and city medical unions	guidelines on 25 conditions by the end of the project life
Training physicians in urban primary care facilities in a 10-month GP training programme	3 670 doctors trained by the end of the project life
Continuous professional development trainings	6 000 doctors and 57 000 nurses trained by the end of the project life
Training hospital managers in hospital management	477 managers trained by the end of the project life
Health financing and management	
Training in financial management	600 staff trained by the end of the project life
Public Expenditure Review reports developed and published	two reports by the end of the project life
National Health Accounts developed and published	two reports by the end of the project life
Strengthening noncommunicable disease prevention and control	
Public health specialists trained in data collection and analysis	300 staff trained by the end of the project life
Health education video clips on cardiovascular risks produced	six clips produced by the end of the project life
Project management, monitoring and evaluation	
Strengthening monitoring and evaluation capacity of the Ministry of Health and project staff	not detailed in the reference document

Source: World Bank, 2012b.

6.1.3 Secondary and tertiary care reforms

In Uzbekistan, district- and city-level hospitals are considered to be part of the state-guaranteed primary health care system. These hospitals are primarily financed from state funds and reforms have been closely aligned with primary care reforms. Health facilities at the regional and republican level, on the other hand, are considered providers of secondary and tertiary care. The majority of these facilities are hospital-based, but they also provide outpatient services.

Until now, secondary and tertiary care reforms have focused on redesigning governance arrangements in republican-level tertiary facilities and on nationwide reductions of bed numbers in state-funded hospitals. In 2003, four tertiary care facilities at the republican level were transformed into specialty centres with expanded roles in governance and financial and human resource management. The centres were permitted to set the prices for services and technically became fee-for-service institutions. The price-setting processes in these institutions, however, had to comply with the guidelines set by the Ministry of Finance, the Ministry of Health and the state committee that deals with issues on competition and monopolies. Up to 20% of services had to be provided for individuals defined as "vulnerable"; the expenses for the care provided for this population group are covered by the Ministry of Health (President of Uzbekistan, 2003; Cabinet of Ministers, 2004). In 2009, tertiary care pilots were expanded to involve six more tertiary care facilities (Cabinet of Ministers, 2009b).

As of 2013, pilot tertiary care facilities were expected to gradually become shareholding entities, with the government holding the controlling set of shares. These changes were anticipated to lead to increased management flexibility, revenues and innovations (Cabinet of Ministers, 2012a). However, it remains unclear what effect these pilot schemes had on the finances of pilot facilities, the quality of care provided by them, and access to tertiary care for different groups of the population.

Reform initiatives of facilities at the regional (*viloyat*) level have so far been largely confined to facility redesign and rationalization (President of Uzbekistan, 2007c, 2007d; Cabinet of Ministers, 2008). At present, three distinct secondary-level facilities are being established at the regional level: multi-specialty adult and paediatric medical centres and medical diagnostic centres. While the first two are hospital-based facilities providing both inpatient and outpatient care services, the third type of facility provides only outpatient care. Medical diagnostic centres are expected to be self-financing, adult multi-specialty centres are expected to be based on a mix of budgetary and self-financing, and

paediatric centres are to be fully funded by the state. Currently, at the *viloyat* level, there is a host of specialty clinics functioning in parallel with the newly established facility types, duplicating many services. At present, it is not yet clear what the government plans to do with these providers of specialty care that fall outside the three new types of facilities.

As one main element of health reforms, the government was able to significantly reduce the number of acute care hospital beds since independence. In the early 2000s acute care hospital beds were reduced to about half the level they had in the 1990s (see Chapter 4). However, it is unclear if officially reported statistics are limited to state-funded beds, include all beds in the public sector, or beds in both the public and private sector.

In 2011, a new *Presidential Decree* (President of Uzbekistan, 2011a) aimed to further reduce the number of state-funded hospital beds (by 18 000 beds, equivalent to a reduction of approximately 14%). It also envisaged closing more than 1000 buildings in the state health sector. Table 6.5 provides information on the numbers and types of buildings that are envisaged to be closed down in coming years.

Table 6.5

Envisaged rationalization of buildings in the state health sector

	Number of buildings, pre-2012	Anticipated number of buildings, after implementation of Presidential Decree No. 1652
Number of buildings at district/city levels	4 011	2 921
Number of buildings in the tuberculosis care network	152	76
• district/city level	111	39
• regional level	41	37
Total	**4 163**	**2 997**

Source: President of Uzbekistan, 2011b.

Significant investments in equipment are planned for the years 2012–2015 in secondary and tertiary care facilities. These investments are part of larger investment plans that cover emergency and ambulance facilities, oncology facilities, facilities providing care to patients with tuberculosis and six national specialty centres (in urology, surgery, dermatology, eye microsurgery, internal medicine and rehabilitation, and endocrinology). About US$ 15 million will be earmarked for purchasing equipment for the six tertiary care centres. Approximately US$ 60 million is planned to be allocated for the improvement of oncology services, US$ 28 million for upgrading equipment in tuberculosis

facilities, and US$ 10 million for emergency and ambulance services. Examples of the anticipated purchases include ambulance cars, establishing centralized call centres for ambulance services, CT machines, linear accelerators, ultrasound machines for oncology services, and digital X-ray machines and lab equipment for tuberculosis facilities. The government allocated US$ 10 million for rehabilitation and equipment of mental health facilities.

6.1.4 Maternal and child health reforms

Reforms related to maternal and child health have been closely linked with the above-mentioned reforms of primary and specialty care, in particular the Woman and Child Health Development project supported by the ADB. Earlier reform initiatives involved the establishment of centralized stand-alone maternity facilities and protocol-driven care processes. More recent reforms include the strengthening of maternal and child health services in primary care facilities and infrastructure investments into stand-alone maternity facilities at district and regional level, such as through the projects funded by the ADB, KfW and the EU.

6.1.5 Reforms of medical training

Academic training for physicians used to be a two-step process (see Chapter 4). The first step involved obtaining a "*tibbiyot fanlari nomzodi*" degree, which was considered to be a prerequisite for the second step, where physicians carried out a larger-scale study to defend a "*tibbiyot fanlari doktori*" degree. Research funding was not project-based, but rather allocated to staff posts in research institutions.

Earlier reforms focused on research funding. The government has now moved towards competitive project-based research funding, where funding is earmarked for a specific project and time period (President of Uzbekistan, 2002, 2006).

More recent reform initiatives focused on academic training. *Presidential Decree No. 4456* established a new framework for higher education, abolishing the previous two-step academic training scheme and replacing it with a one-step framework similar to most western European countries. Under this new framework, physicians intending to obtain a research degree are expected to carry out research and defend a "*tibbiyot fanlari doktori*" degree, equivalent to a doctor of philosophy (PhD) degree (Cabinet of Ministers, 2012b; President of Uzbekistan, 2012b).

7. Assessment of the health system

Although there are only limited system-wide data available on health system performance, a number of trends and challenges can be identified. The country has undertaken major efforts to improve the efficiency of the health system, ensure an equitable distribution of health facilities and protect vulnerable groups of the population from catastrophic health expenditure. Despite an increasing share of public expenditure on health, the high share of out-of-pocket payments and the limited scope of the benefits package to include only primary and emergency care mean that financial protection of the population from the consequences of ill health is still limited, with resulting problems for health equity and access to services. Quality of care is increasingly recognized as a problem, with ongoing efforts to update treatment protocols and revise medical education, continuous professional development, and quality assurance and improvement frameworks. There are also efforts to improve allocative efficiency, with a higher share of resources devoted to the reformed primary health care system. Other challenges to health system performance in Uzbekistan include the practice of informal payments and the fact that user experience has so far been a rather neglected area of health service provision.

7.1 Stated objectives of the health system

In Uzbekistan, the overall aims and objectives of the health system are formulated in terms of general principles. More detailed objectives are developed as part of specific programmes (see Chapter 6). The general principles of the Uzbek health system were stated in a number of government documents. Article 3 of the 1996 *Law on health protection* (Republic of Uzbekistan, 1996) outlined the following general principles:

- compliance with human rights norms in health protection;
- accessibility of health services to all strata of the population;
- prevention as a priority for the health sector;
- social protection for citizens in case of illness;
- bridging the gap between medical science and practice.

These principles were translated by follow-up documents into more detailed objectives, such as the establishment of new health facilities or new financing mechanisms. The 2011 *Presidential Decree* on the next steps of health reforms (President of Uzbekistan, 2011b), for example, addressed the principles of accessibility and prevention through reform initiatives in primary and emergency care. Other presidential decrees focused on other principles, for instance by setting out reforms of tertiary care to improve efficiency and facilitate innovation, or by outlining reforms of medical science to tailor research outputs to the health care needs of the country. Implementation of national legislation is closely monitored, such as through the use of a centralized administrative infrastructure and direct accountability.

7.2 Financial protection and equity in health financing

7.2.1 Financial protection

Ill health can become a significant financial burden to individuals and households due to the medical costs and loss of earnings associated with it. During the Soviet period, the government provided strong financial protection from ill health. Virtually all aspects of care were provided free of charge at the point of use. Although informal payments existed, they rarely had a major impact on financial protection. The public system of social support compensated those unable to work due to illness at rates close to the individual's normal salary until their return to work.

After the break-up of the Soviet Union and the resulting economic difficulties, Uzbekistan had little choice but to ration benefits in all social areas, including health services and social support for those with illnesses. The decision was made to limit financial protection from ill health to selected areas, such as primary and emergency care.

Primary health care facilities in the public sector are expected to provide universal and free coverage for the assigned population. However, comprehensive pharmaceutical coverage for outpatient care is not part of the guaranteed package of primary care, except for small predefined groups of the population and certain clinical conditions (see Chapter 3). Third-party pooling schemes insuring against the expenses associated with outpatient pharmaceuticals do not exist in Uzbekistan. The resulting lack of coverage for outpatient pharmaceuticals is likely to reduce the utilization of nominally free primary care services. Full pharmaceutical coverage would be an expensive undertaking. In 2013, total government funding for health was a little over US$ 1.5 billion (at official currency exchange rates), while the country's pharmaceutical market was predicted to amount to US$ 600 million in the same year (Chemrar, 2013; Ministry of Finance, 2014). Many other countries of the former Soviet Union also require direct patient payments for outpatient pharmaceuticals (Rechel et al., 2013; Richardson, Sautenkova & Bolokhovets, 2014).

Emergency care is formally free and accessible for all, and an extensive network of emergency facilities exists. Although no data are readily available on the amount of public funding earmarked for the delivery of emergency care, anecdotal evidence suggests that emergency care facilities are comparatively well equipped. Pharmaceutical procurement for the emergency care network is considered to be far superior to that of other primary and secondary facilities in the public sector that are charged with providing the guaranteed benefits package. However, pharmaceuticals not available at the facility will need to be provided by patients.

The implementation of formally "free emergency treatment for all" seems to have resulted in some undesirable effects. As secondary and tertiary care generally require formal out-of-pocket payments, since there is no third-party payer reimbursement system for inpatient care, and as they have only limited pharmaceutical coverage, perverse incentives are in place for the use of formally free emergency services in lieu of hospital-based specialty services. These incentives lead to a redirection of patients from other levels of care to the emergency services. This not only results in efficiency losses but is also likely to limit access for those in real need of emergency care.

Furthermore, nominally free services in both primary and emergency care might often require informal payments, which are likely to diminish the extent of financial protection envisaged by reform initiatives. The practice of informal payments is reported to be more common in hospital than in primary care (World Bank, 2009).

Over the last decade, efforts to strengthen financial protection were primarily directed at improving the infrastructure of facilities that provide the care included in the basic benefits package. These efforts involved investments in primary care facilities nationwide, in ambulance and emergency care, and in paediatric facilities at the regional and national level (see Chapter 6). Infrastructure investments mostly consisted of construction works and the procurement of medical equipment. They were expected to increase financial protection through improving the quality of services. However, reliable data on the impact of these investments on financial protection are lacking.

Funding mechanisms for specialized care reflect government efforts to shift costs to non-budgetary sources. State coverage for secondary and tertiary care has been limited to predefined population groups and conditions, which are not necessarily linked to the poverty status of individuals. In the absence of third-party pooling schemes, most of the revenue in tertiary care facilities comes from direct payments, thus passing the entire costs to those who are ill. The burden is especially high for poor groups of the population who are not included in the benefits package. Requests for informal payments further disadvantage the poor; even when they receive care, the quality of the care received may be lower if they cannot afford to pay the requested informal payments.

7.2.2 Equity in financing

A tax-based public system is at the core of the current health system in Uzbekistan. The private sector only accounts for a small share of delivered health services. This overall tax-based framework contributes to improved equity in financing, whereby those with higher incomes pay more, irrespective of the actual use of services.

However, two important elements of the current system should be noted. In Uzbekistan, as in many other post-Soviet countries, the informal sector makes up a significant share of the economy (Bendini, 2013; World Bank, 2013). This means that not all income is taxed and, thus, not all individuals contribute to the system in proportion to their income.

The other element relates to the limited scope of the benefits package and the importance of private out-of-pocket payments. The benefits package is mostly limited to primary care, ambulance and emergency services, paediatric services and services for a selected group of conditions (see Chapter 3). Other services in the public sector, particularly at the levels of secondary and tertiary care, are increasingly being shifted towards official fee-for-service arrangements. Although specialized facilities provide services free of charge for specified groups of population (see Chapter 3), these free services only make up a small proportion of the total care provided. This set-up results in inequities in financing the services outside the benefits package. Furthermore, the common practice of informal payments further contributes to regressive vertical equity in financing, as does the fee-for-service based private industry.

7. 3 User experience and equity of access to health services

7.3.1 User experience

In many respects, health services do not differ from many other services provided in the market. In the marketplace, goods and services need to cater to three key domains in order to succeed: they should do what they are supposed to do well; they should be safe and reliable; and they should deliver good user experiences (Bate & Robert, 2006). In Uzbekistan, health care delivery frameworks mainly focus on the first two elements and often neglect attempts to improve user experience. There are checks and balances in place that take account of user perspectives (that is, frameworks for filing complaints), but they are often retrospective in nature and focus on individual cases, not on improvements to the overall system.

Clearly, effectiveness and safety are paramount concerns in health care. However, there is also a strong business case for improving user experience. One important economic aspect is related to opportunity costs. Many health care providers in the public sector lack frameworks for appointment scheduling. This leads to long waiting times and multiple return visits. Many providers also do not have frameworks for evaluating and improving work processes, resulting in poor user experiences and efficiency losses due to poor workflow designs.

Although there are one-off provider-led initiatives to improve user experience, system-wide efforts are still lacking. Reliable system-wide data on user experiences are also non-existent. However, findings from other former

Soviet countries suggest low patient satisfaction rates. In a survey conducted in 2010 in nine post-Soviet countries, about 40% of patients on average were satisfied with the respective health system (Footman et al., 2013).

One possible explanation for the low priority placed on user experience in the Uzbek health system lies in the fact that business models and ideas of new public management are rarely applied in the health sector. Health services are run primarily by physicians and health management training in the country does not have a strong business component.

The situation is slightly different in the private sector, where the experience of users has received more attention. However, in the last few years, the government has taken measures to restrict the private sector's scope of activities. For instance, inpatient surgical procedures need to be primarily performed in the public sector. Performing them in the private sector requires special permits, which are rarely, if ever, granted. As a result, some public facilities have become de facto monopoly providers in tertiary care services. This situation does not provide incentives to be responsive to patient needs and improve patient experiences.

7.3.2 Equity of access to health services

Access to care requires availability of services and equity of access (Gulliford et al., 2002). Availability of services when they are wanted or needed can be described as potential access. Actual access is concerned with whether available services can be utilized or whether there are barriers that impede the use of available services (Aday & Andersen, 1974; Andersen, 1995).

In Uzbekistan, quantitative data are regularly collected on the available infrastructure, such as the number of hospital beds, outpatient clinics, physicians and nurses. These data can help to understand potential access to services.

In the public sector, data on health care utilization, that is, actual access, are also collected regularly. In the private sector, however, data collection protocols are not strictly enforced, and the reported data do not capture actual utilization rates. Furthermore, utilization data do not convey information on unmet health care needs. This is particularly the case in areas such as specialized care that function on a fee-for-service basis.

Two main types of barriers to access are often identified. Geographical access is concerned with the distance to health care providers: the longer the distance, the higher are the costs associated with receiving care (that is, costs

for travel and accommodation). Financial access is concerned with whether and how ability to pay affects the utilization of services. Where out-of-pocket payments are common, such as for specialized care in Uzbekistan, higher financial barriers to access exist.

While primary care reforms have led to closures of primary care facilities in rural areas, the government aimed to ensure equal geographical access to restructured primary care units (Ahmedov et al., 2007). For this purpose, a mapping and geographical placement of primary care units in relation to populated areas was carried out. Urban primary care has not undergone major closures of facilities. It is therefore safe to assume that geographical access to primary care services in urban areas has remained similar to the period prior to reforms.

In terms of inpatient secondary care, there were some reductions in the number of small rural hospitals, but each urban or *tuman* unit has at least one central urban or *tuman* hospital. It can therefore be assumed that geographical access to inpatient care was largely maintained, despite the closure of small rural hospitals. Tertiary inpatient care was not affected by any major facility closures, although access might have been affected by reductions in bed capacity. Improved availability of a number of complex tertiary care services was the primary goal of reforms of the tertiary care sector in Uzbekistan. Since independence, a number of specialized tertiary care centres have been established in areas such as neurosurgery, ophthalmic microsurgery and cardio surgery.

Financial access has been undermined through the expansion of formal and informal user charges over the last two decades. According to WHO estimates, in 2012 out-of-pocket payments accounted for almost half of total health expenditure (WHO Regional Office for Europe, 2014a). User charges can limit access to necessary care, disproportionately affecting lower income groups. This is a particular problem in Uzbekistan, as eligibility criteria for the benefits package are not directly linked to income levels. Consequently, major differences in financial access exist between the patient or population groups covered by the benefits package and the rest of the population.

Other types of barriers to access also exist. Many rural primary care facilities face physician shortages. Unreliable electricity and water supply to rural health facilities also cause barriers to the utilization of health services (World Bank, 2009; Expert-Fikri, 2011; Ministry of Health, 2014). No recent studies could be identified that explore unmet health care needs in Uzbekistan.

7.4 Health outcomes and quality of care

7.4.1 Population health

Population health can be assessed by a range of measures, particularly those that capture overall and disease-specific mortality and morbidity. Changes over time can provide insights about whether initiatives for improving population health were successful. However, multiple factors can contribute to changes in overall mortality and morbidity patterns, including changes in the economy, the education sector, the political and welfare system, and the health system.

Changes in disease-specific measures, on the other hand, can often be more readily linked to specific health sector efforts. Although immunization rates are high, health outcomes for a number of other infectious conditions (such as tuberculosis and HIV/AIDS) and most noncommunicable conditions (such as cardiovascular or respiratory conditions) fare poorly when compared to outcomes for health systems in western Europe. However, recent improvements in neonatal and maternal mortality (see Chapter 1) can at least in part be attributed to improved health service provision.

There were also improvements in recent years in life expectancy at birth. However, it is difficult to ascertain the exact progress made, as official statistics differ from estimates by international agencies (see Chapter 1). According to World Bank estimates, life expectancy at birth in Uzbekistan increased by 1.6 years between 1991 and 2012, from 66.5 to 68.1 years (World Bank, 2014). Similar increases can be observed in Kazakhstan (1.6 years) and Kyrgyzstan (1.5 years), whereas much greater gains are estimated to have been made in Turkmenistan (2.6 years) and particularly Tajikistan (4.6 years) (World Bank, 2014).

Years of life lost (YLL) and disability-adjusted life years (DALY) are other metrics that provide information on population health. YLLs take into account the age at which death occurred. The metric assigns higher loss to deaths occurring at younger age, thus giving information about premature death. DALY, in addition to measuring premature death, also aims to capture years lost due to ill health and disability (WHO, 2006). Table 7.1 presents conditions ranked according to their contributions to total YYL for Uzbekistan in 1990 and 2010. In this time period, the disease burden of lower respiratory conditions decreased, while the burden of noncommunicable conditions, such as ischaemic heart diseases, stroke and cirrhosis, increased.

Table 7.1

Top 10 causes of YLL, 1990 and 2010

Rank	Disorder, 1990	% of total YYL, 1990	Disorder, 2010	% of total YYL, 2010
1	Lower respiratory infections	25.8	Lower respiratory infections	16.3
2	Ischaemic heart diseases	9.9	Ischaemic heart diseases	16.3
3	Neonatal encephalopathy	8.4	Stroke	7.5
4	Diarrhoeal diseases	6.3	Neonatal encephalopathy	6.5
5	Stroke	5.2	Cirrhosis	4.3
6	Preterm birth complications	3.9	Road injury	3.9
7	Road injury	3.1	Preterm birth complications	2.9
8	Congenital anomalies	2.9	Congenital anomalies	2.4
9	Drowning	2.2	Self-harm	2.2
10	Cirrhosis	1.9	Tuberculosis	2.1

Source: IHME, 2014.

When disability is taken into account, conditions such as diabetes, back pain and major depressive disorder gain in importance (Table 7.2).

Table 7.2

Leading causes of DALY and percentage change between 1990 and 2010

Rank	Disorder, 2010	% change, 1990–2010 (rounded)
1	Ischaemic heart diseases	60
2	Lower respiratory infections	-40
3	Stroke	40
4	Neonatal encephalopathy	-20
5	Road injury	20
6	Major depressive disorder	70
7	Cirrhosis	120
8	Lower back pain	50
9	Iron deficiency anaemia	5
10	Diabetes	130

Source: IHME, 2014.

However, it is worth noting that these data on YYL and DALY have major in-built uncertainties, due to data limitations and the use of assumptions and estimates where data were not available (IHME, 2014). In Uzbekistan, national data on disease-specific measures mostly include those related to incidence, prevalence and mortality. Data reported by Uzbekistan to WHO confirm an

increasing burden of noncommunicable conditions, such as cardiovascular diseases, cancer and diabetes. Unfortunately, these data are now long out of date, with the latest data on disease-specific mortality relating to 2005.

Furthermore, in view of the current set-up of the health system and of data collection frameworks, some officially reported data have to be treated with caution. For instance, data on conditions that are linked to benefits in the public sector, such as cancer, are likely to be more accurate. Some patients with cardiovascular conditions or back pain, on the other hand, might entirely rely on the private sector, where less strict documentation and data reporting measures are in place.

There is an obvious need for better data. A number of health care interventions are shown to reduce mortality, morbidity or disease progression and are incorporated into clinical practice guidelines in developed countries (Strippoli et al., 2004; Rodbard et al., 2007; Benson et al., 2008; Smith et al., 2011; AHRQ, 2014). Well-designed and implemented data collection initiatives can facilitate informed decision-making and improve the effectiveness and efficiency of the health system.

One of the areas that will need attention is inequities in health outcomes across regions. Official statistics on infant mortality indicate substantial variation across different parts of the country (Table 7.3).

Table 7.3

Infant mortality per 1 000 live births, 2000–2012 (selected years)

	2000	2004	2005	2006	2007	2008	2009	2010	2011	2012
Uzbekistan	**18.9**	**15.4**	**14.9**	**14.5**	**13.6**	**12.5**	**11.7**	**11.0**	**10.4**	**10.2**
Karakalpakstan	20.5	18.4	17.4	17.1	14.1	13.9	13.9	11.8	11.2	11.8
Andijan	15.2	14.0	12.3	12.1	13.0	11.0	10.4	9.4	9.2	11.9
Bukhara	19.0	14.0	12.0	13.2	13.2	13.1	12.7	11.3	10.2	10.6
Djizzakh	16.2	12.0	12.3	10.5	10.5	10.4	9.8	8.8	8.8	8.1
Kashkadarya	19.0	14.0	13.8	13.3	12.8	12.0	11.4	10.1	9.6	8.8
Navoi	18.4	12.6	10.9	9.4	9.9	8.6	7.9	6.6	7.4	7.6
Namangan	18.8	14.0	15.1	13.9	14.3	12.8	11.8	12.5	12.5	11.9
Samarkand	16.0	12.2	12.7	12.3	12.5	11.2	9.4	9.4	9.0	7.7
Surkhandarya	20.7	11.6	11.6	10.4	9.9	8.6	8.6	7.8	6.6	7.4
Syrdarya	20.4	18.1	16.7	15.7	13.9	14.4	12.2	10.2	10.7	11.6
Tashkent region	19.6	15.6	15.4	14.0	12.8	11.7	11.0	11.0	10.6	9.9
Ferghana	19.3	20.1	19.3	19.4	17.3	15.0	15.0	14.1	12.7	12.1
Khorezm	24.6	17.1	16.3	16.9	13.5	15.1	12.0	12.0	11.8	11.3
Tashkent city	19.5	22.6	22.3	23.2	18.7	17.6	16.4	17.1	15.6	13.1

Source: State Committee on Statistics, 2013: 130.

7.4.2 Quality of care

Quality of care can be evaluated by looking at the availability of infrastructure, processes of care and health outcomes (Donabedian, 1988). Infrastructure needs to be available to ensure access to care and the care provided needs to be safe and effective to lead to improved health outcomes (Campbell, Roland & Buetow, 2000). Nowadays, quality improvement initiatives mostly concern changes in processes of care.

In Uzbekistan, improving the quality of care has become a government priority and, since the second half of the 1990s, significant external and internal resources have been mobilized for upgrading and restructuring primary, secondary and tertiary care, and emergency services (see Chapter 6). While reliable evidence is limited, it is hoped that these investments in facilities, equipment and training have improved access to quality care, resulting in increased public trust.

Investments in medical facilities and equipment, however, are insufficient to bring about health improvements, as long as clinical practice remains unchanged. Although evidence on the quality of care in Uzbekistan is limited, existing studies and reports as well as anecdotal evidence suggest that significant improvements are still needed to align care with current evidence-based clinical benchmarks (Asadov & Aripov, 2009; Hasker et al., 2009, 2010; Mundt et al., 2011, 2012; Ahmedov et al., 2012; Roberts et al., 2012).

When compared to evidence-based benchmarks, current care processes in Uzbekistan include underuse, overuse or misuse. All three types of inappropriate care can primarily stem from a physician's lack of knowledge about recommended care processes. However, over recent years, overuse seems to have become much more common, a trend that must be attributed, in part, to the expansion of fee-for-service payment mechanisms in the public and private sector (O'Rourke, 2007). Implicit and explicit incentives from fee-for-service-based providers, as well as a lack of oversight, are likely to drive physicians to over-investigate, overprescribe and over-treat. While overuse of services is a concern in many health systems (Campbell, 2007; Smith-Bindman, Miglioretti & Larson, 2008; Hockenberry et al., 2011; Roehr, 2012; Bhaumik, 2013a, 2013b; Moynihan, Glassock & Doust, 2013; Wiener, Schwartz & Woloshin, 2013), it has been recognized that fee-for-service arrangements influence physician behaviour and require increased oversight to prevent abuse (Chren, Landefeld & Murray, 1989; Wazana, 2000; Blumenthal, 2004). However, to be effective, oversight measures and procedures need to be carefully designed and implemented, keeping in mind limitations of evidence-based recommendations.

Yet fee-for-service arrangements are not the only threat to quality of care. Physicians' self-learning skills and frameworks for continuous professional development are also critical. Medical education in Uzbekistan still revolves around classroom learning and involves very limited interaction with patients. Typically, medical graduates start unsupervised clinical practice right after medical school, with very limited prior exposure to patient care. Many countries, such as the United States (USMLE, 2014), Canada (MCC, 2014) or the United Kingdom (GMC, 2014), require medical graduates to meet minimum requirements in medical knowledge and skills by passing independently and rigorously designed tests. A similar framework is missing in Uzbekistan. It might help to align training in all medical schools of the country and, if properly designed, this could ensure minimum quality standards in physicians entering clinical practice.

The framework for continuous professional development is also underdeveloped. The cost of revalidating the licence to practice lies entirely with physicians. Revalidation fees are significant, given the current low salary rates for the health workforce. Salaries of health workers in the public sector are considered insufficient to motivate continuous self-improvement and full-time commitment to patient care (World Bank, 2009). Low remuneration rates also contribute to the practice of informal payments.

Furthermore, most physicians do not have access to up-to-date medical literature. This is due in part to very limited English-language proficiency and lack of access to international peer-reviewed resources. Lack of training in methods of critical appraisal further limits the application of evidence-based changes into clinical practice. Local professional meetings, medical textbooks in Russian and mandatory training modules developed by the Institute for Postgraduate Medical Education are the primary learning resources. The quality of these resources varies and they often fail to reflect the most recent developments.

The restrictions applied to the private sector with regard to the provision of tertiary care services have in part resulted from concerns about the poor quality of care provided in profit-driven settings, where oversight by health authorities is limited. The Ministry of Health has now strengthened its oversight over the private sector with regard to the quality of care, but it remains to be seen whether these expanded oversight functions are sufficient to ensure quality of care in the private sector. Despite these developments, restrictions on the provision of tertiary care services in the private have so far not been lifted.

A final challenge to improving quality of care in Uzbekistan is that clinical quality assurance and improvement frameworks are still rudimentary, including with regard to medications, laboratory tests and diagnostic investigations (Emanuel, 2010). Reliable and valid system-wide data on quality of care are lacking. The existing quality assurance framework relies on patient complaints or the reporting of serious medical errors and lacks clearly articulated and evidence-based guidance. However, there are some areas of care where progress in terms of quality has been made. One such area is the introduction of a comprehensive mother and child health programme on effective perinatal care, supported by WHO, UNICEF, the EU and UNFPA. This initiative includes several components of quality improvement, such as the revision of clinical guidelines, professional training, legislative support, monitoring and evaluation activities, introduction of pilot projects on supportive supervision and critical audit, and media campaigns.

Recent initiatives to develop a set of clinical guidelines, supported by the World Bank, WHO and other international organizations, are another important step in the right direction. It will be important to establish an overall quality assurance framework that tracks quality-related metrics in the system, creates incentives for health care providers to focus on quality care, and provides guidance on priority quality issues and evidence-based interventions. If there are no appropriate frameworks, care providers can externalize costs arising from poor quality of care, often passing the costs on to patients (Mello et al., 2007). To succeed, the still predominant culture of blaming will need to be overcome. When faced with potential punishments, health workers can game the system by inaccurate reporting, thus covering up the extent of quality issues (World Bank, 2009). Health IT can help in collecting data on the quality of care, improving the quality of care and tracking changes over time.

7.5 Health system efficiency

7.5.1 Allocative efficiency

In Uzbekistan, the allocation of resources is not informed by comprehensive health needs assessments, and the use of cost–effectiveness and comparative effectiveness studies in policy and decision-making is very limited. Instead, aggregate proxies for health needs are used as a basis for resource allocation. The allocation of public resources follows a planned process, in which resource

allocations are made according to established standards and protocols, often based on geographical and population indicators. The mechanisms for resource allocation differ between the primary, secondary and tertiary care level.

In public sector primary care, resource allocation has been increasingly linked to the size of the population covered. Conceptually, population size represents a proxy for health needs, as there is a comparatively even geographical distribution of income, education, age and gender within Uzbekistan's territorial units. Furthermore, capitation payments are based on coefficients that take into account the population structure in terms of age, sex and density (Cabinet of Ministers, 2005a). However, in large urban units, such as Tashkent, certain neighbourhoods attract more affluent groups with distinct health needs and health-seeking behaviour.

Financing of secondary and tertiary inpatient care in the public sector is still based on norms, inputs and past expenditures, except where it has been shifted to self-financing. This mode of financing does not take account of the outputs produced. Allocative efficiency is further undermined through the existence of out-of-pocket payments (both formal and informal) and physician-induced demand.

Over recent years, public sector facilities are increasingly being shifted towards self-financing. This primarily concerns tertiary and selected secondary care facilities. This financing scheme enforces organizational behaviour that prioritizes the goals of the facility over those of the health system and society at large. For instance, to protect revenue sources, organizations can engage in activities that reduce the efficiency and effectiveness of the overall health system. Examples include duplicate tests and procedures, and inappropriate hospitalizations. The allocation of resources to public providers on the self-financing scheme (except for those patients included in the benefits package) and to providers in the private sector is based on market forces. In these cases, resources are tailored to demand, not health needs, resulting in low allocative efficiency.

Allocative efficiency also depends on health spending by levels of care. Corresponding to a decreased spending on tertiary care, public funds were shifted in recent years towards primary and secondary care services, increasing allocative efficiency.

Fragmentation of the health system remains a challenge to allocative efficiency. Lack of coordination between different levels of care, as well as within the same level of care, can lead to fragmented and uncoordinated care of

patients, the duplication of services, less efficient care delivery modes and lower quality of care due to lack of continuity. There is no clear pathway or framework that coordinates patient care once they leave primary care. Furthermore, in the absence of strong gatekeeping, the primary care system can be skipped altogether in favour of accessing higher levels of care directly. Patients can access care at any level (secondary or tertiary) and any type of ownership (public or private). Physicians do not have the means and tools to properly coordinate patient care once they leave their practice. Furthermore, in the context of fee-for-service arrangements, tests and procedures performed by other providers are not accepted by facilities and patients are required to have them performed anew, leading to duplication and fragmentation of care. Recent reforms have aimed to create a tighter link between primary and specialty care at the district level. However, it is not clear how this new framework will contribute to improved coordination of care both within and beyond the district level. Further fragmentation results from the existence of parallel health systems maintained by the National Security Service, the Ministry of Internal Affairs, Uzbek Airlines and other ministries or state companies.

7.5.2 Technical efficiency

Technical efficiency means making the best use of available resources (Duran et al., 2012). Two initiatives implemented after independence are likely to have resulted in increased technical efficiency of inpatient care in the public sector: the introduction of formal user charges and the development and implementation of new treatment protocols. User charges have led to a significant decline of demand, although this might also be due to inability to pay. New protocols have reduced the number of hospital days for inpatient stays. At the same time, shifting secondary and tertiary care providers in the public sector towards self-financing is bound to have reduced technical efficiency, as higher bed occupancy rates lead to higher revenues for providers. How technical efficiency has evolved in primary care remains unclear, due to new financing mechanisms based on capitation (which might have improved efficiency) and complex interrelationships between primary care settings and district treasury offices (Expert-Fikri, 2011). Profit-making entities are likely to have higher technical efficiency than non-profit-making providers (Jha et al., 2009).

Hospitals in most former Soviet countries are now paid on the basis of global budgets or cases treated (Fuenzalida-Puelma et al., 2010). In Uzbekistan, there are ongoing pilots to test new hospital financing mechanisms, including those based on diagnosis-related groups (DRGs).

Recent government efforts to streamline health facilities at the district level should help to improve technical efficiency. There are multiple secondary care facilities at the regional level that provide the same type of services (see Chapter 5). Additional efforts to optimize providers and care pathways at the regional and national level could yield further efficiency gains.

7.6 Transparency and accountability

Access to health information is mostly limited to government agencies. Clear and well-structured mechanisms ensuring public access to reports and documents are not yet in place. Public transparency has not been part of the Soviet style of management and requires the establishment of a whole new set of facilitating frameworks and structures. The existence of informal payments further undermines transparency of the health system.

Evidence-based decision-making is still limited in both policy-making and clinical decisions. At the policy-making level, this is in part due to the unavailability of reliable and valid data to support the decisions policy-makers are tasked with. However, there is also still little in the way of an evidence-based decision-making culture, or capacity to analyse and interpret available information.

Lack of appropriate system-level data is also a major barrier to assessing health system performance in Uzbekistan. There is a nationwide framework for data collection, but the collected data primarily take stock of existing capacities in the system and quantify outcome measures on morbidity and mortality. There are no frameworks for collecting process-related, qualitative and patient-centred data. Uzbekistan's existing framework for national data collection was previously utilized to carry out surveys with the support of international donors. Unfortunately, these surveys have not become regular, locally owned exercises. Reliable and valid data that capture information on a range of issues are critical to improve transparency and enable effective policy and decision-making.

8. Conclusions

The Uzbek health system has undergone major reforms in the last two decades, encompassing all levels of care, as well as governance and financing. There were substantial reductions in the number of acute care hospital beds, while a range of initiatives were taken to strengthen primary health care, as well as secondary, tertiary and emergency care. Primary health care in rural areas has been restructured into a two-tiered system, while in urban areas all types of polyclinics (previously separate for adults, children, and polyclinics specializing in women's health) are currently transformed into family polyclinics which will provide primary care for all groups of the population. There are also efforts to introduce new approaches to maternal and child health, public health, noncommunicable disease prevention and control, and monitoring and evaluation.

Reforms included the establishment of new mechanisms for the allocation of resources. Primary care in rural areas is now paid for on a capitation basis and primary care in urban areas is expected to follow by 2015. Furthermore, a growing number of providers of tertiary and specialized care is being moved towards self-financing. Uzbekistan has also embarked on reforms of medical education.

Recognizing fiscal constraints following the transitional recession in the early 1990s, the 1996 *Law on health protection* defined a basic benefits package to be funded by the state; the law still provides the overall framework for policies and regulations related to benefits. The basic benefits package guaranteed by the government includes primary care, emergency care, care for "socially significant and hazardous" conditions, and specialized care for groups of the population classified by the government as vulnerable.

However, despite wide-ranging reforms, the country has also retained some features of the Soviet system. Most health care providers continue to be public and the private sector, although growing, is still small. The health system still follows an integrated approach, with no contracting taking place, and almost all health workers are government-salaried employees.

Some of the greatest challenges relate to health financing. Uzbekistan only spends a comparatively low share of its GDP on health and, although public sector expenditure accounted for an increasing share of total health expenditure in recent years, private expenditure remains substantial, mostly taking the form of (both formal and informal) out-of-pocket payments. This has obvious implications for equity in financing and health service utilization. Further increasing the share of government expenditure on health might enable policies that achieve a better financial protection of the population. These might include increasing the coverage of the benefits package and drawing up a benefits package for outpatient pharmaceuticals, as is being done in some other former Soviet countries. The current shift towards fee-for-service based payment mechanisms in the public sector might need thorough re-examination to make sure it is not associated with unintended negative effects.

Improving allocative efficiency could be another area for future reforms. The government has allocated an increasing share of its expenditure to primary health care, but more could be done. This also applies to efforts to overcome duplication and fragmentation of care, such as through the lack of clear patient pathways and referral mechanisms and the continued existence of parallel health systems.

The uneven allocation of resources across the country is another area of concern. There is a shortage of physicians and specialists in rural and remote areas, but an oversupply in large urban areas. Health outcomes, as well as the allocation of government expenditure on health, also differ across regions, and mechanisms need to be set in place to monitor and overcome these inequities.

As in other countries of the region, informal payments are a challenge. These are notoriously difficult to overcome, but first of all what would be necessary is a recognition of the scale of the problem and the ways that these payments undermine key health system goals. This could pave the way for more transparency in the health system, including through strengthened patient rights, a clearer focus on user experience and higher salaries for health workers. Focused and well-designed reform initiatives in these areas are likely to lead to improvements in access, equity, quality of care, effectiveness and efficiency.

Quality of care is increasingly recognized as a problem, with ongoing efforts to update treatment protocols, and revise medical education, continuous professional development, and quality assurance and improvement frameworks. These efforts will need to intensify in the future to further improve quality of care. Attention will also need to be paid to the substandard medications and medical devices that are currently being used, and stricter government oversight might be required.

Lastly, further investments in health information systems are required. There is a lack of data on functional status, patient satisfaction, access and quality. Local capacity in survey and qualitative data collection methods could be strengthened to support regular data collection in selected areas of interest. This could help to bridge gaps in many areas where better data are needed, providing a better basis for evidence-based health policy-making.

9. Appendices

9.1 References

Acierto Consult (2013). *Analysis of the pharmaceutical market in Uzbekistan for the year 2012*. Darmon (http://www.darmon-info.uz/index.php?option=com_content&view=article&id=227:-2012-&catid=37:2012-08-13-09-18-17&Itemid=55, accessed 1 October 2013).

Aday LA, Andersen R (1974). A framework for the study of access to medical care. *Health Services Research*, 9(3):208.

ADB (2012). *Completion report. Uzbekistan: Woman and child health development*. November. Tashkent, Asian Development Bank.

Ahmedov M et al. (2007). Uzbekistan: Health system review. *Health Systems in Transition*, 9(3):1–210.

Ahmedov M et al. (2012). Addressing the challenges of improving primary care quality in Uzbekistan: a qualitative study of chronic heart failure management. *Health Policy and Planning*, 28(5):458–466.

AHRQ (2014). Quality Indicators [web site] Rockville, MD, Agency for Healthcare Research and Quality (http://www.qualityindicators.ahrq.gov/, accessed 12 June 2014).

Aleshina N, Redmond G (2003). *How high is infant mortality in central and eastern Europe and the CIS?* Florence, Innocenti Research Centre (Innocenti Working Paper 99).

Andersen RM (1995). Revisiting the behavioral model and access to medical care: does it matter? *Journal of Health and Social Behavior*, 36(1):1–10.

Asadov DA, Aripov TY (2009). The quality of care in post-soviet Uzbekistan: are health reforms and international efforts succeeding? *Public Health*, 123(11):725–728.

Bate P, Robert G (2006). Experience-based design: from redesigning the system around the patient to co-designing services with the patient. *Quality and Safety in Health Care*, 15(5):307–310.

Belli P, Gotsadze G, Shahriari H (2004). Out-of-pocket and informal payments in the health sector: evidence from Georgia. *Health Policy*, 70(1):109–123.

Bendini R (2013). *Uzbekistan: Selected trade and economic issues*. Brussels, Directorate-General for External Policies (http://www.europarl.europa.eu/RegData/etudes/briefing_note/join/2013/491518/EXPO-INTA_SP(2013)491518_EN.pdf, accessed 10 July 2014).

Benson VS et al. (2008). Colorectal cancer screening: a comparison of 35 initiatives in 17 countries. *International Journal of Cancer*, 122(6): 1357–1367.

Bhaumik S (2013a). Cardiologists are putting in stents needlessly, doctors say. *British Medical Journal*, 346.

Bhaumik S (2013b). Oxfam calls for new regulations to reduce unnecessary hysterectomies in private hospitals. *British Medical Journal*, 346.

Blumenthal D (2004). Doctors and drug companies. *New England Journal of Medicine*, 351(18):1885–1890.

Borchert M et al. (2010). Improving maternal and perinatal health care in the Central Asian Republics. *International Journal of Gynecology & Obstetrics*, 110(2):97–100.

Cabinet of Ministers (1994). *Decree No. 404 on immediate initiatives to improve the provision and distribution of pharmaceuticals and medical devices in the country*, 6 August 1994. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (1997a). *Decree No. 96 on establishing a list of conditions of public health concern*, 20 February 1997. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (1997b). *Decree No. 532 on the improvement of financing mechanisms of health care delivery institutions*, 2 December 1997. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (1999a). *Decree No. 18 on improving the management of the health care system in Uzbekistan*, 14 January 1999 (amendments made by Decree No. 150 of 1 May 2002 and Decree No. 53 of 31 January 2003). Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (1999b). *Decree No. 414 on improvements of the financing of state institutions*, 3 September 1999. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2001). *Decree No. 68 on the state programme of mother and child health*, 5 February 2001. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2003). *Decree No. 90*, 27 February 2003. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2004). *Decree No. 264*, 8 June 2004. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2005a). *Decree No. 217 on measures on further reform of financing and management systems for health facilities in the Republic of Uzbekistan*, adopted on 28 September 2005. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2005b). *Decree No. 276 on approving the updated guidelines for paying health workers*, 21 December 2005. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2007a). *Decree No. 53 of 20 March 2007 on approving the statute of the treasury system*. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2007b). *Decree No. 148 of 19 July 2007 on introducing amendments to Decree No. 414 of September 1999*. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2008). *Decree No. 48*, 18 March 2008. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2009a). *Decree No. 1*, 5 January 2009, Measures for improving the structure and function of HIV/AIDS centres. Tashkent, Republic of Uzbekistan (http://minzdrav.uz/documentation/detail.php?ID=11070, accessed 25 June 2013).

Cabinet of Ministers (2009b). *Decree No. 145*, 21 May 2009. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2009c). *Decree No. 319*, 18 December 2009. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2011). *Decree No. 206*, 14 July 2011. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2012a). *Decree No. 91*, 29 March 2012. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2012b). *Decree No. 365*, 28 December 2012. Tashkent, Republic of Uzbekistan.

Cabinet of Ministers (2013). *Decree 204*, 22 July 2013, on improving the framework for outpatient pharmaceutical coverage of special groups of patients. Tashkent, Cabinet of Ministers.

Cabinet of Ministers (2014). *Decree No. 50 on optimizing and raising the effectiveness of rural primary care units*, 5 March 2014. Tashkent, Cabinet of Ministers.

Campbell EG (2007). Doctors and drug companies – scrutinizing influential relationships. *New England Journal of Medicine*, 357(18):1796–1797.

Campbell SM, Roland MO, Buetow SA (2000). Defining quality of care. *Social Science & Medicine*, 51(11):1611–1625.

Chemrar (2013). *Перспективы развития фармацевтического рынка Узбекистана [The prospects for the development of the pharmaceutical market in Uzbekistan]*. Moscow, Chemrar (http://www.chemrar.ru/i-news/index.php?ELEMENT_ID=15492, accessed 1 October 2013).

Chren M, Landefeld C, Murray TH (1989). Doctors, drug companies, and gifts. *Journal of the American Medical Association*, 262(24):3448–3451.

Donabedian A (1988). The quality of care: how can it be assessed? *Journal of the American Medical Association*, 260(12):1743–1748.

Duran A et al. (2012). Understanding health systems: scope, functions and objectives. In: Figueras J, McKee M, eds. *Health systems, health, wealth and societal well-being*. Maidenhead, Open University Press:19–36.

Emanuel B (2010). *Consultant report. On improving laboratory diagnostics and optimizing laboratory networks in Ferghana oblast*. Tashkent.

Expert-Fikri (2011). *Health II – Final evaluation report*. Tashkent, Expert-Fikri.

Footman K et al. (2013). Public satisfaction as a measure of health system performance: a study of nine countries in the former Soviet Union. *Health Policy*, 112(1):62–69.

Fuenzalida-Puelma HL et al. (2010). Purchasing of health care services. In: Kutzin J, Cashin C, Jakab B, eds. *Implementing Health Financing Reform: Lessons from Countries in Transition*. Copenhagen, World Health Organization:155–186.

GMC (2014). Professional and Linguistic Assessments Board (PLAB). London, General Medical Council (http://www.gmc-uk.org/doctors/plab.asp, accessed 12 June 2014).

Gulliford M et al. (2002). What does 'access to health care' mean? *Journal of Health Services Research & Policy*, 7(3):186–188.

Hasker E et al. (2009). Drug prescribing practices for tuberculosis in Uzbekistan. *International Journal of Tuberculosis and Lung Disease*, 13(11):1405–1410.

Hasker E et al. (2010). Why do tuberculosis patients default in Tashkent City, Uzbekistan? A qualitative study. *International Journal of Tuberculosis and Lung Disease*, 14(9):1132–1139.

Hockenberry JM et al. (2011). Financial payments by orthopedic device makers to orthopedic surgeons. *Archives of Internal Medicine*, 171(19):1759–1765.

IHME (2014). Global burden of disease country profiles. Seattle, Institute for Health Metrics and Evaluation (http://www.healthdata.org/results/country-profiles, accessed 12 June 2014).

Ilkhamov FA, Jakubowski E, Hajioff S (2001). Uzbekistan: health system review. *Health Systems in Transition*, 3(6):1–74.

Jha AK et al. (2009). Measuring efficiency: the association of hospital costs and quality of care. *Health Affairs*, 28(3):897–906.

Kuchkarov D, Haydarov A (2004). Local budgets through the prism of problems [in Russian]. *Ekonomicheskoe obozrenie [Economic review]*, 6.

Mamatkulov B (2013). *Public health and health management*. Tashkent, Ilm Ziyo.

MCC (2014). Examinations. Ottawa, Medical Council of Canada (http://mcc.ca/examinations/, accessed 12 June 2014).

Measure DHS (2002). *Health examination survey*. Calverton, MD, Measure DHS.

Mello MM et al. (2007). Who pays for medical errors? An analysis of adverse event costs, the medical liability system, and incentives for patient safety improvement. *Journal of Empirical Legal Studies*, 4(4):835–860.

Ministry of Finance (2014). [web site]. Tashkent, Ministry of Finance (www.mf.uz, accessed 7 March 2014).

Ministry of Health (2003). *Decree No. 96 on the review of the appeals process*, 3 March 2003. Tashkent, Ministry of Health of the Republic of Uzbekistan.

Ministry of Health (2004). *Decree No. 535*, 6 December 2004. Tashkent, Ministry of Health of the Republic of Uzbekistan.

Ministry of Health (2005). *Decree No. 132*, 30 March 2005. Tashkent, Ministry of Health of the Republic of Uzbekistan.

Ministry of Health (2007). *Findings from reviewing the pilot testing of the urban primary care model in Tashkent*. Tashkent, Ministry of Health, Working group set up in line with Ministry of Health Decree No. 1381, adopted on 30 November 2007.

Ministry of Health (2010). *Decree No. 56*, 27 February 2010. Tashkent, Ministry of Health of the Republic of Uzbekistan.

Ministry of Health (2012). *Decree No. 76*, 26 March 2012. Tashkent, Ministry of Health of the Republic of Uzbekistan.

Ministry of Health (2013a). *Decree No. 27*, 8 November 2013, About the approved list of medications for outpatient pharmaceutical coverage of special groups of patients. Tashkent, Ministry of Health.

Ministry of Health (2013b). *Decree No. 232*, 17 July 2013. Tashkent, Ministry of Health of the Republic of Uzbekistan.

Ministry of Health (2013c). *Decree No. 3*, 30 January 2013. Tashkent, Ministry of Health of the Republic of Uzbekistan.

Ministry of Health (2014). *Primary health care development in Uzbekistan: achievements and challenges*. Tashkent, Ministry of Health.

Ministry of Finance (2014). *Execution of the state budget for 2013*. Tashkent, Ministry of Finance (https://www.mf.uz/ru/mf-state-budjet.html, accessed 21 July 2014).

Moynihan R, Glassock R, Doust J (2013). Chronic kidney disease controversy: how expanding definitions are unnecessarily labelling many people as diseased. *British Medical Journal*, 347.

Mundt A et al. (2011). Use of psychiatric inpatient capacities and diagnostic practice in Tashkent/Uzbekistan as compared to Berlin/Germany. *Social Psychiatry and Psychiatric Epidemiology*, 46(12):1295–1302.

Mundt AP et al. (2012). Prescription patterns of patients diagnosed with schizophrenia in mental hospitals in Tashkent/Uzbekistan and in four German cities. *Pharmacoepidemiology and Drug Safety*, 21(2):145–151.

O'Rourke E (2007). *Consultant report. Assessment and analysis of the current status of the health services in pediatrics*. Tashkent, Asian Development Bank.

Olson CD (2003). *Health management information systems (HMIS) draft technical report*. Asian Development Bank Working Group, 25 November. Tashkent, Asian Development Bank.

President of Uzbekistan (1998). *Presidential Decree on the state programme to reform the health care system*, 10 November 1998. Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2002). *Presidential Decree on the improvement of research activities*, 20 February 2002. Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2003). *Presidential Decree 3214 of 26 February 2003*. Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2005). *Presidential Decree on improving reimbursement mechanisms for health professionals*, 6 December 2005. Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2006). *Presidential Decree on measures to improve the coordination and management of science and technology development*, 8 August 2006. Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2007a). *Presidential Decree 594 of 28 February 2007.* Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2007b). *Presidential Decree 594 of 28 February 2007 on measures to develop a treasury framework*. Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2007c). *Presidential Decree 700 of 2 October 2007.* Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2007d). *Presidential Decree 3923 of 19 September 2007.* Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2009). *Presidential Decree 1119 of 2 February 2009.* Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2011a). *Presidential Decree 1652 of 28 November 2011.* Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2011b). *Presidential Decree 1652 of 28 November 2011 on the next steps of health reforms*. Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2012a). *Presidential Decree 1730 of 21 March 2012*. Tashkent, Republic of Uzbekistan.

President of Uzbekistan (2012b). *Presidential Decree 4456 of 24 July 2012*. Tashkent, Republic of Uzbekistan.

Rechel B et al. (2013). Health and health systems in the countries of the former Soviet Union. *The Lancet*, 381(9872):1145–1155.

Republic of Uzbekistan (1992). *Constitution of the Republic of Uzbekistan*. Tashkent, Republic of Uzbekistan.

Republic of Uzbekistan (1993). *Law on courts*, 3 September 1993. Tashkent, Republic of Uzbekistan.

Republic of Uzbekistan (1996). *Law on health protection*, 29 August 1996. Tashkent, Republic of Uzbekistan (N 265-I).

Republic of Uzbekistan (2003). *Law on Cabinet of Ministers of the Republic of Uzbekistan*, adopted on 29 August 2003. Tashkent, Republic of Uzbekistan (http://www.lex.uz/Pages/GetAct.aspx?lact_id=51941, accessed 7 July 2013).

Republic of Uzbekistan (2004). *Law on treasury implementation of state budget*, 26 August 2004. Tashkent, Republic of Uzbekistan.

Republic of Uzbekistan (2007). *Law on the prophylaxis of iodine-deficiency diseases*, 3 May 2007. Tashkent, Republic of Uzbekistan.

Republic of Uzbekistan (2011). *Law on control of alcohol and tobacco distribution and consumption*, 5 October 2011. Tashkent, Republic of Uzbekistan (http://www.lex.uz/Pages/GetAct.aspx?lact_id=1880029, accessed 25 June 2013).

Richardson E, Sautenkova N, Bolokhovets G (2014). Pharmaceutical care. In: Rechel B, Richardson E, McKee M, eds. *Trends in health systems in the former Soviet countries*. Copenhagen, World Health Organization (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies).

Roberts B, Karanikolos M, Rechel B (2014). Health trends. In: Rechel B, Richardson E, McKee M, eds. *Trends in health systems in the former Soviet countries*. Copenhagen, World Health Organization (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies):9–27.

Roberts B et al. (2012). The persistence of irregular treatment of hypertension in the former Soviet Union. *Journal of Epidemiology and Community Health*, 66(11):1079–1082.

Rodbard HW et al. (2007). American Association of Clinical Endocrinologists medical guidelines for clinical practice for the management of diabetes mellitus. *Endocrine Practice*, 13:1–68.

Roehr B (2012). Fee for service payments are thwarting evidence based medicine in the US. *British Medical Journal*, 345:e7019.

Rowland D (1991). Soviet health care from two perspectives. *Health Affairs*, 10(3):71–86.

Smith-Bindman R, Miglioretti DL, Larson EB (2008). Rising use of diagnostic medical imaging in a large integrated health system. *Health Affairs*, 27(6):1491–1502.

Smith RA et al. (2011). Cancer screening in the United States, 2011. *CA: A Cancer Journal for Clinicians*, 61(1):8–30.

State Committee on Statistics (2013). *Statistical yearbook*. Tashkent, State Committee on Statistics.

Streveler D (2004). *Strategic evaluation of health management information systems in Uzbekistan*. Consultancy report. Tashkent, World Bank.

Strippoli GF et al. (2004). Effects of angiotensin converting enzyme inhibitors and angiotensin II receptor antagonists on mortality and renal outcomes in diabetic nephropathy: systematic review. *British Medical Journal*, 329(7470):828.

USMLE (2014). United States Medical Licensing Examination. Philadelphia, PA, Federation of State Medical Boards and National Board of Medical Examiners (http://www.usmle.org/, accessed 12 June 2014).

Uzpharmsanoat (2013). [web site]. Tashkent, Uzpharmsanoat (http://www.uzpharmsanoat.uz/, accessed 1 October 2013).

Wazana A (2000). Physicians and the pharmaceutical industry: is a gift ever just a gift? *Journal of the American Medical Association*, 283(3):373–380.

WHO-AIMS (2007). *WHO-AIMS Report on Mental Health System in Uzbekistan*. Tashkent, WHO and Ministry of Health (http://www.who.int/mental_health/evidence/uzbekistan_who_aims_report.pdf, accessed 1 October 2013).

WHO (2006). Years of life lost (percentage of total). Geneva, World Health Organization (http://www.who.int/whosis/whostat2006YearsOfLifeLost.pdf, accessed 12 June 2014).

WHO (2010). *Global status report on noncommunicable diseases 2010*. Geneva, World Health Organization.

WHO (2014a). *Global health expenditure database*. Geneva, World Health Organization (http://apps.who.int/nha/database/Home/Index/en, 20 July 2014).

WHO (2014b). *National health accounts*. April. Geneva, World Health Organization (http://www.who.int/nha/, accessed 27 May 2014).

WHO Regional Office for Europe (2014a). European Health for All database (HfA-DB) [offline database]. Copenhagen, WHO Regional Office for Europe.

WHO Regional Office for Europe (2014b). *WHO Mortality Indicator Database* (HfA-MDB) [offline database], 15 May 2014 release (http://www.euro.who.int/en/data-and-evidence/databases/mortality-indicator-database-mortality-indicators-by-67-causes-of-death,-age-and-sex-hfa-mdb, accessed 18 May 2014).

Wiener RS, Schwartz LM, Woloshin S (2013). When a test is too good: how CT pulmonary angiograms find pulmonary emboli that do not need to be found. *British Medical Journal*, 347:f3368.

World Bank (2003). *Uzbekistan living standards assessment* (Report No. 25923-UZ). Washington DC, World Bank.

World Bank (2004). *Millennium Development Goals for health in Europe and Central Asia. Relevance and policy implications*. Washington, DC, World Bank (World Bank Working Paper No. 33).

World Bank (2009). *Republic of Uzbekistan: Assessment of the primary health care reform: transparency, accountability and efficiency*. Washington, DC, World Bank.

World Bank (2011). *Project appraisal document: Report No. 56632-Uz.*, 10 March 2011. Tashkent, World Bank.

World Bank (2012a). *Implementation completion and results report. Report No.: ICR 2257*, 26 June 2012. Tashkent, World Bank.

World Bank (2012b). *Integrated safeguards datasheet. Report oAC681457*, 12 December 2012. Tashkent, World Bank.

World Bank (2013). *Doing business 2014: Uzbekistan – understanding regulations for small and medium-size enterprises*. Washington, DC, World Bank.

World Bank (2014). *World development indicators*. Washington, DC, World Bank.

9.2 Useful web sites

Apteka.uz
http://www.apteka.uz

Eurasianet Uzbekistan
http://www.eurasianet.org/resource/uzbekistan

EU's relations with Uzbekistan
http://eeas.europa.eu/uzbekistan/index_en.htm

Global Fund to Fight AIDS, Tuberculosis and Malaria country web site
http://www.theglobalfund.org/programs/countrysite.aspx?countryid=UZB

Ministry of Health
http://www.minzdrav.uz

Ministry of Finance
http://www.mf.uz

Online repository of legislative acts
www.lex.uz; www.norma.uz

Tashkent Institute for Postgraduate Medical Education
www.tipme.uz

Tashkent Medical Academy
www.tma.uz

Tashkent Pharmaceutical Institute
http://www.pharmi.uz

UNAIDS country web site
http://www.unaids.org/en/regionscountries/countries/uzbekistan/

UNICEF country web site
http://www.unicef.org/uzbekistan/

UNDP country web site
http://www.uz.undp.org/

Uzbek government
http://www.gov.uz

WHO country web site
http://www.who.int/countries/uzb/en/

World Bank's Mission in Uzbekistan
http://www.worldbank.org.uz

9.3 HiT methodology and production process

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

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

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

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

A typical HiT consists of nine chapters.

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

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

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

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

One of the authors is also a member of the Observatory staff team and they are responsible for supporting the other authors throughout the writing and production process. They consult closely with each other to ensure that

all stages of the process are as effective as possible and that HiTs meet the series standard and can support both national decision-making and comparisons across countries.

9.4 The review process

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

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