Health Systems in Transition
Vol. 19 No. 3 2017

The former Yugoslav Republic of Macedonia

Health system review

Neda Milevska Kostova
Snezhana Chichevalieva • Ninez A. Ponce
Ewout van Ginneken • Juliane Winkelmann

European Observatory on Health Systems and Policies
a partnership hosted by WHO

Juliane Winkelmann and Ewout van Ginneken (Editors) and Reinhard Busse (Series editor) were responsible for this HiT

Editorial Board

Series editors
Reinhard Busse, Berlin University of Technology, Germany
Josep Figueras, European Observatory on Health Systems and Policies
Martin McKee, London School of Hygiene & Tropical Medicine, United Kingdom
Elias Mossialos, London School of Economics and Political Science, United Kingdom
Ellen Nolte, European Observatory on Health Systems and Policies
Ewout van Ginneken, Berlin University of Technology, Germany

Series coordinator
Gabriele Pastorino, European Observatory on Health Systems and Policies

Editorial team
Jonathan Cylus, European Observatory on Health Systems and Policies
Cristina Hernández-Quevedo, European Observatory on Health Systems and Policies
Marina Karanikolos, European Observatory on Health Systems and Policies
Anna Maresso, European Observatory on Health Systems and Policies
David McDaid, European Observatory on Health Systems and Policies
Sherry Merkur, European Observatory on Health Systems and Policies
Dimitra Panteli, Berlin University of Technology, Germany
Wilm Quentin, Berlin University of Technology, Germany
Bernd Rechel, European Observatory on Health Systems and Policies
Erica Richardson, European Observatory on Health Systems and Policies
Anna Sagan, European Observatory on Health Systems and Policies
Anne Spranger, Berlin University of Technology, Germany
Juliane Winkelmann, Berlin University of Technology, Germany

International advisory board
Tit Albreht, Institute of Public Health, Slovenia
Carlos Alvarez-Dardet Díaz, University of Alicante, Spain
Rifat Atun, Harvard University, United States
Armin Fidler, Management Center Innsbruck
Colleen Flood, University of Toronto, Canada
Péter Gaál, Semmelweis University, Hungary
Unto Häkkinen, National Institute for Health and Welfare, Finland
William Hsiao, Harvard University, United States
Allan Krasnik, University of Copenhagen, Denmark
Joseph Kutzin, World Health Organization
Soonman Kwon, Seoul National University, Republic of Korea
John Lavis, McMaster University, Canada
Vivien Lin, La Trobe University, Australia
Greg Marchildon, University of Regina, Canada
Alan Maynard, University of York, United Kingdom
Nata Menabde, World Health Organization
Charles Normand, University of Dublin, Ireland
Robin Osborn, The Commonwealth Fund, United States
Dominique Polton, National Health Insurance Fund for Salaried Staff (CNAMTS), France
Sophia Schlette, Federal Statutory Health Insurance Physicians Association, Germany
Igor Sheiman, Higher School of Economics, Russian Federation
Peter C. Smith, Imperial College, United Kingdom
Wynand P.M.M. van de Ven, Erasmus University, The Netherlands
Witold Zatonski, Marie Sklodowska-Curie Memorial Cancer Centre, Poland

Health Systems in Transition

Neda Milevska Kostova, *Centre for Regional Policy Research and Cooperation "Studiorum"*

Snezhana Chichevalieva, *National Health Policies Programme, Division of Policy and Governance for Health and Well-being, WHO Regional Office for Europe*

Ninez A. Ponce, *UCLA Fielding School of Public Health*

Ewout van Ginneken, *Berlin University of Technology and European Observatory on Health Systems and Policies*

Juliane Winkelmann, *Berlin University of Technology and European Observatory on Health Systems and Policies*

The former Yugoslav Republic of Macedonia:

Health System Review

2017

The European Observatory on Health Systems and Policies is a partnership between the WHO Regional Office for Europe, the Governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Sweden, Switzerland, the United Kingdom and the Veneto Region of Italy, the European Commission, the World Bank, UNCAM (French National Union of Health Insurance Funds), the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine. The European Observatory has a secretariat in Brussels and it has hubs in London (at LSE and LSHTM) and at the Technical University in Berlin.

Keywords:

DELIVERY OF HEALTH CARE

EVALUATION STUDIES

FINANCING, HEALTH

HEALTH CARE REFORM

HEALTH SYSTEM PLANS – organization and administration

THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

© World Health Organization 2017 (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies).

All rights reserved. The European Observatory on Health Systems and Policies welcomes requests for permission to reproduce or translate its publications, in part or in full.

Please address requests about the publication to:
Publications,
WHO Regional Office for Europe,
UN City,
Marmorvej 51,
DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office web site (http://www.euro.who.int/pubrequest)

The views expressed by authors or editors do not necessarily represent the decisions or the stated policies of the European Observatory on Health Systems and Policies or any of its partners.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the European Observatory on Health Systems and Policies or any of its partners concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Where the designation “country or area” appears in the headings of tables, it covers countries, territories, cities, or areas. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers’ products does not imply that they are endorsed or recommended by the European Observatory on Health Systems and Policies in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

The European Observatory on Health Systems and Policies does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use.

Printed and bound in the United Kingdom.

Suggested citation:
Milevska Kostova N, Chichevalieva S, Ponce NA, van Ginneken E, Winkelmann J. The former Yugoslav Republic of Macedonia: Health system review. *Health Systems in Transition*, 2017; 19(3):1–160.

HiTs and HiT summaries are available on the Observatory’s website (http://www.healthobservatory.eu)

ISSN 1817-6127 Vol. 19 No. 3

Contents

Preface v
Acknowledgements vii
List of abbreviations ix
List of tables, figures and boxes xi
Abstract xiii
Executive summary xv

1. Introduction 1
1.1 Geography and sociodemography 2
1.2 Economic context 4
1.3 Political context 6
1.4 Health status 8

2. Organization and governance 13
2.1 Overview of the health system 14
2.2 Historical background 17
2.3 Organization 18
2.4 Decentralization and centralization 26
2.5 Planning and regulation 26
2.6 Intersectorality 27
2.7 Health information management 28
2.8 Regulation 30
2.9 Patient empowerment 34

3. Financing 39
3.1 Health expenditure 40
3.2 Sources of revenue and financial flows 47
3.3 Overview of the statutory financing system 49
3.4 Out-of-pocket payments 54
3.5 Voluntary health insurance 57

3.6 Other financing ... 57
3.7 Payment mechanisms ... 57

4. Physical and human resources ... 65
4.1 Physical resources ... 66
4.2 Human resources ... 74

5. Provision of services ... 83
5.1 Public health ... 84
5.2 Patient pathways ... 91
5.3 Primary/ambulatory care ... 93
5.4 Inpatient care ... 99
5.5 Emergency care ... 100
5.6 Pharmaceutical care ... 102
5.7 Rehabilitation/intermediate care ... 104
5.8 Long-term care ... 105
5.9 Services for informal carers ... 106
5.10 Palliative care ... 106
5.11 Mental health care ... 107
5.12 Dental care ... 108
5.13 Complementary and alternative medicine ... 109
5.14 Health services for specific populations ... 109

6. Principal health reforms ... 111
6.1 Analysis of recent reforms ... 112
6.2 Future developments ... 122

7. Assessment of the health system ... 125
7.1 Stated objectives of the health system ... 126
7.2 Financial protection and equity in financing ... 128
7.3 User experience and equity of access to health care ... 133
7.4 Health outcomes, health service outcomes and quality of care ... 135
7.5 Health system efficiency ... 141
7.6 Transparency and accountability ... 145

8. Conclusions ... 147

9. Appendices ... 151
9.1 References ... 151
9.2 HiT methodology and production process ... 157
9.3 The review process ... 159
9.4 About the authors ... 160

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 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.

Acknowledgements

The Health Systems in Transition (HiT) profile on the former Yugoslav Republic of Macedonia was produced by the European Observatory on Health Systems and Policies.

This edition was written by Neda Milevska Kostova (Executive Director of the Centre for Regional Policy Research and Cooperation "Studiorum") and Snezhana Chichevalieva (Programme Manager, National Health Policies Programme, Division of Policy and Governance for Health and Well-being, WHO Regional Office for Europe). It was edited by Juliane Winkelmann (Berlin University of Technology), Ewout van Ginneken (Berlin University of Technology) and Ninez Ponce (UCLA Fielding School of Public Health), working with the support of Reinhard Busse, Head of the Observatory's team at the Department of Health Care Management, Berlin University of Technology. The basis for this edition was the previous HiT on the former Yugoslav Republic of Macedonia, which was published in 2006, written by Dragan Gjorgjev, Angelina Bacanovic, Snezhana Chichevalieva, Zlate Sulevksi and Susanne Grosse-Tebbe.

The European Observatory on Health Systems and Policies and authors are grateful to Robert Nordyke (Founder, EconStat Consulting) and Dragan Gjorgjev (Advisor to the Director of the Institute of Public Health) for reviewing the report. The European Observatory is also grateful to Vladimir Lazarevik (Executive Director of HealthGrouper), Blashko Kasapinov (Public Health Expert), Biljana Celevska (Department for European Integration, Ministry of Health), Maja Parnardzieva-Zmejkovska (former Director of Health Insurance Fund) and Vladimir Dimkovski (Planning and Analysis, Health Insurance Fund) for providing input and comments to the report.

Special thanks go also to Biljana Celevska (Ministry of Health) and Vladimir Dimkovski (Health Insurance Fund) for providing input and comments to the report as well as to experts at the Ministry of Health and its agencies for providing assistance and information and for their cooperation.

Thanks are also extended to the WHO Regional Office for Europe for their European Health for All database from which data on health services were extracted; and to the World Bank for the data on health expenditure in central and eastern European countries. Thanks are also due to the State Statistical Office that has provided data. The HiT reflects data available as of June 2016, unless otherwise stated in the text or tables.

The European Observatory on Health Systems and Policies is a partnership, hosted by the WHO Regional Office for Europe, which includes the Governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Sweden, the United Kingdom and the Veneto Region of Italy; the European Commission; the World Bank; UNCAM (French National Union of Health Insurance Funds); the London School of Economics and Political Science (LSE); and the London School of Hygiene & Tropical Medicine (LSHTM). The European Observatory has a secretariat in Brussels and it has hubs in London (at LSE and LSHTM) and at the Berlin University of Technology.

The Observatory team working on HiTs is led by Josep Figueras, Director, Elias Mossialos, Martin McKee, Reinhard Busse (Co-directors), Ewout van Ginneken, Ellen Nolte 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, Lesley Simon (copy-editing), Pat Hinsley (typesetting) and Robert Maier (proofreading).

List of abbreviations

CARK	Central Asian Republics and Kazakhstan
CIS	Commonwealth of Independent States
CME	Continuous medical education
CT	Computed tomography
DRGs	Diagnosis-related groups
EU	European Union
EU13	The 13 countries that joined the European Union in 2004, 2007 and 2013
EU28	European Union Member States at July 2013
FFS	Fee-for-service
GDP	Gross domestic product
GP	General practitioner
HIF	Health Insurance Fund
MALMED	Agency for Medicines and Medical Devices
MKD	Macedonian Denar, official currency of the country
MRI	Magnetic resonance imaging
NATO	North Atlantic Treaty Organization
OECD	Organisation for Economic Co-operation and Development
ORIO	Facility for Infrastructure Development
P4P	Pay-for-performance
PPP	Purchasing power parity
SDR	Standardized death rate
SEEHN	South-eastern Europe Health Network
SHI	Social health insurance
WHO	World Health Organization

List of tables, figures and boxes

Tables

		page
Table 1.1	Demographic trends, 1980–2013 (selected years)	3
Table 1.2	Macroeconomic indicators, 1990–2013 (selected years)	5
Table 1.3	Mortality and health indicators, 1991 to latest available year	8
Table 1.4	Main causes of death, selected years to latest available year (standardized death ratio, all ages per 100 000 population)	9
Table 1.5	Maternal, child and adolescent health indicators, 1980 to latest available year	11
Table 3.1	Trends in health expenditure in the country, 1995–2014 or latest available year, WHO estimates	41
Table 3.2	HIF health expenditure by service programme and institution as share of total HIF expenditures, 2013	46
Table 3.3	Categories of insured persons by eligibility in 2012 (*n* = 1 744 237)	50
Table 3.4	Payment mechanisms by type of provider and payer	58
Table 4.1	Number of diagnostic imaging technologies per 100 000 population, 2013	71
Table 4.2	Health workforce in the country per 1000 population, 1990–2013	75
Table 5.1	Structure of the preventive services provided by primary care providers, 2014	94
Table 5.2	Number of hospitals by type, 2007–2014	99
Table 7.1	Self-reported unmet needs for medical examination due to being too expensive in %, by income quintile, last available years in the former Yugoslav Republic of Macedonia and selected countries, selected years	130
Table 7.2	Rates of SHI contributions for different categories of contributors to HIF, 2013	132
Table 7.3	Distribution of primary health care doctors per region, 2015	135
Table 7.4	Immunization rates of infants and children, 1990 to latest available year	138
Table 7.5	Inequalities in child health by income quintile, 2005	140
Table 7.6	Infant death rates and under-5 mortality rates by ethnic background, 2007	140
Table 7.7	Bed occupancy rate and average length of stay by hospital type, and discharge type, 2011 and 2014	143

Figures

		page
Fig. 1.1	Map of the former Yugoslav Republic of Macedonia	2
Fig. 2.1	Organizational relationships of the key actors in the health care system, 2016	16
Fig. 3.1	Trends in health expenditure as a share (%) of GDP in selected countries, 1995–2014, WHO estimates	41
Fig. 3.2	Total health expenditure as a share (%) of GDP in the WHO European Region, 2014	43
Fig. 3.3	Health expenditure in US$ purchasing power parity per capita in the WHO European Region, 2014, WHO estimates	44
Fig. 3.4	Public sector health expenditure as a share (%) of total health expenditure in the WHO European Region, 2014, WHO estimates	45
Fig. 3.5	Financial flows	48
Fig. 4.1	Mix of beds in public and private acute care hospitals, psychiatric hospitals and long-term care institutions in the former Yugoslav Republic of Macedonia, per 100 000 population, 1990 to latest available year	68
Fig. 4.2	Beds in public and private acute care hospitals, per 100 000 population in the former Yugoslav Republic of Macedonia and selected countries, 1990 to latest available year	68
Fig. 4.3	Bed occupancy rates (%) in the former Yugoslav Republic of Macedonia and selected countries, 1990 to latest available year	69
Fig. 4.4	Average length of stay in the former Yugoslav Republic of Macedonia and selected countries, all hospitals, 1990 to latest available year	70
Fig. 4.5	Number of physicians per 1000 population in the former Yugoslav Republic of Macedonia and selected countries, 1990 to latest available year	75
Fig. 4.6	Number of nurses per 1000 population in the former Yugoslav Republic of Macedonia and selected countries, 1990 to latest available year	76
Fig. 4.7	Number of physicians and nurses per 1000 population in the WHO European Region, 2014 (or latest available year)	77
Fig. 4.8	Number of dentists and pharmacists per 1000 population in the former Yugoslav Republic of Macedonia and selected countries, 2013 (or latest available year)	78
Fig. 5.1	Institutions of public health and their respective responsibilities	85
Fig. 5.2	Structure and operation of the electronic health platform "MyAppointment"	96
Fig. 5.3	Outpatient contacts per person per year in the WHO European Region, 2013 or latest available year	98
Fig. 7.1	Out-of-pocket payments as % of total health expenditure in the former Yugoslav Republic of Macedonia and in selected countries, 1995 to latest available year	129
Fig. 7.2	Expenditures of HIF by service category in %, 2010–2015	142

Boxes

		page
Box 2.1	The Health Network	15
Box 5.1	Patient pathway for services covered by health insurance	92
Box 6.1	Two periods of health system reforms, 1991–2016	113

Abstract

This analysis of the health system of the former Yugoslav Republic of Macedonia reviews recent developments in organization and governance, health financing, health care provision, health reforms and health system performance. The country has made important progress during its transition from a socialist system to a market-based system, particularly in reforming the organization, financing and delivery of health care and establishing a mix of private and public providers. Though total health care expenditure has risen in absolute terms in recent decades, it has consistently fallen as share of GDP, and high levels of private health expenditure remain. Despite this, the health of the population has improved over the last decades, with life expectancy and mortality rates for both adults and children reaching similar levels to those in ex-communist EU countries, though death rates caused by unhealthy behaviour remain high.

Inheriting a large health infrastructure, good public health services and well-distributed health service coverage after independence in 1991, the country re-built a social health insurance system with a broad benefit package. Primary care providers were privatized and new private hospitals were allowed to enter the market. In recent years, the country reformed the organization of care delivery to better incorporate both public and private providers in an integrated system. Significant efficiency gains were reached with a pioneering health information system that has reduced waiting times and led to a better coordination of care. This multi-modular e-health system has the potential to further reduce existing inefficiencies and to generate evidence for assessment and research. Despite this progress, satisfaction with health care delivery is very mixed with low satisfaction levels with public providers. The public hospital sector in particular is characterized by inefficient organization, financing and provision of health care; and many professionals move to other countries and to the private sector. Future challenges include sustainable planning and management of human resources as well as enhancing quality and efficiency of care through reform of hospital financing and organization.

Executive summary

The former Yugoslav Republic of Macedonia is a landlocked country situated in southeast Europe on the Balkan Peninsula. It has a total population of 2.1 million. The country declared independence following a nationwide referendum in 1991 in a peaceful cessation from the Socialist Federal Republic of Yugoslavia, beginning the processes of economic, political and societal transformation from command to market economy and parliamentary democracy.

The country's rising trend of population ageing will have potential impacts on the health system. Life expectancy at birth increased from 71.1 years in 1991 to 75.1 years in 2010, but is still low compared with the EU average of 80.2 years. The fertility rate of 1.5 births per woman is below the EU average (1.6) and far below replacement level (2.1).

Though the former Yugoslav Republic of Macedonia avoided the mortality crisis that many central and Eastern European countries experienced in the early 1990s, the overall picture remains of improvements achieved but still much to do. Death rates from the three major causes (diseases of circulatory system, smoking-related causes and cerebrovascular diseases) have seen a strong decline since 2005. However, death rates for diseases of the circulatory system and smoking-related causes remain nearly twice as high as the EU average, driven mostly by unhealthy habits and behaviour: 40% to 50% of the population above 15 years are regular smokers (though air pollution is also a significant cause of death). The prevalence of hepatitis B is particularly high in the country, with an incidence that is 6.5 times higher than the EU average. There has been considerable progress in child and maternal mortality over the last decades; infant mortality has fallen from 11.8 deaths per 1000 live births in 2000 to 7.6 per 1000 live births in 2010 (though this remains below the EU average of 4.1). There are no data on quality of life or years of life spent in good health.

Organization and governance

The former Yugoslav Republic of Macedonia inherited a well-established health care system and public health services network with good geographic distribution of resources and provision as well as financial accessibility. However, it also had inefficient infrastructure, characterized by large and overstaffed hospitals and inefficient service provision resulting from low investment. The long experience of health insurance coverage for nearly the whole population in the former Yugoslavia paved the way for the development of a social health insurance system in the country. Under the Law on Health Care first adopted in 1991, the organization and operations of the health care system were re-established, based on the principles of solidarity, mutuality and citizens' participation. This approach sought to retain the positive features of the previous Yugoslav health system, including control of communicable diseases, strong preventive service delivery and access to free health services at the point of delivery.

At the same time, the market for health care service provision was liberalized, enabling private providers to enter the market; initially growth was slow, focused on privately paid dental care, specialist services and pharmacies. There was a major expansion of the private sector between 2004 and 2007, when the primary care sector was privatized.

At secondary and tertiary levels, private providers that emerged since 1991 acted in parallel with the public system, providing services paid for out of pocket by the users. In 2012, the Government initiated arrangements for their partial incorporation into the health system by establishing a 'Health Network'; a set of both public and private health facilities and providers at all levels of care throughout the country. The Ministry of Health certifies providers to become part of the network, and services are only purchased from these providers (and where public services are insufficient). Public hospitals are still managed centrally by the Ministry of Health.

Financing

Financing of health has seen contrasting trends. Total health care expenditure has increased in absolute numbers (as measured as health expenditure per capita in US$ purchasing power parity), but it has consistently fallen as a percentage of GDP since the late 1990s, from nearly 9% to 6.5% (which is slightly below the EU13 average of 6.8%). The share of that total health care expenditure, which is

public sector spending, has increased significantly since the early 1990s, up to 69.2% in 2013 – but dropped back to 63.3% in 2014, which is below the average of public spending in the EU13 (72.9% in 2014).

The Health Insurance Fund (HIF) acts as the single public purchaser of health services. The main sources of funding for health insurance are the contributions from salaries (89% of HIF revenue, out of which 84% are financed by only 27% of the total insured population, indicating that a small group finances most health costs) and transfers from other agencies for specific population groups (i.e. the unemployed, retired persons, persons receiving social assistance).

The HIF purchases health services as specified in the broad basic benefit package, which covers almost all treatments and rehabilitation services. Changes in the Health Insurance Law in 2009 made all residents eligible for compulsory insurance coverage (subject to proof of citizenship, which can be a particular challenge for the Roma community). Although out-of-pocket (OOP) spending has decreased in the last decades, it still represents a substantial portion of total health expenditure, mostly consisting of co-payments and direct payments for private hospital services, pharmaceuticals and medical devices as well as informal payments. Conservative estimates by the WHO show that OOP spending accounted for approximately 36.7% in 2014 of total health expenditure (WHO Regional Office for Europe, 2016b).

Although the HIF is responsible for purchasing health services, the Ministry of Health finances capital investments in public health providers (facilities and medical equipment), and implements preventive and public health measures through the annual health programmes financed from the central budget.

Since 2009, hospitals have been paid using a combination of diagnosis-related groups and conditional budgets (dependent on the volume of services delivered) since 2011. Ambulatory services are reimbursed using global budgets and a capped fee-for-service payment system. Primary care providers are paid based on a mix of capitation and achievement of preventive health targets. In 2012 pay-for-performance was introduced for all physicians in secondary and tertiary care with the aim of improving overall quality and efficiency of care, but so far it only serves effectively as a form of fee-for-service scheme and does not measure any quality aspects or outcomes.

Physical and human resources

Inheriting a very large infrastructure of widely accessible primary health care facilities and overstaffed hospitals from the pre-independence period, the number of hospital beds has been cut by 17.5% between 1990 and 2013 to levels that are below EU averages (with three acute beds per 1000 people, compared with the EU average of 3.6). Despite this, hospitals operate far from full capacity. Indeed, the bed occupancy rate of 59.7% in 2013 is one of the lowest in Europe.

At the same time, the number of hospitals has increased. This development is mostly the result of privatization in both primary and secondary care, and the political objective to maintain a wide network and access to health care throughout the country.

The Health Network, established in 2012, encompasses public and private providers at all levels. It is used by the Ministry of Health as a planning and distribution instrument for healthcare and public health services as well as physical and human resources.

In 2013 an electronic health data management system was introduced with a number of modules that facilitate scheduling of appointments, patient documentation and tracking of interventions and prescriptions. This new e-health system (*MyAppointment*) led to substantial reductions in waiting times (from over a year to less than a month, for some specialized services) and is widely used by health care professionals.

In the last two decades the numbers of doctors, dentists and pharmacists increased by nearly 29%. This has brought the number of physicians in the country in line with the EU13 average at 2.8 per 1000 population in 2013, though still below the EU15 average of 3.6. Doctors are increasingly attracted by better working conditions abroad and in the private sector, which the Government tries to reverse with special programmes.

The nurse-to-population ratio increased as well but more slowly and remains well below the European averages and those of other countries in the region. This is likely to be the result of the lack of licensing and accreditation of the profession (no system for licensing and accreditation of nurses and midwives has yet been established), as well as migration pressures.

Provision of services

Public health services are provided through an extensive public health network of institutions and councils at multiple levels. Inter-sectoral cooperation is ensured through a National Public Health Council, chaired by the Minister of Health and with representatives from other ministries. The Institute of Public Health prepares national programmes and supervises 10 regional Centres for Public Health. Their core competences are monitoring and surveillance of immunization and sanitary and hygienic activities and laboratory services. The 34 Health Centres are responsible for providing preventive health services, including immunization and preventive check-ups for school children and youth under the national preventive programmes as well as outpatient specialist care.

Primary care providers include general practitioners, paediatricians, gynaecologists and dentists; they are accessible to all citizens without cost-sharing. Patients register with a primary care physician of their choice but can switch to a new one only twice per year. General practitioners also act as gatekeepers for more specialized healthcare.

Secondary care consists of geographically distributed specialist outpatient services and a network of general, specialized and clinical hospitals and university clinics. The type and volume of specialist services delivered at the Health Centres are defined at the state level according to historical data, health care needs and financial arrangements. Hospital care is subject to regional standards.

Tertiary care is provided at university clinics in Skopje, defined according to the criteria for provision of health services that require professionally, organizationally and technologically complex and multidisciplinary treatment. The majority of hospitals are in public ownership although the share of private hospitals increased in the past decade.

With liberalization of the health care market many new private pharmacies emerged. Pharmacies are concentrated in the cities while rural areas are underserved. In 2010, a reference price system was introduced for drugs covered by the HIF, which decreased prices for pharmaceuticals on the positive list of drugs and led to significant savings on pharmaceuticals.

The numbers of beds in institutional long-term care remain low; despite increasing from 17.2 per 100 000 population (2005) to 44.9 per 100 000 population (2013), this is still far below the EU average of 749.5 and the EU13 average of 370.1 per 100 000 population, and does not satisfy the

increasing demand from the ageing population of the country. Strengthening community and home care services is now a priority of the Government. A cash benefit has been introduced for informal carers who provide long-term care at home, to reduce the demand for residential care. However, this means-tested benefit barely covers the expenses and loss of income of informal carers.

Principal health reforms

There are two distinct periods of health system reforms since the country's independence in 1991: the post-socialist transition (1991–1999) and the pro-market period (2000–present). The first period of transition from command to market economy was characterized by the inclusion of the right to health in the Constitution and the liberalization of health service provision through the Law on Health Care (1991). The second period (2000–present) is characterized by the introduction of a third-party payer with the HIF, reforms privatizing primary health care (2004–2007) and establishing the Health Network (2012) and the e-health system (2006).

During the first reform period, a lack of strategic vision for the health system resulted in poor maintenance, low efficiency and high operational costs, leading to further deterioration of public infrastructure and quality of services. At the same time, with the liberalization of the health care market, demand for services from private health care providers increased, resulting in an increase of private out-of-pocket health expenditures for these services as well as movement of health professionals into private practice.

In the second, pro-market reform period, the Government sought to reverse these negative trends and made significant investment in infrastructure and equipment in public facilities. The new Law on Health Care (2012) introduced several key changes in management and governance of health care – notably, the launch of the Health Network. The Health Network, a planning and distribution instrument of services and resources with a register of health providers, is expected to enhance accountability and transparency. Moreover, the Health Network marks a new period of centralization and control by the Government and the Ministry of Health that is intended to improve the functioning and efficiency of the health system.

Assessment of the health system

The health system is based on values of solidarity, equity and participation of all citizens in the country. Although over 85% of the population is covered by the health insurance and vulnerable population groups have a broad benefit package, OOP expenditures still represent about one-third of total health care expenditure, leading to high levels of inequality across income groups in terms of unmet needs. There is wide access to care due to relatively good geographical distribution of primary care and high coverage of preventive care and immunization. However, regional disparities remain for access to ambulatory specialists and health care at secondary level.

During the first years after independence, lack of financing, investment and appropriate incentives resulted in the deterioration of the physical infrastructure of the health system and lack of medical equipment. In turn, the quality of health service provision in public facilities decreased, followed by public dissatisfaction and movement of health personnel to other countries or private care providers that emerged at the same time. Since 2009, the Government started to refurbish old facilities, procure modern equipment for public health facilities and started programmes to retain the workforce in public facilities.

Health indicators have shown an improving trend since 2005 – in particular mortality due to non-communicable diseases, which has caught up with the EU13 level. In addition, life expectancy and infant mortality rates improved, which reflects continuous policy efforts. However, the country still lags behind EU averages on all health indicators, and prevalence of risk factors such as smoking and unhealthy diet is particularly high. This calls for better monitoring as well as health promotion and prevention. Inequalities in health status also remain with regard to marginalized groups, in particular the Roma population.

Public sector health expenditure as share of total health expenditure increased between 2000 and 2013, although with drops in 2010 and 2014; yet the performance of health services has not been assessed. Data collection and low quality health statistics have been identified as one of the underlying factors, and the country is working on improvements. This includes the establishment of an integrated health information system (centred on the *MyAppointment* e-health system) and specialized Directorate of E-Health. There is considerable room for more efficiency in particular in the hospital sector, as the bed occupancy rate in hospitals is still strikingly low.

The country has made recent efforts on reporting and improving performance of hospitals and reshaped policies based on evidence gathered through open consultative processes. However, relatively low levels of civic participation in policy formulation and decision-making still indicate low transparency and accountability at various levels of the health care system.

Conclusion

In summary, the citizens of the former Yugoslav Republic of Macedonia have witnessed important gains in population health as for example reflected in dramatically improved life expectancy and infant mortality. Yet behavioural risk factors such as smoking remain a problem, and health promotion and preventive services need strengthening. That said, the population enjoys a broad range of benefits, and can rely on an extensive network of providers at all levels of health care, including preventive services. However, levels of OOP remain high and there are still disparities in geographical access and inequalities in financial access to health services. Hence, health policy in the country should focus on ensuring equal access for the entire population to all levels of care, and improve quality of care delivered by providers in the Health Network, in particular public institutions.

1. Introduction

The former Yugoslav Republic of Macedonia is a landlocked country situated in south-eastern Europe on the Balkan Peninsula. It has a total population of 2.1 million, with a mixed ethnic, religious and cultural composition. The country declared independence upon a nationwide referendum in 1991 in a peaceful cessation from the Socialist Federal Republic of Yugoslavia, beginning the processes of economic, political and societal transformation from command to market economy and parliamentary democracy. During the past two decades, the country has withstood multiple challenges resulting from economic and political transition. Membership of the European Union (EU) and integration into the North Atlantic Treaty Organization (NATO) have been and remain strategic priorities of the country. The EU candidate status was granted in 2005, and a positive opinion for NATO membership was obtained in 2008.

The country's rising trend of population ageing will have potential impacts on the health system. Life expectancy at birth increased from 71.1 years in 1991 to 75.1 years in 2010, but is still low compared with the EU average (80.2 years). The fertility rate of 1.5 is below the EU average (1.6) and far below replacement level (2.1).

Death rates due to the three major causes (diseases of circulatory system, selected smoking-related causes and cerebrovascular diseases) have seen a strong decline since 2005. However, death rates for diseases of the circulatory system and selected smoking-related causes were nearly twice as high as the respective EU averages, driven mostly by unhealthy habits and behaviours: 40–50% of the population above 15 years are regular smokers. Air pollution is also considered to be a significant cause of death. The prevalence of hepatitis B is particularly high in the country with incidence 6.5 times higher than the

EU average. Although the country is still struggling with avoidable mortality, disease prevention and health promotion, it has made considerable progress in child and maternal mortality over the last decades.

1.1 Geography and sociodemography

The country is situated in south-eastern Europe, on the Balkan Peninsula and has a total area of 25 713 km² (State Statistical Office, 2015). The country is bordered by Serbia to the north, Kosovo[1] to the north-west, Albania to the west, Greece to the south and Bulgaria to the east, with land boundaries in total length of 850 km (Fig. 1.1).

Fig. 1.1

Map of the former Yugoslav Republic of Macedonia

Source: United Nations Cartographic Section, 2016.

1 Under UN Resolution UNSCR1244/1999.

The territory is predominantly mountainous (79%), with elevation levels ranging from 50 m at the River Vardar to 2764 m above sea level at Golem Korab. The climate is mild continental, with some Mediterranean influence, and characterized by hot summers and cold winters. The population was estimated at 2.1 million in 2014; 57.8% of the population live in the 34 cities, the highest concentration being in the capital, Skopje (20.5%) (State Statistical Office, 2015). The country adopted the Nomenclature of Territorial Units for Statistics in 2007, under which it is divided into eight non-administrative, statistical regions (East, North-east, Pelagonija, Polog, Skopje, South-east, South-west and Vardar), administratively divided into 80 municipalities and the City of Skopje (State Statistical Office, 2015).

In the period from 1980 to 2000 the total population showed a steadily increasing trend (Table 1.1); however, as the last official census was held in 2002, the figures have to be confirmed with a new census, which was planned but not executed in 2012.

Table 1.1

Demographic trends, 1980–2013 (selected years)

	1980	1990	1995	2000	2005	2010	2013
Total population (millions) – estimates	1.92	2.00	1.95	2.01	2.04	2.06	2.07*
Population, female (% of total)	49.3	49.7	49.9	50.0	50.1	50.2	50.2
Population ages 0–14 years (% of total)	29.8	26.2	24.9	22.6	20.3	18.2	17.3
Population ages ≥ 65 years (% of total)	6.3	7.2	8.0	9.2	10.5	11.3	11.8
Population growth (annual %), compared with previous year	1.1	–0.2	–0.1	0.6	0.2	0.2	0.2
Population density (persons per km^2)	75.7	78.5	76.8	79.1	80.3	81.8	82.2
Fertility rate, total (births per woman)	2.5	2.2	2.0	1.7	1.5	1.5	1.5
Birth rate, crude (per 1000 people)	21.2	17.8	15.5	13.3	11.7	11.1	11.2*
Death rate, crude (per 1000 people)	7.2	7.5	7.8	7.9	8.4	9.0	9.3*
Age dependency ratio (populations 0–14 and 65+ : population 15–64 years)	56.5	50.2	49.0	46.6	44.5	41.8	41.0
Urban population (% of total population)	53.5	57.8	59.6	58.5	57.5	57.0	57.0
Literacy rate, adult total (% of persons aged ≥ 15 years)***	n/a	93.7	94.0	94.0**	96.1**	97.3	97.4****

Sources: World Bank, 2016; *State Statistical Office, 2015; **data from previous year; ***WHO Regional Office for Europe, 2016a; ****date from 2011.
Note: n/a: Not available.

According to the 2002 census, the ethnic structure of the population is very mixed, including 64.2% ethnic Macedonians, 25.2% Albanians, 3.9% Turks, 2.6% Roma, 1.8% Serbs, 0.8% Bosniaks, 0.5% Vlachs and 1.0% others (State Statistical Office, 2003). With regards to religion, 65% of the population are Orthodox Christians, 33% are Muslims and 2% are Catholics or other. The official language is Macedonian, however, in municipalities that have minority representation above 20% of the local population a second official language is introduced.

Educational attainment as measured with the 2002 census shows that the largest majority of population has completed primary (35%) or secondary (36%) education, but higher education levels were only completed by approximately 11% of the population. A large percentage (approximately 18%) of the population has either no education or incomplete primary education (State Statistical Office, 2003). In addressing these issues, the government enacted a law in 2008 establishing secondary education as mandatory, and enabled better access to higher education institutions in many towns across the country. However, because of the lack of census data a presumed change in educational attainment cannot be monitored.

The country shows a trend of population ageing, which is common in most European states. The proportion of people below the age of 14 years is declining, while the share of persons above the age of 65 years increases. Despite the increase of the crude death rate from 7.9 deaths per 1000 people in 2000 to 9.3 in 2013, the number of deaths is still not outpacing birth numbers. However, the negative net migration (–4.9 migrants per 1000 population in 2012; World Bank, 2016) with people of working age leaving the country, the age dependency ratio will most probably increase again in the coming years. This development is strongly accentuated by the low fertility rate that has sharply declined since the 1980s and 1990s and today lies well below the replacement rate of 2.1 per 1000 population in industrialized countries (see Table 1.1).

1.2 Economic context

The country declared its independence from former Yugoslavia on 8 September 1991. As most countries in south-eastern Europe, the country has undergone major transformation processes in both its political and economic systems, focusing on establishing market economy structures, including deregulation and privatization in the public sector (Gjorgjev et al., 2006). Compared with some other Eastern European countries, the transition processes took longer

and the country experienced several shocks that damaged the local economy and slowed the pace of reform. The economy began to recover in 1995, the gross domestic product (GDP) grew by an average of 5–6% on a yearly basis until the 2008 economic crisis when its economy contracted with the rest of the world (IMF, 2011).

The global crisis had a comparably smaller impact on the country than on other countries in the region (Risteski, 2010), mainly because of stringent bank policies and limited capital account openness (Nikolov, 2007). The country has managed to maintain a low debt-to-GDP ratio, ranging between 20.6% and 30.4% in 2009 and 2013, respectively (World Bank, 2016).

Unemployment levels are very high in the country. Despite a recent drop after 2005 when it reached its maximum of 37.3% of labour force (see Table 1.2), the unemployment rate remains the highest in south-eastern Europe (World Bank, 2016).

Table 1.2

Macroeconomic indicators, 1990–2013 (selected years)

	1990	1995	2000	2005	2010	2013
GDP (current US$, millions)	4 471.8	4 449.4	3 772.9	6 258.6	9 407.1	10 767.4
GDP, PPP (current international US$, millions)	10 612.0	9 433.9	12 561.0	16 773.4	24 086.0	26 429.3
GDP per capita (current US$)	2 240.1	2 277.6	1 875.1	3 063.6	4 561.2	5 195.3
GDP per capita, PPP (current international US$)	5 361.0	4 829.1	6 242.9	8 210.6	11 678.4	12 752.1
GDP growth (annual %) compared with previous year	n/a	–1.1	4.5	4.7	3.4	2.7
Public expenditure (% of GDP)	n/a	n/a	n/a	28.9	30.1	29.4*
Cash surplus/deficit (% of GDP)	n/a	n/a	n/a	2.3	–2.5	–3.9*
Value added in industry (% of GDP)	44.5	30.0	25.4	23.7	24.4	24.5
Value added in agriculture (% of GDP)	8.5	13.2	12.0	11.3	11.7	11.0
Value added in services (% of GDP)	47.0	56.8	62.6	64.9	63.9	64.4
Labour force (total, millions)	0.8	0.8	0.9	0.9	0.9	1.0
Unemployment, total (% of labour force)	n/a	31.9	32.2	37.3	32.0	29.0
GINI Index	n/a	n/a	34.3	39.3	n/a	37.0**
Real interest rate (%)	n/a	24.6	4.5	6.9	7.3	3.6
Official exchange rate (MKD per US$, period average)	n/a	37.9	65.9	49.3	46.5	46.4

Sources: World Bank, 2016; * previous year; ** WHO Regional Office for Europe, 2016a.
Notes: n/a: Not available; MKD: Macedonian Denar, official currency of the country; PPP: Purchasing power parity.

Measured by the Gini Index, inequality of the distribution of income among individuals or households within the economy is very high, although it improved slightly from 39.1 in 2005 to 37.0 in 2013 (see Table 1.2). This is, however, considerably high compared with the EU average of 30.8 in 2013. In particular, there are geographical inequalities of income distribution; regional analysis of the Gini Index indicates that the North-eastern region has the highest degree of income inequality (46.6), whereas the lowest inequality is recorded in Pelagonija region (33.7). Income distribution within ethnic groups shows the highest levels of inequality in Roma households (48.5) followed by households of Turkish ethnicity (44.5) and Albanian households (40.9). Analysis of material deprivation, poverty and social inclusion identified that 30.8% of all surveyed households are materially deprived, as they cannot provide at least four of nine basic items. Only 22% of all households report being able to provide all nine items. Further, the majority of the population cannot afford to pay for unexpected expenses (49.9%), or provide a meal with meat, chicken or fish every second day (39.3%) (Gerovska Mitev, 2012).

1.3 Political context

Since gaining independence in 1991, the country has built a parliamentary democracy and has begun to make progress transitioning from a planned economy into a market economy, though it remains one of Europe's poorest countries. The country was the only former Yugoslav republic that was not embroiled in the nationalist wars of the 1990s. It has made progress on many fronts, overcoming dire economic problems in the 1990s and working to build ethnic harmony after a brief interethnic conflict in 2001. But a major thorn in its regional relations and prospects to become a full member of the European community is the country's naming dispute with Greece that has continued over two decades (Freedom House, 2011).

Citizens have a universal and constitutionally guaranteed right to vote for parliament, the president and municipal councils through secret ballot elections. Majority rule is applied for presidential elections, as well as for electing mayors in the local elections. The proportional model is used for elections of members of parliament that are elected for a mandate of 4 years and members of the municipal councils. The president represents the country in international relations, is the commander of armed forces, and has the right to veto any legislation proposed by the government and adopted by the parliament, although vetoes can be overturned by a two thirds majority of the parliament. However,

real power is vested in the prime minister who chooses the cabinet of ministers for a mandate of 4 years. The prime minister is appointed by the party or the coalition that has the majority of parliamentary seats (Freedom House, 2011).

Since the amendments of the Law on Elections in 2011, the single-house Assembly has 123 seats; 120 are elected from six 20-seat parliamentary election units, and three from the diaspora: Europe/Africa, North/South America and Australia/Asia. In 2013, the territorial division of the country was changed to 80 municipalities and the City of Skopje, after the municipalities of Drugovo, Vraneshtica, Zajas and Oslomej were united with the municipality of Kichevo (Official Gazette, no. 55/04 and 98/08). The last local elections were held in March 2013, and the next parliamentary election is planned for December 2016.

Fiscal decentralization was completed for all municipalities in 2008, transferring the competences from central to local authorities mainly for education, communal services and infrastructure and partly for social services. Although the process envisaged partial decentralization of health care, including public health services and functions, the health sector still remains centrally managed.

The judiciary system consists of 27 courts of first instance, three appellate courts, a constitutional court and the Supreme Court – the highest in the country. The Administrative Court and Superior Administrative Court were introduced in 2007 and 2010, respectively, to improve the efficiency of the judiciary. The Supreme Court decides on extraordinary legal remedies against decisions of the Superior Administrative Court.

The country has been working on alignment of its legislation to EU standards and has adopted a number of laws and bylaw regulations. However, the delays in EU and NATO integration and the strain of the global economic crisis have had their impact on the country in both economic and political terms.

The country is also active in the global, regional and subregional health arena. The Council of Europe and United Nations legal and policy support influence the policy-making processes. The country is a founding member and part of the South-eastern Europe Health Network (SEEHN) since 2001, which is political and institutional forum set up to promote regional collaboration in health and public health.[2]

[2] SEEHN was established by the Ministries of Health of Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, the Republic of Moldova, Romania, Serbia and the former Yugoslav Republic of Macedonia, and was supported by the founding partners, WHO Regional Office for Europe and Council of Europe. In 2011, SEEHN was joined by Israel, so expanding its geographical boundaries in addressing public health. SEEHN has a number of partners and partner countries that support its work.

1.4 Health status

The country has seen an increase of average life expectancy at birth from 71.1 years in 1991 to 75.1 years in 2010, making it comparable to the 13 new EU member countries that joined in 2004, 2007 and 2013 (EU13 average of 75.7 years) although it is still below the EU average of 80.2 years in 2010. Yet, as in many other countries, the gap between female and male life expectancy is substantial; the difference of 4.6 years in 1991 widened to 5.7 years in 2005, but had narrowed to 3.9 years in 2012. However, unlike many other countries, the former Yugoslav Republic of Macedonia averted the mortality crisis that many central and Eastern European countries experienced in the early 1990s (Nolte, McKee & Gilmore, 2004) with continuously decreasing mortality rates since 1995 for both sexes (Table 1.3).

Table 1.3

Mortality and health indicators, 1991 to latest available year

	1991	1995	2000	2005	2010	2012
Life expectancy at birth, total (years)	71.1	72.2	73.4	73.8	75.1	n/a
Life expectancy at birth, male (years)	69.9	70.0	71.2	71.7	73.0	73.0*
Life expectancy at birth, female (years)	74.5	74.5	75.7	76.0	77.3	76.9*
Mortality rate, adult, male[a]	1 187.0	1 244.7	1 199.2	1 198.7	1 114.2	n/a
Mortality rate, adult, female[a]	858.6	891.0	855.8	886.4	790.7	n/a

Sources: WHO Regional Office for Europe, 2016a; * State Statistical Office, 2014.
Notes: n/a: Not available; [a]Standardized death rate all causes, all ages, per 100 000 inhabitants.

Despite the evidence suggesting extended life expectancy, there are no data – collected, monitored or analysed – on the quality of life and on the expected lifespan in good health. To date, the country has not been reporting indicators such as healthy life-years, health-adjusted life expectancy or disability-adjusted life expectancy to WHO or other relevant databases.

An analysis of the causes of mortality (see Table 1.4) shows that similar to many other European countries, the main causes of death are diseases of the circulatory system. Since 1995 the standardized death rate (SDR) for these diseases has been fluctuating with a peak in 2005 (621.0 deaths, all ages, per 100 000 population) followed by a steady decrease. However, in 2010, it was still 2.5 times higher than the EU average (219.4). Selected smoking-related causes have been the second most common cause of mortality in the past two decades. Although the SDR improved from 372.8 in 2005 to 331.2 in 2010, it is above the averages of the EU (196.3) as well as of the EU13 countries (328.3) in 2010. Cerebrovascular diseases were the third most common cause of death

in the country in 2010 (183.7 per 100 000 population). Since 2005, a substantial downward trend has been observed but the SDR is still above the average of the EU13 (102.7) and the EU (51.6) in 2010 (WHO Regional Office for Europe, 2016a). Death rates attributable to other causes show a mixed picture when compared with the EU average; some, such as diabetes and tuberculosis, are higher, whereas others, such as respiratory diseases and diseases of the digestive system, are lower than the EU average.

Table 1.4

Main causes of death, selected years to latest available year (standardized death ratio, all ages per 100 000 population)

	1995	2000	2005	2010
All causes	1 055.9	1 014.5	1 032.7	939.5
Communicable diseases				
Infectious and parasitic disease	13.6	9.1	5.4	3.1
Tuberculosis	5.3	6.0	3.2	1.5
Noncommunicable diseases				
Diseases of circulatory system	603.8	582.2	621.0	553.0
Cerebrovascular diseases	189.3	192.8	206.0	183.7
Malignant neoplasms	149.2	163.6	160.3	171.5
Cervical cancer	3.6	5.7	3.7	2.8
Breast cancer (female)	22.8	25.2	20.2	27.7
Diabetes	21.9	30.2	35.8	34.1
Diseases of the respiratory system	46.8	36.8	41.2	34.4
Diseases of the digestive system	21.2	18.8	17.3	17.2
Mental disorder & disease of nervous system & sense organs	7.5	9.0	8.6	8.4
External causes				
Selected smoking-related causes	360.8	367.0	372.8	331.2
Selected alcohol-related causes	47.0	52.1	43.3	43.1
External cause (injury and poison)	30.8	37.9	30.0	28.3
Motor vehicle traffic accidents	4.9	5.4	6.4	6.3
Suicide and self-inflicted injury	7.5	7.6	7.1	5.7
Transport accidents	5.6	5.8	6.8	6.4

Source: WHO Regional Office for Europe, 2016a.

All three major causes of death have seen a declining trend since 2005, which is also reflected in the downward trend of the SDR for all causes that decreased from 1055.9 deaths per 100 000 population in 1995 to 939.5 in 2010, with some fluctuations over the period. However, the SDR for all causes was nearly 60% higher than the EU average in 2010 (596.1) (WHO Regional Office for Europe, 2016a). Such divergences from EU countries, despite the similar disease pattern, might be attributed to prevailing unhealthy habits

and behaviours (unbalanced diet, high rate of smoking and drinking, and low physical activity) and psychosocial factors, high levels of air pollution as well as low input into health promotion and monitoring of risk factors towards prevention and control of non-communicable diseases. According to the 2013 Annual Report of the Institute of Public Health, 40–50% of population over 15 years of age are regular smokers, with average annual cigarette consumption of 2310 cigarettes per person (Institute of Public Health, 2014). These are approximately twice as many regular smokers as the 16 European countries for which data are available (Eurostat, 2015). Unhealthy habits are also present in nutrition with average daily intake of fats of 34.1% (compared with < 30% recommended intake), exceptionally high sodium intake of 7883 mg (compared with the recommended value of 500–2500 mg) and high salt intake, which are the results of high consumption of processed foods (Institute of Public Health, 2014). It is estimated that 1350 deaths occur annually due to cardiopulmonary diseases and lung cancer, which are linked to the high level of air pollution (Meisner, Gjorgjev & Tozija, 2015).

Mortality-based indicators show significant gender differences for all causes as well as for major disease groups with the exception of diabetes. The SDR for all causes (per 100 000 population) is higher for the male population (1114.74) than for the female population (790.68) with a particular difference of the SDR for circulatory diseases (age group 0–64 years) being twice as high for men as for women in 2010 (126 and 63, respectively). Also the SDR for malignant neoplasms at all ages in 2010 was 222.59 for the male population but only 128.77 for the female population. These different death ratios in all major disease groups most probably result from the gender differences of SDR attributable to selected alcohol-related causes (68.08 for men and 20.13 for women in 2010) and smoking-related causes (416.72 for men and 257.13 for women in 2010).

In terms of prevalence of mental health issues, available data are scarce and additional efforts need to be made for proper monitoring to be set in place. The number of mental health patients staying in hospitals more than 365 days per 100 000 population was 18.37 in 2008 (WHO Regional Office for Europe, 2016a). Although there is a decline in the share of hospitalized mental health patients in the overall hospital morbidity (from 4.6% in 2000 to 2.6% in 2012), there is still a very slow decrease of the total number of mental health patients staying in hospitals (Institute of Public Health, 2013).

With regard to the prevalence of communicable disease, the incidence of hepatitis B per 100 000 population was 6.5 times higher than the EU average (7.5 and 1.1, respectively). The country introduced mandatory hepatitis B

vaccination for all babies born after November 2004, and the effects of this policy intervention are to be monitored in the longer run. The prevalence of HIV/AIDS remains low, with a total number of 236 registered in the period 1987 to 2014 (WHO Regional Office for Europe, 2016c), keeping the country on the second lowest reported level in the south-eastern European region. However, the specific trends in prevalence of HIV infections among the most-at-risk populations should be further explored, as behavioural studies have indicated that high-risk behaviours and low level of knowledge on prevention are still present among key populations such as sex workers, injecting drug users, men who have sex with men and prisoners (UNAIDS, 2012).

Infant mortality has shown a decreasing trend in the last 30 years. Between 2000 and 2010 the infant death rate decreased substantially from 11.8 to 7.6 per 1000 live births. However, judged by infant mortality, the country is still behind the EU average of 4.1 and EU13 average of 5.9 per 1000 live births (2010) (WHO Regional Office for Europe, 2016a). There were significant geographical differences in infant mortality rates, ranging from 6.4 (Vardar Region) to 13.0 (Polog Region) in 2007 (national average 10.3 for 2007) (Ministry of Health, 2010a). The under-5 mortality rate also decreased from 13.7 to 8.4 per 1000 live births between 2000 and 2010 (see Table 1.5).

Table 1.5

Maternal, child and adolescent health indicators, 1980 to latest available year

	1980	1990	1995	2000	2005	2010
Live births per 1000 population	21.1	17.5	16.4	14.5	11.0	11.4**
Infant death rate (per 1000 live births)	54.2	31.6	22.7	11.8	12.8	7.6
Neonatal deaths (per 1000 live births)	n/a	n/a	13.5	8.6	9.5	5.5
Early neonatal death rate (per 1000 live births)	15.1	12.6	10.7	6.9	7.3	5.1**
Under-five mortality rate (per 1000 live births)	n/a	31.8*	25.4	13.7	14.3	8.4
Postneonatal death rate (per 1000 live births)	n/a	n/a	9.2	3.2	3.3	2.1
Perinatal death rate (per 1000 births)	24.8	21.0	19.4	15.8	16.7	12.6
Maternal death rate (per 100 000 live births)	n/a	n/a	21.8	13.7	13.3	4.2**

Source: WHO Regional Office Europe, 2016.
Notes: *1991 data; **2012 data; n/a: Not available.

The neonatal mortality rate (from day 0 to day 28 per 1000 live births) also declined, from 8.6 in 2000 to 5.5 per 1000 live births in 2010; yet, the country is still behind the EU average (2.7 in 2010). The postneonatal mortality rate has declined from 3.2 in 2000 to 2.1 per 1000 live births in 2010, getting much

closer to the EU average for the same year (1.4). Overall, there is obvious progress in child mortality indicators. However, further efforts are needed to reach the desirable targets, mainly through strengthening health promotion and preventive services, but also by addressing issues of the current postreform design and functioning of the health care system, which is discussed further in the relevant chapters.

Maternal mortality (Table 1.5) has witnessed an impressive decline from 13.3 in 2005 to 4.2 per 100 000 live births in 2012, dropping below the EU average (4.7 in 2012) (WHO Regional Office for Europe, 2016a) (see also section 5.1.4). These improvements in both child and maternal health derive to some extent from the public health programmes for active protection of mother and child health.

Due to free point-of-delivery preventive services that are universally provided to all citizens, regardless of their health insurance status, vaccination coverage has historically been very high. It had been kept at levels between 93% and 98% from the 1990s onwards for most vaccine-preventable diseases, including tuberculosis, tetanus, poliomyelitis, diphtheria, measles and mumps. The country has amended the common immunization calendar vaccines, introducing mandatory vaccination against hepatitis B for all babies born after November 2004 and human papillomavirus for all girls aged 9–12 years, since 2004 and 2010, respectively (see section 7.4.2; Ministry of Health, 2012).

Regarding dental health, caries is one of the most widespread diseases among school children. There is a system for monitoring and registration of dental caries, but statistics are not harmonized with those of the EU and WHO, and so no official data exist. However, a cross-sectional study conducted in 2007 showed that decayed/missed/filled teeth among children at 12 years of age is 5.94, which is rather high compared with WHO recommendations for oral health (decayed/missed/filled teeth < 3) (Ministry of Health, 2010b). Based on this and similar studies, the country has enacted the National Strategy for prevention of oral health disease in children from 0 to 14 years for the period of 2008–2018.

2. Organization and governance

The former Yugoslav Republic of Macedonia inherited a well-established health care system with good geographic distribution of resources and provision as well as financial accessibility. The long experience of health insurance coverage for nearly the whole population has paved the way for the development of a social health insurance (SHI) system after the collapse of the former Yugoslavia. Under the Law on Health Care, first adopted in 1991, the organization and operations of the health care system were re-established, based on the principles of solidarity, mutuality and citizens' participation. It also sought to retain the positive features of the previous Yugoslav health system, including control of communicable diseases, strong preventive service delivery and access to free health services at the point of delivery. Yet, at the same time, the market for health care service provision was liberalized, enabling private providers to enter the market (Nordyke & Peabody, 2002); initially only for privately paid dental care, specialist services and pharmacies until the primary care reforms in the mid-2000s. The Health Insurance Law, adopted in 2000, provided the legal basis for the establishment of an SHI system through the Health Insurance Fund (HIF), which acts as an independent agency and purchaser of services on behalf of users, previously performed by the Ministry of Health.

With the primary care reforms throughout 2004 to 2007 all primary care providers were obliged to obtain private ownership to continue service provision under the HIF scheme based on a newly introduced capitation payment model. At secondary and tertiary levels, the private providers that emerged since 1991 acted in parallel with the public system until 2012, providing services paid out-of-pocket by the users. In 2012, the government initiated arrangements for their partial incorporation into the HIF with the new Law on Health Care. This enabled the HIF to contract services from private providers at secondary

and tertiary levels where public services were deemed insufficient. The public hospital sector is still managed by the Ministry of Health and remains highly centralized.

The two central institutions in the health care system are the Ministry of Health and the HIF. The Ministry of Health is responsible for health policy-making, organization of the health care system and the enforcement of health legislation, although all policies go through a process of consultation and agreement with the relevant ministries and agencies within regulated legal procedures. The HIF is responsible for purchasing services from both public and private providers on behalf of users. Relations between the HIF and various providers at the primary, secondary and tertiary levels are regulated through performance-based contracts negotiated and signed for a predefined period of time.

2.1 Overview of the health system

The health care system is based on a statutory health insurance system, with a purchaser–provider split and a mix of public and private providers. Resources are raised mainly through compulsory wage-based contributions but out-of-pocket payments are also important (see Table 3.1 and section 3.4). Contributions are collected by the HIF, which acts as the main purchaser of health services (see section 3.3.2).

The legal foundation of the health system is embodied in the two main laws: the Law on Health Care (1991 and new Law on Health Care 2012, consolidated text 2015) and the Law on Health Insurance (2000, consolidated text 2015). Alongside these laws, there are an ample number of other laws and by-laws that regulate other specific issues and related activities within the health care system (for a comprehensive list of health-related legislation see Box 6.1).

The Law on Health Care sets the foundations of the organization of the health care system. It outlines a wide range of responsibilities of the Ministry of Health, making the health care system highly centralized. Almost all decisions are made by the government and the Ministry of Health, without any input from the municipalities. Although the 2002 law on local self-government provides the legal grounds for the transfer of responsibilities for health care protection (mainly in preventive and primary health care, mental care, surveillance and public health functions) on a local level, this responsibility has not yet been assumed by the municipalities. The centralization of decision-making has

its influence on the management of public health providers, through direct appointment of directors of public health care institutions by the Minister of Health. With the adoption of the new Law on Health Care in 2012 (amended in 2013 and 2015), the leadership role of the Ministry of Health increased with the new responsibility of creating the Health Network (see Box 2.1 and section 2.8.2).

Box 2.1
The Health Network

With the new Law on Health Care (2012) the government established the Health Network for the purpose of strategic planning of resources in the health sector in the country. The main aim of the Health Network is to ensure equal geographical access to health care, particularly to hospital care and specialized diagnostics and treatment.

The Ministry of Health certifies public and private health care providers to become part of the Health Network. The HIF only signs contracts and purchases services from these certified providers. Thus services by providers outside the Health Network are not reimbursed under the HIF and have to be paid out-of-pocket by patients.

The Health Network is a geographically well-distributed network of public and private providers. It integrates preventive, primary, secondary and tertiary health care service provision. The government determines the geographic and functional scope of the Health Network which is then operationalized and monitored by the Ministry of Health.

The Health Network is a planning tool for service provision and resources at national level through which the Ministry of Health:

- determines types of health care services provided by each provider and by geographical area;
- determines physical and human resources, hospital bed stock for each medical specialty as well as type and number of diagnostic and other medical equipment for each level of health care service to prevent overlaps of expensive medical equipment and health technology;
- defines levels of health services to be provided by each health care institution at regional level.

Patients are referred to the geographically nearest available health care practice, which is supported by MyAppointment (*Moj Termin*), a health information system of appointments for health services and monitoring health capacity usage in real time (see section 2.7 and section 4.1.4).

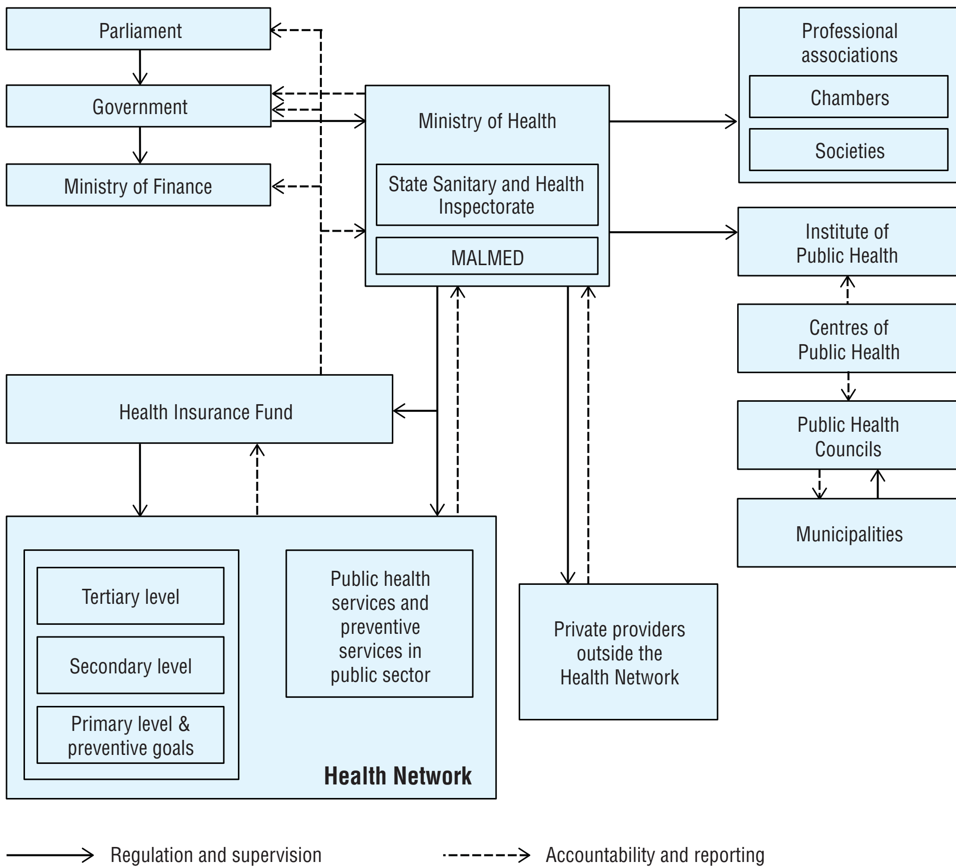
The Ministry of Health monitors the performance and sustainability of the Health Network, and develops and implements related regulations and policies. Overall, the Health Network marks a new period of reforms characterized by greater centralization and control by the government and the Ministry of Health.

All major actors in the health care system and their organizational relationships are shown in Fig. 2.1 and described in detail in the following sections. The legislative power is represented through the parliament, which is responsible for adoption of the legislation prepared and proposed by the

Ministry of Health through the government. The parliament also passes the central budget (of which Ministry of Health is constitutive part) and the HIF budget, thus having a role in the financial control of the health care system.

Fig. 2.1

Organizational relationships of the key actors in the health care system, 2016



Source: Author's compilation.

2.2 Historical background

2.2.1 Developments before 1991

The Yugoslav planning system shaped policies in the health sector with pervasive effects on financing and delivery (Gjorgjev et al., 2006), and much less on the efficiency and effectiveness of resource utilization (Istenic, 1995). Social services did not have high priority; as in other planned economies, focus on the industrial sector prevailed, and the social sector was considered only as a consumer of public funds (Orosz, 1995). Before 1991, health service provision was organized in three tiers: municipal level health centres, hereafter called Health Centres, were responsible for primary and basic secondary care, both inpatient and outpatient; tertiary care was provided in Clinical Centres of the Medical Faculty in the capital, whereas the highly specialized interventions were provided in federally organized clinics. Financing of health care was managed by the federal Social Insurance Fund, which collected revenues and made provider payments based on inputs such as number of beds or clinic visits (Nordyke & Peabody, 2002).

One of the positive characteristics of the Yugoslav model that left a significant mark on the blueprint of the health system of the former Yugoslav Republic of Macedonia was the notion of universal and free access to health services at the point of delivery for all citizens regardless of their ability to pay (Saric & Rodwin, 1993). This heritage alongside the principles of solidarity, mutuality and citizens' participation has paved the way for the development of an SHI system with universal coverage.

2.2.2 Developments since 1991

With the independence gained in 1991, the country inherited a large and well-established health care system with good geographic distribution of resources, qualified staff, good surveillance and control system for infectious diseases, and almost full coverage of the population with the national immunization programme. However, the re-establishment of the health care system necessitated a consolidation of the massive health infrastructure, which was characterized by large and overstaffed hospitals and inefficient service provision resulting from low investment and initiative to improve performance in the health sector.

The initial tendency in the organization of the health care system was to maintain the positive experiences and advantages of the previous socialist system, yet to respond to the inefficiency of resource use. However, with the focus on the political and economic transformations overall, there was little initiative and strong resistance for changes in the welfare system (Lazarevik et al., 2012). As a result, some of the most important policies recognized as successes of the former system were continued, such as strong prevention, control of communicable diseases and free access to health care at the point of delivery.

The new Constitution adopted in 1991 guaranteed the right to health care protection (Article 39) and regulated citizens' obligation to protect personal health and the health of others. The organization and functioning of the health care system was re-established under the Law on Health Care first adopted in 1991 and amended and changed numerous times throughout the transition years (for example, establishment of a licensing system for medical professionals; privatization of practices of primary care, establishment of Agency for Medicines and Medical Aids and Directorate for e-health and so forth) (see section 6.1.2, *Amendment of Law on Health Care: Primary care reforms*).

Adopted in 2000, the Law on Health Insurance lays the basis for the health insurance, based on the principles of equity and solidarity, introducing the third-party payer system and a purchaser-provider split. The same law was the basis for the establishment of the independent Health Insurance Fund (HIF), which previously existed under the Ministry of Health.

2.3 Organization

2.3.1 Organizational overview

The most important actors in the establishment, governance and operationalization of the health care system in the country are the parliament, the government, the Ministry of Health, the Ministry of Finance, the HIF, the Institute of Public Health, the State Sanitary and Health Inspectorate and the Agency for Medicines and Medical Devices which are described in more detail below. The broader organization of the health care system is shown in Fig. 2.1.

2.3.2 The role of the parliament and government

Regarding the health care system, the parliament is responsible for adoption of legislation, state budget and the budget of the HIF. The parliament establishes its own working bodies, one of which is the Committee on Health Care that reviews, comments on and provides opinion on the legislative acts related to health care proposed by the government for adoption. Upon review by the Committee, the proposed legislations are further transferred to the Members of Parliament for deliberation and adoption.

The executive power is vested in the government and its line ministries. At the beginning of every year the government adopts an annual working plan outlining the planned activities for that year. As of 2013, the government, upon proposal from the Minister of Health, delineates and adopts the Health Network and certifies the list of health care providers that can provide health services under the HIF (see section 2.8.2).

2.3.3 Ministry of Health

The Ministry of Health has the central role in the health system through its responsibilities for formulating health policy, exerting influence, and collecting and using intelligence for development, implementation and monitoring health policies and enforcing health legislation. The Ministry's mission has developed from laissez-faire to a proactive role, namely to:

- establish overall strategic direction and priorities;
- develop legislation, regulations, standards, policies and directives;
- monitor and report on the performance of the health system and the health of the population;
- plan for and establish funding models and levels of funding for the health care system.

However, in addition to the policy-making and monitoring role, the Ministry of Health is very much involved in the actual delivery of health care. The Ministry of Health appoints directors as well as plans and allocates capital investment to publicly owned health care providers, defines public health care provision, and provides subsidies to inefficient public hospitals (see section 2.8.2).

Today, the Ministry of Health assumes a stronger coordinating role with other government agencies in committees where intersectoral consultation and policies affecting the health sector are needed. In July 2013, the Committee

for Health and Environment was established, led by the Prime Minister and co-chaired by the Minister of Health. In addition, the development of regulations and policies proceeds through intersectoral consultations and public hearings, as prescribed by law (see section 2.6).

Inclusive participatory processes were used in the development of strategic health documents, but are still not part of regular procedures. One example was the establishment of the Committee for Advancement of the Health System in 2009. The Ministry of Health led this participatory process, which resulted in the development of the *Green book in health*, which serves today as a roadmap for health sector reforms (health care system management, administering health care, financing, pharmaceutical care and patients' rights protection). It is based on consensual agreement and acceptance among most stakeholders involved in the process, including citizens, professional associations, academia, civil society and private sector stakeholders (see section 2.9.5).

2.3.4 Other relevant ministries

The Ministry of Finance negotiates and approves the HIF budget with regard to revenues and expenditures on a yearly basis. It estimates the expected contributions and other inflows in accordance with macroeconomic and fiscal policies, negotiates the level of health expenditures and accounts for payments needed for the next year. It defines the level of deficit financing, principally the transfer needed from the public budget to close the gap between the health expenditures and the actual revenues from the contributions for insured persons to HIF. The Ministry of Finance also sets the budget for the Ministry of Health, as part of the negotiations with every line ministry.

Other line ministries and agencies are involved in health care development through cooperation with the Ministry of Health and coordinated actions; the Ministry of Education in training of medical staff; the Food and Veterinary Agency in food safety issues; the Ministry of Foreign Affairs in the implementation of Sustainable Development Goals, the Framework Convention for Tobacco Control and International Health Regulations and Water Protocol; the Ministry of Labour and Social Policy in social issues of common interest, especially social transfers, violence and health; the Ministry of Interior in migrant health, violence and the fight against illicit drugs; the Ministry of Justice in prison health; the Ministry of Economy in implementing trade agreements relevant to health (application of sanitary and phyto-sanitary measures, technical barriers to trade, and on trade-related aspects of intellectual property rights) and the Ministry of Transportation and Communications in advertising bans.

2.3.5 Health Insurance Fund

The HIF is the main purchaser of health services in the country. It is an independent agency established by the government, and supervised by the Ministry of Health. It is responsible for the development and implementation of purchasing mechanisms for the provision of health services from both public and private providers. The HIF maintains 30 regional offices located in the major urban centres throughout the country.

The HIF adopts an annual working plan in which it defines type and volume of services to be purchased. Over the years of accumulated evidence and experience, the HIF developed specific mechanisms to purchase health services from each level of health care provision (see section 3.7.1). The HIF negotiates and signs performance-based contracts with different groups of providers for curative services at primary, secondary and tertiary levels, as well as for preventive services each year. These contracts include stipulations regulating the feed-forward and feedback reporting by health care providers, as well as sanctioning procedures for failure of delivery. However, these mechanisms are strictly tied to financing as the HIF does not have any mandate or responsibility to monitor and evaluate the quality of care or exercise any related sanctions thereof.

The role of the HIF in the financing of health care further strengthened after 2007 and 2009, when major changes were introduced in the purchase of services, such as the capitation model at primary care level, and diagnosis-related groups (DRG) at secondary and tertiary levels, followed by the introduction of ambulatory packages and preventive service packages in 2011 (see sections 3.7.1 and 5.3).

2.3.6 Institute of Public Health and Centres of Public Health

The Institute of Public Health is the top-level professional and scientific institution providing services such as health promotion through monitoring, research and analysis of health status of the population, and proposing measures for protection and promotion of population's health. It conducts research on communicable and non-communicable diseases, morbidity and mortality in the country, and performs teaching activities through cooperation with the Faculty of Medicine in Skopje.

The 10 regional Centres of Public Health are responsible for providing public health services at a local level in the areas of social medicine, environmental health, epidemiology and microbiology, as well as laboratory services. The

Centres are independent from the Institute but are responsible for reporting their activities and services, which are part of the annual health and public health programmes (see section 5.1).

2.3.7 State Sanitary and Health Inspectorate

Since July 2014, the State Sanitary and Health Inspectorate, a constituent body of the Ministry of Health, has been a member of the Council of Inspectorates. It carries out several functions within the health domain through the main office in the capital and 15 regional branches throughout the country. The primary tasks are inspection and supervision of health-related regulation, especially in health protection, communicable diseases, health insurance, protection of patients' rights and mental health rights, and medical records and data. In the field of sanitary-hygiene and epidemiological protection, it inspects implementation of general and special measures on communicable disease prevention and outbreak response; sources of non-ionizing radiation; production and trade of opioid drugs, poisons and precursors; sanitary-hygienic conditions in the health care facilities; production, selection, packing and disposal of medical waste; and protection from harmful consequences of tobacco. It also inspects the implementation of systematic and preventive check-ups of the population, working conditions, general statutory documents, maintenance of health records in health facilities and patient rights. Its functions are regulated under the separate Law on Sanitary and Health Inspection enacted in 2006.

2.3.8 Agency for Medicines and Medical Devices

Since 2014, the Agency for Medicines and Medical Devices (MALMED, *Agencija za lekovi i medicinski sredstva*) is an independent agency within the Ministry of Health established during the transformation of the Drug Bureau. It is responsible for regulatory surveillance of all pharmacies, issuing registration licenses and granting market authorization. MALMED monitors and evaluates the quality of produced and imported medicines and medical devices, and holds registries thereof.

2.3.9 Professional chambers and societies

The existing professional medical associations are organized as chambers, established under the Law on Health Care. They are recognized as associations of health providers advocating for the common interests of a particular profession. There are three chambers: the Macedonian Chamber of Medicine (*Lekarska komora na Makedonija*), the Dental Chamber (*Stomatoloska komora*

na Makedonija) and the Pharmaceutical Chamber (*Farmacevtska komora na Makedonija*). The chambers are responsible for licensing and re-licensing of professionals and have delegated rights and responsibilities under the Law on Health Care. After 2012, the chambers have by law also assumed the role of professional audit of the health care professionals. Further, every year they negotiate with the HIF on the contract details both in legal and financial terms, including obligations and rights of the HIF and providers, scope and volume of services as per adopted clinical guidelines, payment levels and methods, and penalties.

Professional scientific societies are established under the 2010 Law on Associations and Foundations, which has a broader definition of an association. The Macedonian Medical Association (*Makedonsko lekarsko drustvo*), the Dental Association and the Pharmaceutical Association are established under this law, with the main aim to advance scientific research, the profession and professional standards. The Macedonian Medical Association is an umbrella organization of 70 specialist societies. It is responsible for providing continuing medical education through its member associations which it performs in coordinated fashion with the Macedonian Chamber of Medicine. In the same manner, continuing pharmaceutical and dental education are provided through the respective professional societies in collaboration with the respective chambers (see above) (for more information on health professionals' training see section 4.2.3). Both the chambers and the professional societies are consulted by the Ministry of Health and the HIF in the reforming and policy-making processes, but their influence is rather limited.

2.3.10 The role of private providers

In 1991, with the Law on Health Care, the market for health service provision was liberalized. The growth of the private sector in the health care market was gradual, starting with small specialized clinics, dental practices, pharmacies and laboratories. After a decade, larger general and multi-specialty private hospitals started to emerge. With the primary care reforms throughout 2004 to 2007 all primary care providers were obliged to obtain private ownership to continue service provision under the HIF scheme based on a newly introduced capitation payment model. This resulted in a large number of single-practitioner private practices of general practitioners (GPs), gynaecologists, paediatricians, occupational physicians, dentists and private pharmacies, some of which over time consolidated into medium-size practices with several practitioners.

Although widely called privatization, this process was in fact a transformation of primary care providers from public into private ownership, as seen in many European countries, conditioned with service provision under contracts with the HIF based on a blended capitation payment model. The model, however, had some favourable conditions for providers. In order to maintain the relatively even geographic distribution and at the same time the utilization of the publicly owned health facilities, the Health Centres, primary care physicians and dentists were offered to rent premises at non-commercial prices within these Health Centres (*Zdravstveni domovi*)[3]. In addition, as a response to the possible retraction of providers from rural areas with low population density where the capitation model would not yield enough funding for the provider, the HIF offered incentives for GPs to open practices. In 2012, the number of private primary care providers contracted by the HIF was 2845, of which 1692 were GPs, 1008 were dentists and 145 were gynaecologists (HIF, 2013b; see also section 6.1.2, *Amendment of Law on Health Care: Primary care reforms*). However, if private providers open new practices without being included in the Health Network (see section 2.8.2), the services provided are not reimbursed under the health insurance scheme, and so will be paid out-of-pocket by patients.

The transformation of primary care also included privatization of public pharmacies, which became part of private pharmacy chains. Pharmacies also have to conclude contracts with the HIF to be able to dispense medicines covered by health insurance. These contracts are negotiated and signed based on several criteria, including the geographical area of coverage of the pharmacy, especially for larger cities. In the first half of 2016 there were 804 private pharmacies having contracts with the HIF (see section 3.7.1).

At the secondary and tertiary levels, the penetration of private capital happened long before reforms of those segments were considered by the government. As a result, private general and specialized hospitals operated in parallel with the public hospitals, providing services outside the health insurance system, purchased through out-of-pocket payment by users. With the adoption of the new Law on Health Care in 2012 and the introduction of the Health Network, the contracting of private health providers at the secondary and tertiary levels became subject to declared demand due to insufficient public services by the Ministry of Health and to a decision by the government (see section 3.3.4).

[3] Before the primary health care reforms in 2004–2007, Health Centres used to provide a diverse range of preventive, primary and secondary care services, as well as emergency and post-secondary care (follow-up home visits). Upon transformation of primary care, Health Centres continued to provide preventive services (immunization, preventive medical examinations and community nursing), secondary specialist–consultative care, as well as home visiting following hospital discharge. The number of Health Centres across the country is 34 (see also section 5.1.2).

2.3.11 Process of policy formulation

The process of health policy formulation evolved through several stages over the years. During the 1990s, major driving forces for new health policies were international agencies such as the International Monetary Fund and the World Bank, compensating for the lack of knowledge and skills inherited from the centralized policy and decision-making process in the Yugoslav system. The loans provided by these institutions were conditional and linked to specific regulatory changes in the health care system. As with many postsocialist countries, emphasis was put on improvement of efficiency of service delivery and effectiveness of resource utilization (see section 6.1). However, with time, public administration built its capacities to develop its own health policies, aligning them with international and European frameworks that were relevant for the EU and NATO integration processes.

Since the 2000s, the top-down process of overall policy formulation started with the adoption of a government programme, in which the government sets the goals and objectives for all sectors. Thereupon, the Ministry of Health undertakes actions to transform these goals and objectives into policies and actions. This approach of policy formulation replaced the previously donor-driven legislative changes expressing the capability of the country to take a lead role in achieving its strategic development goals.

As the central actor of policy formulation the Ministry of Health is responsible for policy development as well as enforcement and monitoring of policy implementation. However, the process of policy formulation is not always fully transparent and open to all stakeholders. Some policies that would require wider consultations and consensus were enacted without involving civil society organizations, professional associations or the general public. This was improved with establishment of the mechanism of obligatory publishing of draft laws on the website of the Unique National Electronic Registry of Regulations (*Edinstven nacionalen elektronski registar na regulativa*, www.ener.gov.mk), with the possibility for commenting on draft documents by any interested organization or individual.

There are still many challenges to be addressed with regards to process and impact evaluation of policy implementation. The few independent analyses and evaluations of policies and legislation for reforms continue to have small or limited impact in the overall policy agenda formulation.

2.4 Decentralization and centralization

The health system is highly centralized from the perspective of the three separate components of decentralization (political, administrative and fiscal), with few exceptions. One of the main arguments for strong centralization was to prevent fragmentation of scarce health care resources. In 2006, the policy idea emerged to introduce new legislation towards increasing the autonomy of health care providers, which the government postponed through political reluctance to give away power to lower levels. Hence, the key player remains the central government and the Ministry of Health (see Box 2.1 and Fig. 2.1).

With the process of administrative and fiscal decentralization, municipalities were initially interested in assuming the responsibility of local decision-making in health care, granted to them by the 2002 Law on Local Self-Government. But lack of financial and human resources at local level prevented their ambitions. Currently, their influence is only through their representatives in the managing boards of public health care providers and the local councils of public health, once they are established and start being operational. As a result, their influence has so far been very limited.

2.5 Planning and regulation

The Ministry of Health's essential role in health planning was strengthened within the EU integration processes' related requests for civil administration planning and performance. The Ministry of Information, Society and Administration developed regulatory impact assessment, and policy planning and assessment tools. However, related training of civil servants in the ministries was not performed sufficiently and continuously. Regulatory planning and performance is rather more stringent due to laws and structures established. Policy planning and implementation as well as monitoring and evaluation of the implementation process and the impact still lag significantly behind legislation.

In 2014, the Ministry of Health initiated the development of an overarching national health policy in an open consultative process with technical and professional support from WHO Country Office. This consultative process took place in the context of Health2020, which is the new European Policy Framework for Health and Wellbeing of WHO that seeks to support action across governments and society to improve the health and well-being of populations. The new National Health 2020 Strategy was prepared between 2014 and 2015 with the involvement of over 300 national experts from nearly

100 central and local government institutions and agencies, academia and civil society organizations and other stakeholders through face-to-face and online consultations on www.zdravje2020.mk. In 2016, the process continued with the involvement of local community actors from all sectors, local self-government and civil society. The National Health 2020 Strategy was adopted in December 2016, constituting a fundamental health policy document in the country, the first since its independence (see sections 6.2 and 7.1).

Independent scrutinizing of the Ministry of Health's activities is largely performed by the European Commission in its yearly progress reports. The latest report acknowledges some progress in public health, the adoption of several important policies such as the rulebook on veterinary pharmaceuticals and the introduction of polyvalent vaccines, and recommends further strengthening of the implementation of the already harmonized legislation (European Commission, 2015). Since 2014, the Ministry of Health has worked on shifting from the previous input-based system of planning towards planning that is based on health needs. Especially for preventive programmes a performance-based monitoring of these services is envisaged to become part of the integrated health information system in the near future.

2.6 Intersectorality

The Health in All policies approach was recognized as beneficial to health outcomes in 2009, when the government decided to implement it. The whole government approach integrates collaborative efforts of public agencies to achieve a shared goal and response to particular issues. It is most visible through governmental intersectoral committees for issues of importance (see section 2.3.3), the most recent example from 2013 being the Health and Environment Committee, presided over by the Prime Minister and co-chaired by the Minister of Health. The whole of society approach that engages multiple stakeholders in public health policies across contexts is still not a regular practice, although highly recognized as an approach to provide a fair process in policy development and better results in policy implementation.

Other initiatives for intersectorality are driven by international actors. In 2014, both the WHO and the Global Fund to Fight Aids, Tuberculosis and Malaria discussed the institutionalization of a National Health Account to provide the Ministry of Health with clear tracking of funds in specific health areas.

The Country Coordinative Mechanism to fight HIV/AIDS and tuberculosis has served for more than a decade as an example of good practice of intersectoral efforts, including, but not limited to, the good governance of intersectoral bodies. However, it remains to be seen whether this mechanism will be sustained after withdrawal of the Global Fund to Fight AIDS, Tuberculosis and Malaria from the country in 2017, although the Ministry of Health is planning a transitional strategy.

The Health2020 WHO European Policy Framework for Health and Wellbeing inspired a wide intersectoral process for developing a new National Health Policy 2020 and localizing the 2030 Agenda, involving both national-level and community-level actors across sectors, local self-government and civil society. Also the United Nations Development Assistance Framework supports the development of policy frameworks through wide intersectoral collaboration.

2.7 Health information management

Upon recommendation to set up a health information system by the Health Sector Transition Project (1996–2002) supported by the World Bank, the country has undertaken efforts to create an integrated system involving the Ministry of Health and the HIF. In 2006, the Ministry of Health prepared an Integrated Health Information Strategy, the main aim of which was to recommend the necessary actions to rectify deficiencies in health information systems and to put in place frameworks to ensure optimal development and utilization of health information.

The Integrated Health Information Strategy has identified still-existing variation in technical and information technology capacities among health care providers, a lack of unified coding system for data entering as well as a lack of standardized formats for data collected, both largely influencing the data usability and comparability across the country. The Integrated Health Information Strategy proposed several key initiatives for preparing the country for an integrated health care information system (such as the unified coding systems and electronic health records and cards) that would also be adaptable to the upcoming health care reforms (introduction of DRGs). A unified coding system and the DRG in hospital care were the first to be implemented in 2009 (see section 3.7.1, *Inpatient care*), followed by the electronic health records and the electronic health card in 2013 (for more information see sections 4.1.4 and 5.3.1).

As of 2006, in the context of the primary health care sector reform, primary care providers were obliged to provide regular reports to the HIF for financial performance assessment. The special software provided by the HIF for this purpose, enabled providers to collect data on patients, so piloting the idea for electronic health records. At this stage, however, these records were visible and available only to the doctor and the HIF for administrative purposes. Based on these efforts and the Integrated Health Information Strategy recommendations, a far more sophisticated health information system called MyAppointment (*Moj Termin*) was launched in 2013 nationwide, which finally started to show the contours of a truly integrated health information system at a national level, with the intention to become a fullyfledged data gathering and management structure in the next several years.

MyAppointment was first introduced in 2009, initially as an internal tool for reducing waiting times at three tertiary care facilities (University Clinic of Radiology, University Clinic of Surgical Diseases and City General Hospital), starting with an examination appointment module and an electronic health records module. Since its launch, MyAppointment has expanded across more than 5000 health care providers and service points, integrating over 1000 applications and modules, including integrated secure e-health records, pharmacy prescription integration, performance-based pay modules, automated provider credentialing, specialist referrals, ambulance service management, a public booking interface for health interventions and medical equipment, among others (see section 4.1.4) (Ministry of Health, 2013). As the system can provide various cross-sectional data analyses and aggregation, it is planned to also incorporate features that are useful for health policy and resource planning, hospital patient workflow tracking, service billing, health care inventory management, and GP and specialist practice record management. In order to protect personal data, the platform is operated through a level-privilege access to medical records.

In a very short time, the system performance has been improved in several aspects. The waiting time for radiology scans and visits to specialists has fallen from 15 months to less than 7 days. This avoids overlap of patient scheduling, which ultimately leads to fewer crowds in waiting rooms.

In 2015, following the successful implementation of the MyAppointment initiative, the government decided to institutionalize the efforts, through establishing the Directorate for e-health, as a semi-independent authority for health data collection and management. This Directorate is responsible for health data collection and management, and providing health statistics

reports in collaboration with relevant institutions such as the State Statistical Office and the Institute of Public Health. Throughout its further development the integrated health information system aims to integrate both curative and preventive services, screening outcomes and risk factors, to be used for health resource planning and management and to ultimately improve health care access and quality (see section 4.1.4).

2.8 Regulation

The health system of the country is regulated through legislative, administrative and market mechanisms. The legislative power is vested in the parliament, while the administrative regulation is implemented through various permission and licensing procedures of the Ministry of Health, the Agency for Medicines and Medical Aids (*Agencija za lekovi i medicinski sredstva*, MALMED) and the HIF. The Ministry of Health can delegate some of its authorities to other bodies and agencies.

2.8.1 Regulation and governance of third-party payers

The third-party payer system was introduced in 2000 with the enactment of the Law on Health Insurance and the separation of the HIF from the Ministry of Health. The HIF became an independent agency, with its own management structure and full authority over allocation of its budget. The global HIF budget for the coming year is negotiated and approved by the Ministry of Finance and has thereupon to be passed and adopted as part of the central budget at the end of the year by the parliament. The annual reports of the HIF are submitted to the Ministry of Health and adopted by parliament.

The HIF is governed by the governance board, which consists of seven representatives from different constituencies, appointed by the government for a mandate of 4 years. The board oversees the work of the HIF, reviewing and approving its policies and annual reports. The representatives come from the Ministry of Health, Ministry of Finance, Union of Syndicates, Economic Chamber, professional chambers (Chamber of Medical Doctors, Chamber of Dentists or Pharmaceutical Chamber on 1-year rotation basis), the Union of Retired Persons and one representative of the insured, proposed by the Association of Consumers.

The HIF is the only insurer in the health care financing system with voluntary health insurances playing a very minor role. The Public Revenue Office is responsible for collecting health insurance contributions that are transferred to the HIF, which is responsible for allocation of resources, and purchasing the needed services and devices from health providers on behalf of the insured, through a broadly defined basic benefits package.

2.8.2 Regulation and governance of providers

According to the new Law on Health Care, health care providers can be established as public and private health service provision institutions (see section 4.1.1), with all relevant governing bodies as per the applicable legislation in the country. Healthcare providers can be established at primary, secondary and tertiary levels.

The novelty in the new Law on Health Care (2012) is the Health Network (Box 2.1), established by the government for purposes of strategic planning of health care resources in the country as well as certification of public and private health care providers that can provide services under health insurance. The government determines the geographic and functional scope of the Health Network, which is then operationalized and monitored by the Ministry of Health. The Health Network defines the levels of health services to be provided by each health care provider at regional level.

The Ministry of Health has assigned a certain level of competency to all hospitals, based on their geographic location and population served, number and proficiency of specialists and available equipment, in accordance with the clinical guidelines. The level of competency is used to determine the range and scope of activities that a given hospital can provide and aims to guarantee a certain level of health services quality. In 2011, hospitals in the public domain that do not have the potential to provide adequate health services in terms of the assigned level of competency have been enlisted in the programme of the government for upgrade of medical equipment, infrastructure and professional staff recruitment, for ensuring their compliance with clinical guidelines and proper provision of services. This is expected to reduce the number of patients transferred between hospitals, especially from secondary level in smaller towns to the tertiary level in the capital city of Skopje (for more information see section 7.5.2).

In 2014, the government established the Agency for Quality and Accreditation of Health Care Institutions (*Agencija za kvalitet i akreditacija na zdravstvenite ustanovi vo Makedonija*), which is mandated to define standards of quality of

care and to provide accreditation for health facilities. Within the accreditation process, the Agency for Quality and Accreditation of Health Care Institutions ensures that professionals in the health facilities have undergone proper training and are aware of the standards and norms for provision of high quality health.

2.8.3 Registration and planning of human resources

The Ministry of Health and the professional associations and chambers are jointly responsible for registration of health care professionals. Upon graduation, health professionals are required to pass a state examination and to become members of their respective professional associations, thus automatically becoming part of the licensing system. Pharmacists are also required to pass a state examination and obtain a licence.

With regard to continuous medical education, medical and dental doctors are obliged to attend accredited continuous medical education trainings and education as a requirement for re-licensing every 7 years. The continuous medical education courses are accredited by the chambers and in the case of medical doctors jointly by the Macedonian Chamber of Medicine and the Macedonian Medical Association. However, the system for continuous medical education has not been established in the same manner for pharmacists.

A system of accreditation and licensing for the professions of nurses and midwives has not yet been established, preventing an autonomous health service provision of these professional groups. This is especially an issue for health service provision in areas such as community nursing (patronage nurses), who provide their services at home and without supervision by a doctor. According to the new Law on Health Care (2012), nursing care has been recognized as a separate professional category but until now no accreditation, licensing and re-licensing system exists (see also section 4.2.3).

Although responsible for the overall health system planning and management, the Ministry of Health still does not have a clear strategy and vision for defining the health personnel needs and human resources in health planning. The newly established Health Network (see Box 2.1) might provide some guidance and will probably serve as the basis for future human resources planning in the health sector in the coming years.

2.8.4 Regulation and governance of pharmaceuticals

Pharmaceutical policy is an integral part of national health policy. Before enactment of the new Law on Medicines and Medical Devices in 2007, the Ministry of Health was responsible for the establishment of a National Committee that determines the list of essential drugs and the positive list of drugs that are covered by health insurance. The independent Drug Agency established in 2014 in accordance with the new Law on Medicines and Medical Devices is directly responsible to the government. The Drug Agency assumes the responsibilities to establish a National Drug Committee, a committee for traditional and herbal medicines as well as a committee for clinical trials of medicines and medical devices. It is also responsible for participating in international cooperation related to medicinal products, issuing and revoking permissions for retail sale of drugs and medicinal products on the pharmaceutical market.

Since 2012, the Law of Health Insurance has been amended to strengthen the process of expanding the positive list of drugs covered by the HIF, through establishing 14 Anatomical Therapeutic Chemical Classification-specific committees. The latter are responsible for proposing changes to the positive list of drugs and amendments to the HIF governance board. The appointment of members to the Anatomical Therapeutic Chemical Classification committees is made by proposal of the HIF and approval of the government. This process is currently ongoing.

2.8.5 Regulation of medical devices and aids

Under health insurance, patients are entitled to obtain the necessary medical devices and aids, based on a determined medical need. The indications and standards of medical aids, as well as related procedures, are regulated in the Rulebook on the criteria for obtaining orthopaedic and other aids, a bylaw of the Law on Health Insurance.

The indications for necessity of orthopaedic or other medical aid and devices are determined by a specialist, and primary health care provider in particular cases, upon which it is confirmed by the HIF regional office for further processing. The specialist prescribes specific aids such as orthopaedic, ophthalmological and dental devices, whereas primary care providers are entitled to prescribe aids and devices with regular use, such as intubation devices, feeding aids, sanitary accessories for immobile patients, etc. The

Rulebook defines in further details the quality standards of aids and devices, the period of renewal of request, as well as other conditions for the right to medical aids and devices.

2.8.6 Regulation of capital investment

According to the Law on Operation of the Government and the Law on Healthcare, the Ministry of Health is responsible for planning and allocating capital investment to publicly owned health care providers and the health system as a whole. In addition, the state can provide funding to health care providers through subsidies for acquisition of long-term tangible assets, renovations in connection with the restructuring of information technologies and systems.

The Health Network established in 2013 acts as a regulatory instrument for capital investments in the public sector, whereas private providers have liberty to invest in their own infrastructures without any limitations and based on their market research and analysis on private (out-of-pocket) demand of services.

2.9 Patient empowerment

2.9.1 Patient information

The Ministry of Health together with the Institute for Public Health, the HIF, health care providers, and patient organizations are jointly responsible and accountable before the law to provide information on health and diseases and to work on health promotion and education.

The Ministry of Health allocates each year funding through preventive programmes for health education campaigns, preparation and distribution of informative materials, and for organizing educational workshops for patients. These activities are mainly performed by the Institute of Public Health and the Centres for Public Health. But nongovernmental organizations are also involved, in particular in the early childhood development activities, education on HIV/AIDS prevention and healthy lifestyles. As part of the blended capitation contracts of primary care providers, education workshops mainly for adolescents are part of the preventive health targets that have to be fulfilled by each provider (see also section 5.3.1).

The HIF is obliged to provide information to the insured about contracted health care providers and pharmacies, patient rights, the benefit package and any changes thereof. The HIF is performing this duty through its webpage. On a local level, citizens can be informed or file complaints through the 30 HIF regional offices.

As explained above, in order to improve the efficiency of resource utilization and reduce waiting times for specialized services via MyAppointment (see section 2.7), since 2012, patients can also obtain information on available time slots in any of the contracted health care practices. Providing relevant information for the decision of patients on health care providers, e.g. qualification, should become part of the MyAppointment information system in the future.

2.9.2 Patient choice

In terms of provider choice, patients' rights at the primary care level are regulated in the Law on Health Care. Patients can freely choose their GP, dentist, gynaecologist or pharmacy, and can decide to change them without having to explain why. Patients can change their primary care provider up to a maximum of twice a year.

On the secondary and tertiary levels, however, by defining the levels of health services to be provided by each health care institution at regional level through the Health Network, patients are referred to the geographically nearest available health care practice that performs the required services. After that, they can be further referred vertically or horizontally within the system. There are, however, also some administrative restrictions with regard to provider choice, namely in order to receive specialized care under the health insurance, patients need to be referred by their chosen primary care physician. However, the MyAppointment system enables a choice of doctor or hospital beyond their region, for the purpose of reducing waiting times and to ensure patient choice. In addition, patients can still freely choose to receive care paid out-of-pocket at any private health care facility operating inside and outside the network that has obtained the necessary license for health service delivery from the Ministry of Health.

2.9.3 Patients' rights

In July 2008, after an extensive consultation process with civil society, professional associations and other stakeholders, the government proposed and parliament adopted the Law on the Protection of Patients' Rights. Besides incorporating all existing rights and obligations, the law broadened the scope of

both rights and obligations for patients, introducing several important novelties in improving the implementation and promotion of human rights in health care (Bislimovska-Karadzinska et al., 2010). Patients' rights were further expanded with the right to seek a second opinion at the expense of the health insurance, the right to privacy and confidentiality, the right to personalized care within the possibilities of the system, the right to avoid unnecessary suffering and pain, and the right to personal safety. Patients also have the right to refuse a treatment and to leave the hospital. In both cases they need to sign a consent confirming their will and that they have been informed about the risks of such a decision.

In cases of violation of any of these rights, the law establishes a separate mechanism within the health care facility. The Ministry of Health appoints a Counsellor on Patients' Rights whereby patients can obtain information and can file a claim. This is an additional mechanism to administrative and court procedures that patients can also use in case of violation of rights.

2.9.4 Complaints procedures

Social rights and health care rights are guaranteed under the Constitution and other laws. According to Article 8 of the Constitution, the founding values of the country's constitutional order are humanism, social justice, solidarity and the rule of law. In cases of violation of any of the rights, there are multiple pathways that can be taken to seek justice. The judiciary applies through its court system varied procedures that are established in the legal order, including administrative, civil and criminal procedures, available to every citizen in equal manner. In all of the above, the first and second instances – independent of each other – are established and functioning.

An additional mechanism for claiming violation of rights is the Office of the Ombudsperson, established in 1997, with an appointed Deputy for Protection of Children's Rights and Health-related Rights. The Ombudsperson, however, can only provide advice to institutions on the violation of rights and suggested actions, but without legally binding power.

2.9.5 Public participation

Participatory democracy is considered one of the fundamental elements in the value-creation of the health care system (Larson, Bentley & Brenton, 1994), imposing the necessity for public debate and deliberation on decisions concerning resource allocation in health care.

In 2009, the Ministry of Health initiated an open consultation process with numerous stakeholders to propose solutions for better health care for all. The process was governed by an independent body designated the Committee for Advancement of the Healthcare System, consisting of five subcommittees in various areas of interest:

- health care system governance
- administering health care
- health care financing
- pharmaceuticals
- patients' rights protection.

Through an open web-platform, any interested party (citizen or legal entity) could submit an identified problem or proposed solution that was deliberated in sessions of the particular subcommittee. Each of the five subcommittees prepared a report based on the analysed contributions and discussions, resulting in a compilation of contributions – the *Green book in health*, an 800-page-long book concerning the committee's work. A concluding chapter comprises the opinions of many stakeholders about different issues in the area of public health (see section 2.3.3) (Chichevalieva & Milevska, 2012).

This process was seen by many as a good example of participatory democracy in health care and an opportunity to engage the public in decision-making. At the same time it can serve as a template for other processes of reforms that require a wide participatory approach for understanding, addressing and negotiating the various interests of its stakeholders.

2.9.6 Patients and cross-border health care

Cross-border care is regulated and available to citizens through bilateral agreements with many countries in Europe, and in particular with its neighbouring countries, which makes it possible to receive care abroad within the health insurance under certain circumstances. A system of reimbursement of costs for treatment abroad is well established that reimburses care not available in the country, with prior approval by the HIF regarding the level of costs (see section 3.3.1, *Depth: how much of benefit is covered?*). Although the level of utilization of treatments abroad is high, the demands for cross-border care are not fully satisfied due to limited funding and strict rules for obtaining care in the economically most affordable centres abroad. Many patients still seek health care services abroad, most often specific surgeries, at their own expenses.

3. Financing

Following a continuous decrease of total health expenditure as share of GDP in the 1990s and 2000s from nearly 9% to 6.5% in 2014, it reached the EU13 average. In contrast, public sector health spending as a share of total health expenditure increased significantly from the early 1990s up to 69.2% in 2013, but dropped to 63.3% in 2014, which is below the average of public spending in the EU13 (72.9% in 2014) (WHO Regional Office for Europe, 2016b).

Before independence in 1991, the country had an SHI system based on the principles of mutuality, solidarity and citizens' participation. The Law on Health Insurance of 2000 laid down the foundations for a semi-independent centralized SHI system, based on a third-party payer model, and administered by a single HIF, which acts as the main purchaser of health services. The main sources of funding for health insurance are contributions from salaries and transfers from other agencies for specific population groups (e.g. unemployed, retired persons, persons receiving social assistance), constituting 90% of total HIF revenues. Due to the rising official unemployment rate in the country (29% in 2013) transfers from the Employment Service Agency to supplement the HIF budget have increased since the mid-2000s (State Statistical Office, 2015).

The HIF purchases health services as specified in the broad basic benefit package, which covers almost all treatments and rehabilitation services. Changes in the Health Insurance Law in 2009 made all residents eligible for compulsory insurance coverage, provided proof of citizenship, and has since led to near-universal coverage of the population. Although out-of-pocket spending has decreased in the last decades, it still represents a substantial portion of total health expenditure, mostly consisting of co-insurance and direct payments for private hospital services, pharmaceuticals and medical devices. Conservative estimates by the WHO show that out-of-pocket spending accounted for approximately 36.7% in 2014 of total health expenditure (WHO Regional

Office for Europe, 2016b). Whereas the HIF is responsible for purchasing health services, the Ministry of Health finances capital investments in public health providers (facilities and medical equipment), and implementing preventive and public health measures through the annual health programmes directly financed from the Central Budget.

Since 2009, hospitals have been paid using a combination of DRGs and conditional budgets (since 2011). Ambulatory services are reimbursed using global budgets and a capped fee-for-service payment system. Primary care providers are paid based on a mix of capitation and achievement of preventive health targets. In 2012 pay-for-performance (P4P) was introduced for all physicians in secondary and tertiary care with the aim of improving overall quality and efficiency of care but so far only serves as a remuneration scheme and does not yet measure any quality aspects or outcomes.

3.1 Health expenditure

Although total health care expenditure in the former Yugoslav Republic of Macedonia has increased in absolute numbers (as measured as health expenditure per capita in US$ purchasing power parity), it constantly fell as a percentage of GDP from the late 1990s. Between 1995 and 2003 total health expenditure still slightly increased from 8.4% to 9.2%, reaching a peak of 10% in 1998. Over the following 5 years it decreased considerably to approximately 7% in 2007 where it remained relatively stable, reaching 6.5% in 2014 (see Table 3.1 and Fig. 3.1).

Although overall health expenditure in terms of GDP decreased, government spending on health as share of total health expenditure (through the Ministry of Health budget) saw a significant increase in the last two decades. It rose from 59.6% (1995) to slightly above 69% in 2008 and 2013, but fell again to 63.3% in 2014. Simultaneously, there was a considerable decrease in private expenditure from 40.5% in 1995 to 30.8% in 2013, which increased in the subsequent year to 36.7% (Table 3.1). This overall increase of public expenditure and decrease of private spending is partially explained by a larger volume of health services delivered by new private providers that are covered by the HIF (see section 2.3.10).

Table 3.1

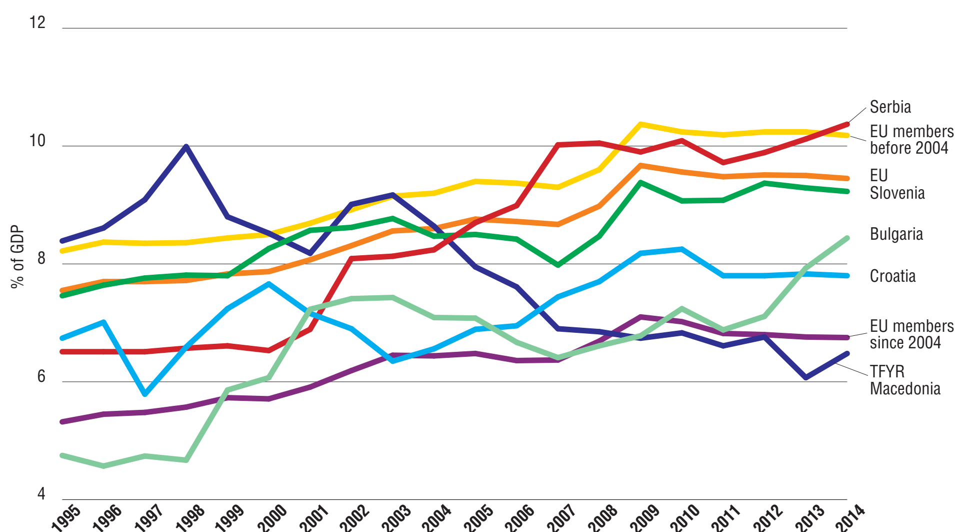
Trends in health expenditure in the country, 1995–2014 or latest available year, WHO estimates

Expenditure	1995	2000	2005	2013	2014
Total health expenditure per capita, PPP (in US$)	418.9	532.1	653.0	757.3	851.2
Total health expenditure as % of GDP, WHO estimates	8.4	8.5	8.0	6.1	6.5
Public sector expenditure on health as % of total expenditure of health, WHO estimates	59.6	56.2	60.1	69.2	63.3
Public sector expenditure on health as % of total government spending, WHO estimates	13.3	15.0	14.7	13.2	12.9
Government health spending as % of GDP[a]	5.0	5.0	5.0	4.6	4.6
Out-of-pocket payments as % of total expenditure on health	40.5	43.8	39.9	30.8	36.7
Out-of-pocket payments as % of private expenditure on health	100.0	100.0	100.0	100.0	100.0

Source: WHO Regional Office for Europe, 2016b.
Notes: [a]World Bank Indicators 2016; PPP: Purchasing power parity.

Fig. 3.1

Trends in total health expenditure as a share (%) of GDP in selected countries, 1995–2014, WHO estimates



Source: WHO Regional Office for Europe, 2016b.
Notes: GDP: Gross Domestic Product; EU: European Union.

From an international perspective, with 6.5% of GDP spent on health in 2014 the country was far below the average of 9.5% in the European Union Member States at July 2013 (EU28 countries). However, it ranked only slightly below the average of 6.8% of GDP spent on health in the EU13 and of 6.6% of GDP spent in countries from the Commonwealth of Independent States in 2014 (Fig. 3.2).

Longitudinal data in Fig. 3.1 indicate that total health expenditure as share of GDP continuously decreased from 2002, widening the gap between the former Yugoslav Republic of Macedonia and EU averages as well as neighbouring countries. The main explanation for the significant decrease of total health expenditure as share of GDP since 2002, was the steep growth of GDP per capita in the country since 2002. It increased from US$ 1980 (current US$) in 2002 to US$ 5453 in 2014. GDP per capita thus almost tripled while health spending per capita (in current US$) only doubled from US$ 178.16 in 2002 to US$ 353.93 in 2014 (World Bank, 2016).

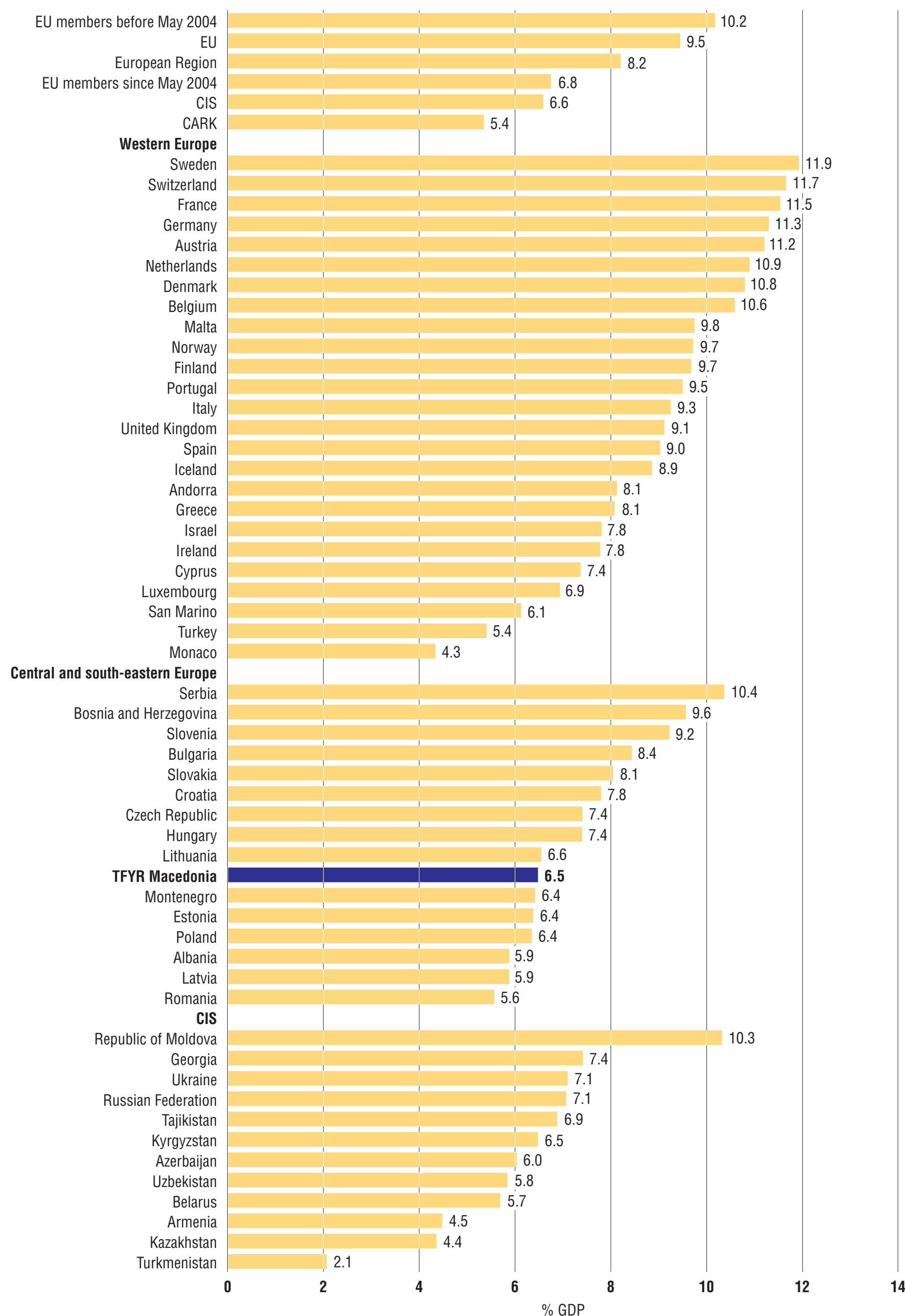
Comparing per capita spending on health with that of other countries in the WHO European Region shows that the country is at the lower end. With US$ 851 purchasing power parity per capita, the country was nearly the lowest in the Central and Eastern European region, ahead only of Albania. Per capita spending was also well below the averages of the Commonwealth of Independent States (US$ PPP 1233.1) and the EU13 (US$ PPP 1595.9) in 2014 (Fig. 3.3; WHO Regional Office for Europe, 2016b).

Similarly, health expenditure from public sources as a share of total health expenditure in the country was only 63.3% in 2014, which was the fifth lowest in Central and south-eastern Europe. It was also below the average of WHO European Region but similar to Latvia, which belongs to the EU countries with very low public spending in health (Fig. 3.4).

In terms of distribution of the health care budget by type of services, primary health care (including GP care, primary dental care and gynaecological care) and specialist-consultative services accounted each for 30% of HIF expenditure; inpatient care amounted to 36% of HIF expenditure, and the remaining 4% of the health service expenditures accounted for treatment abroad and orthopaedic devices in 2015 (HIF, 2016b).

Fig. 3.2

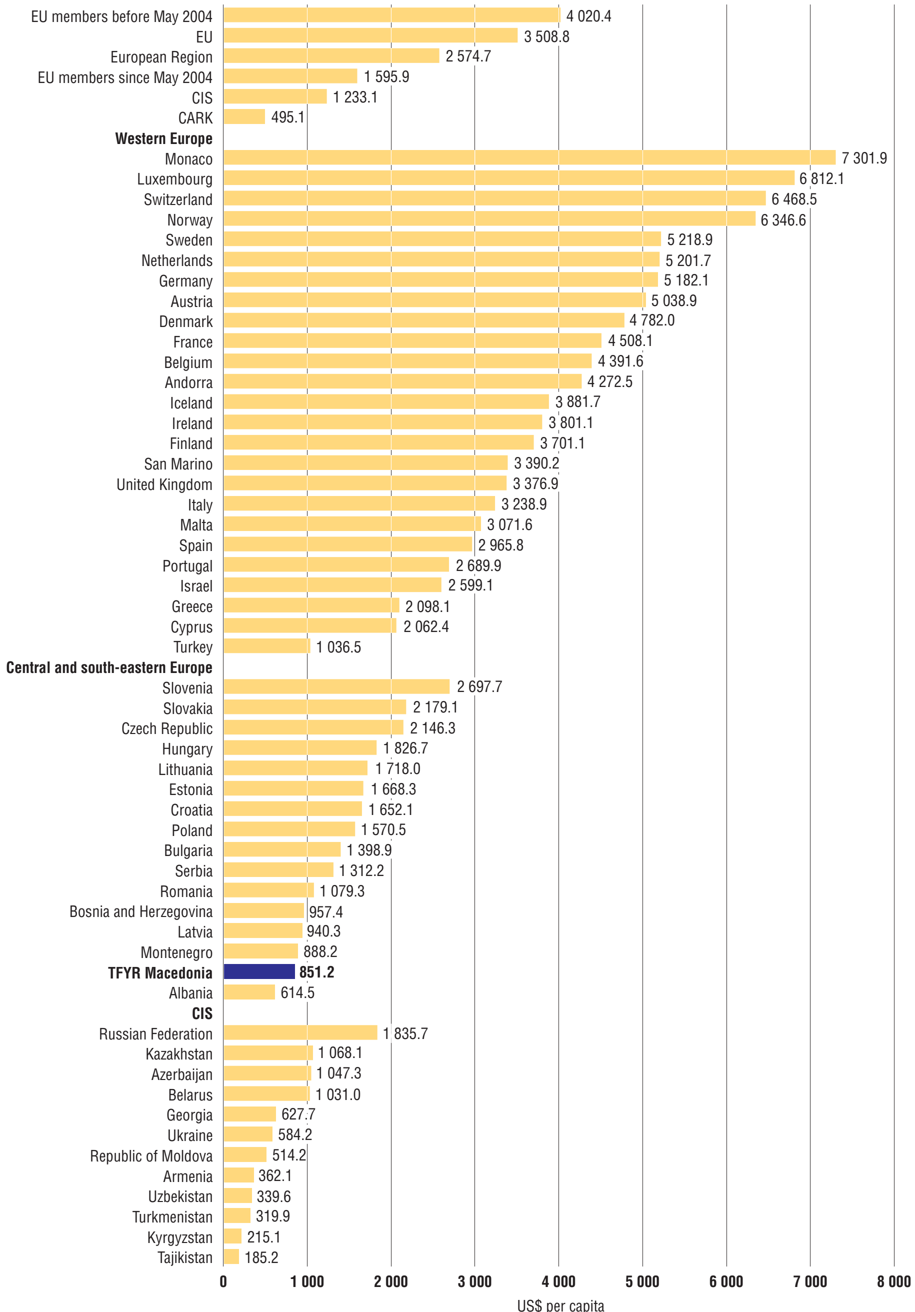
Total health expenditure as a share (%) of GDP in the WHO European Region, 2014



Source: WHO Regional Office for Europe, 2016b.
Notes: EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

Fig. 3.3

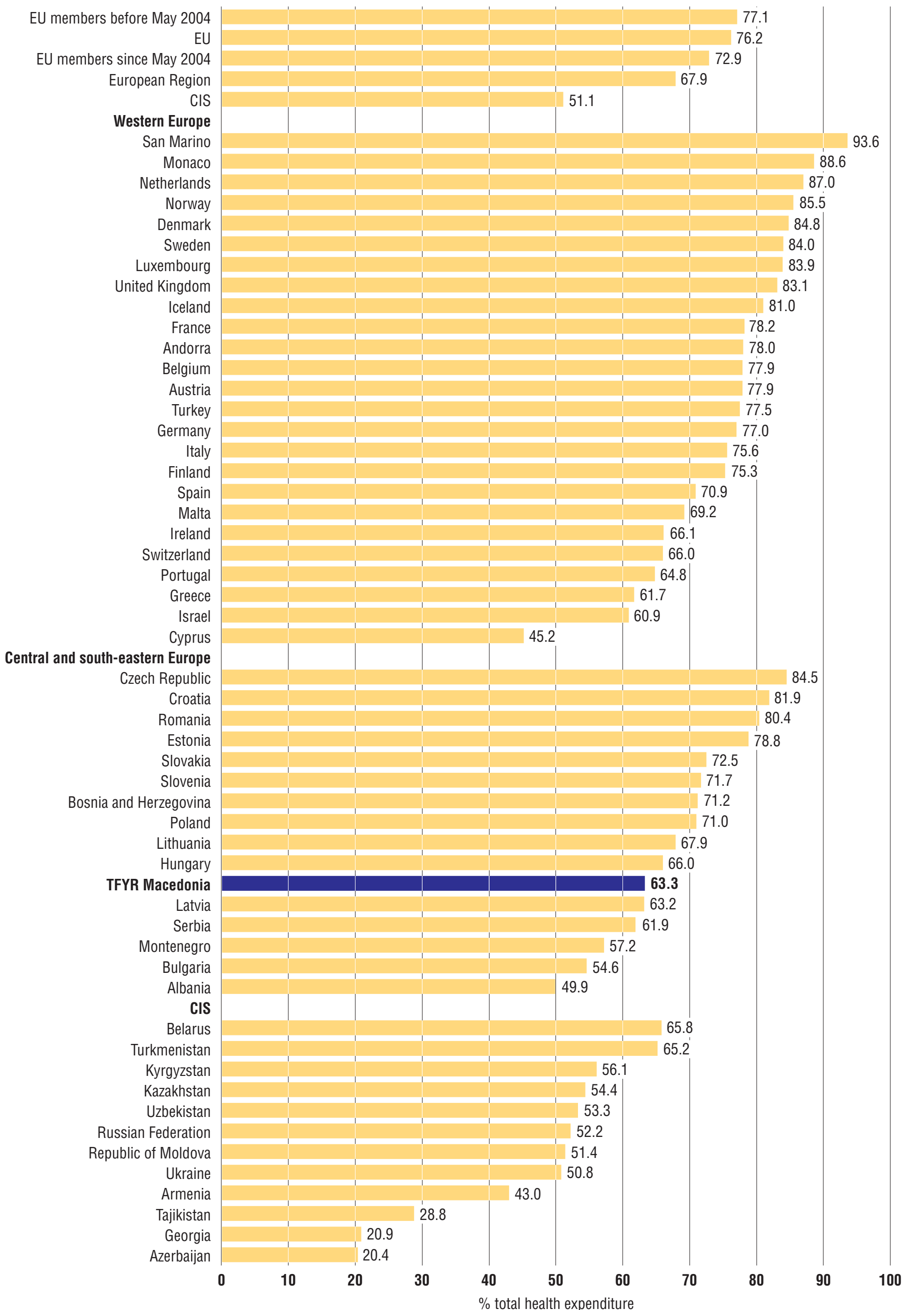
Health expenditure in US$ purchasing power parity per capita in the WHO European Region, 2014, WHO estimates



Source: WHO Regional Office for Europe, 2016b.
Notes: EU: European Union; 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, 2014, WHO estimates



Source: WHO Regional Office for Europe, 2016b.
Notes: EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

In terms of health care spending by service programme and institution, 56.8% of total HIF budget was spent for services provided by public providers (including general, clinical and specialized hospitals university clinics and institutes, rehabilitation centres, non-hospital units, health centres, in-hospital pharmacies). In all, 27.8% was spent on services provided by private providers including GPs, pharmacies, specialists and private hospitals. The latter may provide services upon declared demand by the Ministry of Health if public provision is deemed insufficient. This entails cardiac and eye surgery as well as specialist services that are reimbursed by the HIF (Table 3.2; World Bank, 2015).

Table 3.2

HIF health expenditure by service programme and institution as share of total HIF expenditures, 2013

Service programme	**%**
Health administration and insurance	2.2
Sick and maternity leave	9.9
Health services	
Treatment abroad	0.9
Orthopaedic devices	2.1
Public providers	56.8
Private providers	27.8
General practitioners	11.3
Pharmacies	9.4
Specialists	2.6
Dialysis	0.4
Cardiac surgery	3.2
Eye surgery	0.3

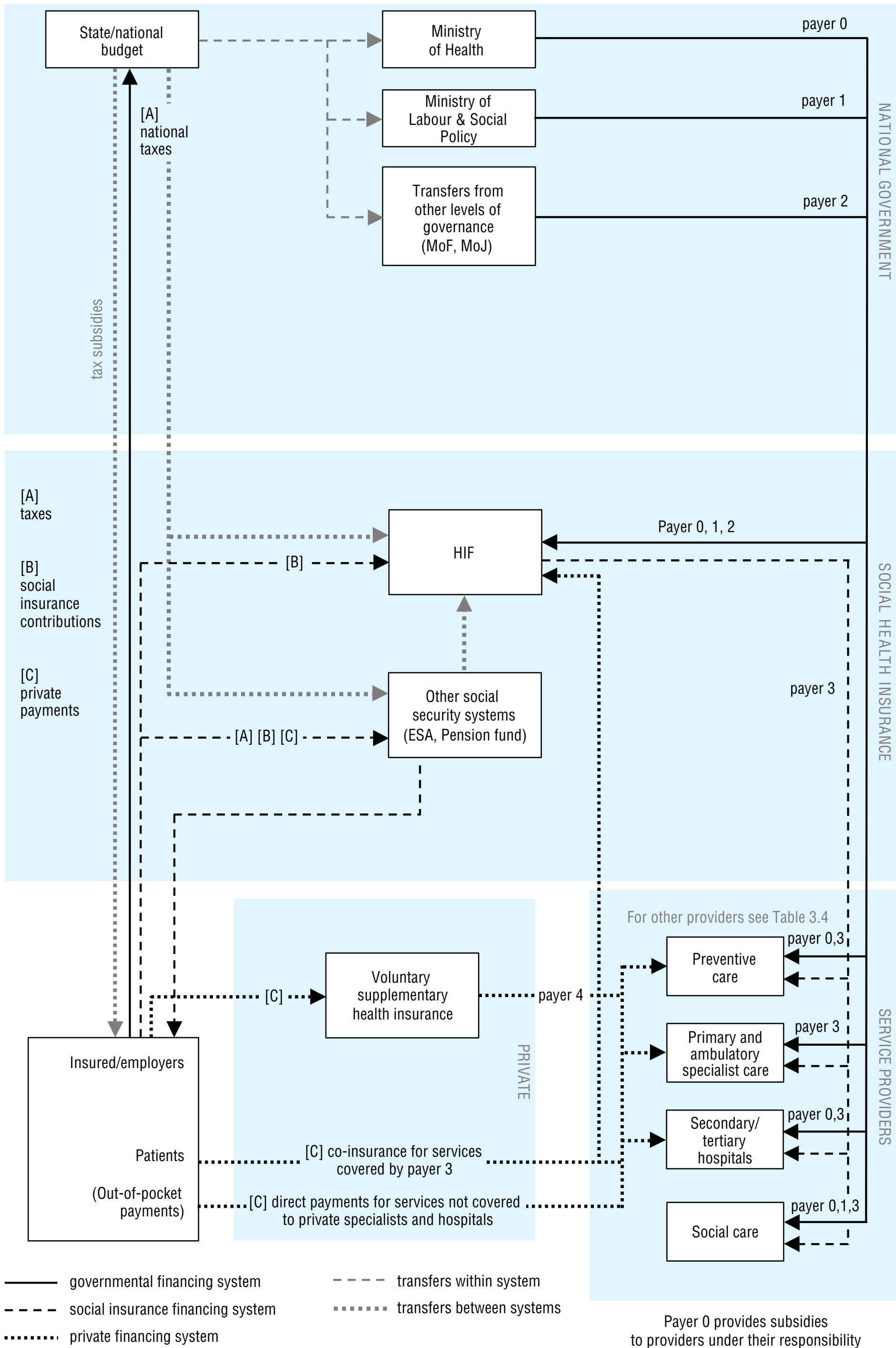
Source: World Bank, 2015.

3.2 Sources of revenue and financial flows

The health system is financed from three main sources: (1) compulsory insurance contributions (wage-based contributions), (2) transfers from the central budget (general taxation) and other agencies, and (3) out of pocket expenditures directly paid by the citizens, whereas a minor percentage of the health care financing can be attributed to donors and non-governmental service delivery organizations. Voluntary health insurance plays a negligible role as a source of revenue (see section 3.5). A substantial portion of public spending on health is channelled through the HIF, which pools the insurance contributions and purchases services on behalf of its insured persons. In 2014, the adopted budget for the HIF amounted to €369.7 million. Since 2006 it increased from €270 million with an average growth rate of 5.5% and with the highest annual increase in this period in 2008 (19.5%), whereas in the following year it shrank by 2.4%, as a result of the global financial crisis (HIF Annual reports 2008 to 2015; HIF, 2009, 2010, 2011, 2012a, 2013b, 2014, 2015, 2016b).

In 2013, the HIF obtained its revenue from the following sources: compulsory, wage-based SHI contributions (89%, out of which 84% are financed by only 27% of the total insured population, indicating that a small group finances most health costs), transfers from other agencies (7%), central budget transfer (1%), revenue from co-insurance at facility level (2%) and other revenues (1%) (HIF, 2014; World Bank, 2015). Contributions from other agencies include contributions for covering economically inactive citizens, such as contributions for the unemployed who receive compensation from the Employment Service Agency, contributions for families who receive permanent social assistance from the Ministry of Labour and Social Policy, contributions for pensioners from the Pension and Disability Fund, transfers for maternity leaves from the Ministry of Labour and Social Policy, and contributions for other unemployed and persons who are not insured under existing eligibility provisions (see Table 3.3). A detailed disaggregation of the total health expenditure by sources of finance (HIF contributions, retirement fund, general taxes etc.) is not available.

Fig. 3.5
Financial flows



3.3 Overview of the statutory financing system

3.3.1 Coverage

Breadth: who is covered?

The long-standing SHI system historically maintained very high levels of health insurance coverage. The legal basis for entitlement is provided in the Law on Health Insurance, which defines 17 different categories of eligibility for health insurance, including employed, self-employed, farmers, retired persons, dependents of the employed, persons receiving social assistance and unemployed persons registered with the Employment Service Agency (see Table 3.3). In 2009, a new category further broadened the population base including all persons that are not eligible under the previously existing 14 categories but being qualified based on citizenship. Despite this policy change, the number of insured persons declined from 1.84 million in 2011 to 1.78 million in 2013 most likely as a result of the improvement of the registry within the HIF and removal of duplicated records as well as emigration abroad as the net migration rate of –4.7 per 1000 (2012) population indicates. The SHI coverage rate equals 85% in 2013. However, this rate is based on the total population size estimated with results of the last official census of 2002 and hence cannot be considered as a true coverage rate.

Despite this uncertainty with regard to SHI coverage, it is widely assumed that there are still large coverage gaps in Roma communities. This is mainly due to the lack of certificates of their citizenship or residency, which resulted from the disintegration of the Socialist Federal Republic of Yugoslavia, and the impossibility of travelling to their countries of birth to obtain the necessary documents. Due to this situation, which has already perpetuated for three generations, many of this population group are uninsured due to incomplete documentation to support their legal eligibility.

Contributions for the newly added category (entitlement based on citizenship) are paid directly from the central budget, through the Ministry of Health. This insurance group includes individuals that are economically active but do not have a permanent job, or have a household income less than €3000 per annum. Those with annual household income higher than €3000 have to pay the contributions themselves if they want to have health insurance coverage. This contribution threshold is updated every year in line with the average monthly salary in the previous year. The Law on Health Insurance (2002) has provisions for family dependents, extending dependent coverage to spouses and children up to 18 years of age, or up to 26 years of age if they are enrolled in higher education.

Table 3.3
Categories of insured persons by eligibility in 2012 (n = 1 744 237)

Insurance code	Description	% of all insured persons in 2012
1	Employed persons and their dependents	48.2
2	Persons holding citizenship of the former Yugoslav Republic of Macedonia employed on the territory of the country in international and foreign institutions or diplomatic missions	0.1
3	Self-employed persons	1.1
4	Individual farmers	2.3
5	Religious officials	0.1
6	Temporarily unemployed persons receiving unemployment benefits	1.7
7	Persons holding citizenship of the former Yugoslav Republic of Macedonia who work abroad that are not insured in the country of employment	0.0
8 and 9	Pensioners and users of financial benefits under the pension and disability regulation	18.5
10	Persons receiving permanent social assistance; refugees; persons under subsidiary protection; persons accommodated in shelter homes and social protection facilities (nursing homes); persons who had status of parentless children until age of 18 years; persons who are victims of family violence; etc.	0.5
11 and 12	Persons holding foreign citizenship employed on the territory of the country in foreign or international institutions and diplomatic missions; foreign students studying in the country	0.0
13	Persons in detention or prison and minors in correction facilities	0.0
14	Persons that participated in the Second World War and war veterans; family members of the war veterans; civilian victims of the Second World War; exiled persons, and other similar categories defined by law	0.1
15	Persons holding citizenship who are not insured under any of the categories 1 to 14 above	26.6
Additional categories for insurance		
16	Additional health insurance (occupational health and safety)	0.1
17	Persons insured under the provisions of international conventions	0.8

Source: HIF Annual Report 2012.

Scope: what is covered?

Compulsory health insurance is based on the principles of solidarity, equity and effective use of the pooled funds. The basic benefit package, defined in the Law on Health Insurance of 2000 as a standard package across the entirety of covered population, includes almost all treatment and rehabilitation services and a positive list of pharmaceuticals and medical aids. As broadly as it is defined, the basic benefit package that is nearly fully covered by the HIF (with exemption of co-insurance) does not specifically list included services, but rather, defines a negative list of excluded services, such as aesthetic surgery and above-standard accommodation at hospitals. In 2007, the Ministry of Health, established a trilateral committee consisting of representatives of the HIF and the Chamber of Medical Doctors that determine this package, based on assessed

necessary levels of care and available funding within the pooled budget. In this process, Health Technology Assessment is not used for deciding which are the most cost-effective services to be included or which services to exclude.

Separate from health insurance, citizens are entitled to preventive health services, which are provided to everybody irrespective of health insurance status. These services covered by the Ministry of Health's funded preventive programmes include postnatal home visits for newborns, immunization and health check-ups of school children, treatment of rare diseases, tuberculosis and HIV prevention and control and other public health services (see section 5.1.1).

In addition to the covered health services, the insured persons are entitled to compensations for sick leave and maternity leave, which is covered by the Ministry of Labour and Social Policy and administered through the HIF. The paid sick leave amounts to 70% of the average income in the previous 6 months (85% in the case of malignant neoplasms) and is paid partly by the HIF and the employer, in different percentages and schemes depending on the disease category. For maternity leave the cash benefit of 100% of the average salary in the previous 6 months is provided for a duration of 9 months, starting either 1 month before delivery due date or from the day of delivery. The cash benefits for caring for a sick child are also the responsibility of the HIF, as are the benefits for absence due to blood, tissue or organ donation.

Other benefits of the health insurance package include orthopaedic and other medical devices and aids, subject to various criteria, as well as compensation for transportation to care providers under certain conditions (e.g. transportation to dialysis centre).

Some health services are solely obtained on an out-of-pocket basis, by direct payments of individuals for items such as over-the-counter medicines, aesthetic surgery and services provided by private providers who do not have contracts with HIF or services that are not covered in the HIF contracts with the respective institutions (see section 3.4.2).

Depth: how much of benefit is covered?

The average cost-sharing of health services provided under the compulsory health insurance (in the form of co-insurance, see section 3.4.1) is approximately 8% of the health services value as estimated by the HIF, which suggests that over 90% of services are covered and paid by the HIF's pooled funds. However, this does not include other direct payments, such as for health services obtained from private health providers or for pharmaceuticals that are either not on the positive list or are obtained with a private prescription (see section 3.4.2).

Before 2013, the cost-sharing for treatment abroad was a maximum of 20% of the invoice of the foreign provider, given before approval for treatment from the HIF; in 2013 this amount was limited to €200 per treatment.

3.3.2 Collection

HIF contributions are obligatory for employees and are automatically deducted from the gross amount that they receive from the employer. For enrolment into health insurance an application has to be filed, either by the employer, the self-employed person or the eligible individual. In 2009, a new system was introduced that pays the gross salary to the employees from which social insurance contributions are automatically deducted and transferred to the respective social insurance funds. In the previous system employers could separate the social insurance contributions and net salary and evade payments.

The Public Revenue Office is responsible for collecting personal income tax, employment agency fees and social contributions for health insurance and pensions. The collected revenues together with other revenues are pooled in the HIF account, administered by the State Treasury. The HIF manages the budget within the governmental treasury system. The contribution rates are regulated in a separate Law on Compulsory Social Contributions. The social insurance system is mostly proportional; everybody pays the rate provided in the Law on Social Contributions (see Table 7.1). Different from statutory SHI systems in many European countries, contributions are not shared by employees and their employers (Doetinchem, Carin & Evans, 2010). Contributions to the health insurance are solely paid by employees.

Between 2009 and 2011, the Law on Compulsory Social Insurance and its amendments stipulated a decrease of the contribution rate from 9.2% to 6% of gross wages. These regulatory changes were part of a broader policy framework to improve the business environment in the country by lowering the overall taxation for companies. However, due to the economic slowdown and decreased fiscal capacity, this reform was postponed and the decrease of the contribution rate was halted at 7.3% in 2011 (see section 7.2.2).

3.3.3 Pooling of funds

The HIF pools the funds in its account at the Ministry of Finance, which approves its annual budget. With regard to the revenues, the Ministry of Finance estimates the expected amount from contributions and other inflows in accordance with macroeconomic developments (e.g. employment rate,

inflation) and fiscal policies. The HIF negotiates the level of health spending on in-kind and cash benefits for the next year. The single-purchaser model that was retained, despite initiatives for establishing another insurer based on the experiences of other transition countries (Czech Republic, for example), has proven to be very beneficial. It prevented fragmentation of resources and helped contain costs of contracting, as it prevented multiple contracting between providers and insurers. Moreover, in such a small market as in the former Yugoslav Republic of Macedonia this would have led to low bargaining power of the insurers compared with a single payer and it would probably have increased the overall administrative and operating costs of health insurance.

In parallel, the Ministry of Health negotiates its annual budget with the Ministry of Finance. The Ministry of Health describes the public health and prevention programmes that need to be financed for all citizens (regardless of their health insurance status), preventive measures for certain diseases and subsidies to cover co-insurance for certain vulnerable patients such as those with renal failure, cancer, rare diseases and diabetes, as well as children up to 1 year (see section 5.1.1). Although public health centres and hospitals are obliged to provide these services as specified in the programme, they are not always able to cover their expenditures for delivered services due to delayed payments from the Ministry of Health. For instance, in 2014 the total debt of the Ministry of Health to the health facilities for the realized measures under these programmes amounted to €5.6 million, which was transferred as obligation to the preventive programmes for 2015. Most affected by these unpaid receivables are university clinics and specialized hospitals with some institutions having unpaid invoices that exceeded their annual allocated budgets in 2012 (World Bank, 2015).

3.3.4 Purchasing and purchaser–provider relations

Each year the HIF publishes tender invitations for purchasing health services from different providers. All tenders are open and any interested health care provider that meets both legal and tendering criteria can participate. Since 2013, with the introduction of the Health Network (Law on Health Care 2012), the HIF is obliged to sign contracts and purchase services only from providers that have obtained a certificate from the Ministry of Health and were recognized as part of the Health Network (see Box 2.1). Every year before signing the contracts, the HIF negotiates with the respective professional chambers (medical, pharmaceutical and dental) on the contract details both in legal and financial

terms, including contractual obligations and rights of the HIF and providers, scope and volume of services as per adopted clinical guidelines, payment levels and methods and penalties. Contracts with primary care providers are renewed annually or every second year.

Contracts for secondary and tertiary level services are granted after analysis of the submitted business plans by each health provider, including plans for type and volume of health services, plans for goal attainment and other required documentation. The HIF negotiates the conditions and volumes for each service. Usual practice is that the planned volume for specific services is distributed among providers that fulfil the conditions, however the allocation formula is not strictly defined.

The new Law on Health Care in 2012 enabled the HIF to contract services from private providers at secondary and tertiary levels. If services are not available from the public health care institutions (e.g. cardiac surgery), the Ministry of Health can allow contracting of private providers outside the Health Network, which then takes place through a bidding process announced by the HIF (see Table 3.2 for HIF expenditure for these services and section 6.1.2).

3.4 Out-of-pocket payments

Apart from public sources of financing, the health care system is also financed through private out-of-pocket spending on health care. These include co-insurance for services included in the benefit package, direct payments to specialized private clinics, private hospitals and physicians, payments for pharmaceuticals and medical devices that are not on the positive list or are obtained with private non-HIF prescription, as well as informal payments. Out-of-pocket spending represents a substantial portion of total health expenditure with the latest estimates at 36.7% in 2014 (WHO Regional Office for Europe, 2016b) and accounts for nearly 100% of all private sources of health expenditure. The only available information on out-of-pocket spending comes from household surveys (see section 7.2.1). Especially, informal payments are very difficult to estimate and it is assumed that total out-of-pocket spending may be much higher than the above conservative estimates.

3.4.1 Cost-sharing (user charges)

To ensure wide access to the health system at primary level, services in general practice, paediatrics, gynaecology and dentistry are obtained free at the point of delivery. However, some user charges apply for specific services of gynaecologists and dental care in a form of co-insurance.

As specified in the Law on Health Insurance, insured persons share in the cost in the form of fixed co-insurance rates at all other levels of care. The maximum co-insurance rate is set at 20% of the total cost of health services or prescribed medicines that are on the positive list of drugs and at 50% for certain orthopaedic devices, both with an absolute maximum threshold of €98 per service to be paid, after which cost-sharing requirements are waived (see Table 3.4).

An annual limit for cost-sharing per insured person is set at 70% of average salary with more loose caps for certain vulnerable population groups[4] to protect them from further impoverishment. However, with the global financial crisis and the declining economic conditions in the country, further preventive mechanisms were introduced in 2011, such as waiver for co-insurance for certain vulnerable groups, including persons receiving social assistance, pensioners above age of 70 years, children under the age of 1 year, disabled persons who need care from a third person, persons with serious mental health illnesses. Some forms of exemptions are also available for employed persons with income less than the average national salary, or for those that have already paid co-insurance over the annual limit of 70% of average monthly salary.

The co-insurance rates are regulated in the HIF Rulebook that lists all services and the respective co-insurance rate amounts. The rationale for introducing co-insurance was to prevent overutilization of services (excluding GP and paediatrics services), especially considering the reduced health insurance contribution rates (reduction from 9.2% to 7.3% in 2011), and to enable a wider scope of service covered by the HIF.

Treatment abroad is nearly fully covered by the HIF, subject to previous statement of necessity by the "Consilium medicum" opinion of doctors and approval by a specialized committee. A maximum co-payment of €200 for approved treatment abroad is paid by the patient. This measure, introduced in 2013, replaced the previous policy of maximum of 20% co-insurance rate for approved treatment abroad.

[4] Although different documents consider slightly different listings, in general the vulnerable groups of interest to all are: children, elderly, people at social risk, people living under the poverty line and representatives of some minorities such as Roma.

3.4.2 Direct payments

Direct payments are payments made by health care consumers for services not included in the benefit package, or uncontracted, private services. Most direct payments are payments for services that are provided by private specialized clinics and hospitals, which either do not have contracts with the HIF or have contracts only for limited types and volume of services. The privately purchased services are mainly diagnostic and surgical interventions (see section 3.3.4).

In the early 2000s, the largest portion of direct payments was divided between gynaecology services (pregnancy monitoring, delivery and newborn care) and cardiac surgery interventions. Since 2010, privately purchased services through direct payments have included also eye surgery, gastroenterological diagnosis, and surgery and neurosurgery, due to an increased supply of private services provided by newly opened hospitals of various specializations.

Citizens usually pay direct payments if they are not insured, or if they choose not to use their health insurance to bypass waiting times, if they prefer to purchase better quality of service, or if they wish to be examined by a specific physician (without referral). Direct payments also have to be made for medicines not on the positive list, or obtained with private prescription not covered by the HIF (see also Table 3.4).

3.4.3 Informal payments

As in many health systems with high out-of-pocket expenditures, informal payments constitute an inevitable portion. The 2010 World Bank Life in Transition Survey identified that over 40% of the population made informal payments to receive health services, with over 20% stating that they "usually" or "always" made these kinds of payments (World Bank, 2015).

Informal payments are especially made for expensive diagnostic or medical procedures, services that are limited in volume or have long waiting lists. These shortcomings were partially addressed through expansion of medical equipment availability, increased efficiency of resource use through the MyAppointment system and improved availability of services. Although some studies have confirmed the above as types of informal payments for health services (Donev, 2009; EBRD, 2011), there are no studies or data on the actual magnitude of these hidden costs for health care.

3.5 Voluntary health insurance

In 2012, a new Law on Voluntary Health Insurance was enacted (Official Gazette, no. 145/2012), providing regulations for supplementary health insurance or private voluntary insurance. The law is under the authority of the newly established Agency for Insurance Supervision. Legal provision does not allow individuals to opt out of the compulsory health insurance, so the voluntary health insurances remain supplementary. No data are available on voluntary health insurance uptake but anecdotal evidence suggests that voluntary health insurance until now only plays a minor role in the insurance market.

3.6 Other financing

Minor funding comes from external sources, which between 2003 and 2015 have been dominated by the grants from the Global Fund to Fight AIDS, Tuberculosis and Malaria. Since 2003, the country has received US$ 30 million (approximately €21.4 million) in two grants for HIV/AIDS (70% of funding) and two grants for tuberculosis (30% of total funding). Until 2014, US$ 25 million have been disbursed and used for diagnostics, curative and preventive activities for these two diseases.

3.7 Payment mechanisms

3.7.1 Paying for health services

This section focuses on payment mechanisms for services from different health care providers. The HIF uses a mix and combinations of several payment methods ranging from retrospective payment (capitation, fee-for-service), global budgets, activity and case mix based payment methods (DRGs) as well as performance-based payments (P4P, conditional budgets and preventive health targets). Table 3.4 lists the different payment mechanisms by type of provider and payer and describes the level of cost-sharing in each.

Table 3.4

Payment mechanisms by type of provider and payer

Providers / Payers	HIF	Ministry of Health/ Ministry of Labour and Social Welfare Policy	Co-insurance	Direct payments
Public health services	Through preventive/ public health packages	Budget for services transferred through health programmes (Ministry of Health)	n/a	n/a
Primary health care (GPs, gynaecologists, paediatricians)	C + Fulfilled preventive health targets		Up to 20% on specific gynaecological services	100% by uninsured
Ambulatory specialist	GB/capped FFS		Up to 20% on some services[a]	100% by uninsured, or without referral
Other ambulatory	GB/capped FFS		Up to 20% on some services[a]	100% by uninsured, or without referral
General (acute) hospitals	DRG + conditional budgets + P4P		Up to 20% on some services[a]	100% by uninsured, or without referral
Clinical and specialized hospitals	DRG/service groups + conditional budgets + P4P		Up to 20% on some services[a]	100% by uninsured, or without referral
Dentists	FFS		Up to 20% on specific services[a]	100% by uninsured and in dental clinics not contracted by HIF
Pharmacies	Reimbursement		Up to 20% on some medicines[a]	Medicines not on positive list, Over-the-counter medicines, other
Social care		S (Ministry of Labour and Social Welfare Policy)		

Source: Author's compilation based on Law on Health Care and related rulebooks.
Notes: C: capitation; DRG: diagnosis-related groups; FFS: fee-for-service; GB: global budgets: P4P: pay for performance (only for services covered by HIF); S: social transfers; n/a: not applicable; [a] Based on the Positive list of drugs.

Primary health care

With privatization of publicly owned primary health care facilities starting in 2005, all primary care providers in the public sector including GPs, paediatricians, dentists, gynaecologists, school medicine doctors and pharmacists (Gjorgjev et al., 2006) have been obliged to open private offices and sign a capitation-based contract with the HIF for payment per registered patient (see section 2.3.10 and 6.1.2 *Amendment of Law on Health Care: primary care reforms*).

The capitation is calculated based on the age of the insured person, a defined minimum and maximum number of insured persons per practice and achievement of preventive health targets. There is additional compensation for doctors in less densely populated rural areas to ensure geographical access. In general, the capitation-based contract includes two major payment categories:

70% fixed capitation fee based on the number of registered patients paid at the end of the month, and the remaining 30%, which is conditional upon fulfilment of the preventive health targets of primary health care and is paid at the end of each quarter (see section 5.3.1 and Table 5.1 for detailed structure). These targets are reviewed on a regular basis based on rational prescribing through budget ceilings (6%), attendance at four educational targeted trainings (4%), rational referrals (4%) and preventive services and early detection of deformities in children, malignancies, cardiovascular diseases, diabetes and renal disorders in adults (combined 16%) (HIF, 2014). For gynaecologists, the preventive health targets include Papanicolaou tests, microbiological testing and colposcopy; for dentists in preventive health care they include control check-ups, removal of soft tissues and plaque, and preventive covering of new-grown teeth in children. The preventive health targets are planned, implemented and reported at the beginning of each trimester.

In 2010, the HIF introduced a package system for outpatient health services provided in the 34 Health Centres that are located in the major municipalities and provide emergency care, immunization, preventive medical examinations, community nursing and home visiting following hospital discharge. This package system is based on the ceiling of volume of services provided, and it is paid retrospectively to the Health Centres based on invoicing of services delivered.

Ambulatory specialist services

For outpatient specialist services at primary level in Health Centres and in hospitals at secondary level, mixed payment methods of global budgets and capped fee-for-services apply (Table 3.4). The HIF negotiates contracts based on annual volume of services for a predefined sum of the contract, based on both previous year's performance and expected service volume for the up-coming period. The health providers send monthly invoices for the provided health services. However, public and private providers are treated differently. Public hospitals are paid a fixed amount throughout the year but in case of lower invoicing, their agreed contract can only be decreased by a maximum of 20%. If the invoiced amounts exceed the allocated budget, additional funding will be approved only if other public providers have not used up their allocated funds. Private health providers are only paid the invoiced amounts.

Inpatient care

New payment methods were introduced by the HIF in cooperation with the hospitals. In 2007, the new hospital payment system was introduced based on the concept of DRG, which was adopted from the Australian AR DRG 5.2

model. After 2 years of preparatory activities and adaptation of the DRG model to the health system, in 2009, all 59 public inpatient facilities started using the DRG coding for hospital cases (HIF, 2009). All inpatient facilities with an HIF contract are obliged to code and report on every admission and treatment which they send electronically to the web application (the grouper) (HIF, 2013a). Although financing of hospitals is still not completely linked to the DRG performance, this process is advancing each year by adjusting providers' budgets based on the results and lessons learnt from the DRG reports. Currently, type and volume of services provided by individual providers as coded by DRGs serve as an approximation of hospital outputs, which is then compared to previous historical budgets. The first DRG results indicated that some hospitals provided more services than the respective budget received, whereas other hospitals had budget estimates that exceeded their service delivery capacity. The DRG has been implemented by the government with the aim to improve efficiency, transparency and equal distribution of health care resources. It should enable payment of medical staff according to the number of cases treated. Over the years, the DRG implementation has improved, but challenges remain, specifically, in measuring the quality of care and aligning the DRG system with the integrated health information system, newly developed by the Ministry of Health in 2013.

Since its implementation, the model has been constantly upgraded, with the number of DRG codes increasing from 665 to 676. In April 2011, the HIF introduced additional payments for complex patients admitted at the tertiary level, amounting to 10% of the realized DRG invoice (case-mix adjustment). These additional payments were also introduced for hospitals specialized in paediatric and acute psychiatric care amounting to 25% of the billed services. This reflects the complex demands placed on these institutions as they provide more diagnostics, have longer patient stays and higher expenses for medical treatments. In 2012, the DRG system of payment was also implemented in the four private hospitals for the HIF-contracted services, such as cardiovascular and ophthalmological surgery.

However, some services, such as critical care, long-term mental care, rehabilitation and emergency services were not included in the DRG system. In mid-2010, the HIF therefore introduced service groups for payment of these outpatient health services provided in inpatient settings. The service groups consist of 18 different segments of health care, including ophthalmology, orthopaedic services, psychiatry, dentistry, dermatology, physical medicine,

hearing and speech, and neurology. In addition, in April 2012, the HIF adopted prices for different hospital packages of services, which are not included in the DRG system, such as for chronic mental disorders and chronic care.

To further strengthen its strategic purchasing role and to discourage hospitals from providing low-quality or improperly planned health services, the HIF introduced so-called "conditional budgets" for public secondary and tertiary level clinics and hospitals in 2011. These budgets, set by the HIF, define the volume of services to be delivered by each public inpatient care provider. Payments are released quarterly based on delivered and invoiced services. In practice, a strong conditionality within budget allocation is not used by the HIF. These budgets are adjusted each trimester, i.e. reduced if the level of delivered services is lower than planned and in return increased to the maximum defined ceiling if the hospital performs better in the following trimesters. This enables the HIF to control the maximum expenditure for health services, but at the same time to retain funds that have not been spent (see section 7.4.2).

In 2012, the HIF set aside approximately €5 million through conditional budgets that were re-allocated to 11 clinics, 15 hospitals and two institutes, compared with only nine clinics at its start in 2011. The HIF budget of 2014 planned €9.6 million for conditional budgets, which for an increased number of hospitals will include transplantations of kidneys, bone marrow and pancreas, vascular and thoracic surgeries, phaco-cataract surgery, medication therapy for cystic fibrosis, hormones for growth and rheumatoid arthritis, dialysis care, and cochlear implants. The initial impact of conditional budgets was increased motivation among health providers, reduced waiting times for certain services and increased cooperation with patients' groups, all of which contributed to better analysis and planning of future service-purchasing strategies. However, a more detailed, long-term analysis would be required to evaluate whether this policy intervention had an impact on the service quality in public hospitals and the overall health status of the population in the country.

With all of the above policy adaptations to the purchase of health services, the HIF has improved the basis for valuation of the health services and defining of their costs, which is crucial for properly defining type and volume of health services that can be purchased on all levels of care.

Pharmaceutical care

Since independence and the liberalization of the health care market, the number of pharmacies in the country increased rapidly in the early 1990s and has continued to grow. Currently, with the exception of clinical pharmacies that function within public hospitals, all pharmacies are private and 804 have signed

a contract with the HIF for dispensing medicines under health insurance. These contracts include combined dispensing quotas and caps that are revised every year by the HIF. The overall HIF budget for pharmaceuticals in 2011 amounted to €40 million, with the general trend of reducing prices and increasing volumes of dispensed medicines. The highest increase of volume of medicines dispensed (45%) was observed in 2009, when the positive list of drugs was expanded with new medicines that were previously obtained fully out-of-pocket.

In November 2011, an international price comparison model to calculate national ceilings for prices of pharmaceuticals was adopted. It was part of the reform of cost rationalization for certain pharmaceuticals with prices higher than in neighbouring and EU countries. The ultimate goal of the reform was not only to reduce overall pharmaceutical spending, but to negotiate better prices for medicines and create fiscal space for the inclusion of additional essential medicines in the positive list. The model for determining the reference pricing of pharmaceuticals is based on pricing systems of four comparator (reference) countries (Bulgaria, Croatia, Slovenia and Serbia). Three criteria are taken into consideration:

- reference price (wholesale) in the comparator country
- average price of comparator countries
- the level of the average price adjusted for a coefficient of purchase parity power.

As a result of this policy change, by the end of 2013, prices were reduced for a total of 415 generic drugs and 337 innovative drugs, yielding total savings of €7.3 million (Ministry of Health, 2014). However, it has not yet been evaluated whether the policy had an impact on the overall volume of pharmaceutical dispensing. It is speculated that the reduced pharmaceutical prices led to an increase of dispensing and utilization of medicines.

In addition, the Ministry of Health started centralized procurement of optical lenses and plans to also procure the most frequently used and expensive drugs as well as orthopaedic devices.

The pharmaceuticals at secondary and tertiary levels are procured directly by the health care institutions and are invoiced to the HIF as part of the services provided to the patient. According to the HIF treasury data, secondary and tertiary level providers have spent approximately 3.6 billion MKD (approximately €60 million) on pharmaceuticals in 2015, which represents a 1% increase compared with 2014 (HIF 2016b).

3.7.2 Paying health care professionals

The payment of the health care workforce differs across the three levels of care, both in terms of remuneration methods and rates. Self-employed GPs, dentists, gynaecologists and paediatricians in primary care work as entrepreneurs and own their practice. Their revenue is mainly generated through capitation payment and through fee-for-service (for dentists) (see Table 3.4). This revenue can be allocated at their discretion for salaries, medical and other equipment and supplies, facility rental, and maintenance.

For all other care providers, payment depends on whether they are employed by public or private institutions. In the public domain providers at all care levels must adhere to the Collective Agreement, defining the rules of remuneration. This includes the minimum salary, and the conditions for higher pay based on education and experience, and severity of working conditions. In the private health care sector, the internal rules of the provider define salaries, often remuneration levels are not disclosed to the public or to official statistics.

Attempts to implement pay for performance

With the aim of providing incentives to improve the efficiency and quality of health services covered by the HIF, the Ministry of Health introduced P4P in 2012 to remunerate physicians and to move away from fixed salaries (see Table 3.4). P4P is based on mandatory reporting of each procedure that physicians perform in a specially developed web-based application. Data are analysed at provider level for the purposes of comparison, control and payment of providers. The central database is housed at the Ministry of Health. The system measures individual physician's performance (in terms of output) as reported by doctors. In essence, the model measures individual doctor's workload as the quantity of the interventions delivered within 1 month. Hence, it does not measure the performance of clinical teams, departments or hospitals, nor does it integrate other performance measures such as quality, teamwork, complexity of the interventions or any hospital outcome measures (Lazarevik & Kasapinov, 2012). As such, the introduced model still resembles more of a modified fee-for-service scheme. Since the beginning of 2014, hospital scorecards were introduced but the full-scope P4P has yet to be developed and implemented.

This new payment model, piloted in the hospital settings first, received mixed acceptance. Although it was accepted in departments dealing with chronic and long-term care, it was not well perceived in acute and emergency departments. In particular, it was seen as infeasible to implement certain

indicators in practice, such as a threshold of service volume to be provided, because this does not properly account for the longer and more intensive care needed by some acute and critical patients and so endangers quality of care at the expense of quantity of services.

4. Physical and human resources

Inheriting a very large infrastructure of widely accessible primary health care facilities and overstaffed hospitals from the preindependence period, the number of hospital beds decreased by 17.5% between 1990 and 2013. At the same time, the number of hospitals increased. This development is also a result of privatization both in primary and secondary care and of the political objective to maintain a wide network and access to health care throughout the country. Despite a decrease in the average length of hospital stay as a result of the introduction of DRG in 2009 and the low number of beds per 1000 population, hospitals operate far from full capacity. Indeed, the bed occupancy rate of 59.7% in 2013 is one of the lowest in Europe.

The Health Network, established in 2012, encompasses public and private providers at all levels that provide services based on concessions. The Health Network is used as a planning and distribution instrument for health care and public health services as well as physical and human resources.

In 2013, an electronic health data management system was introduced with a number of modules that facilitate scheduling of appointments, patient documentation and tracking of interventions and prescriptions. This new e-health system (MyAppointment) led to substantial reductions in waiting times and is widely used by health care professionals.

In the last two decades the numbers of doctors, dentists and pharmacists increased by nearly 29%. By European standards, the number of physicians in the country was relatively high with 2.8 per 1000 population in 2013. The nurse-to-population ratio increased as well but more slowly and remains well below the European averages and those in other countries in the region, which is most probably a result of the lack of licensing and accreditation of the profession as well as migration. Also, doctors are attracted by better working conditions abroad and in the private sector, which the government tries to reverse with special programmes.

4.1 Physical resources

4.1.1 Capital stock and investments

In 2013, there were in total 73 health care facilities providing inpatient care, divided into four major categories: 14 general and four clinical hospitals[5] at secondary level, 28 tertiary level university teaching clinics and institutes, 20 specialized hospitals and rehabilitation centres providing longer-term treatment and specialized care (tuberculosis treatment, psychiatric care) and seven nonhospital units[6] (Institute of Public Health, 2015). Of these 73 in-patient facilities, 65 are categorized as hospitals (see also section 5.4).

The new Law on Health Care adopted in 2012 and amended in 2013 (Official Gazette, no. 10/2013, consolidated text) established the Health Network, which determines types of health care services provided in certain geographical areas, physical and human resources and hospital bed stock for each medical specialty and type and amount of diagnostic and other medical equipment for each level of health care services. The Health Network integrates preventive, primary, secondary and tertiary health care service provision, and includes public and private health care facilities. Providers can submit applications to become part of this network. Successful applicants will be certified by the Ministry of Health, and contracted by the HIF. The main aim is to ensure equal geographical access to health care, particularly to hospital care.

There are general hospitals in all major towns and three clinical hospitals in the major cities (Bitola, Tetovo and Shtip), whereas all tertiary health care services are provided solely in the capital city of Skopje. Geographical distribution of hospital facilities can be considered equitable, but specialized services and medical knowledge are concentrated in the capital (see section 5.4).

Capital investments in the publicly owned health infrastructure are secured through the Ministry of Health or direct project financing by the government with funds coming from the central budget or from donors and creditors. As part of the 2006 health reform, in the past several years, the government has used central budget and loans from international institutions to invest in renovation of public health facilities as well as in modern medical equipment. A loan of the Council of Europe Development Bank of €23 million for the period 2010

[5] General and clinical hospitals provide health care at secondary level distinguished only by types of diagnostic and treatment services offered (e.g. certain surgical services available in clinical hospitals are not provided in general hospitals).

[6] Nonhospital units are inpatient facilities functioning mainly as maternity facilities, being part of the Health Centres.

to 2014 was obtained for improving health facilities and health care quality in 20 publicly owned health institutions, including renovation and replacement of obsolete medical equipment. In 2012, 17 health facilities were opened in remote rural areas where health facilities had not been previously available.

Public–private partnerships were also addressed with the 2006 health reform. The Ministry of Health established several working groups to examine and explore public–private partnerships for providing dialysis services, ophthalmological surgeries, health information systems, etc. Based on the recommendations of the working groups, the government proposed and the parliament adopted the Law on Concessions and other forms of public–private partnerships (Official Gazette, no. 7/2008) in 2008. Starting in February 2014, the first public–private initiative in the health sector was realized with a concession for dialysis services to 1300 dialysis patients.

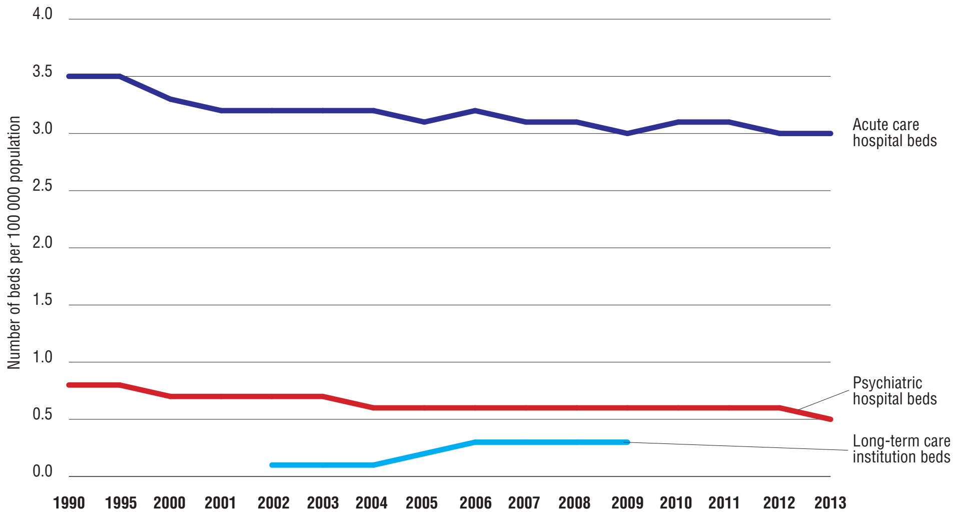
4.1.2 Infrastructure

Both publicly and privately owned facilities provide hospital care. The number of hospitals increased from 50 hospitals in 1990 to 65 in 2013, mostly as a result of private initiative and capital investment (see section 2.3.10 and Table 5.2). In 2013, there were 3.2 hospitals per 100 000 population, a figure that is higher than the EU average (3.0), but lower than for example Finland (4.8), France (5.3) and Germany (4.0) (WHO Regional Office for Europe, 2016a).

However, in the same period, the number of hospital beds decreased by 17.5% from 11 119 in 1990 to 9177 in 2013. Fig. 4.1 shows the trend of beds in acute hospitals, psychiatric hospitals and long-term care institutions since 1990. A steady downward trend can be observed in bed numbers in acute care and psychiatric care. From an international perspective, the number of acute care beds of 3 per 1000 population in 2013 is below the EU average (3.6 per 1000 population) and well below that of countries in the region (see Fig. 4.2). The numbers of beds in long-term care have increased from 17.2 per 100 000 population (2005) to 44.9 per 100 000 population (2013), which is, however, still far below the EU average of 749.5 and the EU13 average of 370.1 in 2013 (WHO Regional Office for Europe, 2016a).

Fig. 4.1

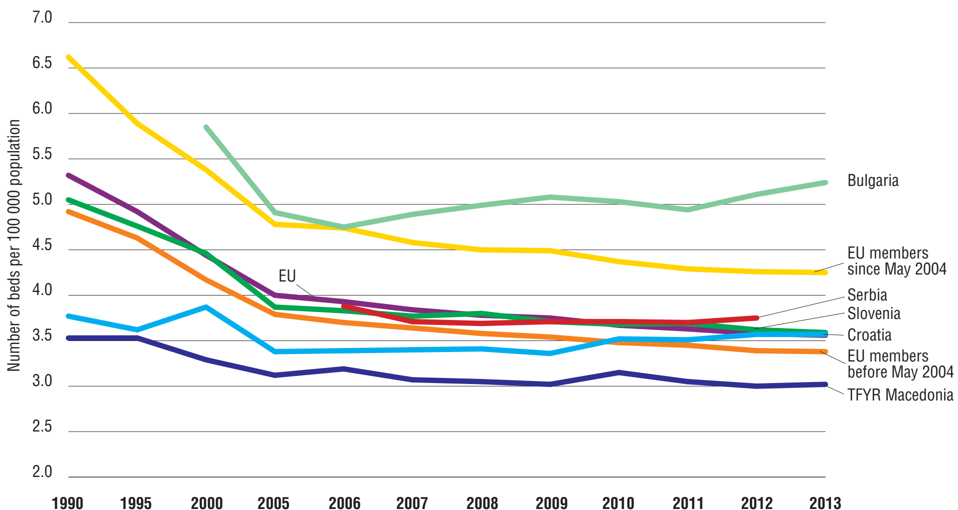
Mix of beds in public and private acute care hospitals, psychiatric hospitals and long-term care institutions in the former Yugoslav Republic of Macedonia, per 100 000 population, 1990 to latest available year



Source: WHO Regional Office for Europe, 2016a.
Notes: Long-term care institution beds: 2002 is first year of data.

Fig. 4.2

Beds in public and private acute care hospitals, per 100 000 population in the former Yugoslav Republic of Macedonia and selected countries, 1990 to latest available year

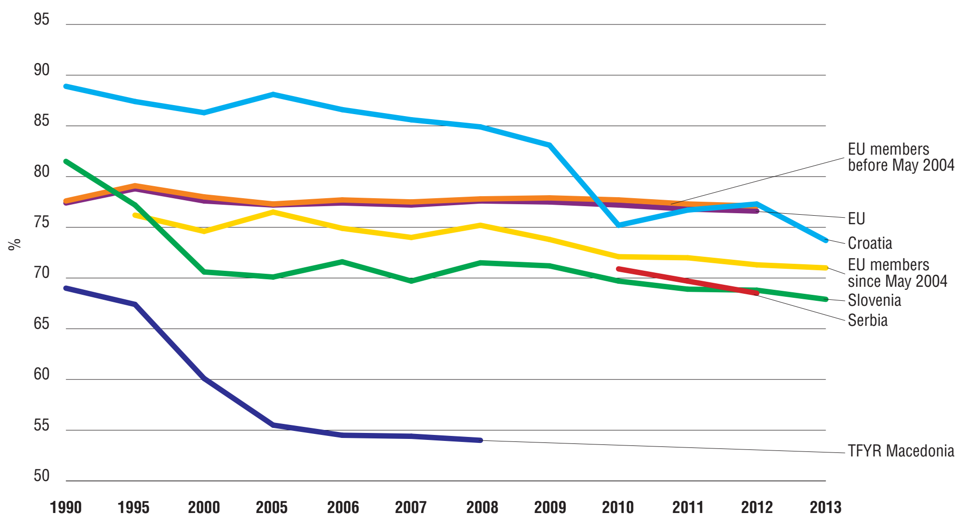


Source: WHO Regional Office for Europe, 2016a.
Notes: Croatia 1990 is from 1993, European Union Member States before May 2004 (EU15) 1990 is from 1991.

Despite the low proportion of acute care beds, bed occupancy rates are very low compared to other countries. Bed occupancy decreased from 69.0% in 1990 to 54.0% in 2008 and increased slightly to 59.7% in 2013 (Fig. 4.3). This overall decrease of bed occupancy rates may be partly the result of slowed rationalization of hospital capacities and the declining average length of stay in all hospitals from 15.4 days in 1990 to 7.9 days in 2013 (Fig. 4.4). The average length of stay for acute care hospitals further decreased to 5.7 in 2012 and to 5.5 in 2013 (HIF 2014). This fall may be partly attributed to the introduction of the DRG reform in hospitals in 2009. In international comparison, however, average length of stay ranks slightly higher than the EU13 average in 2013 (Fig. 4.3). The main reasons for these comparatively long average lengths of stay are unnecessary prolonged stays due to diagnostic procedures and lack of post-secondary (follow up) services provided at community level or at home (Institute of Public Health, 2015).

Fig. 4.3

Bed occupancy rates (%) in the former Yugoslav Republic of Macedonia and selected countries, 1990 to latest available year

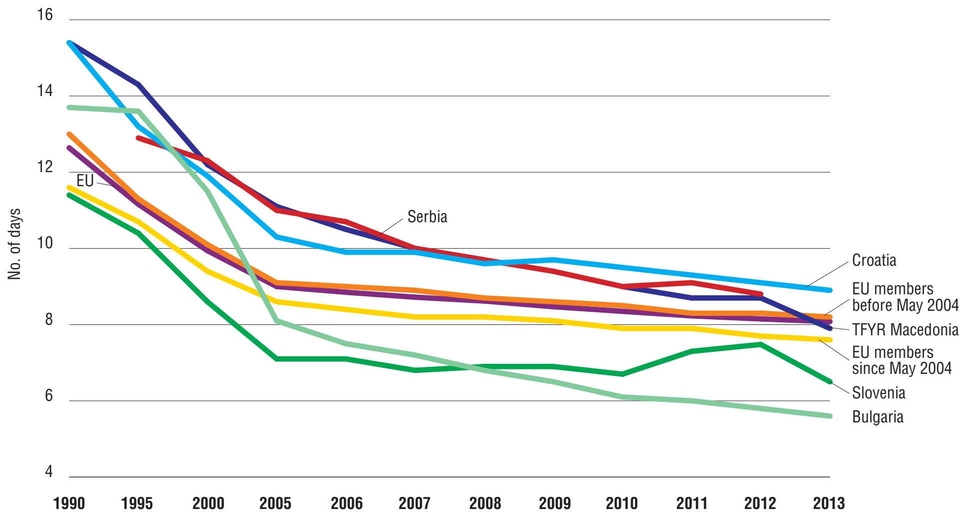


Source: WHO Regional Office for Europe, 2016a.
Note: Serbia is not participating in the Joint Eurostat/OECD/WHO Europe data collection on health care activities (according to WHO European Health For All Database indicator definitions).

Geographically, the emergency care units are evenly distributed throughout the country, regardless of whether the service is cost-effective in a given region. In 2013, 24/7 emergency care units had 252 full-time medical teams consisting of a physician and nurse, working as part of the 34 Health Centres.

Fig. 4.4

Average length of stay in the former Yugoslav Republic of Macedonia and selected countries, all hospitals, 1990 to latest available year



Source: WHO Regional Office for Europe, 2016a.
Note: Serbia 1995 is from 1998.

4.1.3 Medical equipment

In general, medical equipment and capital investments in the publicly owned health facilities are funded by the central budget, through the Ministry of Health. As part of the continuous investment in public health infrastructure since 2006, some new magnetic resonance imaging units, computed tomography scanners and other basic equipment with a total value of over €100 million were procured for public general and clinical hospitals. In addition, equipment mainly for paediatrics and otolaryngology with a value of €650 000 was procured for the respective university clinics. The emergency care units were equipped with 69 new ambulance vehicles and one special paediatric vehicle in 2012, with emergency services provided by 252 medical teams (Lazarevik et al, 2015). Despite these investments, medical facilities in the country are still relatively poorly equipped with diagnostic imaging technologies compared with neighbouring countries (see Table 4.1). This probably relates to a very slow uptake of investment in health infrastructure after 1991.

Table 4.1

Number of diagnostic imaging technologies per 100 000 population, 2013

	CT scanner	MRI units	Gamma cameras	Angiography units	Mammography units	PET scanners
Bulgaria	3.4	0.7	0.3	1.1	2.7	0.0
Greece	3.5	2.4	1.4	1.1	6.0	0.0
Hungary	0.8	0.3	1.1	0.4	1.5	0.0
The former Yugoslav Republic of Macedonia	0.7	0.3	0.1	0.3	1.1	0.0
Romania	1.0	0.4	0.2	0.3	0.7	0.0
Slovenia	1.2	0.9	0.8	0.8	1.7	0.1

Source: Eurostat, 2016a.
Notes: CT: computed tomography; MRI: magnetic resonance imaging; PET: positron emission tomography.

The Health Network intends to make efficient use of expensive medical equipment and health technology. This is supported by the MyAppointment system, established in 2013, which enables more transparent service provision, increase of efficiency of health resource utilization and reduction of waiting times (see section 2.7 and section 4.1.4).

4.1.4 Information technology

The 2006 health reform also introduced an electronic health data management system, which should enable collection of timely health data, maximize the utilization of health care equipment and reduce waiting lists for certain interventions in public facilities. The waiting lists for magnetic resonance imaging were up to 18 months, mainly as a result of poor appointment management and multiple appointments by the same patients in different institutions. The MyAppointment initiative was created to establish a system that would not only enable equal distribution of patients throughout the available infrastructure, but also would avoid patients making multiple appointments. Within 6 months of its launch in October 2012, waiting times were reduced to a maximum of 30 days. In 2013, the Ministry of Health decided to expand the existing web application to include all interventions and examinations that require appointment and have waiting lists. The implementation of this national appointment system was divided into several stages: it started with online real-time appointments for tertiary care services, which were later complemented with electronic appointment of examinations and interventions by a chosen doctor, transfers from secondary to tertiary level of care, and e-prescriptions involving pharmacies at primary care level. Surgical interventions are not included in the system, for which the surgeons make planning and appointments based on the assessed situation and need of the patient.

The current modules and functionalities of MyAppointment include:

- electronic appointment of interventions and examinations
- e-diary of medical interventions and services
- electronic patient record (e-record)
- patients' and doctors' portal
- 35 separate health registries and reports required by law
- HIF-interoperable module for data management
- registry of health professionals
- registry of health institutions and equipment.

In September 2015, the government enacted a decision to transform the MyAppointment initiative into a separate Directorate for e-health under the Ministry of Health. The main tasks of the Directorate for e-health are to provide continuing upgrade, optimization and management of the integrated health information system. Further, the Directorate is responsible for maintenance of a number of registries, including a registry of health facilities, a registry of health service providers and health associates at all levels of care, and a registry of health services, interventions and procedures. It is also in charge of completing the initiative of an integrated electronic health record for every patient. Using data from the integrated health information system, the Directorate for e-health is proposing health policies based on evidence to the Minister of Health. As a result, several key projects have been implemented, among others "Our specialist", "Rural doctor" and "Mobile Pharmacy" (Ministry of Health, 2015).

Initiated in 2006 the Electronic Health Card aims to modernize patients' access to their health e-records (see below). The personalized electronic health card, prepared and issued by the HIF, itself contains the personal data of the patient, and provides access to health data of the patient that is stored in a centralized database. Until June 2014, 1.5 million electronic health cards were issued, covering 80% of insured persons. The HIF will extend this service to all insured individuals. In the future, the electronic health card will also enable the use of e-prescriptions and e-referrals.

The electronic referral (e-referral) is the first major component launched within the electronic health data management system. Specialist and inter-specialist referrals, as well as hospital admissions referrals, laboratory referrals and X-ray diagnostics have been in use since the end of 2013.

The use of e-prescriptions envisages paperless prescriptions with doctors prescribing medications electronically and uploading prescriptions to the national database. The e-prescription will be immediately accessible in any pharmacy upon patient's request. The data are withdrawn from the central drug registry, reducing the possibilities for errors in prescribing or dispensing. In the future, both prescribing and dispensing should be authorized by digital signature of the doctor and pharmacist. This will allow the HIF to monitor overall drug dispensing, consumption and expenditure as well as drug availability in community pharmacies based on real-time demand. Overall, it is expected to contribute to better evaluation of policies and necessary changes thereof.

The e-record is an electronic patient file, comprising all the interventions that the patient has undergone within the system, including initial diagnoses, e-referrals, e-prescriptions and confirmed diagnoses and treatment regimens. The e-record is part of MyAppointment, and will be linked to the electronic health card when all insured individuals become part of the system. The advantage of the e-record and MyAppointment is that GPs are able to constantly monitor their patients and their medical records (see also Fig. 5.2).

The e-diary is a dynamic database of all medical interventions and services generated from various modules of the system. Although its goal is mainly to monitor medical interventions and appointments, the e-diary also allows the monitoring of health service use per patient as well as physician performance and utilization of equipment in the health system.

The e-treasury was introduced in 2011, as an upgrade to the 2010 treasury system. The e-treasury of public health institutions is a transparent system of payments made to public health institutions. Located at the HIF and independent from the central state treasury, its main purpose is to secure efficient and meaningful use of financial resources by public health institutions, while having a real-time overview of financial flows. The adoption of an e-treasury implies that better financial planning and management, purposeful use of health resources, transparency of payments and improved financial and budget discipline of the public health institutions, as well as savings on banking service fees, are possible. However, it also requires not only hardware and software capacity for both HIF and public providers but also skills of public providers for preparing and adopting annual financial plans. This requires training in information technology skills and on e-data exchange, which is itself a challenge that needs continuous monitoring and improvement to maintain a fully functional e-treasury.

The 2006 health care reform also addressed the availability and accessibility of pharmaceuticals. The Ministry of Health together with the HIF introduced a Drug and Medical Aids Registry and Inventory in 2014/2015 with data on drugs including dosages, packages, prices, manufacturers and valid co-authorizations for sale and distribution in standardized format. The system keeps track of manufacturing, import, spending and stock in pharmaceutical companies, public health institutions and pharmacies by collecting its data from manufacturers, prescribers and dispensers of pharmaceuticals. This should enable the monitoring of available drugs and medical aids and will coordinate procurement with available stocks at predetermined maximum prices.

Furthermore, a new semi-automated system compares drug prices with reference countries to set national drug prices (see section 3.7.1, *Pharmaceutical care*). If drugs are more expensive than abroad the system recommends a price reduction.

4.2 Human resources

The total number of individuals working both in public and private institutions in the health sector in 2013 was 28 664, 5 804 of whom were physicians, 1705 dentists and 930 pharmacists. There were a further 13 176 paramedical workers with medical college or high school qualifications, 1888 health associates, 345 workers with lower educational qualifications and 4816 administrative and technical workers (State Statistical Office, 2015). However, the exact number of the practicing and available health workforce is not known because the system is based on self-reported data from health care facilities, without formal obligation of private health providers to report the data to the Institute of Public Health.

4.2.1 Health workforce trends

Trends in supply of health care professionals vary among the different health professions. Overall, according to the national statistics, the number of medical doctors, dentists and pharmacists in the country shows a steady increase of 29% between 1990 and 2013, from 5998 to 8439 persons. The proportion of physicians has closed the gap (2.8 per 1000 population in 2013) with the EU13 average (2.8 per 1000 population) and is similar to that of Croatia (3.0), but still well below the EU average and some other countries in the region in 2013 (Table 4.2 and Fig. 4.5). The number of physicians and specialist physicians varies across the regions. In primary care, the number of physicians per 1000 insured persons varied between 0.8 in the Eastern region to 1.0 in the North-eastern region in 2015 (HIF Annual Report, 2016b).

Table 4.2

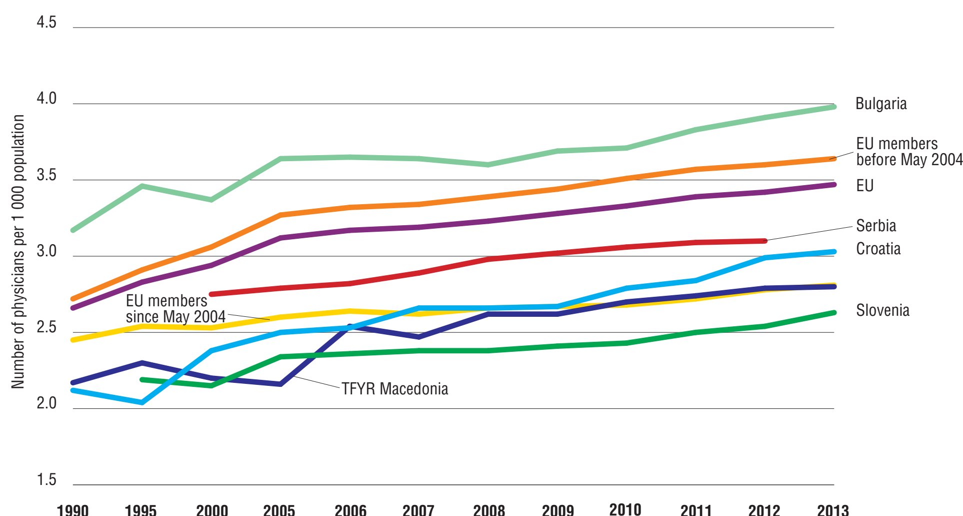
Health workforce in the country per 1000 population, 1990–2013

	1990	1995	2000	2005	2011	2013
Physicians	2.2	2.3	2.2	2.2	2.7	2.8
Specialist physicians	0.8	0.8	0.8	0.8	0.8	n/a
Nurses	n/a	n/a	3.6	3.4	4.2	4.2
Midwives	0.7	0.8	0.7	0.7	0.6	0.6
Dentists	0.6	0.6	0.6	0.7	0.8	0.8
Pharmacists	0.2	0.2	0.2	0.4	0.4	0.4

Source: WHO Regional Office for Europe, 2016a.
Note: n/a: Not available.

Fig. 4.5

Number of physicians per 1000 population in the former Yugoslav Republic of Macedonia and selected countries, 1990 to latest available year



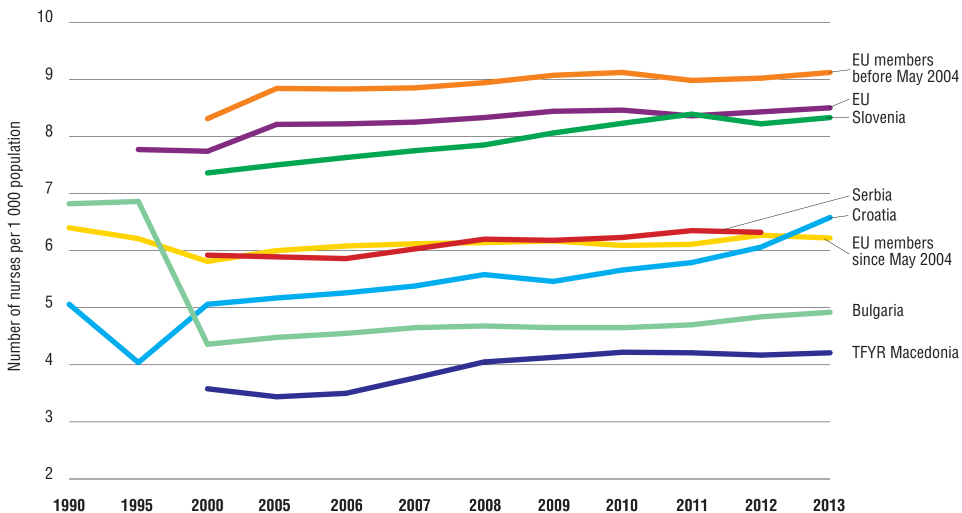
Source: WHO Regional Office for Europe, 2016a.
Note: Serbia 2000 is from 2003, Slovenia 1995 is from 1998.

The country still does not have a comprehensive study or strategic plan for development of human resources in health. In 2016, with technical assistance from WHO, the Ministry of Health started to develop a national profile on human resources in health that assesses the availability of human resources, level of education and specializations, as well as projections on future needs. This study will be used as a starting point for the development of the national strategic document on human resources.

The nurse-to-population ratio has increased slowly since 2005, reaching 4.2 per 1000 population in 2013, but remains well below the European averages and those of other countries in the region (see Fig. 4.6). Although there is no study available on the reasons for this low level of supply, explanations include the migration of nurses to other countries, as well as the still missing licensing and accreditation systems for the nursing profession (see section 2.8.3). However, the issue requires further attention in research and collection of evidence to inform health workforce policies. In contrast to the slow but steady increase of nurses, the number of midwives per 1000 population decreased considerably from 0.7 in 1990 to 0.6 in 2013 (Table 4.2). In absolute terms, the number of community patronage nurses has increased from 278 in 2011 to 357 in 2013 based on a comprehensive study undertaken in 2011 (UNICEF, 2012).

Fig. 4.6

Number of nurses per 1000 population in the former Yugoslav Republic of Macedonia and selected countries, 1990 to latest available year

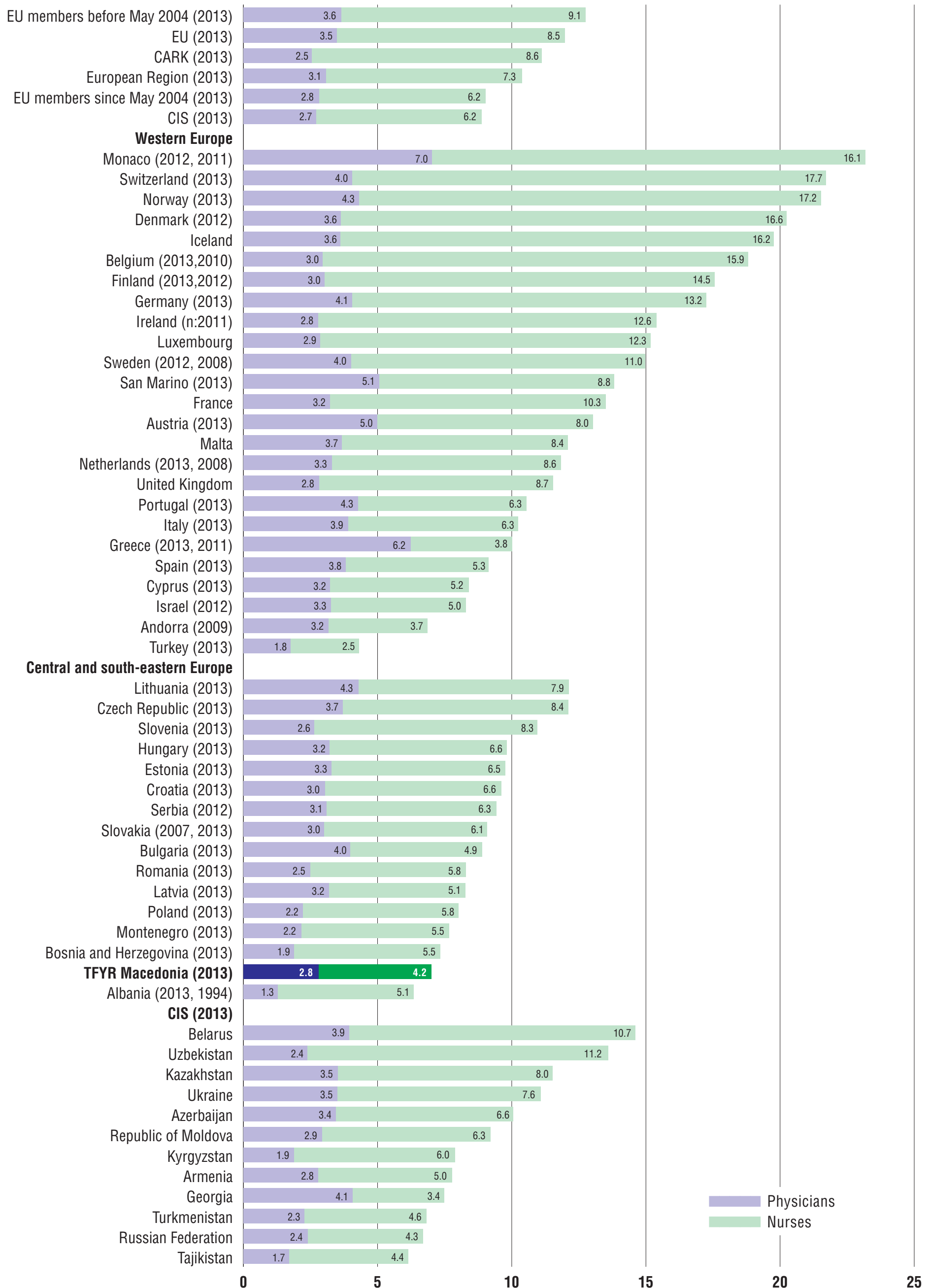


Source: WHO Regional Office for Europe, 2016a.
Notes: Serbia 2000 is from 2003, Slovenia 2000 is from 2003, EU 1995 is from 1998.

Combined data on numbers of nurses and physicians for the WHO European Region is shown in Fig. 4.7. The numbers of physicians and nurses per 1000 population is higher than in Albania and Turkey and comparable to the numbers in Bosnia and Herzegovina and some EU13 countries (Romania and Poland); however, they are still far below those in new Member States (EU13), western European countries and the average of the European Region.

Fig. 4.7

Number of physicians and nurses per 1000 population in the WHO European Region, 2014 (or latest available year)

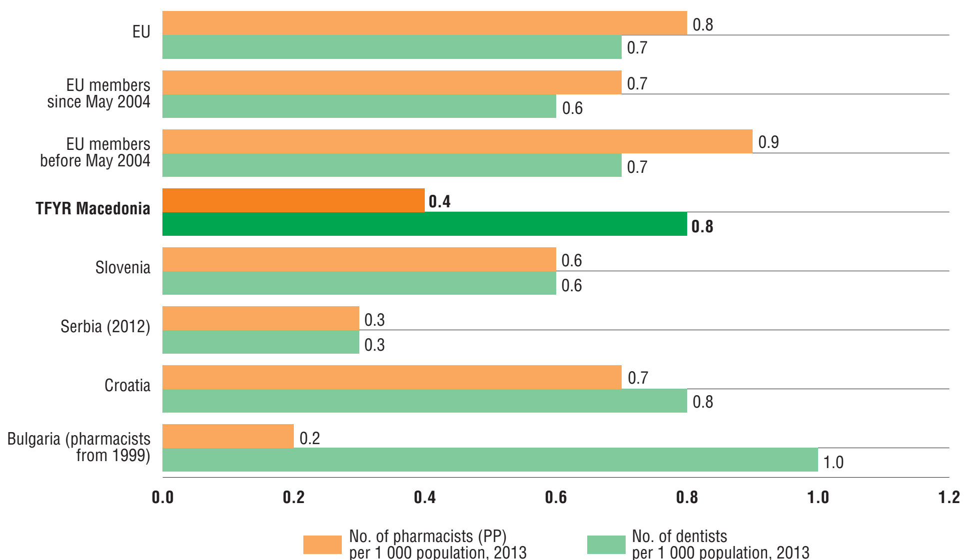


Source: WHO Regional Office for Europe, 2016a.
Notes: EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

The total numbers of dentists and pharmacists in the country has also increased since the early 2000s (Table 4.2). The rapid increase of the number of pharmacists after 2000 is the result of the liberalization of the pharmaceutical market (see section 3.7.1, *Pharmaceutical care*). The density of dentists per 1000 population was equal to EU average in 2013, whereas the number of pharmacists per 1000 population was lower (0.4) (Fig. 4.8).

Fig. 4.8

Number of dentists and pharmacists per 1000 population in the former Yugoslav Republic of Macedonia and selected countries, 2013 (or latest available year)



Source: WHO Regional Office for Europe, 2016a.
Notes: Numbers for Serbia 2013 are from 2012; number of pharmacists for Bulgaria from 1999 (first year of data).

4.2.2 Professional mobility of health workers

Despite the increasing numbers of doctors, dentists and nurses, there is anecdotal evidence suggesting that the sustainability of the health workforce is threatened by increased professional migration to other countries. There are no data available on numbers, qualification, age, professional distribution or duration of health professionals working abroad. However, it is estimated that more physicians than other professionals apply for certification to work abroad. A survey conducted in 2015 with medical doctors showed that 70% of all respondents considered migrating to EU countries. The main reasons

for migration were remuneration, and working and living conditions as well as dissatisfaction with status and career opportunities for medical doctors (Lazarevik et al., 2015).

In response to this, the Ministry of Health has taken the initiative to improve qualifications of health personnel, by educational study visits to internationally renowned medical universities, teaching centres and hospitals, while at the same time bringing colleagues from abroad for exchange of experience and practice. In addition, the Ministry of Health's efforts to improve working conditions (reconstruction of facilities and medical equipment procurement, see section 4.1.1) and to offer continuing professional development for GPs in primary health care (WHO Regional Office for Europe, 2011) as well as the introduction of a P4P scheme (see section 3.7.2) are expected to further contribute to reversing the trend of migration. Preliminary results indicate an increased job satisfaction and performance of GPs in primary health care (WHO Regional Office for Europe, 2011).

Recognizing the trend of migration from public to private sector as one that is draining the capacities and quality of care in the public domain, the new Law on Health Care also regulates the possibility for carrying over contracts from the private to the public sector. Since the introduction of this option, 103 doctors have applied for this programme and the first group of 45 specialists were transferred by agreement to public health care facilities (Ministry of Health, 2016).

4.2.3 Training of health workers

Training of health professionals is regulated by law. Higher education is under the authority of the Ministry of Education and Science and postuniversity education and specializations are within the authority of the Ministry of Health. Continuing medical education, previously the responsibility of the Ministry of Health, has been delegated to the professional chambers (medical, dental and pharmaceutical), which are also responsible for licensing and re-licensing of professionals. EU legislation, such as the Directive on the Mutual Recognition of Professional Qualifications (Directive 2005/36/EC), has been ratified, but the process of harmonizing national legislation is still ongoing. All of the higher education programmes in the country are aligned with the Bologna declaration for higher education. Under the new amendments of the Law on Health Care (2012), the Ministry of Health is obliged to deliver 1000 high-level trainings per year to existing health professionals in the country in various disciplines and specialties.

The numbers of faculties in medicine, dentistry and pharmacy have increased since the mid-2000s. Students can obtain their medical degree at three Medical Faculties in Skopje, Shtip and Tetovo, and at four medical colleges in Skopje, Tetovo, Shtip and Bitola. There are two Faculties of Dentistry at universities in Skopje, one at the University of Tetovo and one at the University of Shtip. Three Faculties of Pharmacy are located at the universities in Skopje, Shtip and Tetovo.

The duration of medical education at undergraduate level is 6 years, including 5 years of theoretical training and 1 year of practice on a rotation principle between different specialties, such as internal medicine, surgery, gynaecology, public health etc. The primary care reforms also changed the curriculum by including 30 hours of family medicine in the fifth year, which is taught in the Medical Faculty's Education Centre for Family Medicine that opened in 2010 and provides interdisciplinary specialization in family medicine. After completing their residency and final state examination, doctors need to register with the Medical Chamber to obtain a certificate of professional qualification and practicing license.

Dentistry is taught over a 5-year course with 6 months of practical training after completion of theoretical training. Similar to medical doctors, the students of dentistry have to pass a state examination after completing their residency. They also have to register with the Dental Chamber to obtain a certificate of professional qualification and receive a practicing license.

Pharmacists obtain their degree through an integrated undergraduate and master degree qualifying them as Master in Pharmaceutical Studies. Upon completion of 1 year of practice on a rotation basis in different specialties and in a pharmacy, graduated students have to pass the state examination, and obtain a practicing license issued by the Pharmaceutical Chamber. At the Faculty of Pharmacy, pharmacists can also train in laboratory bioengineering, which is mostly taken up for working in the pharmaceutical industry.

Specialist and subspecialist education for medical personnel is regulated by an ordinance of the Ministry of Health. Specializations and subspecializations in most medical and pharmaceutical fields are available at all faculties, and students are enrolled based on predefined quota for each specialty. The faculties are responsible for organizing, registering, conducting and supervising the training of specialties. Practical training takes place at the faculties, accredited health care establishments and other health institutions defined by the ordinance of the Ministry of Health and the faculty. Most specialties take 3–4 years of training, and require a written final specialist thesis and a specialist examination.

Continuous medical education is mandatory for medical, dental and pharmaceutical professionals, and is tied to a credit-system that is managed by the respective professional chambers. The credit system is used to assess the advancement of knowledge and experience of health professionals which is a condition for renewal of their practicing license (see section 2.8.3).

Training of nurses and other auxiliary medical personnel is available in 10 medical high schools geographically dispersed in larger towns. Upon completion of the 4 years of medical high school, nurses, midwives and technicians are required to undertake practical training in order to apply for and pass the state examination. The nurses who pass the state examination are eligible to apply to any health care facility and can obtain on-the-job training for the specific medical field in which they have been employed. Further nursing training to become chief nurse (3 years of training) is available in four medical colleges in Skopje, Shtip, Tetovo and Bitola, which are attended after medical high school. Nursing specializations are available in colleges in Shtip and Bitola, but are attended through personal interest for professional advancement. Despite the long training and wide institutional network of nurses, there is still no system of accreditation, licensing or re-licensing, and therefore no requirements for their continuing medical education exist. Hence completed specializations are not rewarded with higher remuneration because the required education for nurses is a medical high school and/or a medical college degree (see section 2.8.3).

To improve the quality of human resources in the public domain, the Ministry of Health initiated various forms of professional upgrade, embedding them as well into the Law on Health Care with amendments in 2014. These include augmenting in-service medical education with foreign trainers, improving quality of theoretical knowledge and practical skills in preservice medical education and providing scholarships for medical specializations abroad (see section 6.2).

Public health programmes on master and doctoral level are available at the Centre for Public Health under the Medical Faculty in Skopje. During the period of 10 years, over 280 Master of Public Health students have attended the programme, out of which by the end of 2014 only 65 had graduated. One of the main reasons for the low graduation rate is the lack of career opportunities.

4.2.4 Doctors' career paths

Upon graduation and obtaining a practicing license, doctors can start working, with or without further specialization. Hospital managers have the possibility to decide which interns to train further in specializations as well as how many interns to employ. Waiting times for an intern position can vary greatly between different specialist fields. Since 2010, completing a specialty requires a minimum number of performed interventions in the respective field. Most specialties take 3–4 years of training and require a written final specialist thesis and a specialist examination.

Promotion of doctors within the system is by law a merit-based system based on years of experience, level of specialization and excellence of practice although there are exceptions. Academic advancement is conditioned upon completion of master and doctoral degrees as well as proof of scientific work through research projects and publications in peer-reviewed journals.

4.2.5 Other health workers' career paths

Dentists and pharmacists can open an independent practice after obtaining a practicing license. The profession of nurses and midwives on the other hand is tied to the practice of the doctor or an institution where they are part of the medical team. One exception is the community (so called patronage) nurse, who performs home visits to mothers and newborns after hospital discharge without the supervision of a doctor.

5. Provision of services

Public health services are provided through an extensive public health network of institutions and councils at multiple levels. The main institution is the Institute of Public Health, which supervises the work and professional standards of operation of the 10 regional Centres for Public Health. Their core competences are monitoring and surveillance of immunization and sanitary and hygienic activities and laboratory services. The 34 Health Centres are responsible for providing preventive health services, including immunization and preventive check-ups for school children and adolescents under the national preventive programmes (Public Health Programme, Programme for preventive check-ups of school children and students, Immunisation Programme).

With the adoption of the new Law on Health Care in 2012, the majority of health care providers are organized within the predefined Health Network. The Health Network is a geographically well-distributed network of certified health facilities and providers at all levels of care that provide services according to adopted standards and evidence-based guidelines. Network members may provide services under health insurance. The Ministry of Health monitors the performance and sustainability of the Health Network, and develops and implements related regulations and policies.

Primary care providers include GPs, paediatricians, gynaecologists and dentists that play the gatekeeper role in the health care system and are accessible to all citizens with nearly no cost-sharing. Patients register with a primary care physician of their choice but can switch to a new one only twice per year.

Secondary care consists of geographically well-organized specialist-consultative services and a network of general, specialized and clinical hospitals and university clinics. The type and volume of specialist-consultative services delivered at the Health Centres are defined at the state level according to historical data, health care needs and financial arrangements. Hospital care is

subject to regional standards. Emergency care consists of emergency care units at all levels of health care, determined by the government based on the Ministry of Health's recommendations.

Tertiary care is provided at the university clinics in Skopje, defined according to the criteria for provision of health services that require professionally, organizationally and technologically complex and multidisciplinary treatment. The majority of hospitals are in public ownership although the share of private hospitals has increased in the past decade.

With liberalization of the health care market many new private pharmacies have emerged. Today pharmacies are concentrated in the cities while rural areas are underserved. In 2010, a reference price system was introduced for drugs covered by the HIF, which decreased prices for pharmaceuticals on the positive list of drugs and led to significant savings on pharmaceuticals.

The numbers of beds in institutional long-term care are very low and do not satisfy the increasing demand within the ageing population of the country. Strengthening community and home care services is now a priority of the government. A cash-benefit has been introduced for informal carers that provide long-term care at home to reduce the demand for residential care. However this means-tested benefit can barely cover the actual expenses and loss of income of informal carers.

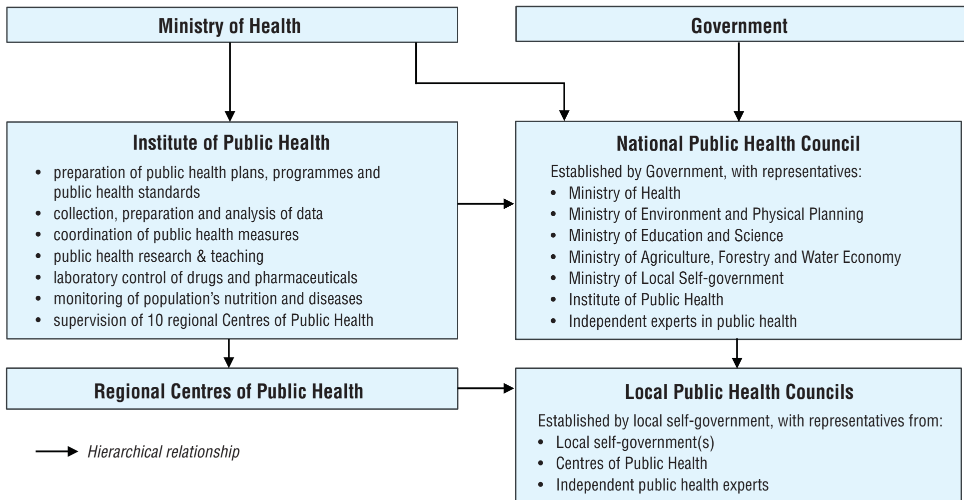
5.1 Public health

Public health has a long tradition in the former Yugoslav Republic of Macedonia, reflected in achieving very high immunization rates in the European region. Public health services continued within the preindependence structure of predominantly public sector provision, financed through the central budget, and until 2010, functioned under the general framework of health legislation.

In 2010, the public health system was subject to regulation based on the latest developments in public health policy and practice, and definitions of its functions, key actors and their responsibilities forming the new Law on Public Health. The main public health functions identified in the new Law on Public Health are given in more detail in section 6.1.2, *Law on Public Health*.

Given the complexity of the population's health and public health functions, the law stipulates separate governance structures (Fig. 5.1). The National Public Health Council is a multisectoral body established by the government

Fig. 5.1
Institutions of public health and their respective responsibilities



Source: Authors' compilation.

for addressing issues that require intersectoral cooperation. It is chaired by the Minister of Health and consists of 14 representatives from line ministries, the Institute of Public Health and independent experts. The 10 regional Centres of Public Health have similar functions as the Institute of Public Health, but at the regional level, with the exception of research, education and policy advising roles. The Centre of Public Health's role is disease prevention and health promotion, based on earmarked funding from the state budget-funded programmes of the Ministry of Health. In addition, the law provides legal grounds for establishment of Public Health Councils at the local level, which have the mandate to address issues of public health importance for the local communities. Local Public Health Councils can be established by one or several municipalities. The law requires that one member of the Council is a representative from the Centre of Public Health in the area.

The Ministry of Health bears the overall responsibility for the implementation of the public health functions, delegating tasks and responsibilities to its institutions and agencies. Three key institutions that implement the public health function of the Ministry of Health are the State Sanitary and Health Inspectorate (see section 2.3.7), the Institute of Public Health and its 10 regional Centres of Public Health.

The Institute of Public Health (formerly the Republic Institute for Health Protection) is the top-level professional and scientific institution providing highly specialized preventive health care services, such as health promotion through monitoring, research and investigation of health status of the population, and proposing measures for protection and promotion of the population's health. As such, it conducts research on communicable and non-communicable diseases, morbidity and mortality in the country and performs teaching activities through cooperation with the Faculty of Medicine in Skopje. In its structure, the Institute of Public Health has referent laboratories for hazardous biological and chemical agents, and other laboratories for air quality, food and drug control, ionized radiation, etc. It also coordinates and supervises the work of the 10 regional Centres of Public Health.

In 2014 and 2015, the country has undertaken a comprehensive self-assessment activity of the essential public health operations based on the tool developed by WHO Regional Office for Europe, with a participatory approach. The process led to the definition of priorities and objectives of the Public Health Action Plan 2020, which is part of the National Health 2020 Strategy and was adopted in December 2016 (see sections 2.5, 6.2 and 7.1).

5.1.1 National public health programmes

The government directly funds public health activities from the annual central state budget allocation to the Ministry of Health. Although the number and structure of these programmes varies from year to year, they are intended to address various aspects of public health, prevention and health promotion benefiting the general population and targeting specific population groups. Being funded directly from the central budget, these programmes are intended for services provided to all citizens, regardless of their health insurance status, so contributing towards narrowing inequality gaps among various population groups.

The programmes are prepared in November for the next calendar year, adopted by the government and proposed for adoption by the parliament together with the adoption of the central budget. Programmes are published in the Official Gazette and are publicly available to all citizens. However, the programmes' financing typically is in the first line of budget cuts during central budget rebalancing, which jeopardizes the fulfilment of the full scope of planned activities and achievement of goals.

In 2014, 21 national public health programmes were adopted with total planned funding of €66 million:

- Two of these programmes are the pillars of the public health system – the National Public Health programme and the "Health for All" programme. Both focus on health promotion and related activities such as environmental health risk assessment, occupational health and safety, surveillance of specific communicable diseases, health promotion and education.
- Four programmes focused on addressing mother, child and adolescent health: immunization programme, programme for active health protection of mother and child health, programme for preventive systematic check-ups of pupils and students, programme for subsidizing co-insurance for the services provided to mothers and infants up to 1 year of age.
- Non-communicable diseases are the main focus of five programmes, specifically designed to address the major non-communicable diseases in the country: prevention of cardiovascular diseases, prevention and early detection of malignant diseases, diabetes prevention and control, mental health conditions and dialysis costs, and haemophilia therapy.
- Communicable diseases are the focus of three programmes for prevention and control of HIV/AIDS, tuberculosis and brucellosis. Because of the low prevalence of all three diseases, these programmes are mainly focused on preventive activities and health education, with only a small part of the funding allocated to diagnosis and treatment costs.
- Several programmes address the needs of population groups with special health conditions or experiencing financial deprivation. These programmes provide coverage of treatment costs for rare diseases not covered by their health insurance, health insurance costs for uninsured persons, and co-insurance costs for retired persons with incomes below the national average. In addition, one of the programmes provides funding for support services for persons with addictions.

The implementation of these public health programmes has demonstrated very positive results in some areas. With regards to the improvement of mother and child health, significant progress has been achieved in relation to the main health indicators: infant mortality has been reduced to record-low 7.5 per 1000 live births in 2011 compared with 31.6 per 1000 live births in 1990, although it has again increased to 10.2 per 1000 live births in 2013 (State Statistical Office, 2014; WHO Regional Office for Europe, 2016a).

The programme for compulsory immunization has achieved very low incidence rates for most vaccine-preventable diseases covered by the national immunization calendar (diphtheria, tetanus, pertussis, polio, measles, mumps, rubella, *Haemophilus influenzae* B). The last case of poliomyelitis in the country was diagnosed in 1987, and in 2002, WHO certified the country as polio-free. The national immunization calendar has been upgraded twice to include mandatory hepatitis B vaccine for children born after November 2004, and in September 2009 mandatory vaccination against human papillomavirus of girls in the age group 9–12 years. Since September 2015, polyvalent vaccines were introduced in the regular immunization calendar, reducing the number of immunization visits in the first 12 months of life from 13 to seven.

5.1.2 Organization of preventive services

The National Public Health Programme funds preventive services delivered primarily through the 34 Health Centres. These Health Centres are geographically well dispersed throughout the country. Health Centres house immunization units and polyvalent patronage nursing units. Immunization teams, consisting of a medical doctor and a nurse, immunize children and adolescents in the Health Centres' immunization units and dispersed stationary immunization points, as well as through mobile units operating in hard-to-reach areas and in immunization pockets, usually in Roma communities. The current challenge in the provision of preventive services is sustaining a physician workforce. Specialization in preventive medicine was phased out beginning in 2005. As a result, there were no new recruitments in the preventive teams, and the average age of preventive service health personnel is close to retirement age. At present, the country is considering policy revisions to ensure continuity of the teams and guarantee future delivery of preventive services. An initial step was made in September 2014 with the recruitment of 140 doctors and their immediate enrolment in preventive medicine specialization.

Patronage nurses are independent health care workers who have the responsibility of visiting the mother and infant after maternity discharge. Patronage nurse units are defined as polyvalent and have responsibility for advising on health for the whole family, including living and social conditions of the household. However, because of understaffing and lack of training and resources, patronage nurses provide bivalent services to the mother and infant only. In 2011, the Ministry of Health received funding from the Dutch Government through the Facility for Infrastructure Development (ORIO)

for mother and child health services. One of the ORIO components is the improvement of patronage nursing, including provision of education and training for extending the scope from bivalent to polyvalent service.

Preventive services are also provided by GPs receiving a capitation payment of which 30% is earmarked for achievement of preventive health targets, including counselling for healthy lifestyles and smoking cessation (see section 5.3.1 and section 3.7.1, *Primary health care*).

5.1.3 Occupational health

The Law on Occupational Safety and Health, enacted in 2007 (Official Gazette, no. 92/2007), regulates workplace safety and health as integral to the health care system in the country. Occupational health policies are based on the public health approach, as promoted by WHO, oriented towards the health of all workers through disease prevention and health promotion at the workplace. The novelty in the 2007 Law is the designation of an authorized health provider by the employer for provision of health care at the workplace. Occupational health service provision was purposely excluded from the transformation of primary health care to preserve and differentiate occupational health's specific function.

The Institute of Occupational Health, a WHO Collaborating Centre since 2003 on occupational health and safety, is the highest institution in the field of occupational health at the national level, delivering health services together with authorized occupational health providers and implementing educational and scientific research activities in the field. It is responsible for standardization of criteria for workplace safety, developing and implementing research programmes and proposing legislative and policy changes in occupational health and safety.

In 2011, the government enacted the National Strategy for Health, Healthy Environment and Safety at Work 2012–2015, developed by the Ministry of Health and Ministry of Labour and Social Policy. In the further process the strategy was reviewed under participation of civil society organizations, and a new strategic document was proposed for the period 2015–2019. The aims of this strategy are to provide a safe and healthy work environment, to prevent workers' and employers' injuries, diseases and illnesses caused or influenced by occupation, environment, life style and social health determinants, to maintain mental and physical health and ability to work and to ensure an optimal balance between economic interests, work ability and health (Ministry of Health, 2011).

Further to this, the legislation regulates obligatory health check-ups for all employees at the expense of the employer as well as for the unemployed and farmers, covered by the national public health programme.

5.1.4 Mother and child health

Committed to uphold the decreasing trends in maternal and infant mortality in the country, the Ministry of Health, urged by a series of incidental maternal deaths in 2009, endorsed a Safe Motherhood Strategy for the period 2010–2015, in cooperation with the United Nations Children's Emergency Fund (UNICEF, 2013). The Strategy includes four important periods for safe motherhood, starting from improvement of antenatal, prenatal, natal and postnatal services, and includes target activities for adolescents, women of reproductive age, newborns and infants. The Strategy comprehensively includes development of clinical guidelines, upgrade of education programmes on the medical faculties and nursing colleges, and continuous medical education of medical staff at community nursing units and all maternity wards in the country. Based on the Strategy, the Ministry of Health increased the funding for preventive programmes in mother and child health by 50% in 2011. The ORIO programme of the Dutch Government co-funded the infrastructure investments and education activities planned under the Safe Motherhood Strategy.

5.1.5 Reproductive health

Based on previous research and behavioural studies, the Ministry of Health initiated preparation of the National Strategy on Sexual and Reproductive Health that was enacted in 2009 for the period 2010–2020. With financial support from the United Nations Children's Emergency Fund and United Nations Population Fund, the Strategy was developed by an interdisciplinary team of representatives of the Ministry of Health and civil society organizations, and with contribution from other line ministries and agencies, including Ministry of Labour and Social Policy, Ministry of Education and Science, Ministry of Local Self-Government, Agency for Youth and Sports, and the Health Insurance Fund.

With regard to the low prevalence of HIV/AIDS in the country, the Ministry of Health initiated a process of building a coordinated national response to prevent a major HIV/AIDS epidemic in 2003. Through multistakeholder cooperation, the country received funding through the Global Fund to fight AIDS, Malaria and Tuberculosis, amounting to nearly US$ 21 million since 2003. This funding has been used to successfully contain any major outbreak of HIV/AIDS epidemics.

5.1.6 Screening

Organized screening for malignant diseases was introduced in 2012 through the programme for early detection of malignant diseases. Before 2012, the Ministry funded programmes for early detection of diseases of female reproductive organs, which enabled free Papanicolaou tests for women aged 24–60 years. In 2009, preparatory activities were initiated for pilot screening of cervical cancer in four towns in the country and in 2012 organized cervical cancer screening was initiated in the whole country for all women in the age group 24–35 years. The programme for 2013 covered activities of cervical cancer screening of all women aged 36–48 years and those aged 24–35 years who missed the screening in 2012. Likewise, the 2014 programme covered activities of cervical cancer screening for women aged 49–60 years and those in the age group 36–48 years who had not taken the test in the previous year. Since 2013, the early detection programme also initiated activities for two other malignant diseases, colorectal cancer and breast cancer.

5.2 Patient pathways

At the national level, there are two routes for the patients to access health care services. The first is prescribed and predefined for services covered under the HIF, whereas the alternative route is obtaining and paying full costs out-of-pocket for health services in the market.

Through the pathway of HIF coverage, GPs are the first contact of patients with the health care system. Access to these services is free of charge at the point of delivery. The GPs act as gatekeepers for access to more specialized health care. With the recent changes in the health care legislation, the previously existing patient pathways were further defined and strengthened. After examination in primary care, if there is need for further outpatient specialized services, the GP refers the patient to higher levels of care, specifying the type of service and the health care institution at which services should be obtained. If further examinations are needed, depending on the case, specialists can further refer the patient to other services. Provision of tertiary care is conditional on previous examinations at the secondary level at general or other specialized hospitals. The role of the GP is also central in the therapy management for the patient. With a few exceptions for some specialist-prescribed medicines, the GP issues prescriptions for the therapy prescribed by the specialist, and provides continuous therapy refills for the patient’s chronic conditions. Exceptions are made for patients with chronic diseases and children, who can be sent from GP

to university clinics directly; as can patients with emergency conditions or in life-threatening situations. Box 5.1 describes a typical patient pathway for hip replacement in more detail.

Box 5.1
Patient pathway for services covered by health insurance

A woman in need of a hip replacement due to arthritis would take the following steps:

- During a free visit to the GP with whom she is registered, the GP refers her to an outpatient hospital orthopaedic department.
- To reduce the burden on the tertiary level of care, she has free access to the public hospital closest to where she lives; in case of emergency, she can be referred to any public hospital including tertiary level; her GP makes an appointment through the MyAppointment e-platform.
- If she does not want to wait at all, she can choose to go to a private hospital for which she has to pay out-of-pocket as these services, unless in exceptional cases, are not covered by the HIF (exceptions include for example women in labour, who cannot be admitted to a public hospital due to lack of places, and if she obtains written approval thereof). Currently, only a handful of patients would choose this option.
- Her GP prescribes any necessary medication. For medicines that need to be prescribed by a specialist the GP would have to wait for the specialist's report.
- After referral, the patient may have to wait for 1 month or more for an outpatient hospital appointment for examination by a specialist. Depending on the required service, the waiting times vary from 1 day to 3 months.
- After this she will have to wait for inpatient admission and surgery for 1 month to 3 months. For the hospital stay she would have to pay a fixed co-insurance rate; if the patient were 70 years or older, she would not have to pay any co-insurance for the hospital stay.
- Following surgery and primary rehabilitation at the hospital, the patient goes home, where she might need home care (home nurse and/or home assistance); if this is prescribed by the hospital or her GP, it will be provided by the Health Centre free of charge, through their home visiting teams of a doctor and a nurse.
- The GP receives a discharge summary from the hospital and is responsible for further follow up, such as referral to a physiotherapist (to whom the patient will have to pay co-insurance).
- A follow-up hospital visit is likely to take place to check the treatment's outcome, usually after 1 month, 3 months and 6 months, and those can be scheduled directly by the specialist at the hospital, without the need to visit the GP.

Where patients wish for direct access to health care services at secondary and tertiary levels they can purchase services in the market through direct payments, from either private or public health care providers.

5.3 Primary/ambulatory care

Primary ambulatory care is provided mainly by private primary care providers and by outpatient specialist-consultative providers in the 34 Health Centres and some private providers.

5.3.1 Primary care

The first contact of the patient with the health care system is through the primary care provider who acts as "chosen physician". With the reform of primary care between 2005 and 2007, general practitioners of medicine and dentistry, paediatricians and gynaecologists have been privatized. Since 2012, based on primary care models from other countries, the Ministry of Health introduced the family medicine specialty in primary care, requiring all GPs and paediatricians to undergo further specialization in family medicine and to become family physicians by 2020.

Primary care providers organize their work in single or group practices. Each primary care physician is obliged by law to be associated with a medical nurse to form a medical team. With the reform of primary care, all primary care providers that want to deliver services under government health insurance are obliged to contract with the HIF. This contract is based on a blended capitation model that includes fixed and variable components of the capitation. Each primary care provider has a number of registered patients for which capitation is paid; the structure of the capitation is made of 70% fixed amount of payment and 30% variable amount for the achievement of preventive health targets that include rational prescribing and referrals, preventive check-ups and counselling and education workshops for children in schools. The realization of the preventive services is evaluated on an annual basis. The structure of the 30% variable amount for preventive services is given in Table 5.1.

Patients have the right to choose their physician, except for patients under 14 years of age for whom parents bear this right and obligation. As free choice is a right, patients can change their physician without having to explain the reasons. The law limits the number of changes of primary care physician to two per year.

In terms of geographic distribution, primary care is easily accessible near the place of residence to almost all citizens in the country due to financial incentives to stimulate doctors to open practices and provide services to populations living in rural and remote regions (see section 3.7.1, *Primary health care*).

Table 5.1
Structure of the preventive services provided by primary care providers, 2014

Target	Activities and indicators		% of capitation	Applicable to
I. General targets				
Prescribing	Activities	Rational utilization and prescription budgets 1. Overall average annual limit of 330 MKD (€5) per point 2. Average annual limit of 150 MKD (€2.50) per point for antibiotics and anxiolytics within the overall average annual limit	6%	All registered insured patients
	Indicator	Based upon prescribing budget ceiling		
Continuous medical education (CME)	Activities	Obligatory CME trainings: 1. ECG interpretation; 2. Chronic obstructive pulmonary disease and bronchial asthma in children (diagnosis and therapy); 3. Thyroid function and deficiencies (diagnosis and therapy); 4. Early detection and appropriate therapy of mental disorders.	2%	
	Indicator	CME certificates for all four trainings		
Sick leaves and referrals	Activities	Rational and justified sick leaves and referrals (max. 15 days sick leaves)	2%	All registered insured patients
	Indicator	Number of sick leaves up to 15 days as per medical records		
II. Specific (by age group and disease)				
Diabetes mellitus prevention	Activities	Early detection of diabetes mellitus among population 14–65 years of age	5%	50% of insured persons age 14–65 years with the inability to repeat activity for the same patient in two consecutive years
	Indicator	Take anamnesis and refer patient to preventive testing Persons with at-risk scores are referred to higher levels of care		
	Activities	Education of patients with diabetes	1%	50% of the diagnosed diabetes patients age 14–65 years registered with the practice, with inability to repeat the activity for the same patient in two consecutive years
	Indicator	Advice on hygiene, nutrition and therapy compliance, distributing educational brochures; keeping record of patients with diabetes		

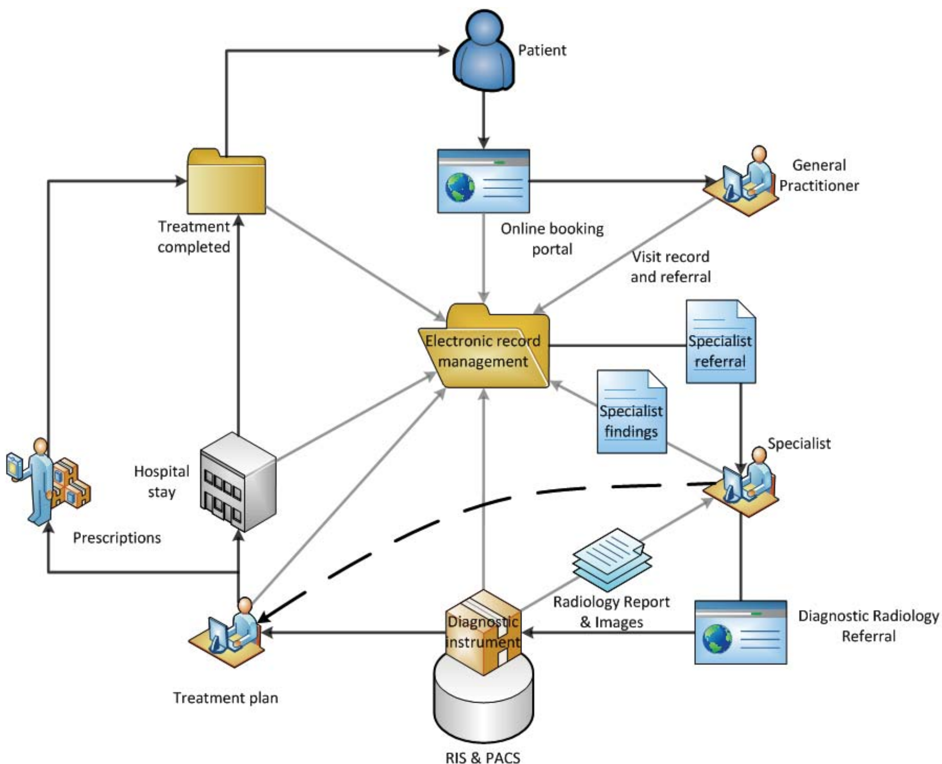
Kidney diseases prevention	Activities	Preventive activities for early detection of kidney diseases population 14–65 years of age	5%	50% of insured persons age 14–65 years with the inability to repeat activity for the same patient in two consecutive years
	Indicator	Take anamnesis and refer patient to preventive testing Persons with at-risk scores are referred to higher levels of care		
	Activities	Education of all insured people chronically suffering from nephrology disease	1%	50% of the diagnosed kidney patients aged 14–65 registered with the practice, with inability to repeat the activity for the same patient in two consecutive years
	Indicator	Advice on hygiene, nutrition and therapy compliance, distributing educational brochures; keeping record of patients with kidney insufficiency and patients on dialysis		
Cardiovascular disease prevention	Activities	Preventive activities for early detection of cardiovascular diseases in population aged 14–65 years	7%	50% of insured persons age 14–65 years with the inability to repeat activity for the same patient in two consecutive years
	Indicator	Take anamnesis and refer patient to preventive testing Persons with at-risk scores are referred to higher levels of care		
	Activities	Education of patients with cardiovascular disease aged 25+	1%	50% of the patients diagnosed with cardiovascular disease aged 14–65 years registered with the practice, with inability to repeat the activity for the same patient in two consecutive years
	Indicator	Record keeping for monitoring the health status of all patients with cardiovascular disease age 25+		

Source: Adapted from Preventive Goals of PHC for 2016/2017 (HIF, 2016a).

Primary care providers have the role of gatekeepers to prevent over utilization of secondary and tertiary care services. The latest reform related to the improvement of the efficiency of the health care system was the introduction of the electronic system for referrals and prescribing, MyAppointment. Since July 2013, primary care providers can refer their patients to higher levels of care based on the availability of appointments, which are displayed in the electronic database of all health care providers in all specialties throughout the country. MyAppointment is a relatively new tool being further developed to become integrated within the health information system. By avoiding overlap of patient scheduling, it has reduced previously overcrowded waiting rooms and decreased patient waiting times for some services, such as radiology scans (from 15 months to less than 7 days). MyAppointment is an innovative platform in terms of integrating all levels of care, using the patient-centred approach (see Fig. 5.2).

Fig. 5.2

Structure and operation of the electronic health platform “MyAppointment”



Source: Directorate for e-Health, Arizankoski M, unpublished presentation (18 November 2014) MyAppointment presentation.

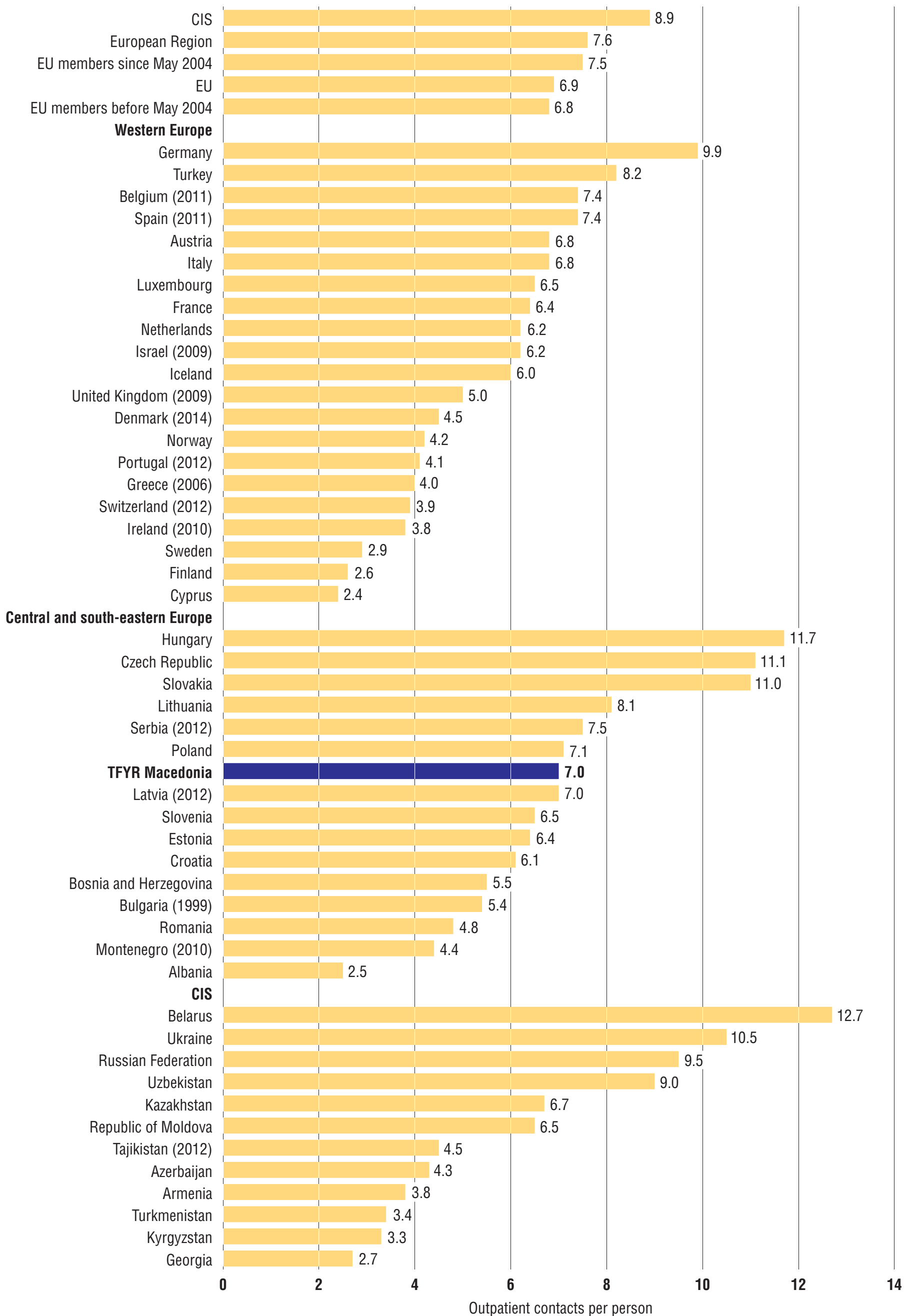
5.3.2 Specialist-consultative outpatient care

Alongside the wide network of primary care providers, the system was designed to provide specialist services on an outpatient basis with wider outreach, which were especially useful in smaller towns where secondary level inpatient care was not available. The ambulatory specialist services purchased by the HIF are provided mainly through health care providers in the public domain, i.e. within the 34 Health Centres (87% of the budget for specialist-consultative services), while a small portion of this budget (13%) is spent on services delivered by approximately 450 private outpatient specialist-consultative providers (HIF, 2014). The specialist-consultative services provided within the 34 public Health Centres cover specialties such as ophthalmology, internal medicine, otorhinolaryngology, dermatology and mental care. These specialists provide diagnostics, treatment and follow-up services to patients referred by their chosen primary physician. As shown in Fig. 5.3, in 2013, an average patient visited an outpatient doctor seven times per year, which is slightly higher than averages of the EU28 and EU13 countries as well as many Central and south European countries.

Before the primary care reform between 2005 and 2007, the Health Centres played a very important role in the provision of preventive and health promotion services at the community level. However, with the transformation at the primary level, their role and position within the system has to be revisited, especially from the aspect of its unique position of providing certain preventive services, such as immunization and community nursing; and systematic check-ups for elementary and secondary school students. With their current structure, the Health Centres have a dual role of providing preventive and secondary outpatient services, and future reforms should address the specific place and role of the Health Centres within the health care system.

Fig. 5.3

Outpatient contacts per person per year in the WHO European Region, 2013 or latest available year



Source: WHO Regional Office for Europe, 2016a.
Notes: EU: European Union; CIS: Commonwealth of Independent States; TFYR Macedonia: The former Yugoslav Republic of Macedonia.

5.4 Inpatient care

According to the Law on Health Care of 2012, hospitals can be general (with at least internal medicine, general surgery, gynaecology and obstetrics, and paediatric wards), specialized or clinical. In 2014, there were 73 health care facilities providing inpatient care, divided into four major categories: 14 general and four clinical hospitals at secondary level, 28 tertiary level university teaching clinics and institutes, 20 specialized hospitals and rehabilitation centres providing longer-term treatment and specialized care (tuberculosis treatment, psychiatric care) and seven nonhospital units providing maternity services (Institute of Public Health, 2015). Of these 73 inpatient facilities, 65 fall under the category of a hospital. Most hospitals and inpatient care facilities are publicly owned. Only six hospitals are in private ownership, one general and one clinical hospital in Skopje and four specialized hospitals, three of them in Skopje. The public specialized hospitals provide specialized care in rehabilitation, psychiatry, gynaecology and obstetrics, whereas private specialized hospitals provide care mainly in cardiac surgery, ophthalmology, gynaecology and obstetrics. The numbers of each type of hospital are presented in Table 5.2.

Table 5.2
Number of hospitals by type, 2007–2014

Type of hospital	2007	2008	2009	2010	2011	2012	2013	2014
General and clinical hospitals	16	16	16	18	18	18	18	18
Tertiary university clinics and institutes	21	26	28	28	28	28	28	28
Specialized hospitals and rehabilitation centres	18	18	18	17	19	19	20	20
Hospitals for pulmonary tuberculosis	3	3	3	3	3	3	3	3
Institutes for pulmonary diseases and tuberculosis for children	1	1	1	1	1	1	1	1
Institutes for orthopaedics and traumatology	1	1	1	1	1	1	1	1
Mental hospitals	3	3	3	3	3	3	3	3
Centres for rehabilitation and treatment	5	5	5	5	5	5	5	5
Other specialized hospitals	5	5	5	4	6	6	7	7
Nonhospital units	10	9	9	8	8	8	7	7

Source: State Statistical Office, 2016.

At tertiary level, services are provided by university clinics and institutes in the capital of Skopje. These 28 university clinics have been the first pillar of tertiary care in the country, with their establishment in the late 1940s.

Initially established as the University Clinical Centre in 2007 by government ordinance, the clinics have been transformed into separate legal entities while cooperation between them is regulated by an inter-clinic referral system. They are affiliated with the Faculty of Medicine in Skopje and serve as training institutions for students and health professionals at postgraduate level. In 2014, a new University clinic for cardiac surgery was opened.

With regards to the overall health services provided through the HIF in publicly owned hospitals, approximately 40% of the costs are related to acute health services, 10% to chronic illnesses, 30% to ambulatory services and 20% to other services. In 2012, the highest concentration of acute patients was registered in the region of the city of Skopje (approximately 46% of all DRG cases in the country, including patients in private hospitals that have contracts with HIF). The hospitals with the highest number of cases are the University clinics and regional clinical hospitals in Tetovo, Bitola and Shtip (HIF, 2013a).

5.4.1 Day care

The Law on Health Care (2012) defines day care in hospital settings, similarly to the previous law, as provision of therapy and other forms of treatment that do not require hospital admission but can also not be provided at home (e.g. radiation, dialysis, intravenous administration of medicines). The duration of diagnostic, treatment and rehabilitation services provided must be less than 8 hours per day. Day care is provided in all secondary and tertiary hospitals in the country. The percentage of patients who receive day care treatment in these centres is approximately 5–10% of all hospitalized patients (HIF, 2014). There is an upward trend in day care, especially in mental health, since day care has increasingly replaced the previous practice of long-term hospitalization of these patients.

5.5 Emergency care

Emergency care is defined as provision of emergency medical services to patients in need, which in the case of failure to deliver in a short time will result in permanent and irreversible consequences to patients and eventually death. According to the 2012 Law on Health Care, all health professionals are obliged to provide patients with urgent life-threatening conditions with complete health care until the condition no longer endangers their life, regardless of their health insurance status. At national level, emergency services are provided

by primary care providers in units for emergency care in Health Centres and hospital emergency wards for a limited number of interventions. The emergency care network, including the emergency care units' distribution at all levels, is determined by the government, based on a proposal from the Ministry of Health. This network, according to the needs of the population within a certain area, can have units for emergency dental care for acute treatment of dental cases in the night shift. The main functions of the emergency care unit are the following:

- Determining the need of transportation with an ambulance vehicle in life-threatening situations, organizing transport (individually or in collaboration with another doctor or the nearest emergency care unit) and estimating the justification of a patient being accompanied by another person;
- Tracking and recording specialist health treatment;
- Keeping records for the patient according to the applicable regulation on health records;
- Performing other tasks according to the regulations on compulsory health insurance.

Depending on the type of emergency, patients can first visit their chosen GP, call emergency services or go directly to the emergency ward. If the condition or injury is not life threatening, patients are obliged to go to the GP to obtain referral for further care. According to the contract conditions for primary care signed with the HIF, GPs are obligated to be available around the clock and to provide emergency care within the responsibilities at primary care level. The coverage of care during the night, at weekends and during holidays is organized by the Health Centres that, in case of lack of personnel, can contract primary care doctors. However, in practice, almost 98% of the patients first call the emergency service, and only 2% call upon their GP.

In 2013, 86 ambulance vehicles were purchased to improve the efficiency of the emergency health care units, which resulted in significantly better conditions of accessibility in this sector. The emergency service responds to all calls adequately and quickly within an interval of 25 minutes, the quality threshold indicator. However, there are rural areas that are 30 km from the nearest emergency care unit, and given bad road conditions it can take over an hour to reach patients living in these areas.

5.6 Pharmaceutical care

The main documents regulating pharmaceutical care in the country are the 2007 Law on Medicines and Medical Devices (amended in 2010, 2011 and 2013) and the 2012 Law on Health Care (amended in 2012 and 2013). Whereas the Law on Health Care regulates the modes and mechanisms of dispensing, the Law on Medicines and Medical Devices is concerned with the quality standards of production, registration and distribution of medicines and medical devices. Another important legislation is the 2000 Law on Health Insurance (consolidated text 2012), which together with its bylaws is regulating the conditions for access to medicines that are covered by the HIF.

The key players in implementation of the pharmaceutical policy in the country are MALMED (see section 2.3.8) and the HIF.

With regard to market authorization the law prescribes a maximum duration for obtaining market authorization and approval of 15 days for drugs registered in the EU and up to 60 days for drugs registered in other countries. The registration is valid for 5 years. In 2013, the total number of registered drugs was 3150. On average, every year, MALMED issues 280 new market authorizations, renews authorizations for 440 drugs, and receives nearly 2500 applications for enlisting the drug variations within existing authorizations.

According to the Law on Medicines and Medical Devices, drugs and other pharmaceutical and medicinal products can only be produced, imported and distributed through wholesale companies (so-called *veledrogerii*), registered for procurement, storage, transport, supply and distribution of drugs, which then further distribute the products to the pharmacies for dispensing to patients.

The network of pharmacies in the country is geographically well-dispersed. Liberalization of the health care market in the 1990s led to the opening of a large number of private pharmacies. A lack of a strategic approach on the development of this health sector led to the creation of a huge oversupply of medicine-dispensing services. Over time, with market competition, alongside the introduction of market regulation policies, the number of pharmacies has reduced. However, there are still large numbers of pharmacies concentrated in the cities and a low concentration in rural areas. The attempts to address this issue consist of organizing mobile pharmacies for rural and less accessible areas.

Upon transformation of primary care in 2008, the HIF started to sign contracts with private pharmacies for dispensing the agreed quota of medicines covered by health insurance. The distribution of drugs in pharmacies is by

quotas. Their calculation is based on a predefined methodology, which includes the number of qualified staff, patients residing in the service area and the value of filled prescriptions in the previous 6 months. However, the contracts are not exclusive for operation within the health insurance system, and pharmacies are free to dispense medicines that are not reimbursable by HIF. In 2013, HIF had signed contracts with 735 community pharmacies throughout the country, and 33 pharmacies at the hospital level. In mid-2016 the number of pharmacies with contracts with HIF was 804 and there were 33 in-hospital pharmacies. In terms of ownership, the pharmacies within the primary care level are private, whereas those in the public hospitals belong to the public domain and can only dispense medicines for clinical use. To ensure better access to medicines for the patients living in rural and remote areas, the HIF enacted an ordinance for 24-hour pharmaceutical care in 2012, obliging private pharmacies with contracts for dispensing medicines under the health insurance to organize 24-hour coverage of dispensing in shifts in all major cities in the country.

The pharmaceutical pricing and reimbursement policy has also changed with reforms in primary care; the policies are defined by the Ministry of Health and implemented through MALMED and the HIF. Since 2008, the Ministry and MALMED (the Drug Bureau at that time) introduced a regulatory system for all registered drugs by defining "unified price" as a ceiling price to ensure the same costs for particular medicine in all pharmacies. In 2010, a reference price system was complementarily introduced for drugs financially covered through the HIF to decrease prices for pharmaceuticals on the positive list of drugs (see section 3.7.1, *Pharmaceutical care*). This referencing policy yielded significant savings on pharmaceuticals estimated to be around €15 million annually since 2010, further improving the access to drugs for all citizens. In 2012, the policy was amended by the Ministry of Health to apply to all pharmaceuticals on the market.

All entities working with production, distribution and supply of drugs and other pharmaceutical and medicinal products have established units for monitoring of drug side effects. Each entity has an assigned person registered in the Registry of Monitoring Drug Side-Effects (*Pharmacovigilance*), responsible for promptly informing the Registry and MALMED about any identified or reported side-effects.

5.7 Rehabilitation/intermediate care

Rehabilitation care is provided for posthospitalization and postsurgical recovery, as well as for physiotherapeutic needs of diverse population groups, including the elderly, children and persons with disabilities.

Rehabilitation care services are provided by several specialized health care institutions in the public domain: the centre for rehabilitation from cardiovascular diseases in Ohrid, centre for physiotherapy and rehabilitation in Skopje, centre for rehabilitation in Katlanovo, as well as several healing spring spas with medical treatment, covered by the HIF that are subject to referral and in some cases require previous approval by the HIF.

Medical rehabilitation services covered by the HIF include physiotherapy (massage, electrotherapy, hydrotherapy, phototherapy and ultrasound), support by professional, and orthodontic aids, for the prevention or mitigation of reduced working or functional capabilities of a person. Medical rehabilitation is performed as ambulatory care, although patients can receive specialized medical rehabilitation in inpatient care, under the condition of prolonged (over 10 days) hospitalization for treatment of an acute condition. The medical rehabilitation covered by the HIF is obtained by a recommendation from a specialist and a referral from the primary care provider. To provide equality of access and fair resource distribution, the specialized medical rehabilitation can be provided for a maximum of 21 days; exemption is made for children with cerebral palsy that can use these services up to 30 days four times a year until the age of 14, and twice per year thereafter. Since September 2014, some categories of patients are eligible for direct admission to rehabilitation services without previous hospitalization: patients with multiple sclerosis, malignancies in children, cerebral palsy and patients with rheumatoid arthritis.

Intermediate care after hospital discharge is provided on call for families by home visit teams of a doctor and a nurse from one of the 34 Health Centres. Before this, these teams were referred by the hospital from which the patient was discharged. These teams serve as follow-up medical assistance aimed at facilitating earlier discharge or averting readmission to hospital by providing support at an intermediate level between primary and secondary care.

5.8 Long-term care

Provision of long-term care began in 1958 with the opening of the first home for elderly *Dimitar Vlahov* in Katlanovo, a village near the capital city of Skopje. After the catastrophic earthquake in Skopje in 1963 another home for the elderly, *Majka Tereza*, was built with the financial and technical assistance of the Inter-European mission of the Swedish Government. In 1972, the two homes were merged into a single institution which, in 1988 became the Gerontology Centre and 2 years later the Gerontology Institute, broadening its scope of work to health and social services for elderly persons. Beginning as a small home for the elderly, the Gerontology Institute has since expanded its capacities and expertise and is today a specialized hospital for geriatric and palliative care with 340 hospital beds and 10 beds for residential care. The uniqueness of the Gerontology Institute lies in its structure of integrating geriatric, long-term and palliative care, which is rarely the case in other European countries. The Gerontology Institute provides care for patients with chronic progressive and traumatic diseases in need of 24-hour medical care, patients in need of palliative care and provides residential care for healthy persons who predominantly need support and social care in their everyday living.

In addition, there are private care home facilities for the provision of care to the elderly. These are part of the network of social services and under the auspices of the Ministry of Labour and Social Policy. Costs for these facilities are covered out-of-pocket. People in home care settings can apply for a means-tested cash benefit for receiving care from third persons ranging between 3700 MKD and 4100 MKD (approximately €60 to €70) per month at their regional Centre for Social Works to cover some of the costs (section 5.9).

According to the National Strategy for Elderly People 2010–2020, the coverage of institutional long-term care was estimated at 0.5% in the elderly population, which is far below the European recommendation of 3–5% (Ministry of Labour and Social Policy, 2010). More initiatives and institutions in institutional care as well as in community care are needed to cover the increasing needs of the ageing population. In particular, the lack of specialized professionals, multidisciplinary teams as well as appropriately equipped institutions lead to long waiting lists for admission to these institutions and under-provision of care for the already deprived elderly in rural areas (Apostolska & Gulija, 2014).

Since 2009, the Ministry of Labour and Social Policy in cooperation with the nongovernmental organization Humanity in Skopje initiated community care for elderly through trained home caregivers, who upon request, visit the elderly in their homes and provide services of personal hygiene, food preparation etc. However, this type of home care is only provided in pilot locations through project-based funding (Ministry of Labour and Social Policy, 2010). The National Strategy for Elderly People 2010–2020 by the Ministry of Labour and Social Policy, adopted in 2010, envisions joint activities in support of the ageing population and outlines policy objectives on improving quality of life and implementing appropriate health and social service network for this population group.

5.9 Services for informal carers

As mentioned above service provision for persons in need for continuous medical care or assistance in everyday life at home remains underdeveloped. The care for these patients is to a large extent provided by family members and relatives, who, due to the scope and duration of the care provided, have limited possibilities for employment in the formal sector.

Under the Law on Social Protection, the Ministry of Labour and Social Policy has developed social and financial assistance instruments for persons in need of long-term care at home. Financial assistance for informal care by a third person is provided to people with long-term mental and physical disability, blindness and persons in need of assisted daily living. The request for financial assistance is administered through the Centres for Social Work and can be approved for an amount ranging from approximately €60 to €70 a month, subject to the severity of the condition or disability and the income of the applicant. The assistance is aimed at providing support in the home environment so reducing the number of people in residential care. However, the amount of the means-tested cash benefit can barely cover the actual expenses for daily living.

5.10 Palliative care

On a policy level, palliative care has been initially addressed in the National Strategy for Poverty Reduction and Social Inclusion 2010–2020, through the dimension of long-term care. Considering the under-provision of palliative care

and the global trends in this area, the Ministry of Health has since declared that it envisages plans for a Palliative Care Strategy, however, these have not yet been prepared and enacted. Nevertheless, the first hospice was opened within the Gerontology Institute in Skopje in 1998, equipped with funds from the state, the PHARE programme (Poland and Hungary: Assistance for Restructuring their Economies) and the Sue Ryder Care Foundation from the United Kingdom. Based on positive experience, good practices and increasing demand, in 2005, the second palliative care facility was opened in Bitola, the country's second largest city.

Initiatives have also emerged on a local level with the first municipal palliative service opening in the municipality of Sveti Nikole, a cooperation initiative of the National Employment Agency and the local self-government authorities. The municipal palliative service operates with an interdisciplinary team of social workers, psychologists and physiotherapists, working on call from family members and providing services towards attaining the highest quality of life, relieving unnecessary pain and suffering, psychological and social support to the patient and members of the family. This initiative has been launched as part of the operational plan for active employment measures in 2012 and might serve as a template for other local governments in addressing palliative care needs in the community.

5.11 Mental health care

Care for persons with mental health conditions is mainly provided in public psychiatric wards, although care from private providers is also available. The public system is represented by the Specialized Psychiatric Hospital and the University Clinic of Psychiatry with inpatient and day care services, both located in the capital Skopje, and several day centres for mental health care, prevention and treatment of depression located within the Health Centres. The strategic determination in social protection is for deinstitutionalization, towards community-oriented service delivery in line with the EU strategy (Ministry of Labour and Social Policy, 2008) and the recently adopted WHO European Mental Health Action Plan. Activities are being pursued accordingly; in cooperation with WHO and the Council of Europe, the aim is to develop socially oriented psychiatry and to set up more mental health centres in the community, taking local needs into account. A World Bank loan was used to perform reconstruction works on the psychiatric hospitals in Skopje and Negorci.

In 2006, the Law on Mental Health was enacted, regulating the rights and responsibilities of both health care providers and persons with mental health conditions. Due to the importance of mental health in the community, the law also provides legal grounds for establishing a Committee for Mental Health in each unit of local self-government, enabling close monitoring of the implementation and protection of the rights of the persons with mental conditions. In very few cases, municipalities have established such committees; however, their work is not publicized or widely disseminated to the public.

For many years, the country has had an annual public health programme for mental health that mainly comprises providing education to the population, and adolescents in particular, as well as counselling persons with severe mental health conditions including suicidal intentions among the young.

5.12 Dental care

Dental care services are provided at preventive, primary and secondary care levels. The Ministry of Health has made efforts to strengthen preventive dental care for children and adolescents through provision of preventive dental check-ups for all school children and children that are uninsured and outside the schooling system. These services are provided by 149 preventive teams working at the 34 Health Centres and funded through the programme for systematic check-ups for primary, secondary and higher education students, as well as through the primary dental services contracted by HIF. Based on WHO recommendations for dental preventive measures for children, the Ministry of Health developed a long-term National Strategy for Prevention of Oral Diseases for children up to 14 years of age for the period 2008–2018 (Ministry of Health, 2010b).

During the period 2004–2006 primary dental care services were privatized in the same manner and under the same conditions as other specialties in primary care. Primary care dentists who were assigned to work under the capitation model were given the right to use premises at nonmarket rent costs and to lease equipment that was available in the public health care institutions (see section 2.3.10). The privatization process did not include child and preventive dentistry, as well as emergency dental care services, these remained within the public sector. Also, remaining within the public domain were the dental services at secondary and tertiary levels at the maxillofacial departments of clinical hospitals in Bitola and Shtip, the general hospital in Prilep, the University Clinic for Maxillofacial Surgery and the University Dental Centre “St Pantelejmon” in

Skopje. Most of the dental practices at primary, secondary and tertiary levels have signed contracts for delivery of services with the HIF; however, some practices do not have contracts with the HIF and provide services on the basis of direct payments by patients.

5.13 Complementary and alternative medicine

Complementary and alternative medicine is not specifically regulated and defined. However, the legislation partly recognizes and regulates such treatment methods through definitions on registration and use of particular types of complementary and alternative medicine, but medical procedures of complementary and alternative medicine themselves are not included in legislation. To harmonize with international law, the Ministry of Health initiated an analysis on the available regulation (of products, service and professions) and the current situation of complementary and alternative medicine in EU countries and at the national level. The results show that the term "complementary and alternative medicine" does not exist in national law, although the use of homeopathic and traditional herbal drugs is accepted, described and regulated as a practice in providing health care for the general population among others within the Law on Medicines and Medical Devices of 2007. As no accreditation system exists, nonqualified professionals, such as persons with a nonmedical educational background do not have the right to practice alternative medicine, which opens a different set of issues regarding the overall practice of all forms of complementary and alternative medicine in the country.

5.14 Health services for specific populations

As in other countries, the health status of the Roma population is worse than the general population with significantly shorter life expectancy. According to a 2008 study, 45% of Roma men and 64% of Roma women suffer from chronic diseases. Of these chronically ill people, 73% are not able to procure the necessary drugs to treat their diseases (Pavlovski, 2008; Ministry of Labour and Social Policy, 2014). The causes of this poor health status and shorter life expectancy of the Roma population are multiple and need to be addressed through joint efforts of health and other nonhealth sectors, including education, employment and housing. This approach is taken within the Strategy for Roma 2014–2020 (Ministry of Labour and Social Policy, 2014). In a comprehensive and intersectoral approach, this strategy sets the vision for social inclusion

and improvement of possibilities for Roma wellbeing covering employment, education, quality of housing for and health of the Roma population as well as development and promotion of Romani culture, language and tradition.

Several nongovernmental organizations have initiated projects for the improvement of health status of Roma, including increases in immunization, health insurance coverage and access to health services. The most significant initiative undertaken was the education and recruitment of Roma health mediators, based on similar models from other Roma Inclusion Decade countries. In 2010, the process commenced with a situation analysis, followed by structuring and delivering a 3-month vocational training programme for selected candidates in 2011, who preferably had secondary medical school or a related educational background. In 2012, the first 16 Roma health mediators were engaged to serve in eight municipalities, outreaching to nearly half of the whole Roma population in the country. The programme was funded in cooperation between the government and the Foundation Open Society – Macedonia. The second phase of the programme started in November 2014 with the engagement of nine additional Roma health mediators for another four municipalities where the Roma population lives.

Health service provision in prisons and custody is regulated under the Law on Execution of Sanctions and the Law on Health Care. Health services for prisoners and persons held in custody is the responsibility of the Ministry of Health and health care costs are paid through the budget of the Ministry of Justice. Services are mainly provided at primary care level with some inpatient function, if more specialized care is needed, prisoners can be admitted to other health care facilities.

6. Principal health reforms

There are two distinct periods of health system reforms that can be discerned since the country's independence in 1991: the postsocialist transition (1991–1999) and the promarket period (2000 to present). The first period (1991–1999) of transition from command to market economy of the country is characterized by the inclusion of the right to health in the Constitution and the liberalization of health service provision through the Law on Health Care (1991). The second period (2000 to present) is characterized by the separation of the Health Insurance Fund from the Ministry of Health to serve as an independent third-party payer and reforms privatizing primary health care (2004–2007).

During the first reform period, a lack of strategic vision for health system development and reforms resulted in poor maintenance, low efficiency and high operational costs, leading to further deterioration of public infrastructure and quality of services. At the same time, with the liberalization of the health care market, demand for services from private health care providers increased, resulting in an increase of private out-of-pocket health expenditures for these services as well as migration of health professionals into private practice.

In the second reform period the government sought to reverse this negative trend and initiated a process of significant investment in infrastructure and equipment in public facilities. The new Law on Health Care (2012) introduced several key innovations in management and governance of health care, notably the launch of the Health Network (see Box 2.1). The Health Network, through its registry of health providers, is expected to enhance accountability and transparency. Moreover, the Health Network marks a new period of centralization and control by the government and the Ministry of Health, but designed to improve the functioning and efficiency of the health system.

6.1 Analysis of recent reforms

This section describes reforms in the health care sector including their goals, background and implementation from the 1990s with a special focus on the period since the last Health Systems in Transition review appeared (Gjorgjev et al., 2006). Since independence in 1991, two main periods can be distinguished with regard to the development of health system reforms and decision-making power over resource allocation: the transition (1991–1999) and pro-market (2000 to present) periods. Each of these periods carries its own specifics and major reforms that have left a stamp on the current structure of the health system (Box 6.1).

The first years since the independence of the country have been marked with attempts to preserve the existing system while consolidating available financial resources that decreased as a result of disintegration from the larger health system of the Socialist Federal Republic of Yugoslavia. The health care reforms since the early 2000s focused on improving efficiency of use of health care resources while maintaining the geographically well-distributed system of preventive, primary, secondary and tertiary levels of care, inherited from preindependence. The challenges that the country faced in particular throughout this process were the large health infrastructure including large and overstaffed hospitals, alongside the necessity to transform state-owned capital investments and health financing reform to correspond with the new vision of the future health care system. A comparative advantage to other postsocialist countries was the already present universal and free access to health services at the point of delivery for all citizens (Saric & Rodwin, 1993), which has been preserved by all governments over time regardless of their political orientation. This unifying principle forms the basis of the country's commitment to implement a system promoting universal health insurance coverage for all citizens.

Box 6.1
Two periods of health system reforms, 1991–2016

Postsocialist transition period (1991–1999)	
1991	Establishment of the right to health in the Constitution of the newly independent state
1991	Law on Health Care Liberalization of health service provision; transformation of state into public capital; re-establishment of professional associations and chambers
1993	Law on Pension and Disability Insurance Re-establishment of the solidarity-based retirement and disability system
Promarket period of reforms (2000 to present)	
2000	Law on Health Insurance Introduction of third-party payer system; establishment of semi-autonomous health care financing institution (Health Insurance Fund)
2002–2004	Regulation of existing public health functions through new legislation (Law on Ionizing Radiation Protection and Safety, Law on Population Protection against Communicable Diseases, etc.)
2004–2007	Amendment of Law on Health Care: Primary care reforms Transformation of primary care based on concession and blended capitation model (general practitioners, paediatricians, gynaecologists, pharmacies, occupational health specialists)
2006	Health care reforms: • Renovation and purchase of equipment in public health facilities using state budget and loans from international institutions • Introduction of the public–private partnership concept • Electronic health data management system • Regulating availability and accessibility of pharmaceuticals
2006	Law on Mental Health Introduction of new concept in and preventive approach to mental health, regulation of the rights of persons with mental health conditions
2006	Law on Sanitary and Health Inspection Establishment of supervisory and regulatory control mechanisms for health services
2007	Law on Medicines and Medical Devices Reformulation of pharmaceutical policies, in particular quality standards of production, registration and distribution of medicines and medical device
2007	Reestablishment of certain public health functions through new legislations: Law on Occupational Safety and Health, Law on Preventing Harmful Noise, etc.
2008	Law on Protection of Patients' Rights Compilation of existing rights of patients into single legislation and introduction of new rights (right to privacy and confidentiality of medical records, right to second medical opinion, right to personalized treatment, etc.)

2009	Law on Health Statistics Introduction of new concept in health statistics in the country, including level and scope of health records and data to be collected; increase of registries in various fields to 35 registries
2009	Amendment of the Law on Health Insurance Adding new ground for insurance based on citizenship (Universal Health Coverage approach)
2009	Introduction of Diagnosis-Related Groups (DRG) payment model for hospitals
2010	Law on Public Health Introduction of new dimension of existing public health functions, aligned with the International Health Regulations; establishment of Public Health Committee under the auspices of the government to coordinate intersectoral cooperation on public health issues
2010	Law on Protection against harmful effects of Smoking (smoking ban) Introduction of complete smoking ban in public and commercial premises
2011	Law on Blood Safety Restructuring of blood safety and transfusion system, aligned with the EU directives
2011	Law on Extraction and Transplantation of Parts of Human Body for Treatment Purposes
2012	New Law on Health Care Establishment of Health Network of all health care providers; Health Council under Ministry of Health; regionalization of care; registry of health providers; accreditation system for quality of care
2012	Introduction of P4P payment method for providers at secondary and tertiary levels of care
2012	Law on Voluntary Health Insurance Establishment of basis for voluntary (additional and private) health insurance (not yet in full implementation)
2013	Nationwide roll-out of MyAppointment, integrated electronic health system (upon piloting during 2011–2012)
2014	Establishment of the Agency for Medicines and Medical Devices (MALMED) as successor of the Drug Bureau Establishment of Agency for Quality and Accreditation of health institutions
2015	Establishment of the Directorate for e-Health
2014–2016	Development and endorsement of the first overarching National Health Strategy with action plans until 2020 Development and endorsement of Strategic Framework for Public Health with Action Plan until 2020 Development of Strategic Framework for Environment and Health with Action Plan until 2030; and Strategic Framework for Non-communicable diseases with Action Plan until 2020

6.1.1 First phase (1991–1999): postsocialist transition reform period

In 1991, the country constituted itself as a parliamentary democracy and a welfare state based on citizens' participation and the right to private property. The right to health protection and the obligations for protecting personal health and the health of others are embedded in the 1991 Constitution (article 39) that served as the basis for the further development of the legislation regulating the health care system. The organization and functioning of the health care system was re-established under the Law on Health Care adopted in 1991. The Law redefined all entities operating in the health care system, including medical chambers and professional associations and set the grounds for liberalization of health service provision by private practices (Nordyke & Peabody 2002). It also served as a basis for the development of the SHI system by introducing compulsory health insurance and the HIF as an administrative entity of the Ministry of Health with all decisions for allocation of resources, health care financing and planning of investments taken centrally by the cabinet. The health care system was centralized to provide strong control over utilization of resources and equitable distribution in times of economic crises (Menon, 2006).

The transition from socialism to a market-oriented system caused a collapse of many domestic enterprises. Within a few years, many state-owned enterprises were privatized and unemployment rate increased to approximately 10% (Slaveski, 1997). These new economic conditions inevitably caused significant deterioration in the health care sector due to reduced wage levels and lack of social insurance contributions. Between 1991 and 1995, total health revenues decreased by 40% with negative consequences on health service provision, health infrastructure maintenance, patients' and health workers' satisfaction as well as on the health status of the population (Ivanovska & Ljuma, 1999). As a result of lack of funds as well as low motivation and poor efficiency, health care providers accumulated financial debts that by 1997 totalled US$ 40 million.

Similar to other transition countries, this period was marked by important humanitarian and financial assistance programmes for the health sector, from both the international donor community and through bilateral relationships, providing pharmaceuticals, medical devices and equipment (Jovan Tofoski, former Minister of Health, personal communication). During this period the government signed its first Loan Agreement with the World Bank for health sector reforms (World Bank, 1996), but the effects were not felt until the promarket period of health care reforms.

6.1.2 Second phase (2000 to present): promarket period of reforms

The promarket period of health sector reforms is marked by reforms that were mainly initiated and guided by the World Bank's Health Sector Transition Project (World Bank, 1996; Nordyke, 2000) and the Health Sector Management Project. The influence and the pressure of the World Bank were key in the design of structural and fiscal reforms in the health care sector. Among the main reforms in this period were: the enactment of laws related to health insurance and the establishment of the HIF as a third party payer (2000); enactment of the law on medicines and establishment of the Drug Bureau as a constituent part of the Ministry of Health that has since been transformed into an independent agency on medicines and medical aids (2007). New payment mechanisms were established at all levels of care, including a capitation-based model for primary care, fee for services in specialist-consultative care, and DRG and P4P in secondary and tertiary hospital settings. The following sections deal with these reforms in more details.

Law on Health Insurance

The most important reform during this period was the formal separation of the HIF from direct control by the Ministry of Health, and the introduction of the third-party payer concept. In 2000, the Law on Health Insurance was adopted and the HIF was established as an autonomous health insurance agency governed by a managing board of 13 representatives, including six patients, two employers, three health providers delegated by the medical chambers and one representative from the Ministries of Finance and Health. The objective was to improve transparency and efficiency in financing and delivery of health services with an independent purchaser of health services being responsible for establishing performance-based payment that replaced the previous historic budgeting and politically driven financial allocations. These reforms were in line with the global movement led by the World Bank of creating health care markets by separating the role of purchaser and provider (McPake, 2002).

Amendment of Law on Health Care: primary care reforms

A further important set of reforms constituted the privatization of primary health care and the introduction of a capitation-based model for payment of physicians in primary care (2004–2007). In 2004, the Ministry of Health introduced changes in the Law on Health Care (1991), opening the possibility for privatization of segments of the public health care system including dental clinics and pharmacies. In 2005, additional amendments to the Law were adopted to initiate the privatization of the primary health providers, referring

to the general practitioners, paediatricians, primary gynaecologists, primary dental services, pharmacies, occupational medicine specialists, and school medicine specialists.

The privatization process encompassed long administrative procedures of planning and legislative preparations by the Ministry of Health. Each Health Centre was obliged to prepare a special programme for privatization to be approved by the Minister of Health. The previous salary-based payment system of doctors was replaced by a capitation-based payment with the income linked to the number of citizens enrolled on primary care providers' lists. Mostly, the primary care providers established private practices in premises at the Health Centres, which they were able to rent at favourable conditions. As a result, many providers remained in the same premises (Health Centres) as before privatization, which preserved the widespread accessibility of primary care for most of the population. The transformed Health Centres retained the provision of preventive services, including teams for immunization and preventive check-ups of pupils and students, home visiting and emergency services, as well as specialist-consultative outpatient care.

Although called privatization, the primary care transformation did not imply transfer of ownership of the premises themselves such as the Health Centres but transfer of providers from the public to the private sector. In other words, primary care providers were obliged to register their own private practice as a legal entity that could sign a contract with the HIF for provision of services at primary care level, while at the same time hiring medical nurses and renting premises in the publicly owned health facilities (Health Centres) (see also section 2.3.10). By October 2007, nearly 3 years after the adoption of the initial privatization changes, a total of 3521 health professionals at primary level (medical doctors, dentists, pharmacists and nurses) had moved to the private sector, constituting 95% of the licensed primary health care physicians and over 35% of all licensed practicing physicians in the country at the time (Milevska Kostova, 2010).

Each primary care provider is obliged to sign a performance-based contract with the HIF. These are based on the blended-capitation model which include 70% fixed amount and 30% variable amount, subject to fulfilment of preventive health targets that include rational prescribing and referral, preventive check-ups, and health promotion and education activities. The contracts paid on a monthly basis since 2013 (on a quarterly basis before), are subject to performance evaluation (see section 3.7.1, *Primary care providers* and 5.3.1).

According to surveys conducted for the Ministry of Health shortly after the reforms, patient satisfaction with health services increased as well as provider satisfaction regarding their income compared with the previous salary-based system. However, a more recent survey among primary care providers who are paid by capitation found that doctors are overburdened with administrative workload (previously bundled across all doctors within the Health Centre), negatively affecting the active time they spend on patient care (Lazarevik & Kasapinov, 2012). Since 2013, the HIF started introducing e-services for GPs to reduce the administrative workload (via MyAppointment, see section 4.1.4) and, together with the Ministry of Health, plans further improvements in this area.

During this second phase, first attempts for open dialogue and multi-stakeholder involvement in decision-making were made. It became clear that successful implementation of the reforms depended largely on governmental willingness and commitment, but even more importantly, on wider ownership and participation of all stakeholders in the development and implementation of the reforms. Examples of such open dialogues were the establishment of the Steering Committee for health reforms in 2009, and the open inter-sectoral consultation process of development of the National Health Strategy during 2014 and 2015, involving the highest level of government through the Committee for Environment and Health, chaired by Prime Minister and co-chaired by the Minister of Health (see sections 1.3, 6.2 and 7.1).

Privatization in other sectors

The transformation of primary care was completed without property transfer of the Health Centres from public to private providers. One exception was the privatization of the state-owned chain of pharmacies “City Pharmacies” (*Gradski Apteki*) as its premises were sold to several private entities in 2006 that established a new company.

Privatization also led to the emergence of private health providers at secondary and tertiary levels. During the promarket period a number of private specialized hospitals for cardiac surgery, gynaecology and obstetrics and one general hospital opened. The private hospital sector was developed in parallel with the public hospital sector, providing services under market conditions. However, the HIF started to sign contracts to cover some of the services provided at the private cardiac surgery hospital in 2012, and in the following years, contracts were signed with other private hospitals for specific types and volume of services that cannot be provided by public hospitals due to deficiency or lack of specialized care. Hence, the HIF reimburses defined sets and volumes of services provided in private hospitals, but patients still need to pay out-of-pocket for all other services provided at these facilities.

Law on Medicines and Medical Devices

Since 2007, the Law on Medicines and Medical Devices has regulated pharmaceutical care by setting quality standards of production and controlling registration and distribution of medicines and medical devices. Changes in the Law in 2010 introduced a new system of unified prices determined by the then Drug Bureau in the Ministry of Health. Based on this new system and on the Law on Health Insurance, HIF has also introduced necessary changes to pharmaceutical pricing policies. This system resulted in a decrease in the prices of pharmaceutical products. A further new provision was the implementation of international methodologies for reference pricing (2011) and unique pricing (2012) of pharmaceuticals, leading to a decrease of prices and payments for co-insurance for medicines covered by HIF. By the end of 2013, these cost containment policies have yielded total savings of €7.3 million on pharmaceuticals (Ministry of Health, 2014). In addition, the Ministry of Health started centralized procurement of optical lenses and plans to introduce centralized contracting for the most frequently used and expensive drugs as well as orthopaedic devices (see section 3.7.1, *Pharmaceutical care*).

Hospital Payment Reform: introduction of DRG

The hospital payment reform was part of the overall health reforms of 2006 and was developed under the World Bank Loan for Health System Management Project. In 2007, the new hospital payment system was introduced based on the DRG concept. Australia's DRG model was selected as the most appropriate model and the Ministry of Health purchased the DRG license from the Government of Australia. After a period of 2 years of preparatory activities and adaptation of the DRG model to the health system, in 2009, all 59 inpatient facilities started using the DRG coding for hospital cases (HIF, 2009) (see section 3.7.1, *Inpatient care*).

Implementation of e-health

In 2006, the government initiated a process of e-health that aimed to improve the daily operation of the health system as well as the development of an integrated health information system. The Ministry of Health prepared the Integrated Health Information Strategy, and its first visible results were the establishment of the web-based platform MyAppointment (*Moj Termin*), piloted in 2009 and launched in 2013 (see section 2.7). Within the same reform, other e-health services have been initiated. In 2011, the HIF developed and introduced the e-health card system that replaced the old paper health books (see also section 4.1.4). In the same year an e-treasury system was introduced to improve the transparency of the payments made to and from public health institutions.

Law on Public Health

In 2010, the public health system was subject to regulation based on the latest developments in public health policy and practice, and definitions of its functions, key actors and their responsibilities formed the new Law on Public Health. The main public health functions identified in the new Law on Public Health (2010) are:

- monitoring and assessment of health status of the population;
- identification, forecast, analysis and mitigation of health conditions and health risks in the community;
- protection of the population's health and undertaking measures and activities for ensuring protection of the population's health;
- primary and secondary disease prevention;
- health promotion and health education;
- proposing legislative changes and policies for addressing wider public health concerns (water and food safety, air quality, occupational health and safety, and land conservation);
- enabling formation of competent multidisciplinary public health professionals;
- support and implementation of public health research;
- public health development and planning;
- public health emergency preparedness and response; and
- providing inter-sector partnership and community participation for health promotion and inequality reduction.

Given the complexity of administrating public health functions, the law stipulates separate governance structures, including the National Public Health Council and Local Public Health Councils. In this law, the major role is played by the Institute of Public Health and the 10 regional Centres of Public Health (see also section 5.1). One of the key objectives of the Law is the establishment of the disease and risk registries that are also regulated under the Law on Health Statistics. These registries, which represent a core element of the health information system, enable monitoring of health status and designing health services to specific needs of the population.

New Law on Health Care

The new Law on Health Care (2012), building on the Law on Health Care (1991) and its amendments in 2006, introduced important changes to the health system and its functioning, including the establishment of the Health Network, which is a geographically well-distributed network of certified health facilities and providers on all levels of care that provide services according to adopted standards and evidence-based guidelines under HIF contracts. The Health Network encompasses planning of service provision and resources at national level as it determines types of health care services provided by geographical area, physical and human resources, hospital bed stock for each medical specialty as well as type and number of diagnostic and other medical equipment for each level of health care services (section 4.1.1 and Box 2.1).

The new Law on Health Care further regulates the following areas:

- provision of health services and pharmaceuticals;
- establishment of the Health Network including a system of registration and recognition of the health providers within the network and definition of levels of health service to be provided by each health care institution at regional level;
- establishment of new governance in health structures, such as the Health Council under the Ministry of Health;
- establishment of a quality of care system through preparation of clinical guidelines and introduction of an accreditation system of health care facilities (see below);
- establishment of an integrated comprehensive health information system (section 4.1.4);
- definition of health professions, including recognition of nursing care as a separate professional category (section 2.8.3);
- regulation of continued medical education, including the obligations of the Ministry of Health to provide professional upgrade to providers in the public health care sector (section 4.2.3); and
- maintenance of the quality and supply of health services in the public domain of the health system, including reversing the trend of migration of specialists from public to private health facilities (section 4.2.2).

In 2010, the Ministry of Health initiated the preparation of clinical guidelines jointly with the professional community. In 2014, the HIF has assumed its new role of control on adherence of clinical guidelines within its responsibilities

defined under the new Law on Health Care. Along these lines, the government established a new independent Agency for Quality an Accreditation of Health Institutions, responsible for preparation of quality standards of care, assessments of health services quality and accreditations of health care institutions based on the level of implementation of the adopted standards of care (see also section 2.8.2).

6.2 Future developments

Future reforms have the overall aim to improve health care quality and patient satisfaction. This is envisioned as continuation of the already implemented reduction of the waiting times for services in secondary and tertiary care, by upgrading infrastructure and health technology in public hospitals, as well as improving hospital financing and data collection.

Within this context and following the new global paradigm of creating resilient communities and partnerships for health and wellbeing, an open consultative process has been reinitiated to prepare an overall National Health Strategy. The main aim of this participatory process is to involve every sector and segment of society through the use of off-line technical meetings and online exchange of ideas, to gather the expertise and evidence-based experience that largely informs policy-makers and decision-makers on the current health state and needs of the population as well as the steps necessary to reduce health inequities. By the end of 2015, this process yielded several strategic documents, including the overarching National Health 2020 Strategy, and its action plans for Public Health, Environment and Health, and Non-communicable diseases, all developed in alignment with the European Policy Framework for Health and Wellbeing Health 2020 of WHO and the national commitments towards the Sustainable Development Goals within the Agenda 2030. The adoption of the National Health 2020 Strategy was adopted in December 2016 (see also sections 2.5 and 7.1).

In the future, many challenges need to be addressed to achieve better population health outcomes. This concerns, in particular, the full implementation of the new Law on Health Care of 2012 including the establishment and operationalization of the Health Network, which constitutes the most important recent development in the health system. Namely, a more efficient use of existing health resources within the Health Network and a registry of health facilities are necessary. Moreover, the medical schedule system MyAppointment leaves scope for improvement that can further enhance data and information exchange

as well as research opportunities. Currently, MyAppointment collects diverse health data that can be used not only to assess health status but also to conduct cost-effectiveness analysis of health resource use in terms of health gains. In the future, the system could be expanded to gather data on lifestyles and social determinants of health, as well as on biological and environmental risk factors of major noncommunicable diseases at individual and community levels. This would, among other effects, strengthen the country's response for prevention and control of noncommunicable diseases.

Planning and management of human resources remains an important challenge that the government already addressed in various steps (augmenting in-service medical education with foreign trainers, improving quality of theoretical knowledge and practical skills in preservice medical education, and providing scholarships for medical specializations abroad, see section 4.2.3). However, to date there is no comprehensive study or strategy for human capital development. In 2016, with technical assistance by the WHO, the Ministry of Health started to develop a national profile on human resources in health that assesses the availability of human resources, level of education and specializations, as well as projections on future needs. This study will be used as a starting point for the development of the national strategic document on human resources.

Finally, an important area that requires further reform is the collection of reliable data and assessment mechanisms to evaluate and monitor the performance of the health system and enable evidence-based decision-making. First and foremost the population census of 2002 as the central reference tool for all types of health care analysis urgently requires an update. There are a number of other areas where data collection is not sufficiently developed. There is a lack of population-level and individual-level data (e.g. health outcomes by regions, age, economic status and ethnicity) as well as of household, consumption and health surveys, which could, for example, assess satisfaction or financial protection. Also, systems to obtain quality data on the management system with reliable indicators are not in place. These could, for example, allow estimation of indicators such as avoidable mortality and evaluation of health service quality. Furthermore, there is an important lack of data that assesses health system efficiency, such as data on health workforce by regions, institutions and professions and detailed data on provider costs and resource utilization. Lastly, there are no reliable data on the shares of health care-related funding by sources of finance outside the HIF (out-of-pocket spending, other government agencies' expenditure etc.; see section 3.2).

In the attempt to improve the quality of care, in July 2014, the government created the Agency for Quality and Accreditation of Health Care Institutions (*Agencija za kvalitet i akreditacija na zdravstvenite ustanovi vo Makedonija*), as an independent body responsible for quality standards, quality assessment and provider accreditation improvements. Hence improvements in data collection for performance measurement can be expected.

While collection of data via MyAppointment and the Integrated Health Information Strategy system will generate reliable individual-level routine data on resource utilization, medical records, etc. (see sections 2.7 and 4.1.4), further improvement of data systems should be acknowledged as crucial in all future reforms to support health policy development.

7. Assessment of the health system

The health system of the former Yugoslav Republic of Macedonia is based on the values of solidarity, equity and participation of all citizens in the country. Although over 85% of the population is covered by health insurance and vulnerable population groups have a broad benefit package, out-of-pocket expenditures still represent about one-third of total health care expenditure, leading to a high level of inequality across income groups in terms of unmet needs for medical examination. There is wide access to care due to relatively good geographical distribution of primary care and high coverage of preventive care and immunization. However, there exist regional disparities in access to ambulatory specialists and health care at secondary and tertiary levels.

During the first years after independence, lack of financing, investments and appropriate incentives resulted in the deterioration of the physical infrastructure and the availability of medical equipment. Subsequently, the quality of health service provision in public facilities decreased followed by a low level of patient satisfaction and migration of health personnel to other countries or to the private care providers that emerged at the same time. Since 2009, the government has started to refurbish old facilities, procure modern equipment for public health facilities and started programmes to retain the workforce in public facilities.

Important health indicators have shown an improving trend since 2005, in particular mortality due to noncommunicable diseases, which decreased to the EU13 level. In addition, life expectancy and infant mortality rates improved, which reflects continuous policy efforts. However, the country still lags behind EU averages on all health indicators and prevalence of risk factors such as smoking and unhealthy diet is particularly high, which demands better monitoring as well as health promotion and disease prevention. Inequalities in health status exist between the general population and marginalized groups, in particular the Roma population.

Public sector health expenditure as a share of total health expenditure has increased between 2000 and 2013, although with falls in 2010 and 2014; yet the performance of health services has not been assessed. Inadequate data collection and low-quality health statistics have been identified as two of the underlying factors, and the country is working on improvements, that include establishment of an integrated health information system and a specialized Directorate of e-health. There is considerable room for more efficiency, in particular in the hospital sector, as the bed occupancy rate in hospitals is still considerably low at 59.7%.

The country has made recent efforts on reporting and improving performance of hospitals and has reshaped policies based on evidence gathered through open consultative processes. However, the low level of civic participation in policy formulation and decision-making still indicates low transparency and accountability at various levels of the health care system.

7.1 Stated objectives of the health system

As in most postsocialist transition economies the main objectives of reforms of the health system after independence in 1991 were to improve the efficiency of health resource utilization while at the same time retaining the good geographical distribution of health services and improving the health status of the population (Milevska Kostova, 2013). Political and economic developments have brought new lifestyles that influenced the health of the population. At the same time, new disease patterns emerged with noncommunicable diseases prevailing in the morbidity and mortality trends.

The post-2000 reforming period, and in particular the 2006 health care reform, envisioned to improve population health and to set up a health care system that is responsive to the needs of the population, through the following set of priorities:

- improving the health status of the population, with special attention to vulnerable groups and with emphasis on health promotion;
- improving effectiveness and efficiency of the health care system through the introduction of professional management in health institutions, and structural changes in the delivery of health care services, with emphasis on primary care;

- modernizing the system for protecting public health according to EU standards, with an emphasis on the central role of the existing network of public health institutions, consisting of the Institute of Public Health, its 10 regional Centres for Public Health and occupational medicine services;
- improving planning and management of human resources in the health care system according to population needs;
- establishing a health care quality assurance system; and
- improving health system financing by establishing a sustainable mechanism of financing and resource allocation.

One of the priorities of the 2006 government programme was improving health financing through establishing a sustainable mechanism of financing and resource allocation. This included:

- providing a clearly defined and unique basic benefits package for all citizens, covered by compulsory health insurance;
- improving financial control mechanisms and improved collection of health insurance contributions;
- introduction of performance-based reporting for all health care facilities to measure the efficiency of the use of financing; and
- allowing several forms of additional voluntary health insurance.

Although some major steps have been taken to achieve these above stated goals (Lazarevik et al, 2012), the multi-tiered reform led to fragmentation of primary health care. For example, the level of communication and collaboration between primary care and preventive service providers deteriorated, as, before the reform, all these functions were concentrated in Health Centres. This fragmentation was partly addressed with the establishment of capitation payment in primary care (2007), P4P in 2012 as well as DRG payment in secondary and tertiary care (2009). Overcoming fragmentation should therefore continue to be a health policy goal, in line with the set objectives towards the creation of a people-centred health care system.

The political commitment to address the above-mentioned gaps using intersectoral and collaborative approaches has become more visible in recent years. In 2009, the Ministry of Health has initiated an open consultation to improve the health system in terms of access and quality, through the establishment of an independent Committee for the Advancement of the Health Care System. This committee examined the following issues: health care system

management, administering health care, financing, pharmaceutical care and patients' rights protection. The Committee gathered over 1000 contributions and suggestions from experts, professional associations, patients and patients' organizations through regular meetings and via an online portal. The final product was the *Green Book* intended to serve as a roadmap for further health reform (Chichevalieva & Milevska, 2012). In 2013, the government established an intersectoral Committee on Health and Environment chaired by the Prime Minister with the aim of addressing the major issues of public health that require multisectoral actions.

In 2014 and 2015, the open consultative process has continued to prepare a strategy for improving population health status. This strategy is based on WHO's European Policy Framework for Health and Wellbeing Health2020 and the Sustainable Development Goals within the Agenda 2030. The country has taken the whole-of-government and whole-of-society approach with the main aim to involve every sector and segment of society in technical meetings or through the online platform Zdravje2020 (www.zdravje2020.mk).

The online platform, intended as a wide outreach tool for consultation, has been instrumental in gathering opinions, views and ideas from professional communities, civil society and ordinary citizens. At the same time, it serves as a health information portal, gathering over 200 strategic documents, legislation, reports and analyses from all sectors referring to health and wellbeing. It aims to aid the process of nationwide involvement in the creation, preparation and implementation of the National Strategy Health 2020, adopted in 2016. Its implementation will be monitored through transparent reporting and data gathering on indicators via the online platform as a dynamic tool (see sections 2.5 and 6.2).

7.2 Financial protection and equity in financing

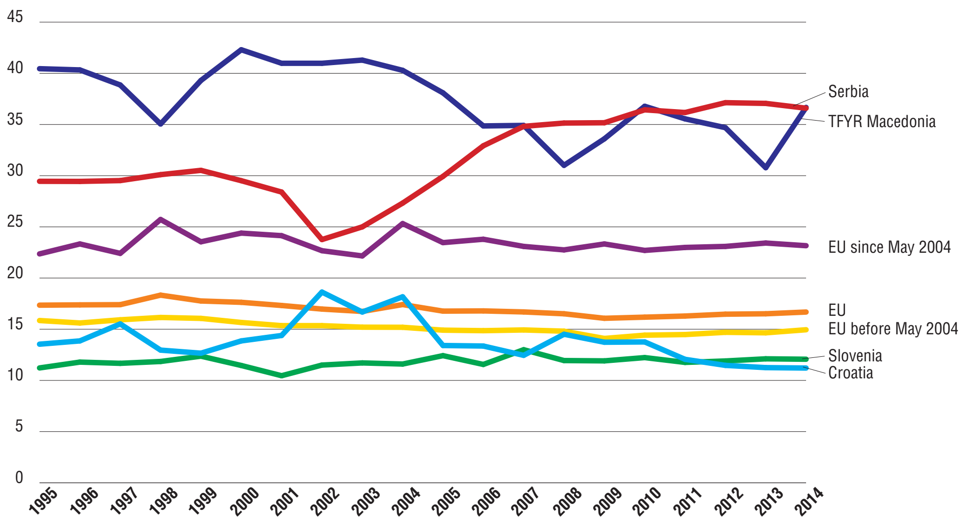
7.2.1 Financial protection

Financial protection in health care refers to the extent to which people are financially protected from the consequences of illness. The share of out-of-pocket payments made by individuals out of total health expenditures indicates the level of financial protection offered by the health system.. In 2014, out-of-pocket health expenditure amounted to 36.7% of total expenditure on health. Since 2000 it has dropped from 42.3% while simultaneously public spending as share of total health expenditure increased from 56.2% to 63.3% in 2014 with

peaks of 69% in 2008 and 2013 (WHO Regional Office for Europe, 2016a). Compared with most other countries in the region and European averages, the country has a very high share of out-of-pocket payments of total health expenditures, as Fig. 7.1 indicates.

Fig. 7.1

Out-of-pocket payments as % of total health expenditure in the former Yugoslav Republic of Macedonia and in selected countries, 1995 to latest available year



Source: WHO Regional Office for Europe, 2016b.

Out-of-pocket payments consist of co-insurance for certain services covered by health insurance, direct payments for OTC medicines and all services provided by private providers without HIF contracts, informal payments and payments for treatments received abroad. Co-insurance under the HIF scheme only represent approximately 8% of the total health service value. For that reason it is assumed that the major portion of out-of-pocket payments are the result of direct payments for privately purchased health care services and informal payments. The household consumption survey of 2015 shows that on average 3.8% of the total household income is spent on health (State Statistical Office, 2016).

According to the Eurostat Income and Living Condition Survey, 10.8% of the population aged 16 and over reported in 2012 that they had unmet needs for medical examinations or treatment, which is significantly higher than the EU28 average in 2014 of 6.7% (Eurostat, 2016b).

In 2012, the most common reason for not having a medical examination or treatment was that it was too expensive, which accounts for 6.1% of people (while in total 10.8% of people reported an unmet need for medical care). Compared with the EU28 average of 2.2% this is relatively high (Table 7.1). The next most commonly reported health-system-related reason in the country was waiting lists with 1% (Eurostat, 2016b).

Table 7.1

Self-reported unmet needs for medical examination due to being too expensive in %, by income quintile, last available years in the former Yugoslav Republic of Macedonia and selected countries, selected years

	First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile	Total
The former Yugoslav Republic of Macedonia						
2010	20.2	13.6	7.8	6.4	2.3	10.1
2012	12.7	8.7	5.5	2.7	0.9	6.1
Croatia (2012)	2.9	1.6	0.9	0.8	0.4	1.3
Serbia (2013)	12.7	6.0	4.6	3.2	1.6	5.7
EU28 (2012)	4.5	2.8	2.0	1.2	0.5	2.2

Source: Eurostat, 2016c.

In particular, low-income groups report very high levels of unmet needs for medical care because services are too expensive. In 2012, 12.7% of people in the first income quintile stated unmet needs due to financial reasons, which seems to be a considerable improvement compared with 20.2% in 2010 (Table 7.1). This decrease is possibly associated with the introduction of annual ceilings and waivers for cost-sharing for the most vulnerable groups since 2010 (Fig. 7.1).

In the highest income quintile only 0.9% report unmet needs. These disparities of reported unmet needs across different income quintiles seem to be particularly pronounced in the former Yugoslav Republic of Macedonia (and to a lesser extent Serbia) compared with the EU28 average, as well as with Croatia (Table 7.1).

These findings are also confirmed by a recent case–control study from 2012/2013 with 605 households containing patients with tuberculosis, indicating that the main reasons for not receiving health care in the past 30 days was lack of health insurance and inability to pay (15.1%), with the highest rates in the South-west region, populated mainly by Albanians (Gudeva-Nikovska & Tozija, 2015).

In the light of the global financial crisis, the government has undertaken measures to improve the financial protection of certain patient groups. In 2010, cost-sharing waivers were introduced for hospital stay and services for persons above the age of 70 years, children up to age of 1 year and all children with disabilities, persons receiving social protection benefits, and several other categories, such as war veterans and their families, veterans of the Second World War, etc. Cost-sharing requirements were also waived for emergency services in life-threatening situations. Additional waivers are provided to persons with low household income. Costs incurred from the waivers are covered from the state budget through a separate programme of the Ministry of Health (see section 3.4.1).

7.2.2 Equity in financing

The health system is based on the values of solidarity and equity and as such is predominantly financed by compulsory social health contributions and transfers from other agencies in the form of contributions on behalf of vulnerable population groups. The main sources of financing are wage-based SHI contributions from actively employed persons, active farmers, and contributions from the pension fund for the retired persons (89% of HIF budget in 2015). In all, 8% of the HIF budget comprises transfers from other agencies and the central budget for SHI contributions paid for specific categories of insured persons (unemployed, social benefit recipients, children not covered otherwise) as well as mothers on maternity leave (see section 3.2).

Progressivity in the financing of health care is also reflected in the different SHI contribution rates for different categories of contributing population groups (Table 7.2). In contrast to many other European health insurance systems, employers do not participate in the health insurance contributions of their employees (see section 3.3.2). The most vulnerable population groups, as defined by social policies in the country, as well as farmers who have weather-dependent revenues, are paying the lowest contributions rates, whereas the actively employed and retired persons contribute a much higher percentage to health insurance. SHI contributions for the vulnerable group of persons that are otherwise not insured (i.e. not insured under any of the defined insurance categories) are covered out of specific health or social programmes, ensuring a certain level of redistribution of resources from the active to the inactive or poor population. Furthermore, whereas the contributions paid by employed individuals and farmers are paid from their wages, contributions for retired and unemployed persons are effectively paid from government

Table 7.2

Rates of SHI contributions for different categories of contributors to HIF, 2013

Category	Rate of SHI contribution (%)	Basis for SHI contribution/ transfers	Absolute amount of contributions/ transfers	As % of total contributions/ transfers
Actively employed and self-employed	7.3	Gross salary	2 240 MKD (€36.4)	45.2
Registered farmers	7.3	20% of average gross salary	460 MKD (€7.5)	9.3
Retired persons	13.0[a]	Pension	1 410 MKD (€23)	28.4
Unemployed (uninsured) persons	5.4[a]	50% of the average salary	850 MKD (€14)	17.1

Sources: Health Insurance Fund (2013b), HIF Annual Report 2013.
Note: [a]Paid by transfers from general taxes.

transfers from general tax revenue, reflecting the fact that there is a strong income distribution from the economically active (mostly the actively employed, and to a lesser degree the farmers) to the economically inactive (retired and unemployed).

Studies that analyse the vertical equity in terms of progressivity or regressivity of the health financing system in the country have so far not been performed by national or international bodies. However, it can be said that the financing system is proportional with regard to public health revenues indirectly collected through a flat tax rate of 10% and SHI contributions. Further, there is no upper ceiling on SHI contributions, which makes the funding system proportional, albeit with lower (and so progressive) contribution rates for vulnerable groups. However, with regard to private out-of-pocket and informal payments that constitute one-third of total health expenditure or even more, the financing system is regressive, as poorer patients have to pay a larger share of their income than people with a greater ability to pay. On the other hand, waivers for co-insurance for certain vulnerable groups make out-of-pocket payments slightly less regressive. Nevertheless, more analysis is needed to evaluate the financial equity and in particular the structure and effects of out-of-pocket payments in the health system.

7.3 User experience and equity of access to health care

7.3.1 User experience

User experience has not been a major focus for research and only a few small-scale studies were performed in the last decade. A patients' satisfaction survey performed in 2007 on 1225 respondents found that between 79% and 90% of respondents expressed a high level of patient satisfaction for services and conditions in ambulatory care, hospital care as well as organizational and infrastructural conditions. Only a small percentage (3–7%) of respondents expressed dissatisfaction with the services offered (Tozija & Gudeva-Nikovska, 2008). Previous studies among marginalized groups have shown a basic lack of understanding and lack of information on the minimum standards of quality of care and patients' rights (Milevska Kostova, 2006). This can also be one of the reasons for the high satisfaction level with services in these population groups (Milevska Kostova, 2006; Apostolska & Tozija, 2010). The opinion poll of the World Bank's Health System Management Project in the former Yugoslav Republic of Macedonia shows that people who frequently visit primary care doctors are more satisfied with services obtained than persons with less frequent visits, whereas in hospital care the trend is the opposite (Ministry of Health Project Coordination Unit, 2007).

However, more recent studies suggest mixed levels of patient satisfaction. The 2010 European Bank for Reconstruction and Development – World Bank Life in Transition Survey revealed that 45% of the respondents were satisfied with health services provided in the country (World Bank, 2015). The European Health Consumer Index found that in 2014 the country has made a remarkable progress largely due to reducing waiting times through the real-time appointment system (Björnberg, 2016). Another study from 2014 investigated the patient satisfaction with public outpatient health care services at secondary and tertiary levels. The results of this cross-sectional study with 646 patients show that patients were more satisfied with tertiary care facilities compared with secondary care facilities (Stefanovska & Petkovska, 2014).

In 2011, the first patient satisfaction survey on pharmaceutical community services was carried out among 651 respondents. It showed overall satisfaction with the availability of medicines in the community pharmacies; but with noticeable variations between regions. In addition, the patients expressed mixed levels of confidence in pharmacy staff, with especially low confidence levels in Skopje (14.2% of people having no confidence), and the Vardar and Polog regions. The survey also identified that patients were unable to differentiate

between pharmaceutical graduates and technicians. However, more than half of patients claimed that they had obtained the necessary information from the pharmacy staff during their visit; approximately 70% of patients in all regions reported getting the information without having even to ask (Sterjev et al, 2011).

7.3.2 Equity of access to health care

The Constitution guarantees the right to health care for all citizens, which has been reflected in the health care legislation in the past several years. This includes introduction of universal coverage for all citizens with a broad benefit package for all people covered by health insurance, irrespective of socioeconomic characteristics such as income or occupation and several measures seeking to overcome inequity in access to health care services, such as cost-sharing waivers for particular groups of patients. After independence, the country has inherited a health system with geographically well-distributed service provision with municipalities delivering a range of primary care and hospital services. This decentralized system with high health service coverage has been largely maintained but has inefficiencies in staff mix and bed capacities, including regional disparities.

From a European perspective, the country has a good physician–patient ratio with 2.8 per 1000 population and high outpatient physician contacts per year, which are similar to the EU13 average. However, the nurse-to-population ratio of 4.2 per 1000 population is below international averages (see sections 4.2.1 and 5.3.1).

Equity of access to the health system remains a challenge that needs continuous monitoring and attention. In particular at primary care level, there are regional disparities of physicians (Table 7.3). Due to lack of data it is not possible to assess whether there are also regional differences with regard to number of specialists.

At secondary level, facilities are largely available throughout the country, both as outpatient specialist services provided through Health Centres – and as inpatient care provided through the clinical and general hospitals. Due to the small population size, tertiary care is only available at the university clinics and institutes in the capital Skopje (see section 5.4). Nevertheless, there are on average eight hospital beds per 1000 people in four regions but only 2.2 beds per 1000 in Skopje (World Bank, 2015). Equally, the move by many specialists from the public to the private sector due to better remuneration creates unequal access to health services, leaving the most socially deprived population groups with limited choice and within crowded public health facilities (Apostolska & Gulija, 2014; see section 4.2.2).

Table 7.3
Distribution of primary health care doctors per region, 2015

Region	Number of primary health care doctors	Primary health care doctors per 1000 insured persons
Polog	219	0.89
Vardar	123	0.89
South-eastern	129	0.84
South-western	141	0.80
Pelagonija	182	0.85
Eastern	119	0.75
North-eastern	184	0.99
Skopje	487	0.78
Total	**1 543**	**0.85**

Source: HIF, 2016b.

Information technology has also been used to improve equity in access to health services. With the introduction of the new real-time electronic referral and appointment system (MyAppointment) for health services at secondary and tertiary levels, waiting times for some specialized diagnostic and therapeutic services have been reduced from over a year to less than 1 month (see also section 2.7).

In addition, equity of access to health services is traditionally observed in the provision of preventive and public health services. Immunization and preventive systematic medical check-ups are provided free at the point-of-delivery for all children and adolescents regardless of their health insurance status. Through the Ministry of Health's programme "Health for All" a number of preventive examinations for general health and cardiovascular diseases among at-risk populations, including elderly and marginalized groups, are performed every year (see section 5.1.1).

7.4 Health outcomes, health service outcomes and quality of care

7.4.1 Population health

In general, many population health indicators have lower levels in comparison to EU averages. Average life expectancy at birth of 75.1 years was below the EU average of 80.2 years in 2010 but was similar to EU13 and European Region averages. Notably, life expectancy at birth increased considerably

from 68.7 years in 1980 to 75.1 years in 2010, with a decreasing gender gap of 4.5 years in 2000 to 3.9 years in favour of women in 2012 (State Statistical Office, 2014; WHO Regional Office for Europe, 2016a, see section 1.4).

The main causes of mortality, as in many European countries, are noncommunicable diseases, in particular circulatory diseases, cerebrovascular diseases and malignant neoplasms, smoking-related causes, attributable to prevailing unhealthy habits and behaviour (unbalanced diet, high rate of smoking and drinking and low physical activity). Death rates by these diseases have in particular decreased since 2005 and are very similar to EU13 averages but far higher than averages for the EU, with for example a standardized death rate due to circulatory diseases more than twice as high as the EU average in 2013 (see Table 1.4; WHO Regional Office for Europe, 2016a). In general, low input into health promotion and monitoring of risk factors towards prevention and control of non-communicable diseases are some of the reasons for these health outcomes but this needs further attention.

With regards to communicable diseases, tuberculosis incidence is in decline and HIV prevalence is still very low. However, the number of detected hepatitis B infections is on the rise, but obligatory immunization was introduced in 2004 to prevent a further increase (see section 1.4).

Infant mortality has shown a decreasing trend in the last 30 years, declining between 2000 and 2010 from 11.8 to 7.6 per 1000 live births, respectively. Similarly, under-five mortality decreased from 16 to 8.4 per 1000 live births in the same period (WHO Regional Office for Europe, 2016a). However, in terms of infant mortality the country is still lagging behind the EU averages. There are significant geographical differences in infant mortality rates, from 6.4 (Vardar Region) to 13.0 (Polog Region) per 1000 live births in 2007 (national average 10.3 for 2007) (see section 1.4; Ministry of Health, 2010a).

Environmental and behavioural risk factors, including air pollution, high smoking rates, unhealthy diet and hypertension constitute the major health risk factors in the country. Smoking prevalence is still very high with 40–50% of the adult population (above 15 years) being regular smokers with an average annual cigarette consumption of 2310 cigarettes per person (Institute of Public Health, 2014). Nutrition has not been comprehensively assessed, but several studies with representative samples of general and specific population groups show average daily intake of fats of 34.1%, higher than the recommended level (< 30%), exceptionally high sodium intake of 7883 mg, compared with

the recommended values of 500–2500 mg, and salt intake higher than the recommended 5 g/day, as a result of large consumption of processed foods (Institute of Public Health, 2014).

The observed improvements in life expectancy and mortality rates have been a result of not only improved access and quality of care, but also of other societal and economic factors. Although studies are not yet available, it can be assumed that the rising awareness of positive effects of healthy lifestyles and the increasing culture of preventive medical examinations are contributing to the observed improvements. However, as already shown in Chapter 1, morbidity and mortality rates are still above the EU averages, so there is scope for further action. The priorities of the health system have shifted to addressing health inequalities, providing better access to health services and further improving quality of care. However, the health status is lagging behind European averages and signals a need for further efforts and investments in preventing premature mortality and promoting healthy lifestyles.

7.4.2 Health service outcomes and quality of care

There is still no quality management system in place based on reliable indicators and mechanisms for monitoring and control that could feed the process of quality improvement. Although performance-based payment mechanisms are in place, encompassing P4P, conditional budgets and preventive health targets (see Table 3.4), they are only based on type and quantity of services provided and do not consider qualitative aspects of care provision (Lazarevik & Kasapinov, 2012). Clinical guidelines for all medical specialties have been prepared; they are published in the Official Gazette and regularly updated. In addition, health care institutions are preparing clinical pathways based on the clinical guidelines. However, these clinical guidelines are not yet used to measure quality of care.

The assessment of health service outcomes and quality of care are also hampered due to lack of data on key indicators both at national and institutional level as there are no systematic data collection systems, which was identified as a crucial challenge in the Health System Information Strategy in 2007. Since 2013, the Ministry of Health has sought to improve this situation with the health information system (MyAppointment, see section 4.1.4).

At present, data on health service outcomes exist only for preventive care. Data on avoidable hospital admission rates for certain chronic conditions as well as on in-hospital mortality rates for certain diseases, which are good

measures for primary/ambulatory care and acute care quality, are not available. In the attempt to improve the quality of care, in July 2014, the government has established the Agency for Quality and Accreditation of Health Care Institutions (*Agencija za kvalitet i akreditacija na zdravstvenite ustanovi vo Makedonija*), as an independent body responsible for preparation of quality standards of care, assessments of health services quality and accreditations of health care institutions based on the level of implementation of the adopted standards of care.

Preventive services, such as immunization and preventive medical check-ups traditionally have a high coverage rate in the country (Table 7.4). Their delivery is universal to all children and adolescents, regardless of their health insurance status. The country has added mandatory vaccination against hepatitis B virus for all babies born after November 2004 and against human papillomavirus for all girls age 9–12 years since 2010 (Ministry of Health, 2012).

Table 7.4

Immunization rates of infants and children, 1990 to latest available year

% of children vaccinated against:	1990	1995	2000	2005	2010	2013
Tuberculosis	n/a	90.0	97.4	98.8	96.0	97.0
Diphtheria, Tetanus, Pertussis	94.4	95.2	95.1	97.1	95.4	98.0
Poliomyelitis	94.3	94.7	96	97.5	94.8	98.0
Haemophilus influenzae type b	n/a	n/a	n/a	n/a	88.8	97.0
Hepatitis B	n/a	n/a	n/a	90.8	90.4	97.0
Mumps, Rubella	93.6	96.7	97.1	n/a	98.1	96.0
Measles	94.0	97.0	97.0	96.4	98.1	96.0

Source: WHO Regional Office for Europe, 2016a.
Note: n/a: not available.

The 2011 Multiple Indicator Cluster Survey (MICS) survey reports vaccination rates among the Roma minority. For the whole population of 18- to 29-month-old children 80% had all the recommended vaccinations by their first birthday, within Roma settlements only 65% of 18- to 29-month-old children had received all the recommended vaccinations by their first birthday (MICS, 2011).

The use of patient-reported outcome measures is not an established practice in the country. According to health legislation, providers, especially hospitals, are obliged to gather complaints and opinions of patients through a complaints register and comment box, placed in each facility in a visible and easy to reach place. Some sporadic surveys of health outcomes have been undertaken with patients, but mostly for internal research purposes at some hospitals.

Each inpatient health care setting is legally required to have a Patients' Rights councillor within the health care facility. This councillor, appointed by the Ministry of Health, has the obligations to consult patients on their rights, to receive their complaints and to address them within the health care setting or to advise on further possibilities for resolving any issues. The councillor reports back to the Ministry of Health on complaints received and actions taken. The patients' rights councillors have been appointed in some, but not all facilities, due to lack of human and physical resources for full implementation of the law (Alcheva, Gerovski & Beletsky, 2013). In 2014, the Ministry of Health started revising the law, but this is still in progress.

Patient safety standards or indicators to measure them have also not yet been developed or implemented in the health care system. Medical audits are performed on demand and on a case-by-case basis, but there is no elaborated data collection or analysis, except for intra-hospital infections.

Indirect evidence on the appropriateness of operations of health facilities can be obtained from the annual HIF reports, which audit the implementation of legal requirements (type and number of health professionals in the facility, validity of licenses, etc.) and contractual obligations of providers (such as volume of services delivered, reporting, invoicing and so forth). In 2012, a total number of 7496 audits were carried out in primary care, pharmacies, hospitals, as well as audits of particular functions, such as sick leave referrals and financial operations. In the same year, 4.9% of the audits revealed irregularities in provider operations, 1% less than in the previous year, which indicates better compliance with the legal requirements and contractual obligations (HIF, 2013b).

7.4.3 Equity of outcomes

As in many countries, inequities in health outcomes exist along territorial, ethnic, age, gender, educational and socioeconomic lines. The decline of the production sector and rapid increase of unemployment in the early 1990s has led to widening socioeconomic inequalities that have also influenced the health status of the population, particularly of marginalized and vulnerable groups. The health status of vulnerable population groups, especially children, is characterized by lower life expectancy, shorter healthy life expectancy, higher morbidity and increased mortality and premature death from noncommunicable diseases. The National Report on progress to MDGs (2008) showed significant disparities in infant mortality between regions (5.6 per 1000 live births in Vardar and 13.07 per 1000 live births in Pelagonija and Polog in 2007 compared with nationally 10.3 per 1000 live births), which may reflect differential access to

health care services between urban and rural areas (UNDP, 2009). Inequalities in child health also exist among different socioeconomic groups. The MICS 2011 survey showed that the prevalence of diarrhoeal diseases among children of 0–59 months in the poorest income quintile is twice as high as compared with the wealthiest quintile (MICS, 2011). These socioeconomic differences in child health are supported by earlier data on other health outcome measures and diseases (Table 7.5; World Bank, 2012).

Table 7.5

Inequalities in child health by income quintile, 2005

Health outcome	First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile	Total	CI
Stunted growth	14.8	11.0	13.6	5.9	8.5	11.6	–0.149*
Underweight	2.9	1.3	2.0	1.4	1.1	1.9	–0.205
Diarrhoea	9.8	8.0	4.4	6.8	3.9	7.3	–0.148
Acute respiratory infection	17.1	13.5	11.8	8.8	10.7	13.1	–0.141*

Source: World Bank, 2012.
Notes: CI: Concentration Index, ranges between –1 and 1; a negative sign indicates that the health outcome has higher values among the poor; * significant at 1%.

Inequalities in health status exist between the general population and marginalized groups, in particular the Roma population. Main sociodemographic and health indicators show 10 years shorter life expectancy for Roma compared with the general population (Ministry of Labour and Social Policy, 2011; Open Society Foundations, 2013). Also in terms of child mortality, the ethnic minorities of Albanian, Turkish and Roma population had considerably higher death rates for infants and under-5s compared with Macedonians and Serbs (Table 7.6).

Table 7.6

Infant death rates and under-5 mortality rates by ethnic background, 2007

	Macedonian	Albanian	Turkish	Roma	Serbian
Infant death rate (per 1000 live births)	8.0	13.4	14.2	13.1	7.9
Under-5 mortality rate (per 1000 live births)	9.0	15.0	14.7	15.1	8.3

Source: UNDP, 2009.

In particular, the Roma minority has been the focus of several poverty reduction and social inclusion programmes, most notably through the commitment of the government for the Decade for Roma Inclusion 2005–2015. Policies directed towards reduction of health and social inequalities of Roma and other marginalized groups have been adopted since 2006, with monitoring mechanisms for their implementation and revision. The list includes the National Roma Inclusion Strategy 2014–2020, National Strategy for Poverty Reduction and Social Inclusion 2010–2020, Strategy for Elderly 2010–2020, and other strategies on gender equality, nondiscrimination etc.

7.5 Health system efficiency

7.5.1 Allocative efficiency

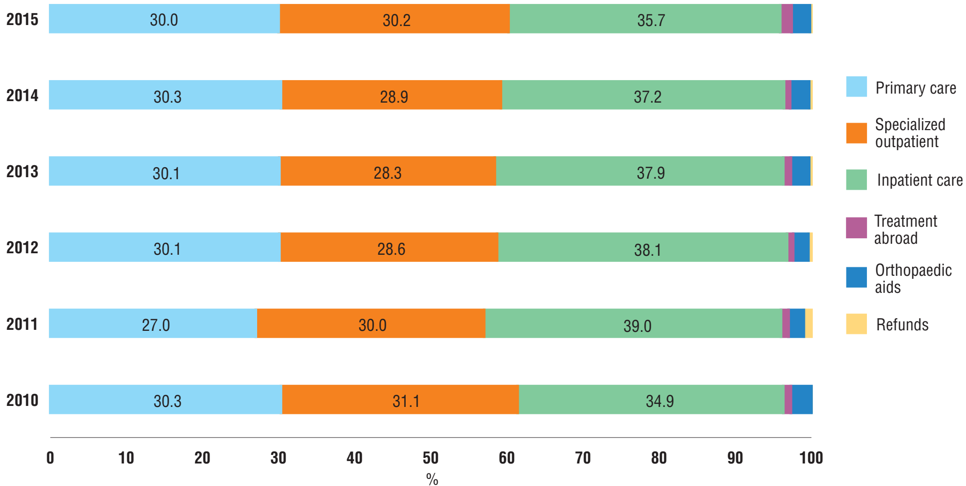
Allocative efficiency relates to the extent to which limited funds are allocated in a way that best satisfies the population preferences in terms of mix of health services. There is currently no system in place for health system budget allocation. Budget allocation to different health care sectors is traditionally based on historical expenditures and existing staff costs (World Bank, 2015).

Within the allocation of resources to different sectors, inpatient care providers receive the largest share of HIF budget, with 35.7% in 2015, followed closely by primary care and outpatient specialist care (30% each) (Fig. 7.2). Expenditure on inpatient care has increased since 2010, which can be explained by the introduction of the HIF of output-based payments for high-cost treatments, additional payments for complex patients and a 25% payment bonus for paediatric and acute psychiatric care provided in specialized hospitals (see section 3.7.1, *Inpatient care*) whereas DRG payments for “base cases” for hospitals and capitation payments for primary care physicians remained stable (World Bank, 2015).

However, sectors such as long-term care and palliative care are not sufficiently developed, which leads to long waiting lists and underprovision (see Fig. 4.1, and see section 5.8). Acute hospitals often provide care for elderly people in need of long-term care (see section 7.5.2) which leads to inefficiencies in the provision of services. For specialized diagnostic and therapeutic services, the country has made substantial progress in reducing waiting times which may lead to patients receiving care more effectively and efficiently when needed.

Fig. 7.2

Expenditures of HIF by service category in %, 2010–2015



Source: Authors' compilation from annual reports of HIF (HIF, 2011, 2012a, 2013b, 2014, 2015, 2016b).

As in many countries in central and eastern Europe the share of out-of-pocket payments and informal payments for health services of total health care spending is high (Rechel & McKee, 2009; see sections 3.4.3 and 7.2.2), making poorer population groups less likely to receive the treatments they need. In general, informal payments distort the efficient allocation of public resources, as individuals are willing to pay for better services or for better access. In sum, this suggests that better allocation of resources could lead to more efficient resource use and mix of services.

Substantial investigations and analysis on the allocative efficiency of resources in health care have not been undertaken, and should be seen as a challenge for the research community in the coming years.

7.5.2 Technical efficiency

The technical efficiency of the health system is not extensively investigated, but some performance indicators are monitored by the HIF and reported in the annual publications of the Institute of Public Health on hospital morbidity. With the introduction of DRGs the average length of stay declined from 10.5 days in 2006 to 7.9 days in 2013, which is close to the EU average of 8.1 in 2013 (WHO Regional Office for Europe, 2016a). In 2010, the longest average stay was 246.8 days in psychiatric hospitals, followed by the Gerontology Centre in

Skopje (82.5 days), rehabilitation centres (19.4 days) and the special hospital for orthopaedic services and traumatology in Ohrid (15.1 days) (Institute of Public Health, 2012). Looking at average length of stay by type of discharge, patients with subsequent treatment in home care facilities, other type of facility and with death as discharge reason have the longest average stay. This indicates a lack of residential long-term care facilities for the elderly in need of care, which drives up the average length of stay (see Table 7.7; UNDP 2009).

Table 7.7

Bed occupancy rate and average length of stay by hospital type, and discharge type, 2011 and 2014

	No. of beds/cases	Bed occupancy rate (%)	Average length of stay (days)
Hospital type (2011)			
General Hospitals	2 537	43.3	5.4
Clinical Hospitals (Bitola, Tetovo, Shtip)	1 482	39.5	5.4
Specialized hospitals[a]	986	29.5	n/a
University clinics (tertiary level)	2 344	53.9	n/a
Discharge type (2014)			
Discharge upon completed treatment	222 610		5.6
Discharge with transfer to other hospital	4 462		3.0
Discharge to treatment in home-care facility	51		13.2
Discharge with transfer to psychiatric hospital	74		4.6
Discharge with transfer to other type of health care facility	241		5.9
Voluntary terminated treatment	3 634		3.6
Death	3 560		6.9
Total	234 642		5.5

Sources: HIF, 2012b; Health Insurance Fund: DRG Annual Report 2014.
Notes: n/a: Not available; [a]Psychiatric hospitals are not included.

The bed occupancy rate has increased from 54% in 2008 to 59.7% in 2013 but in international comparisons, for example to the average of EU13, which is 71%, and to the EU average of 76.6% (2012) it is considerably low (see section 4.1.2). The highest bed occupancy rate in 2011 was reported in university clinics at tertiary level (53.9%) and the lowest in specialized hospitals (29.5%) (Table 7.7).

There are, however, also large differences in bed occupancy rates between hospitals of the same type. In 2011 HIF reported bed occupancy rates in general hospitals that range between 92.3% (General Hospital Struga) and

17.6% (General Hospital Ohrid), in special hospitals between 60.7% (Special Gynaecology Hospital Chair) and 8.1% (Special Hospital for Pulmonary Diseases in Oteshevo) and in university clinics between 100% (University Clinic for Oncology and Radiotherapy) and 10% (University Clinic for Psychiatry) (HIF, 2012b). Such differences may also be explained by the varying number of beds per population with on average 2.2 beds per 1000 population in the capital and 8 beds per 1000 population in four other regions (World Bank, 2015), as well as the different pace of reduction of hospital capacities and hospital admissions, probably due to varied implementation of clinical guidelines and definition of levels of health services to be provided by each health care provider at regional level through the Health Network. From an international perspective however, the average number of acute care beds of 3 per 1000 people is below the EU average of 3.6 per 1000 population (see section 4.1.2).

With regard to health technology, it is worth noting that the cost (and volume) of medicines issued under the HIF have been growing since 2009, from 26% to 28.9% of HIF budget in 2013. This is high compared with most EU countries, which spend on average 17% of health expenditures on pharmaceuticals. This can be attributed to high spending on hospital drugs, which is twice as high as in most EU countries (World Bank, 2015). However, by the end of 2013, prices of medicines decreased for a total of 415 generic drugs and 337 innovative drugs, yielding total savings of €7.3 million, although this may also have led to increased dispensing and utilization (Ministry of Health, 2014).

With the introduction of the DRG-based payment system in inpatient care facilities in 2009, public hospitals and health facilities had to struggle to provide care as efficiently as hospitals in the private sector due to excessive staffing and low bed occupancy. Therefore, the government established a programme in 2011 that required the HIF to provide supplementary funding to these less-efficient hospitals for upgrading of medical equipment and infrastructure; increasing professional staff recruitment; ensuring compliance with clinical guidelines; and providing adequate services at the assigned competence level. This programme was also designed to facilitate the transition to DRG-based payment, allowing hospitals to adjust. In 2011, 52 public facilities were part of this programme. However, the programme implies certain opportunity costs as less resources are available for better performing hospitals and for primary care. Further, it creates incentives for hospitals to provide care less efficiently as managers can assume that arrears will be cleared through public funding (see section 2.8.2; World Bank, 2015).

With regard to human resources in the health sector, the lack of supply of nursing staff requires further attention. The large difference of the nurse to population ratio compared with the EU average is most likely due to migration of nurses and lack of licensing and accreditation of this profession in the country.

In terms of technical efficiency, there is considerable room for improvement in the production of health care, particularly with regard to more efficient utilization of existing capacities of hospitals and imbalances in costs and quality of care that result from informal payments.

7.6 Transparency and accountability

Transparency and accountability have been an important challenge facing all economic sectors including the health sector. Due to a lack of publicly available data usable for analysis, the culture of evidence-based policy-making has only recently begun to gain understanding and acceptance. However, the EU accession process and the expanding influence of civil society have forced transparency and accountability on the government's agenda. Furthermore, in 2006, the country enacted the Law on Free Access to Public Information (Official Gazette, no. 13/2006), enabling additional mechanisms for increased transparency and accountability of the public sector.

Since its establishment in 2000, the HIF has published its annual reports. Initially, reporting was scarce and generally prepared as a report to the Governance Board of the HIF. Over the years, annual reporting has improved, both in terms of the data presented as well as in the diversity and frequency of analytical reports produced by HIF, including monthly and quarterly available reports for particular services. The HIF also publishes annual DRG reports with comparative data on hospital outputs and efficiency and a list of less-efficient hospitals. Less-efficient hospitals can require supplementary funding by the government to close their financing gap due to excessive staffing, low bed occupancy, etc. (see section 7.5.2). However, the HIF has not provided an update on unit costs for DRGs based on current hospital expenditure (World Bank, 2015). To enhance monitoring, autonomy on staff and resource allocation and performance of hospitals, the HIF together with the Ministry of Health introduced a Balanced Score Card system, which assesses the performance of hospitals based on criteria such as financing, patients, clinical focus, development and training (World Bank, 2015).

The State Audit Office established in 1997 as an independent body directly reporting to parliament has been regularly auditing the financial operations of health care facilities, based on their annual operational plans and through ad hoc visits. The State Audit Office reports are made publicly available among others on their official website (www.dzr.mk/en/).

According to a monitoring report conducted in 2014 by the Centre for Economic Analyses and the Institute for Democracy "*Societas Civilis*" on the transparency and accountability of state institutions as public budget users, the only positive examples for transparency are the State Audit Office for its audit results and the HIF for its monthly budget reports (Trenovski, 2014).

As mentioned in section 3.4.3, the World Bank Life in Transition Survey found that over 40% of the population made informal payments to receive health services, with over 20% stating that they made these kind of payments "usually" or "always" (EBRD, 2011). The high level of informal payments indicates a certain lack of control over existing rules and a lack of accountability in the health sector.

Although citizens formally enjoy the rights of public participation, they are still not able to fully and meaningfully participate in the decision-making processes in the health sector, including access and quality of care or allocation of funds. Although the HIF involves civil society and patients in its Governance Board, their influence on decision-making is still rather small. Public participation in the decision-making processes of the Ministry of Health is even less explicit or actively promoted. An example of involvement of all stakeholders in decision-making was the establishment of the Committee for the Advancement of the Health Care System in 2009, which drafted the *Green Book* of health care reforms. This process has served as a template for the comprehensive and well-organized involvement of hundreds of engaged experts and citizens and over 1000 ideas and proposals for improving the health sector. What could be seen as continuation of the efforts, the nationwide open consultative process of preparation of the National Strategy Health 2020, was initiated in 2014 and 2015. This resulted in formulation of a strategic document that involved and potentially will involve many stakeholders in both its preparation and implementation. Using whole-of-government and whole-of-society approaches (see section 2.6), it displays the importance of health for economic growth and society at large, while enabling better socioeconomic development and equity by the healthier nation.

8. Conclusions

The health system in the former Yugoslav Republic of Macedonia has seen major transformations and liberalizing reforms, while at the same time managing to sustain compulsory health insurance with a broad benefit package. The reforms have placed emphasis on the transformation of primary care, including health service providers and community pharmacies, but have also restructured how preventive care, dental care and specialist outpatient care are delivered. With the policy changes and reforms already implemented, the country has shown political will and commitment to providing health services to all and to reducing inequities by implementing incentives and programmes to optimize the provision of care to special populations.

The major reforms that aimed at improving the efficiency of the health resource use were the privatization of primary care doctors and their remuneration based on capitation payment; introduction of preventive health targets in primary care; implementation of reference pricing for pharmaceuticals (which led to important savings); introduction of DRG system for hospitals; and introduction of P4P scheme for health providers, which still has large scope for improvement.

These reforms have been accompanied by the introduction of an e-health system, which led to efficiency improvements, e.g. by reducing waiting times, improving coordination and collaboration of health professionals and easing referrals to higher levels of care. Upon the Ministry of Health's initiative in 2013, the MyAppointment (*Moj Termin*) was established first as a real-time appointment system. It has since been expanded to include e-health records of all visiting patients, real-time monitoring of health resources including appointments, issuing prescriptions and referrals and utilization of health technology and bed stock. The system's objective is to incorporate all health data in the coming years. The HIF also introduced many e-services for the

contracted providers, such as use of the Electronic Health Card for services such as e-prescription and e-referrals, electronic reporting, e-invoicing, etc., thus enabling faster and more reliable flow of data.

Efficiency improvements have mostly been made in primary care, whereas the public (inpatient) care sector remains affected by poor organization and management, oversized facilities in terms of staff and infrastructure and low bed occupancy. Since the introduction of the DRG system in 2009, the financing of hospitals is increasingly linked to hospital outputs, which has led to major financial deficits of hospitals because more services are provided than payments received. This is subject to continuous adjustments in terms of rationalization, taking into consideration geographical coverage, utilization rates, human resources and infrastructure.

While going through economic hardship in the early 2000s and being affected by the global economic crisis in 2008, the country has managed to sustain high levels of preventive services, including immunization and medical check-ups for school children, as well as good geographical access to health service and medicines provision. In terms of life expectancy and mortality rates, the country is similar to most EU13 countries, witnessing major improvements in infant and child mortality and maternal mortality rates in the last decades. Mortality rates for all major causes of death remain on average twice as high as the respective EU averages despite improvements throughout the last decade. However, public health services and infrastructure need to be modernized, requiring a capacity-building programme for human resources as well as sustainable allocation of funding.

In terms of financial equity, general taxes make considerable contributions to the health insurance for the noncontributing population (unemployed, social assistance recipients, etc.), which, together with lower contribution rates for vulnerable groups, ensures a certain degree of progressivity in health financing. However, highly regressive out-of-pocket and informal payments, which constitute approximately one-third of total health care expenditure, negatively impact equity in health financing. Indeed, low-income patients are often not able to pay for high-quality services or to reduce waiting times through informal payments. Inequality in health care also exists across particular population groups, with the Roma population being the most deprived group in access to health care in the country.

It is increasingly difficult to sustain a stable medical workforce in the public sector because attractive and better-paid opportunities exist in the private sector and abroad. There are also regional disparities in human

health professionals, with a concentration of tertiary care and specialists in the capital, Skopje. This requires strategic planning of human resources, starting from a comprehensive study on the availability, current level of education and specializations, as well as projections on the future need for medical professionals.

More reform efforts are needed that target quality and efficiency of health care. Currently, there are no quality assurance, Health Technology Assessment or monitoring systems in place. Introduction and monitoring of quality indicators in combination with the collection of comprehensive data through the already established e-health data system would allow more accurate evaluation of the effectiveness, efficiency and quality of the health system. The P4P payment model does not yet measure and reward any quality aspects or outcomes of services delivered and as such only serves as a provider payment scheme that is not yet well-accepted by physicians. Lastly, the above-described monitoring mechanisms, as well as accountability and transparency systems, are needed to track the progress made by the country in the health care sector, which seems particularly relevant in light of the accession to the EU.

In summary, the citizens of the former Yugoslav Republic of Macedonia have witnessed important gains in population health as reflected, for example, in drastically improved life expectancy and infant mortality. Yet behavioural risk factors such as smoking remain a problem, and health promotion and preventive services need strengthening. That said, the population enjoys a broad range of benefits, and can rely on an extensive network of providers at all levels of health care, including preventive services. However, levels of out-of-pocket costs remain high and there are still disparities in geographical access and inequalities in financial access to health services. Hence, health policy in the country should focus on ensuring equal access for the entire population to all levels of care and improve quality of care delivered by providers in the Health Network, in particular public institutions.

9. Appendices

9.1 References

Alcheva G, Gerovski F, Beletsky L (2013). Implementation of patients' rights legislation in the Republic of Macedonia: gaps and disparities. *Health and Human Rights*, 12;15(2):20–31.

Apostolska Z, Tozija F (2010). *Annual National Report 2010: Pensions, Health and Long-term Care – Former Yugoslav Republic of Macedonia*. ASISP Report, European Union Programme for Employment and Social Solidarity – PROGRESS. (http://pensionreform.ru/files/4160/ASISP.%20Annual%20National%20Report%202010%20-%20Former%20Yugoslav%20Republic%20of%20Macedonia.pdf, accessed 16 October 2016).

Apostolska Z, Gulija M (2014). *Annual National Report: Pensions, Health and Long-term Care, Country Document Update 2014*, ASISP, European Union Programme for Employment and Social Solidarity – PROGRESS. (http://ec.europa.eu/social/BlobServlet?docId=12959&langId=en).

Bislimovska-Karadzinska J et al. (2010). *Human rights in patient care: a practitioner Guide – Macedonia*. Skopje, Faculty of Medicine & CRPRC Studiorum.

Björnberg A (2016). *European Health Consumer Index 2015*, Stockholm, Health Consumer Powerhouse (http://www.healthpowerhouse.com/files/EHCI_2015/EHCI_2015_report.pdf, accessed 30 June 2016).

Chichevalieva S, Milevska N (2012). Participatory democracy in public health: committee for healthcare system advancement in Macedonia. *Journal for European Issues Evrodijalog*, 17:187–204.

Doetinchem O, Carin G, Evans D (2010). *Thinking of introducing social health insurance? Ten questions. World Health Report (2010) Background paper*, Geneva, WHO (http://www.who.int/healthsystems/topics/financing/healthreport/26_10Q.pdf, accessed 03 August 2016).

Donev DM (2009). Health insurance system and provider payment reform in the Republic of Macedonia, *Italian Journal of Public Health*, 6(1):30–39.

EBRD (2011). *Life in transition after the crisis*. London, European Bank for Reconstruction and Development.

European Commission (2015). *The former Yugoslav Republic of Macedonia 2015 Progress Report* (http://ec.europa.eu/enlargement/pdf/key_documents/2015/20151110_report_the_former_yugoslav_republic_of_macedonia.pdf, accessed 22 August 2016).

Eurostat (2015). *Eurostat Database, tobacco consumption statistics* (http://ec.europa.eu/eurostat/statistics-explained/index.php/Tobacco_consumption_statistics, accessed 15 July 2016).

Eurostat (2016a). *Eurostat Database, healthcare resource statistics – technical resources and medical technology* (http://ec.europa.eu/eurostat/statistics-explained/index.php/Healthcare_resource_statistics_-_technical_resources_and_medical_technology, accessed 28 July 2016).

Eurostat (2016b). *Eurostat Database, unmet health care needs statistics* (http://ec.europa.eu/eurostat/statistics-explained/index.php/Unmet_health_care_needs_statistics#Main_statistical_findings, accessed 29 July 2016).

Eurostat (2016c). *Eurostat Database, indicator self-reported unmet needs for medical examination for reason and income quintile* (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth_silc_08&lang=en, accessed 12 July 2016).

Freedom House (2011). *Nations In Transit 2011: country report on Macedonia*, Washington, Freedom House. (http://www.freedomhouse.org/report/nations-transit/2011/macedonia, accessed 14 October 2013).

Gerovska Mitev M (2012). *Material deprivation, poverty and social exclusion among households in Macedonia*. Skopje, Friedrich Ebert Stiftung (http://www.fes.org.mk/pdf/MATERIAL%20DEPRIVATION%20eng..pdf, accessed 17 August 2016).

Gjorgjev D et al. (2006). The former Yugoslav Republic of Macedonia: health system review. *Health Systems in Transition*, 8(2):1–98.

Gudeva-Nikovska D, Tozija F (2015). Drivers of inequity in access to healthcare in Republic of Macedonia. *European Journal of Public Health*, 23(Suppl. 3):288.

HIF (2009). *Годишен извештај 2008 [Annual Report 2008]* (http://www.fzo.org.mk/WBStorage/Files/gIzvestaj08.pdf, accessed 28 November 2013).

HIF (2010). *Годишен извештај 2009 [Annual Report 2009]* (http://www.fzo.org.mk/WBStorage/Files/Godisen%20izvestaj%20za%20rabotenjeto%20na%20FZOM.pdf, accessed 28 November 2013).

HIF (2011). *Годишен извештај 2010 [Annual Report 2010]* (http://www.fzo.org.mk/WBStorage/Files/Godisen%20Izvestaj%202010.pdf, accessed 28 November 2013).

HIF (2012a). *Годишен извештај 2011 [Annual Report 2011]* (http://www.fzo.org.mk/WBStorage/Files/Godisen%20Izvestaj%202011%202%203%20Final.pdf, accessed 28 November 2013).

HIF (2012b). *Прилог кон Дијагностичко сродни групи Годишен извештај за 2011 година: искористеност на болнички капацитети за акутни пациенти [Annex to the Annual Report on DRG for 2011: Utilization of hospital capacities for acute patients]* (http://www.fzo.org.mk/WBStorage/Files/Prilog%20iskoristenost%20na%20kapacitetiet%20DSG%202011.pdf, accessed 2 December, 2013).

HIF (2013a). *ДСГ Групер [DRG Grouper]* (www.fzo.org.mk, accessed 31 October 2013).

HIF (2013b). *Годишен извештај 2012 [Annual Report 2012]* (http://www.fzo.org.mk/WBStorage/Files/Godisen%20izvestaj%202012%20godina.pdf, accessed 28 July 2016).

HIF (2014). *Дијагностичко сродни групи Годишен извештај за 2013 година [DRG Annual Report for 2013]* (http://www.fzo.org.mk/WBStorage/Files/DSG%20Godisen%20Izvestaj%20za%202013.pdf, accessed 13 August 2014).

HIF (2015). *Годишен извештај 2014 [Annual Report 2014]* (http://www.fzo.org.mk/WBStorage/Files/Godisen%20izvestaj%202014%20KONECEN.pdf, accessed 30 June 2016).

HIF (2016a). *Превентивни цели 2016/2017 [Preventive Goals 2016/2017]* (http://www.fzo.org.mk/default.asp?ItemID=4324D1F7CAA3A94080538CB0E945DB52, accessed 28 July 2016).

HIF (2016b). *Годишен извештај 2015 [Annual Report 2015]* (http://www.fzo.org.mk/WBStorage/Files/Godisen%20izvestaj%202015.pdf, accessed 28 July 2016).

IMF (2011). [web site]. World Economic Outlook Database, April 2011 (http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/index.aspx, accessed 14 October, 2013).

Institute of Public Health (2012). *Анализа на болничкот морбидитет во Република Македонија. Во 2009 и 2010 година. [Analysis of the hospital morbidity in the Republic of Macedonia for 2009 and 2010].* Skopje, Institute of Public Health. (http://iph.mk/images/stories/pdf_nezarazni/Bolnicki%20morbiditet%202009%20i%202010%20finish%20so%20cip.pdf, accessed 22 August 2016).

Institute of Public Health (2013). *Анализа на искористеноста на болничките капацитети во здравствените установи во Република Македонија во 2012 година [Utilisation of the hospital facilities in the Republic of Macedonia in 2012]*. Skopje, Institute of Public Health.

Institute of Public Health (2014). *Годишен извештај за здравствената состојба на населението во Република Македонија 2013 година [Annual Report on the Health Status of the Population in the Republic of Macedonia 2013]*. Skopje, Institute of Public Health (http://www.iph.mk/multimedija/dokumenti/godisni-izvestai/, accessed 20 July 2016).

Institute of Public Health (2015). *Анализа на искористеноста на болничките капацитети во здравствените установи во Република Македонија во 2013 година [Utilisation of the hospital facilities in the Republic of Macedonia in 2014]* (http://iph.mk/wp-content/uploads/2015/12/Iskoristenost-na-bolnicki-kapaciteti-2014.pdf, accessed 27 June 2016).

Istenic MC (1995). Slovenia. In: Johnson N, ed. *Private markets in health and welfare: an international perspective*. Oxford, Berg.

Ivanovska L, Ljuma I (1999). Health sector reform in the Republic of Macedonia. *Croatian Medical Journal*, 40:181–189. (http://www.cmj.hr/1999/40/2/10234060.htm, accessed 17 August 2016).

Larson NL, Bentley JP, Brenton MA (1994). Values, participatory democracy and health care reform. *American Journal of Pharmaceutical Education*, 58: winter 1994 (http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.531.788&rep=rep1&type=pdf, accessed 17 August 2016).

Lazarevik V, et al. (2012). Three periods of health system reforms in the Republic of Macedonia (1991–2011) *Contributions, Section on Biological and Medical Sciences*, XXXIII(2):175–189 (http://www.manu.edu.mk/prilozi/2012_2/15l.pdf, accessed 28 July 2016)

Lazarevik V, Kasapinov B (2012). Medical doctors' attitudes towards pay-for-reporting in Macedonia medical doctors' attitudes towards pay-for-reporting in Macedonia: a web-based cross-sectional survey. *Macedonian Journal of Medical Sciences* 5(4):437–443.

Lazarevik V et al. (2015). Migration of health care workers from the western Balkans – analyzing causes, consequences and policies. Country report: Macedonia. Health Grouper (RRPP Project), (http://www.rrpp-westernbalkans.net/en/research/Completed-Projects/2015/Migration-of-health-care-workers/mainColumnParagraphs/00/text_files/file0/Final%20country%20report-Macedonia.pdf, accessed 10 June 2016).

McPake B (2002). The globalization of health sector reform policies: is lessons drawing part of the process? In: Lee K, Buse K, Fustukian S, eds. *Health Policy in a Globalizing World*. Cambridge, Cambridge University Press.

Meisner C, Gjorgjev D, Tozija F. (2015). *Estimating health impacts and economic costs of air pollution in the Republic of Macedonia* (Original research). SEEJPH 2015, posted: 07 April 2015. DOI 10.12908/SEEJPH-2014-45

Menon S (2006). Decentralization and health care in Republic of Macedonia. *International Journal of Health Planning and Management* 21:3-21.

MICS (2011). Republic of Macedonia Multiple Indicator Cluster Survey 2011. UNICEF/MICS (available at http://mics.unicef.org/surveys, accessed 29 July 2016)

Milevska Kostova N (2006). Patients' rights in southeast Europe. *ICFAI Journal of Healthcare Law*, 4(4):63–74. ICFAI Press, Hyderabad, India.

Milevska Kostova N (2010). Реформи во здравството - приватизација на примарната здравствена заштита и други модели за подобрување на ефективноста и ефикасноста во користењето на здравствените ресурси. [Reforms in health – privatization of primary care and other models for improvement of efficiency and effectiveness of health resources use]. In: Friedrich Ebert Stiftung, *Journal of Social Policy* (3)5: 409–422 (http://www.fzf.ukim.edu.mk/files/revija%205%20finalna.pdf, accessed 17 January 2017).

Milevska Kostova N (2013). Equity in health in Macedonia: socio-economic and financial aspects and effects of policy changes on access to prescription medicines in primary healthcare. In: Gordon CE, Kmezic M, Opardija J eds. *Stagnation and drift in the western Balkans: the challenges of political, economic and social change*. Interdisciplinary studies on Central and Eastern Europe, 10. Pieterlen, Switzerland, Peter Lang AG. ISBN 9783034311526.

Ministry of Health Project Coordination Unit (2007). *Стратегија за развој на Македонски интегриран здравствен информатички систем [Strategy for development of Macedonian integrated health information system]*. (http://zdravstvo.gov.mk/wp-content/uploads/2015/06/IT_strategija_IZIS.pdf), accessed 5 May 2017).

Ministry of Health (2010a). *Improving Maternal and Infant Health Macedonian Safe Motherhood Strategy (SMS) 2011–2015*. Skopje, Ministry of Health.

Ministry of Health (2010b). *Национална стратегија за превенција на оралните болести кај деца на возраст 0–14 години во Република Македонија за период 2008–2018 [National Strategy for prevention of oral diseases in children age 0–14 in the Republic of Macedonia for the period 2008–2018]*. (http://zdravstvo.gov.mk/wp-content/uploads/2012/12/nacionlna_strategija-stomatologija.pdf, accessed 15 June 2016).

Ministry of Health (2011). *Национална стратегија за здравје, здеарва шивотна средина и безбедност на работа 2012–2015 [National Strategy for Health, Healthy Environment and Safety at Work 2012–2015]*, (http://zdravstvo.gov.mk/wp-content/uploads/2014/01/bzr-strategija.pdf, accessed 15 October 2014).

Ministry of Health (2012). *Стреатегија за имунизација 2012–2020 година [Immunization Strategy 2012–2020]*. (http://mz.gov.mk/wp-content/uploads/2012/12/strategija_imunizacija.pdf, accessed 14 October 2013).

Ministry of Health (2013). *Moj Termin* (https://mojtermin.mk, accessed 1 November 2013).

Ministry of Health (2014). [News article]. *"Петто по ред намалување на цените на лекови – поевтинуваат 352 лека" [Fifth in a row price reduction on pharmaceuticals – prices reduced for 352 medicines]* (http://zdravstvo.gov.mk/petto-po-red-namaluvanje-na-cenite-na-lekovite-poevtinuvaat-352-leka/, accessed 22 August 2016).

Ministry of Health (2015). [News Article] *"Од идниот месец подвижни аптеки во шест региони во државата" [Mobile pharmacies in six regions in the country starting next month]* (http://zdravstvo.gov.mk/od-idniot-mesec-kje-pochnat-so-rabota-podvizhni-apteki-vo-shest-regioni-vo-drzhavata/, accessed 9 January 2017)

Ministry of Health (2016). *Health service providers* (http://moh.gov.mk, accessed 24 June 2016).

Ministry of Labour and Social Policy (2008). *Национална Стратегија за демографски развој на Република Македонија. [National Strategy on Demographic Development of the Republic of Macedonia 2008–2015].* (http://www.mtsp.gov.mk/WBStorage/Files/strategija_demografska.doc, accessed 14 October 2013).

Ministry of Labour and Social Policy (2010). *Национална стратегија за стари лица 2010–2020 година [National Strategy for elderly 2010–2020]* (http://mtsp.gov.mk/WBStorage/Files/Strategija%20za%20stari%20lica%20juni.pdf, accessed 20 June 2016).

Ministry of Labour and Social Policy (2011). *Стратешка рамка за воведување на ромските здравствени медијатори во Република Македонија [Strategic Framework for Introducing Roma Health Mediators in the Republic of Macedonia].* (www.mtsp.gov.mk/WBStorage/Files/strateska_ramka.doc, accessed 5 May 2017).

Ministry of Labour and Social Policy (2014). *Стратегија за Ромите во Република Македонија 2014–2020 [Strategy for the Roma in Republic of Macedonia, 2014–2020]* (http://www.merc.org.mk/Files/Write/Documents/02310/en/Roma-Strategy-in-Macedonia-2014-2020.pdf, accessed 20 June 2016).

Nikolov M (2007). Measuring openness of the capital market in Macedonia. Skopje, Center for Economic Analyses – CEA. 2-4 (http://pdc.ceu.hu/archive/00002630/01/MEASURING_OPENNESS_CAPITAL_MARKET_MACEDONIA.pdf, accessed 17 August 2016).

Nolte E, McKee M, Gilmore A (2004). *Morbidity and mortality in transition countries in the European context*. Geneva, European Population Forum 12–14 January 2004 (http://www.unece.org/fileadmin/DAM/pau/_docs/pau/2004/PAU_2004_EPF_BgDocNolte.pdf, accessed 17 August 2016).

Nordyke RJ (2000). *Privatization of health care provision in a transition economy: lessons from the Republic of Macedonia* [PhD Dissertation]. Santa Monica, RAND.

Nordyke RJ, Peabody JW (2002). Market reforms and public incentives: finding a balance in the Republic of Macedonia. *Social Science & Medicine*, 54:939–953.

Open Society Foundations (2013). *Roma Health Rights in Macedonia, Romania, and Serbia – A Baseline for Legal Advocacy* (https://www.opensocietyfoundations.org/sites/default/files/roma-health-rights-macedonia-romania-serbia-20130628.pdf, accessed 3 August 2016).

Orosz E (1995). Hungary. In: Johnson N, ed. *Private markets in health and welfare: an international perspective*. Oxford, Berg.

Pavlovski B (2008). *Health, health care and health impacts of Roma in Macedonia*. Skopje, ESE.

Rechel B, McKee M (2009). Health reform in central and eastern Europe and the former Soviet Union. *The Lancet*, 374(9696):1186–1195.

Risteski H (2010). Effects of the global economic crisis on the vulnerable groups in the Republic of Macedonia. WBalkans 2010 Conference Paper (http://siteresources.worldbank.org/INTECAREGTOPPOVRED/Resources/HristijanRISTESKI.pdf, accessed 15 October 2013).

Saric M, Rodwin VG (1993). The once and future health system in the former Yugoslavia: myths and realities. *Journal of Public Health Policy*. 14(2):220–237.

Slaveski T (1997). Privatization in the Republic of Macedonia. *Eastern European Economics* 35:31–51.

State Statistical Office (2003). *Census of population, households and dwellings in the Republic of Macedonia, 2002 - Book XIII*, (http://www.stat.gov.mk/OblastOpsto.aspx?id=31, accessed 13 June 3016).

State Statistical Office (2014). *Macedonia in Figures, 2014* (http://www.stat.gov.mk/Publikacii/MakBrojki2014_mk.pdf, accessed 14 October 2014).

State Statistical Office (2015). *Macedonia in Figures, 2015* (http://www.stat.gov.mk/Publikacii/MakBrojki2015a.pdf, accessed 28 July 2016).

State Statistical Office (2016). *Household consumption in the Republic of Macedonia 2015* (http://www.stat.gov.mk/Publikacii/4.4.16.01.pdf, accessed 28 July 2016).

Stefanovska V, Petkovska M (2014). Patient satisfaction in outpatient healthcare services at secondary level vs. tertiary level. *Srpski Arhiv Za Celokupno Lekarstvo (Serbian Archives of Medicine/Journal of the Serbian Medical Society)*, 142(9–10):579–585.

Sterjev Z et al. (2011). Assessment of patient satisfaction with pharmaceutical community services in R. Macedonia. *Macedonian Pharmaceutical Bulletin* 56:(1,2):23–28.

Tozija F, Gudeva-Nikovska D (2008). Patient satisfaction survey. Skopje, Institute for Public Health, Ministry of Health.

Trenovski B (2014). Monitoring report on the transparency and accountability of the budget users. Skopje: Center for economic analyses (CEA).

UNAIDS (2012). *Global AIDS Progress Reporting 2012: Universal Access In The Health Sector*. (http://files.unaids.org/en/media/unaids/contentassets/documents/document/2011/JC2215_Global_AIDS_Response_Progress_Reporting_en.pdf, accessed 5 May 2017).

UNDP (2009). Report on the progress towards MDGs Republic of Macedonia. Skopje, UNDP (http://eprints.ugd.edu.mk/6756/1/MDG%20Report%2009%20ENG.pdf, accessed 03 August 2016).

UNICEF (2012). Community Nursing Assessment with equity analysis in Macedonia. (www.unicef.org/tfyrmacedonia/12156_16932.html, accessed 10 June 2016).

UNICEF (2013). *Improving maternal and infant health: safe motherhood strategy in The Republic of Macedonia 2010–2015* (http://www.unicef.org/tfyrmacedonia/SM_strategy_final_ENG(1).pdf, accessed 31 October 2013).

United Nations Cartographic Section (2015). (http://www.un.org/Depts/Cartographic/english/htmain.htm, accessed 17 August 2016).

WHO Regional Office for Europe (2011). *Attracting and retaining health workers in the Member States of the South-eastern Europe Health Network*. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0013/152203/e95774.pdf, accessed 28 July 2016).

WHO Regional Office for Europe (2016a). *European Health for All Database* (http://data.euro.who.int/hfadb/, accessed 30 June 2016).

WHO Regional Office for Europe (2016b). *European Health for All Database* (http://data.euro.who.int/hfadb/, accessed 16 October 2016).

WHO Regional Office for Europe (2016c). *Review of the HIV programme in The former Yugoslav Republic of Macedonia*. Copenhagen, WHO Regional Office for Europe.

World Bank (1996). *Macedonia – Health Sector Transition Project*. World Development Sources, WDS 1996. Washington, D.C., World Bank.

World Bank (2012). *Health equity and financial protection datasheet – FYR of Macedonia*. Washington, D.C., World Bank (http://siteresources.worldbank.org/INTPAH/Resources/400378-1333393918286/FYRofMacedonia_Data_IOR_MOI.pdf, accessed 03 August 2016).

World Bank (2015). *FYR Macedonia public expenditure review, fiscal policy for growth*. Washington DC, World Bank (http://respublica.edu.mk/attach/izvestaj.pdf, accessed 29 July 2016).

World Bank (2016). *World Bank development indicators database 2016*. Washington DC, World Bank (http://data.worldbank.org/products/wdi, accessed 30 June 2016).

9.2 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. This HiT has used a revised version of the template that is being piloted during 2016–2017 and will be available on the Observatory web site once it has been finalized. The previous (2010) version of the 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.

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 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 and health workers 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 and dental care.
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 of systems for monitoring health system performance, the impact of the health system on population health, access to health services, financial protection, health system efficiency, health care quality and safety, 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 and useful web sites.

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.
- 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.

9.3 The review process

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

9.4 About the authors

Neda Milevska Kostova is Senior Researcher and Executive Director of the health policy think-tank Centre for Regional Policy Research and Cooperation "Studiorum". She holds a Master of Science degree from the University of Tokyo, Japan and Master of Public Policy and Management from the GSPIA, University of Pittsburgh, USA. Currently, she is completing a PhD in public health from the School of Health and Related Research, University of Sheffield, UK.

Snezhana Chichevalieva, LL.B, MA is Programme Manager on National Health Policies, Division of Policy and Governance for Health and Wellbeing, and a former Head of the World Health Organization, Country Office in the former Yugoslav Republic of Macedonia, with over 25 years of experience in the health policy, public health law and health diplomacy in the region of south-eastern Europe. She holds a Master of Arts in Social Sciences from the University "Ss. Cyril and Methodius" in Skopje.

Ninez A. Ponce is a Professor in the UCLA Fielding School of Public Health's Department of Health Policy and Management. She served as RAND's Policy Advisor to the FYRM between 1996–1998. She is currently Vice-Chair of the California Health Benefits Review Program, Associate Director of the UCLA Center for Health Policy Research, and Director of the UCLA Center for Global and Immigrant Health. She has a BS from UC Berkeley, a Master's in Public Policy from Harvard University and a PhD in Health Services from UCLA.

Ewout van Ginneken is a Senior Researcher in the Department of Health Care Management at the Berlin University of Technology and coordinator of the Berlin hub of the European Observatory on Health Systems and Policies. He holds a Master's of Health Sciences, Health Policy and Administration from Maastricht University, and a PhD in Public Health from the Berlin University of Technology.

Juliane Winkelmann is Research Fellow in the Department of Health Care Management at the Berlin University of Technology and the Berlin hub of the European Observatory on Health Systems and Policies. She holds a Master's of Public Policy from Maastricht University and a Postgraduate Certificate in Health Economics from the University of York.

The Health Systems in Transition reviews

A series of the European Observatory on Health Systems and Policies

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

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

How to obtain a HiT

All HiTs are available as PDF files at www.healthobservatory.eu, where you can also join our listserve for monthly updates of the activities of the European Observatory on Health Systems and Policies, including new HiTs, books in our co-published series with Open University Press, Policy briefs, Policy summaries and the *Eurohealth* journal.

If you would like to order a paper copy of a HiT, please write to:

info@obs.euro.who.int

The publications of the European Observatory on Health Systems and Policies are available at *www.healthobservatory.eu*

HiT country reviews published to date:

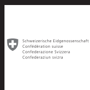
Albania (1999, 2002[ag])
Andorra (2004)
Armenia (2001[g], 2006, 2013)
Australia (2002, 2006)
Austria (2001[e], 2006[e], 2013[e])
Azerbaijan (2004[g], 2010[g])
Belarus (2008[g], 2013)
Belgium (2000, 2007, 2010)
Bosnia and Herzegovina (2002[g])
Bulgaria (1999, 2003[b], 2007[g], 2012)
Canada (2005, 2013[c])
Croatia (1999, 2006, 2014)
Cyprus (2004, 2012)
Czech Republic (2000, 2005[g], 2009, 2015)
Denmark (2001, 2007[g], 2012)
Estonia (2000, 2004[gj], 2008, 2013)
Finland (2002, 2008)
France (2004[cg], 2010, 2015)
Georgia (2002[dg], 2009)
Germany (2000[e], 2004[eg], 2014[e])
Greece (2010)
Hungary (1999, 2004, 2011)
Iceland (2003, 2014)
Ireland (2009)
Israel (2003, 2009, 2015)
Italy (2001, 2009, 2014)
Japan (2009)
Kazakhstan (1999[g], 2007[g], 2012)
Kyrgyzstan (2000[g], 2005[g], 2011[g])
Latvia (2001, 2008, 2012)
Lithuania (2000, 2013)
Luxembourg (1999, 2015)
Malta (1999, 2014, 2017)
Mongolia (2007)
Netherlands (2004[g], 2010, 2016)
New Zealand (2001*)
Norway (2000, 2006, 2013)
Poland (1999, 2005[k], 2011)
Portugal (1999, 2004, 2007, 2011, 2017)
Republic of Korea (2009*)
Republic of Moldova (2002[g], 2008[g], 2012)
Romania (2000[f], 2008, 2016)
Russian Federation (2003[g], 2011[g])
Slovakia (2000, 2004, 2011, 2016)
Slovenia (2002, 2009, 2016)
Spain (2000[h], 2006, 2010)
Sweden (2001, 2005, 2012)
Switzerland (2000, 2015)
Tajikistan (2000, 2010[g], 2016)
The former Yugoslav Republic of Macedonia (2000, 2006, 2016)
Turkey (2002[gi], 2011[i])
Turkmenistan (2000)
Ukraine (2004[g], 2010[g], 2015)
United Kingdom of Great Britain and Northern Ireland (1999[g], 2015)
United Kingdom (England) (2011)
United Kingdom (Northern Ireland) (2012)
United Kingdom (Scotland) (2012)
United Kingdom (Wales) (2012)
United States of America (2013)
Uzbekistan (2001[g], 2007[g], 2014[g])
Veneto Region, Italy (2012)

Key

All HiTs are available in English.
When noted, they are also available in other languages:

a Albanian
b Bulgarian
j Estonian
c French
d Georgian
e German
k Polish
f Romanian
g Russian
h Spanish
i Turkish

* More recent versions are available from the Asia Pacific Observatory.



The European Observatory on Health Systems and Policies is a partnership, hosted by the WHO Regional Office for Europe, which includes the Governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Sweden, Switzerland, the United Kingdom and the Veneto Region of Italy; the European Commission; the World Bank; UNCAM (French National Union of Health Insurance Funds); the London School of Economics and Political Science; and the London School of Hygiene & Tropical Medicine. The European Observatory has a secretariat in Brussels and it has hubs in London (at LSE and LSHTM) and at the Technical University of Berlin.

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

ISSN 1817-6127