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**Final Report on Health Financing
Diagnostic and Review of Envisaged
Reforms**

May 2015

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Abbreviations

BLISS	Bulgarian Longitudinal Inclusive Society Survey
BBP	Basic Benefit Package
CBA	Cost-benefits Analysis
CEA	Cost-effectiveness Analysis
CEMC	Center for Emergency Medical Care
CMS	Crisis Monitoring Surveys
CCP	Clinical Care Pathway
DALYs	Disability-adjusted life years
DDD	Defined Daily Dose
DRG	Diagnosis-related Group
ECP	Emergency Care Package
EMC	Emergency Medical Care
EMR	Electronic Medical Record
EMS	Emergency Medical Services
EU	European Union
GP	General Practitioner
HDD	Health Data Dictionary
HIA	Health Insurance Act
HIIS	Health Insurance Information System
HMIS	Health Management Information System
HTA	Health Technology Assessment
IMF	International Monetary Fund
INN	International Nonproprietary Name
MOF	Ministry of Finance
MOH	Ministry of Health
MPHMA	Medicinal Products in Human Medicine Act
NCD	Noncommunicable Disease
NFC	National Framework Contract
NHA	National Health Accounts
NHIF	National Health Insurance Fund
NICE	National Institute for Health and Care Excellence
NRA	National Revenue Agency
NSI	National Statistical Institute of Bulgaria
OECD	Organisation for Economic Co-operation and Development
OOP	Out of Pocket
OTC	Over the Counter
PDL	Positive Drug List
PHI	Private Health Insurance
PPP	Purchasing Power Parity; Public–Private Partnership
QALY	Quality-adjusted Life Year
SWOT	Strengths Weaknesses Opportunities Threats
SEMC	Subsidiary Center for Emergency Medical Care
UHC	Universal Health Coverage

UHU	Unit Hour Utilization
YLLs	Years of Life Lost
VHI	Voluntary Health Insurance
WDI	World Development Indicators
WHO	World Health Organization

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Overview

At a Glance—Health Financing Diagnostic and Review of Envisaged Reforms

Health financing in Bulgaria is organized in a way that should, in theory, allow the system to deliver good performance. In particular, the National Health Insurance Fund was set up to provide universal coverage, and the provider-payment system contains elements of international best practices.

The system does not achieve good value for money, however. The hospital-centric service delivery structure is not well targeted to the predominant and growing burden of noncommunicable diseases, and loopholes in the provider-payment system reinforce this bias toward expensive hospital care. Pharmaceutical listing and pricing mechanisms fail to promote competition in the off-patent market and many prices for medicines compare unfavorably to prices elsewhere, even in wealthier countries. The National Health Insurance Fund—the largest and virtually single purchaser of services—lacks a well-functioning information system and the authority to purchase strategically.

So, even though current public spending—average for Bulgaria’s income at 4.2 percent of GDP—is a significant proportion of total public expenditure (12 percent), private out-of-pocket spending is exceptionally high against internationally recognized standards, taking 4 percent of the population into poverty each year. Inefficiency in current spending, coupled with little additional fiscal space, is putting future financial sustainability of the health sector at risk.

In February this year the government approved a comprehensive reform agenda, crucially to separate the current benefit package into three—basic, additional, and emergency care. Details on the basic and additional packages are still to be worked out. International experience points to the importance of developing capacity for these two packages in areas new to Bulgaria, such as health technology assessment, economic evaluation, and regulation of the insurance market, as well as making sure that poor people are not more disadvantaged by the reform. For the emergency care package, the current organizational and financing practices need to be better analyzed to inform the reform plan.

From the health financing perspective, major items not given adequate prominence in the reform agenda include fixing the health information system of the National Health Insurance Fund, tackling the issue of individuals’ weak financial protection, and addressing perverse incentives in the overall provider-payment system.

Now it falls to the government to develop a reform process that considers all the key, interactive health system issues comprehensively and that allows policy makers to choose options for reform based on costs, evidence, and lessons learned from global practices. It is hoped that this report will help the government continue its progress in this challenging endeavor.

Diagnostic and review

The first part of this report presents a health financing diagnostic to assist the Government of Bulgaria in developing health financing reform options that improve the efficiency, equity, and long-term sustainability of the Bulgarian health system. The second part reviews the reform agenda currently envisaged by the government with a focus on health financing aspects. It presents practical suggestions, drawn from international experience, which should support the government as it moves toward implementing its reform agenda. These suggestions aim to enhance the reforms' capacity to address some of the performance gaps highlighted in Part I with respect to efficiency, sustainability, and capacity to provide financial protection.

Health financing reform baseline

Coverage and care are in theory comparable to the rest of Europe. Bulgaria's National Health Insurance Fund (the NHIF) was established in 1999 and has since become the largest health services purchaser in the country. The NHIF is in principle comparable to many social health insurance funds in the European Union (EU). The 1998 Health Insurance Law mandates coverage for all Bulgarians. Employers and employees jointly contribute 8 percent of labor income, as do the self-employed. Large groups—including children, pensioners, the disabled, the unemployed, and other socially dependent groups—are covered by the state, in a system that achieves a significant intergenerational redistribution from the working-age population toward younger and older groups.

The Health Insurance Law stipulates that the insured are entitled to receive “medical care within the scope of the basic package of health-care activities guaranteed by the budget of the NHIF.” Ordinances issued by the Ministry of Health (MOH) specify the benefit package.

The NHIF employs a wide range of payment methods to pay providers of care directly. Hospitals are reimbursed on the basis of bundled fee-for-service payments called “clinical care pathways.” General practitioners are paid on the basis of a combination of capitation and fee for service, while ambulatory specialists, laboratories, and dentists are paid purely on a fee-for-service basis.

Health outcomes are average for above-average government spending but out-of-pocket spending is extremely high. In 2012, around Lev 6.3 billion was spent on health care in Bulgaria, or about 8 percent of gross domestic product. Some 51 percent of total expenditure was public, of which some 80 percent was disbursed through the NHIF. The remainder was mostly out-of-pocket (OOP) costs incurred by patients. OOP payments are the single largest source of both revenue and expenditure in the health system, accounting for 47 percent of total expenditure in 2012. The second largest is the NHIF, which “commands” in a formal and organized way 40 percent of total expenditure on health.

When put in perspective with countries of comparable income, total health expenditure is above average in Bulgaria and public expenditure, average. Still, Bulgaria spends 12 percent of its government/public budget on health, slightly above the global average given its income level. Yet for its income and health-spending levels, Bulgaria's health outcomes are about average and over time have not improved at the rates in neighboring countries. Moreover, despite having more hospital beds and health workers than other comparable-income and health-spending countries, Bulgaria's health delivery system is increasingly hospital-centric and is not well targeted to its predominant and growing burden of noncommunicable diseases (NCDs).

Further, Bulgaria is a clear outlier on OOP payments and is a great distance from meeting the criterion for adequate financial protection of the World Health Organization (WHO), which specifies a ceiling of 15–20

percent for OOP payments as a proportion of total health spending. The situation has deteriorated markedly over time.

The NHIF needs to protect and purchase better. A key objective of any health insurance system is to protect individuals from large and/or unexpected health expenditures they cannot afford, and NHIF coverage is incomplete for this. Between 7 and 12 percent of Bulgarians who do not live abroad permanently are uninsured. The vast majority of them are vulnerable non-working populations with lower socioeconomic status. While ethnic minorities are more likely to lack cover, the majority of the uninsured are ethnic Bulgarians. The high level of OOP payments considerably limits the financial protection of all. At 5.3 percent in 2013, the share of household budgets spent on health is high compared with the 3 percent average in Western Europe. More than 4 percent of the population is impoverished each year by paying OOP.

Another set of questions reviewed is whether the NHIF is adequately leveraging its purchasing power to promote efficiency in the system. On services, many aspects of NHIF purchasing arrangements conform to global good practices. However, the ways in which these arrangements have been implemented can be improved, and contribute to the health sector's bias toward expensive hospital care. On efficiency in pharmaceutical spending, the current listing and pricing mechanisms provide little assurance of value for money for medicines in the Positive Drug List. Policy settings do not promote competition in the off-patent market and many prices for both patented and off-patent medicines compare unfavorably to prices in wealthier countries with far greater capacity to pay. Current cost-sharing policies for medicines limit the NHIF's financial exposure but expose the population to high levels of OOP payments, with pharmaceuticals accounting for more than three-quarters of OOP spending.

The NHIF information system is close to meltdown. The health financing element of the diagnostic—in particular, an analysis of the health insurance information ecosystem—identified some of the constraints hindering more effective health financing policies. Two or three competent and active IT vendors have largely developed the data standards and have therefore provided some reasonable means of interoperability and interconnection between health care providers and the NHIF. Unfortunately, the current NHIF information system, after several years without maintenance support, has reached a point where many functions must be conducted manually and may be at risk of collapsing. It cannot provide information essential to managing quality, cost, and risks (a database of insured, information on individuals' consumption over time, etc.), and it is not well prepared to accommodate significant changes in functionality or transaction volumes that reforms might precipitate.

Roles and responsibilities need to be more tightly aligned among agencies. To finalize the health financing reform baseline assessment, the governance of the NHIF was reviewed from structural and operational perspectives. Good governance of mandatory health insurance systems requires stability of rules and coherent decision-making structures, both of which are limited in Bulgaria. Notably, there is a substantial misalignment of roles and responsibilities. For instance, while the NHIF is accountable for delivering the benefit package to all insured within the allocated budget, decisions about the package are taken by outside entities with little attention to cost-benefit ratios or financial impact. The NHIF is also obliged to contract all providers that meet basic standards set by the MOH. Ultimately, a decision needs to be made about which organization (NHIF, MOH, or Ministry of Finance) has the final authority and responsibility for ensuring that the system becomes and stays efficiently run and financially sustainable. This fragmentation and misalignment precludes a holistic approach to health financing.

“Future proofing” spending—health sector efficiency gains are key. An actuarial model projecting NHIF future trends in revenues and expenditures based on the NHIF's statutory contribution levels and underlying expenditure was prepared for understanding fiscal pressures and for NHIF policy making. The model provides a tool to assess the explicit types and validity of structural, excess health-cost inflation

pressures documented in other studies that could prevent the achievement of future budget targets absent specific cost-control policies.

Options to offset this potential fiscal deterioration could, in theory, include cutting non-NHIF health programs or other public expenditures, increasing revenues, or undertaking efficiency-enhancing reforms in the health and other public sectors. Given Bulgaria's slow growth prospects, current investments in health, and the overall pressure on public finance resulting from competing priorities and population aging, efficiency gains appear to be the main option for generating future fiscal space for health. Such gains can be found in the NHIF's purchasing procedures for services and medicines, better rationalization of the benefit package on the basis of cost-effectiveness and financial protection criteria, and more comprehensive control over financial and clinical policy levers that affect spending. As long as existing cost drivers remain undermanaged, it may prove difficult to maintain a strict fiscal stance. On the other hand, even if the enforcement of health budget ceilings is successful, it will most likely lead to further shifts toward private OOP spending, further increases in poverty (which has been rising since 2008), and diminishing financial protection.

Support to envisaged reforms

The government in February 2015 approved the comprehensive reform agenda presented in the "Concept Note: Health 2020 Goals" of the MOH (MOH 2015a). Recognizing the shortcomings in the system performance on efficiency, financial protection, and sustainability, this strategy document specifies overall national health objectives to reduce mortality and disability by addressing several key priorities covering service delivery and health financing.

Splitting the benefit package into three. On service delivery, the government intends to consolidate the hospital sector, and to strengthen primary and emergency care. The key health financing initiative is the proposed separation of the benefit package into three: basic, additional, and emergency care. E-health is also seen as an important means to facilitate the envisaged reforms. The second part of the report analyzes specific aspects of the envisaged reform program from a health financing perspective and provides lessons from international experience to inform the design and implementation of the key initiatives.

The proposed guiding principle to define the new basic benefit package (BBP) is the continued coverage of prevention, diagnosis, and treatment of the major diseases and conditions leading to death and disability, especially among children and maternal health. International experience suggests that to further detail the content of the BBP, it is important to understand the distribution of the disease burden and to identify upfront the key principles that will guide the priority-setting process beyond clinical effectiveness. In particular, much greater emphasis needs to be put on cost-effectiveness, the absence of which undermines the financial sustainability of the current package and ultimately limits the effectiveness coverage. Bulgaria will thus need to strengthen its capacity for conducting economic evaluations. Delivery barriers and financial constraints need to be accounted for in order to ensure effective coverage. The new BBP needs to be costed and the sustainability of its financing assessed. Given the inherent tradeoffs in defining the BBP under resource constraints, it is important to ensure that the process by which it is defined is transparent and allows participation from representatives of civil society.

With the creation of the additional package, the government would officially establish waiting time and the use of voluntary health insurance for those who do not want to wait. As such, the country explicitly exposes itself to the business of setting priorities, rationing health services, and opening the market for competition in health insurance. This is a daring endeavor that could yield benefits in optimizing value for public money and curb government health spending. However, it can also be a double-edged sword, which

could hurt the Bulgarian public if the reform processes are not managed properly. Measures need to be taken to preemptively address potential negative effects of both waiting time and voluntary health insurance, in particular to assure that the poor will not suffer disproportionately.

The recent announcement of the Emergency Care Package (ECP) and the accompanying “Concept for the Development of the Emergency Medical Care System in the Republic of Bulgaria 2014–2020” (MOH 2014) while basically sound, will require a more careful analysis, planning, and integration of the various types of emergency services to ensure that the correct service is available, and used when clinically appropriate. This implies addressing regional variations in the availability and use of emergency services; putting in place appropriate organizational and management structures; and developing a sustainable financing strategy that provides appropriate levels of funding and removes financial impediments to the appropriate use of the system by either patients or service providers. A key part of this will be the need for a deeper understanding of the reasons behind large regional variations in the operation and financing of the existing emergency care system. Implementing the proposed Concept will require large investments in various components of emergency care, including the training of staff; development of clinical and management information systems (including communications and dispatch); and rationalizing and improving the network of facilities, including necessary vehicles and equipment.

Aligning provider incentives—outpatient and hospital. The diagnostic highlighted necessary changes in purchasing outpatient and hospital services to align provider incentives for efficiency and quality. For outpatient services, there is a need to review the way the referral budget is organized, namely to reassess the mandatory cross-referral requirement and to consider expanding the accountability of outpatient providers for hospital and prescription expenses—enhanced with performance-related payment if they make savings on current activity caps, financial budgets, quality, or coverage. Payments could generally be better leveraged to move some hospital services to an ambulatory basis. For hospital services, it is recommended that selective contracting with hospitals and the financial caps be enforced. The government should heavily reform the hospital payment system, using tools like diagnosis-related group payments, to remove inefficiency, increase transparency, and better link payment to intensity of resource use. Some element of integrated payment could be introduced to further encourage the treatment of patients in the right setting. Provider-payment reforms that could help remove inefficiencies in the system and support the government’s delivery agenda are currently not outlined in the program.

More effort required to check OOP-related impoverishment. To assure effective financial protection, the first order of business is improved risk pooling by enrolling the most vulnerable uninsured through fundamental reforms of the NHIF’s eligibility and enrollment processes. The restructuring of the BBP and its cost-sharing elements, particularly on pharmaceuticals, could yield improvements in coverage; and explicit protection from excessive OOP for the poor should be introduced. Finally, fixing loopholes in current provider-payment policies, such as extra-billing, informal payments, clinical care pathway add-ons (the bases for the NHIF paying hospitals), and referrals to uncovered private services by dual practitioners would lessen the burden of OOP payment.

Two tracks for the NHIF’s information system. Bulgaria has a long tradition of supporting and encouraging development and advancement of its health information systems. Its health technology sector is sound, providing the country with good capacity to continue that long-standing tradition of progress with these systems into the future. However, despite these rich technology resources, Bulgaria is now falling behind other countries of similar economic standing in e-health development. Most critically, the health information system of the NHIF is inadequate and extremely vulnerable, contributing to the NHIF’s low capacity to perform strategic purchasing. This will be a major obstacle for moving forward in many reform areas for which timely and accurate data are critical. A two-track approach is recommended: first,

stabilizing and rehabilitating the existing system while, second, beginning preparatory work on the next generation of systems for the NHIF.

Executive Summary

The objective of this study, in two parts, is to assist the Government of Bulgaria to develop and assess health financing reform options that improve the efficiency, equity, and long-term sustainability of the Bulgarian health system in the context of its National Health Strategy 2014–2020. The first step in this process is to assess how the Bulgarian health financing system operates and performs. The second is to discuss how the government’s reform plans can be best tailored or adjusted to deal with the system’s inherent weaknesses. In Part I the report presents a baseline diagnostic of Bulgaria’s health financing system within the broader overall context of the Bulgarian health system and economy. Part II analyzes reforms envisaged by the government and provides recommendations that seek to enhance its ability to address the objective.

The analytical approach taken to evaluate the health system’s performance is based on internationally accepted goals and objectives of health systems, and an analytically driven empirical framework that incorporates perspectives from public health, demography, epidemiology, economics, actuarial science, and public financial management. The three basic health financing functions of revenue raising, risk pooling, and purchasing are analyzed, as are their interactions with other critical health system components. In particular, the study employs the globally accepted World Health Organization (WHO)/World Bank taxonomy of health systems, which identifies resource generation, stewardship, and service delivery as key health system functions, and focuses on three objectives: improving health outcomes; assuring financial protection; and being responsive to consumers in an equitable, efficient, and sustainable manner.

Novel aspects of this study include a comprehensive analysis of Bulgaria’s health financing arrangements; international benchmarking and trend analyses of Bulgaria’s inputs, outcomes, and health financing performance relative to countries of comparable incomes, neighboring countries, and European Union (EU) averages; detailed up-to-date measurement of the uninsured population based on recent household surveys carried out by the World Bank and the Open Society Institute; an updated analysis of financial protection based on 2010 and 2013 Household Budget Surveys provided by the National Statistical Institute of Bulgaria; an initial assessment of Bulgaria’s capacity to improve value for money for prescription medicines; the first comprehensive analysis of the solvency and sustainability of the National Health Insurance Fund (NHIF) based on an actuarial model being developed for this study; a fiscal space analysis highlighting Bulgaria’s challenging public finance prospects; and an assessment of Bulgaria’s health management information system.

The report’s structure is as follows:

Part I, in five chapters, presents a diagnostic of health financing in Bulgaria and puts it in the context of the overall health system:

- Chapter 1 presents selected elements of the underlying demographic, labor-market, economic, and health-system performance contexts necessary to frame a discussion on health financing.
- Chapter 2 provides a detailed description of the health financing system by outlining its main features and sheds light on how the system operates in practice, including a focus on pharmaceuticals and health information systems.
- Chapters 3 and 4 offer a comprehensive empirical and analytical assessment of the performance of health financing in Bulgaria, including trends in expenditures and revenues in the health financing system and some comparable countries; provision of financial protection in an equitable, efficient, and financially sustainable manner; purchasing efficiency for health care

goods and services; the financial soundness of the NHIF in the context of future fiscal space constraints; and a summary assessment of the overall governance and operation of the NHIF.

- Chapter 5 summarizes the findings of this diagnostic and puts them in the context of broader analysis of the strengths and weaknesses of the health system.

Part II has a collection of essays on selected priority areas as reflected in the government’s recently adopted “Concept Note: Health 2020 Goals” of the Ministry of Health (MOH), to which the Reimbursable Advisory Services is best positioned to contribute:

- Chapter 6 introduces key issues and pertinent concepts regarding the definition of the basic and additional benefit packages, while sharing lessons learned from international experience.
- Chapter 7 analyzes and provides recommendations specifically on two areas underrepresented in the government program, which should contribute significantly to the cost efficiency and equity goals: aligning incentives in the provider-payment system and improving financial protection.
- Chapter 8 provides a critical analysis of the government’s e-health road map.
- Chapter 9 analyzes in detail the emergency medical package managed by the MOH. Given that the government has developed the detailed “Concept for the Development of the Emergency Medical Care System in the Republic of Bulgaria 2014–2020” (MOH 2014) with a clear vision and plan for emergency medical care, the chapter performs an in-depth analysis of the current and past trends to formulate specific recommendations on areas of special attention in implementing that concept.
- Chapter 10 concludes the report with a discussion on the first of the government’s four key priorities—ensuring the financial sustainability of the health system.¹ It revisits key areas that affect such sustainability and calls for a committed approach in implementing reforms in all these areas.

Part I: Diagnostic

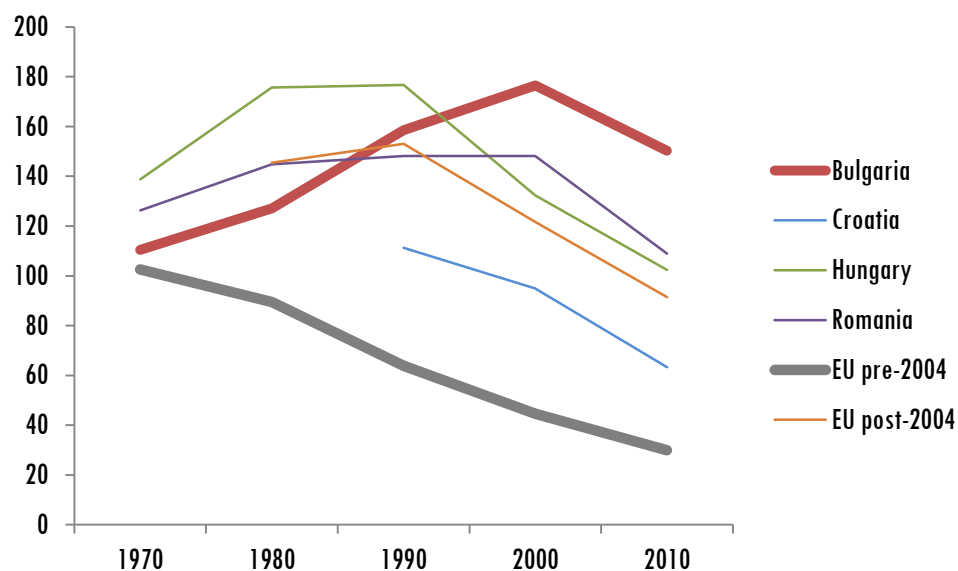
Country context

Demographic, epidemiological, and economic trends coupled with structural inefficiencies in the health system pose significant challenges for publicly financing adequate health services for Bulgaria’s population. The current mix of health services does not meet the needs of the population, and absent major reform, future health and financial prospects appear bleak.

Bulgaria’s population is aging and declining. By 2050, one in three Bulgarians is projected to be older than 65, while only one in two will be of working age. The United Nations (UN) projects net emigration of 10,000 people a year until 2050, while Eurostat forecasts an even larger cumulative loss. As a result, by 2050 the old age-dependency ratio is expected to double to 50 percent, and labor supply projections suggest a decline of up to 40 percent. Noncommunicable diseases (NCDs) are now the key causes of mortality and morbidity in Bulgaria.

¹ The other three are changing the functioning of the health system; adopting an active approach with respect to care and the establishment of supportive environments; and strengthening the capacity for public health care.

Figure ES1: Standardized death rate for diseases of the circulatory system (0–64 years) per 100,000



Source WHO Health for All Database 2014.

Aggravating these pressures is the sizable and increasing fraction of the population that is either poor, or highly vulnerable to falling below the poverty line, and can therefore ill afford to pay for essential services out of pocket (OOP). Poverty levels have been increasing since 2008; in 2011 more than 21 percent of the population lived below the national poverty line, over 16 percent of the population lived on \$5 (purchasing power parity, PPP) or less per day, and close to 4 percent lived on \$2 per day or less. However, nearly half the population (and 60 percent of those 65 and over), or 3.6 million Bulgarians, are living at risk of poverty or social exclusion, the highest percentage in the EU.

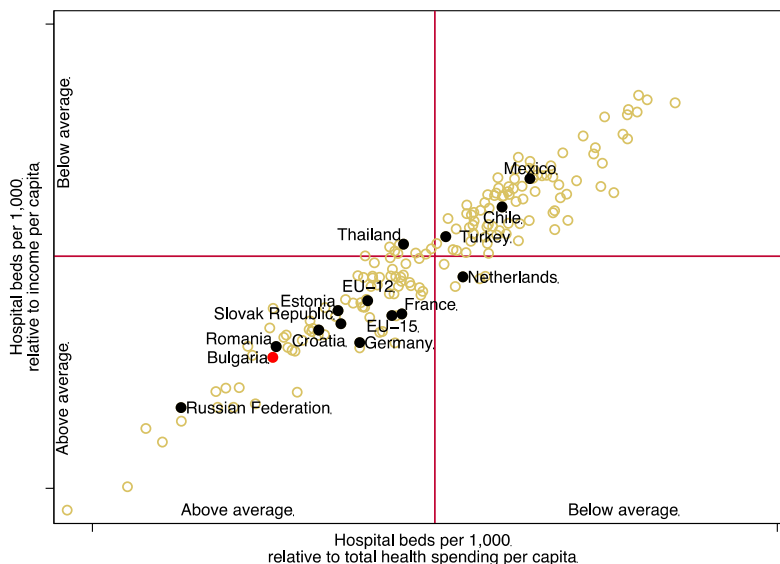
These trends in vulnerability and the declining tax base are not aided by the substantial part of the labor force that works in the informal sector. In recent years the “shadow economy” has been estimated to be worth more than one-third of gross domestic product (GDP), and some 16.5 percent of all workers work informally.

Since its EU accession in 2007, Bulgaria has been unable to reduce gaps in health outcomes and has failed to catch up with EU15 countries, despite a convergence in income. It has even lost ground to countries it had outperformed in the past. Yet on a more global scale, current indicators for life expectancy and disability-adjusted life years (DALYs) per capita suggest average to above-average performance against other countries with similar levels of income and health spending per capita.

These gaps result in part from poor progress in dealing with NCDs. Neither primary care services nor health promotion activities appear appropriately geared to the prevention, diagnosis, or management of these conditions. An examination of public spending across countries suggests that Bulgaria spends comparatively more on inpatient services and, at the same time, comparatively less on outpatient care. Hospital capacity and hospitalization rates are above average, even when comparing Bulgaria with countries of similar levels of income and health spending. A 2013 analysis of hospitalization rates in Bulgaria suggests that at least 20 percent of procedures performed on an inpatient basis could have been completed in basic outpatient settings. The current deployment of human resources does not support a strong primary care sector that can deal with NCDs. Even though Bulgaria has no overall shortage of physicians, and in fact ranks above both the EU15 countries and other countries with similar income and

health spending profiles, general practitioners and nurses are in short supply. The health workforce is also rapidly aging, and out-migration among young health professionals is frequent. Moreover, only 5 percent of general practitioners have been trained in family medicine.

Figure ES2: Hospital beds to population ratio relative to total health spending and income



Source: World Development Indicators and WHO NHA 2014.
 Note: Beds and GDP per capita data are for the latest/earliest available year.

Bulgaria’s health system thus appears ill-suited to meet its present and future needs. Given the speed and magnitude of the projected demographic and epidemiological transitions, the basic inefficiencies in the health system, and the challenging economic outlook, substantive reforms to the health system are imperative.

Bulgaria’s health financing system

History and design of the National Health Insurance Fund

Bulgaria’s health financing and health system reforms to date have exemplified the movement from the Soviet (Semashko) model. In this model, universal coverage was provided through a public national health service funded through general revenues. Physicians and other health workers were salaried public employees, hospitals received global budgets, and private practice and insurance were prohibited.

Over time, Bulgaria has shifted toward a more pluralist health system based on a social health insurance model. The NHIF was established in 1999 and has since become the single largest health services purchaser in the country. In principle, the NHIF appears to be fairly comparable to many “social” (or mandatory) health insurance funds of the EU. The whole population is in theory covered through a compulsory and autonomous public health insurance fund. Workers (and their employers) pay social health insurance contributions based on their incomes, while the poor, unemployed, children, pensioners, the disabled, and other socially dependent or priority groups are exempt from contributions and are financed by the government. The single national public fund pools the health risks for the entire population and purchases services from public and private providers.

The reforms have also separated purchasing from provision with the intention that money would “follow the patient” rather than finance existing facilities irrespective of their performance and usage. Provider-payment mechanisms were reformed; private provision of health care services and private health insurance were authorized; ambulatory care was privatized; and hospitals became autonomous. MOH retained responsibility for public health, emergency care, tuberculosis, HIV/AIDS, mental health and some other services, and its role evolved more toward that of stewardship of the system.

The 1998 Health Insurance Law mandates compulsory coverage for all Bulgarians, via an employer/employee mandate for formal sector employers/workers and an individual mandate for the self-employed, including informal sector workers. The current contribution rate is 8 percent of income with a minimum and maximum set by law. The rest of the population—including children, pensioners, the disabled, the unemployed, and other socially dependent groups—is covered by the state. Unemployed individuals who are not entitled to unemployment compensation or social support are also required to enroll and make contributions. Uninsured people can activate coverage at any point, and may be motivated to do so when hospitalized or faced with catastrophic expenditure, resulting in potential adverse selection for the NHIF. Contributions are collected by the National Revenue Agency and transferred to the NHIF.

The Health Insurance Law stipulates that the insured are entitled to receive “medical care within the scope of the basic package of health-care activities guaranteed by the budget of the National Health Insurance Fund.” Ordinances issued by the MOH, not the NHIF, specify the BBP. The package includes primary and specialist outpatient medical and dental care, drugs, diagnostics, and inpatient hospital care. The MOH covers a range of preventive and curative medical services outside the package, including notably some immunization, emergency care, mental health care, in vitro fertilization, and organ transplants. Cost-sharing requirements vary by type of service, and coverage of services is ultimately limited by the NHIF budget approved by Parliament for the year.

The NHIF employs a wide range of payment methods differing by provider type. In general, hospitals are reimbursed from the NHIF on the basis of bundled fee for service payments for some 300 clinical care pathways (CCPs) and are also subject to annual budget ceilings. General practitioners (GPs) are paid on the basis of a mix of capitation and fee for service, while outpatient specialists, laboratories, and dentists are paid on a fee-for-service basis. For private patients, whether they purchase services directly or are privately insured, providers are generally paid fee for service. A National Framework Contract is negotiated every year between the Bulgarian Medical Association and the NHIF, with a separately determined “price/volume” agreement that sets the conditions for provider participation and the prices and volumes of services provided by all categories of medical professionals.

Financing flows

In 2012 around Lev 6.3 billion was spent on health care in Bulgaria, 51 percent of which was public expenditure, largely disbursed through the NHIF. This 51 percent was collected and pooled through mandatory taxes and contributions. The rest was private money, mostly spent by households at the time individuals seek care (OOP). The NHIF pools and distributes around 80 percent of all public health funding.

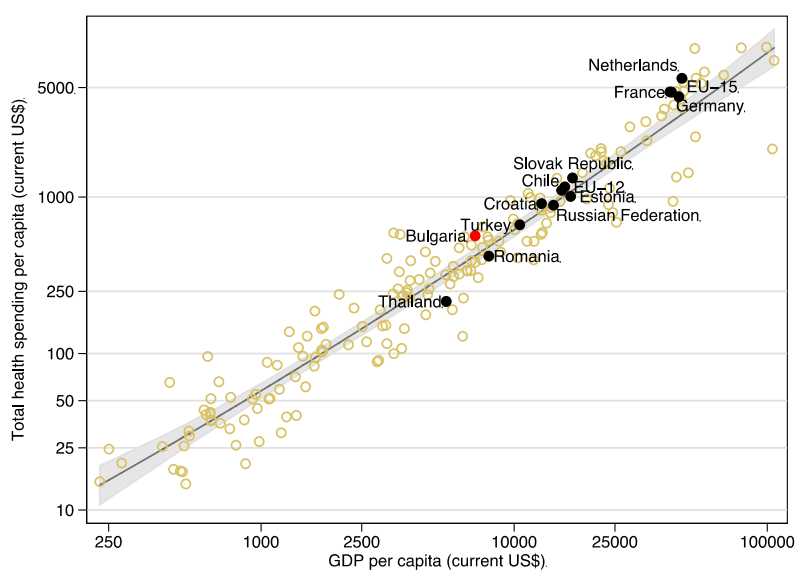
On the private side, over 98 percent of “revenues” for health arise through the direct purchase of services, as well as copayments and other OOP costs by consumers. Voluntary private health insurance makes up a relatively small proportion of private expenditure. OOP costs are the single largest source of revenue and expenditure in the health system, representing 47 percent of the total in 2012. The second largest is the NHIF, which “commands” in a formal and organized way 40 percent of total expenditure on health.

Assessment of health financing system performance

International comparisons and trends

While per capita health spending in Bulgaria is still below EU averages, Bulgaria spends more than other comparable-income countries. Total expenditure increased from 5.2 percent to 8.0 percent of GDP between 1995 and 2012, when per capita health spending increased from \$82 to \$566. Against its neighbors, Bulgaria's total per capita health spending started from a much lower base, but its upward trend has tended to mirror those of others in the region such as Romania and Croatia. Nevertheless, in 2012 it was still lower than the EU12 and EU15 averages of \$1,160 and \$4,379 per capita, respectively. Yet in 2012, total health spending per capita and as a share of GDP was above the average of countries at similar income.

Figure E53: Total health expenditure per capita versus income per capita, 2012 (current US\$)



Source: World Development Indicators and WHO NHA 2014.

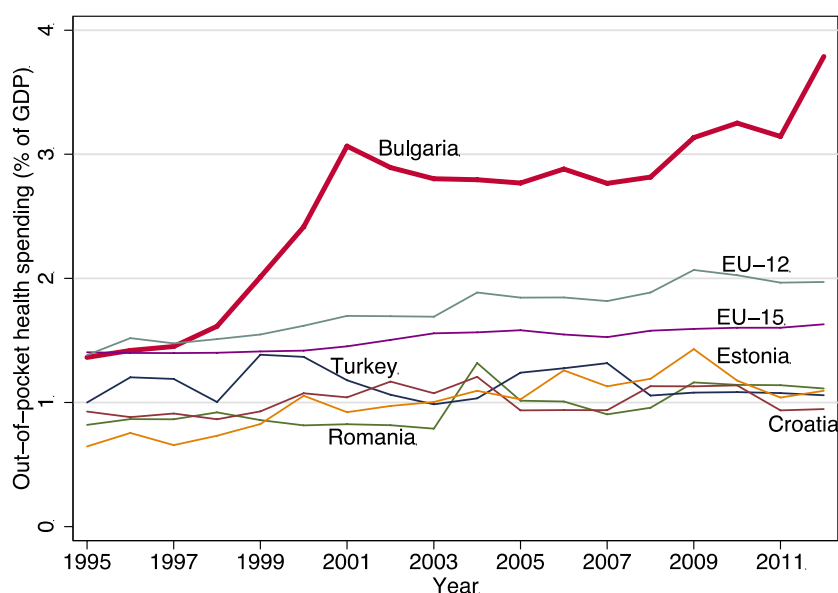
Public spending on health in Bulgaria is similar to rates in countries of comparable income. In 2012, public health spending represented 51 percent of total health spending and 4.1 percent of GDP. Per capita, public health spending was \$291. By most metrics, public health spending was about average for all measures in a global comparison in 2012, except for the public share of total health spending, which was slightly below average due to the high level of private spending.

Bulgaria appears to give relative priority to the public sector in terms of the government's overall revenue and expenditure efforts, and to health in the overall budget. Bulgaria's total government spending relative to GDP (expenditure effort) and total revenues relative to GDP (revenue effort) are both slightly above average compared to other similar income countries. Between 1995 and 2012, the government has increased the share of its budget spent on health from 8.5 to nearly 12 percent. Compared with similar income countries, this is slightly above average, suggesting that Bulgaria gives slightly more priority to health within its budget allocations.

Bulgaria, however, is a clear outlier on private expenditures—in particular, OOP payments, which are significantly above global averages as a share of total health spending (47 percent), as a share of GDP (3.8 percent), and per capita (\$268 at market exchange rates). Bulgaria is thus a considerable distance from

meeting the WHO criterion for adequate financial protection, which specifies a ceiling of 15–20 percent for OOP payments as a proportion of total health spending. Further, the situation has deteriorated markedly. OOP costs in Bulgaria increased by more than 20 percentage points between 1995 and 2012, while countries such as Chile, Mexico, Thailand, Turkey, which started from a similar or higher base, have made tremendous progress in reducing OOP expenditure. Bulgaria’s trend runs counter to the well-established relationship of diminishing private (and OOP) expenditure shares with increasing GDP.

Figure ES4: OOP health expenditure as a share of GDP, Bulgaria and comparators, 1995–2012



Source: World Development Indicators and WHO NHA 2014.

Financial protection, equity, and redistribution

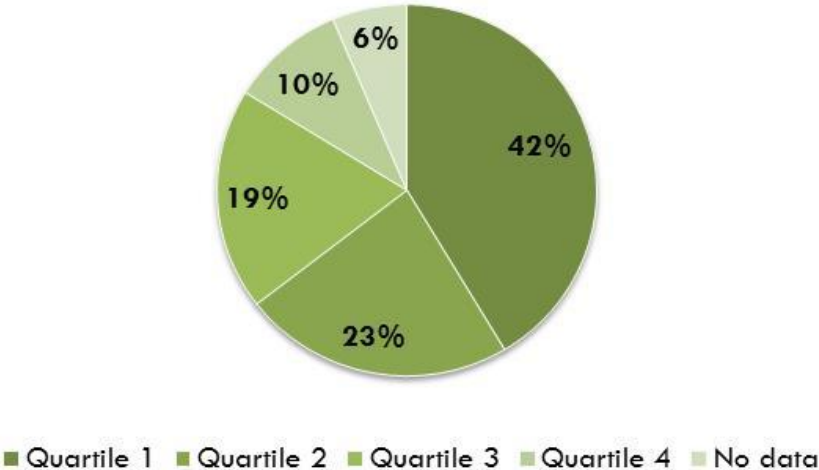
The core objective of any health insurance system is to protect individuals from large and/or unexpected health expenditures they cannot afford. This entails both broad insurance coverage (that is, insurance extended to all citizens) and low levels of OOP payments after payment of health insurance contributions. Given the heterogeneity of both health needs and ability to pay, providing adequate financial protection on an equitable basis generally entails cross-subsidies from healthy to sick, and from rich to poor.

Bulgaria’s NHIF is the compulsory national health insurer and single risk pool for the entire population. As such, it pools health risks efficiently and comports with global trends toward centralization of risk pooling. Some 90 percent of the population is enrolled, including most children and most elderly, whose coverage is subsidized by the state. The range of services covered is broad. There are, however, two main limitations to coverage.

The first is that a significant share of the population are uninsured and that the vast majority of the uninsured are disadvantaged. Bulgaria is falling short of its intention of providing coverage to all citizens. Triangulating data from the National Revenue Agency and representative household surveys suggests that 7–8 percent of the population living in Bulgaria at any point in time are not covered by health insurance. And as it is likely that some people who work abroad seasonally may not be insured when they come back, including them would put the proportion at around 7–12 percent of Bulgarians who do not live abroad permanently.

The data also suggest heterogeneity of coverage among the resident population—in particular, pronounced disadvantages among populations with lower socioeconomic status, minorities, and age groups whose contributions are not covered by the state. Results from a multiple regression show that relative to the third quartile of the wealth distribution, the bottom two quartiles are 10 and 5 percentage points less likely to have health insurance, while individuals who have not completed primary schooling are similarly disadvantaged, being 12 percentage points less likely to report coverage than those who have completed a secondary education. The Roma population, even after controlling for resource poverty and low rates of educational attainment, is still 25 percentage points less likely to be covered, while for the Turkish ethnic minority the difference is 7 percentage points.

Figure ES5: The uninsured population by wealth quartile



Source: BLISS 2013 data.

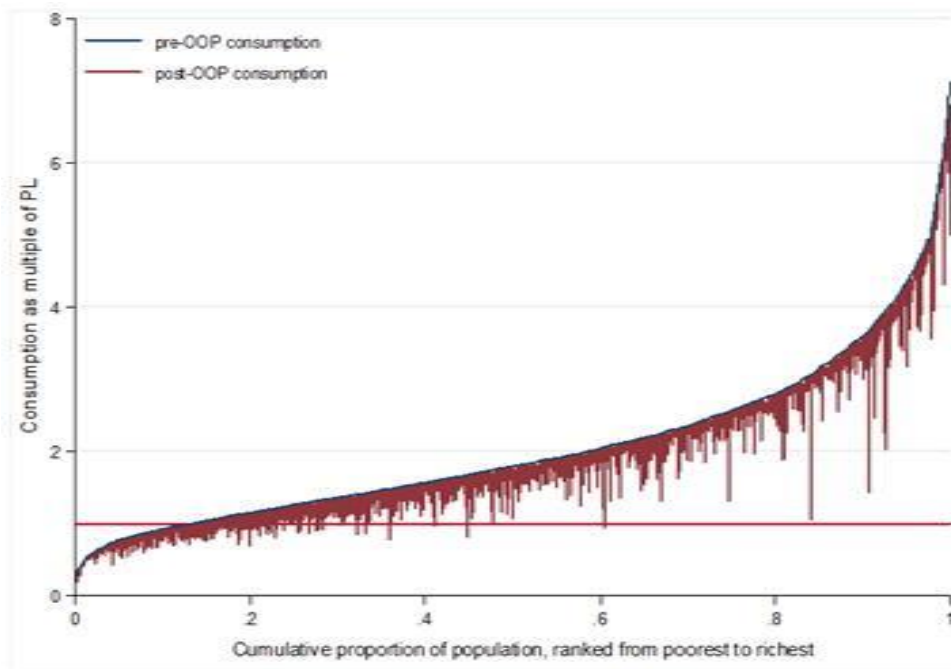
The bulk of the uninsured population, however, consists of poor, working-age, ethnic Bulgarians who are not working. More than half the insured are ethnically Bulgarian, and the bottom wealth quartile accounts for more than 40 percent of the uninsured. Children and the elderly account for only around 10 percent of those lacking coverage, while those who reported no work in the four weeks prior to the survey make up 76 percent of the uninsured population.

Access to coverage by the NHIF is only one aspect of the problem. The Household Budget Surveys in Bulgaria show that the high level of OOP payments considerably limits the financial protection of all. The share of the household budget spent on health is relatively high, at 5.3 percent in 2013, against about 3 percent on average in Western Europe. Almost 20 percent of households in Bulgaria spent 10 percent or more of their total outlays on health care in 2010 and 2013, well above the EU15 average of 5.8 percent.

The poverty impact of OOP payments is considerable. Excessively high household expenditures on health care can push some households into poverty. If a household has total consumption expenditures (pre-OOP) above the national poverty line but its total nonmedical spending (post-OOP) is below the line, it could be considered to have suffered impoverishment due to OOP spending on health. Data from the 2010 Household Budget Survey showed that 14.2 percent of the population had total expenditure below the official poverty line. An additional 3.8 percent who did not fall below the poverty line, given their total consumption expenditure, would have done so once health payments were subtracted. By 2013, this

proportion had risen to 4.2 percent and even some households in the highest quintile fell below the poverty line after spending on health.

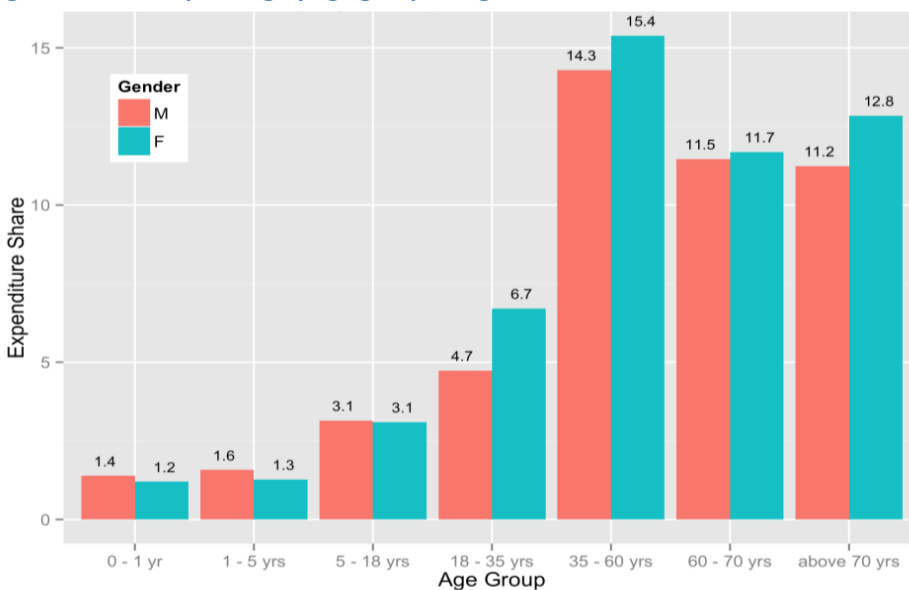
Figure ES6: Per capita expenditure, gross and net health spending



Source: Authors' calculations using Household Budget Surveys 2010 and 2013.

The last question reviewed is the redistribution that takes place in the context of the public health insurance system. While data limitations preclude a complete benefits-incidence analysis, data on contributions and expenditures suggest that health care resources flow primarily from the relatively healthy working-age contributors to the elderly population with greater health needs, and to a lesser extent to children. In other words, the state makes contributions on behalf of children and the elderly that are lower than the amount the NHIF spends on these groups, and contributions from the working-age population fill the gaps. Estimates based on NHIF data suggest that for every Lev 100 paid in payroll contributions, Lev 45 help cover the costs of care for children and the elderly. This redistribution across generations is an advantage of publicly financed systems over systems where people have to pay according to need. Given the high risk of poverty of the elderly in Bulgaria, it is also probably reasonable to assume that some redistribution between the better off and the poor is taking place.

Figure ES7: NHIF spending by age group and gender, 2013



Source: Authors using NHIF administrative payment data.

In summary, adequate financial protection has still not been established for the population of Bulgaria, but observable redistribution operated through the NHIF appears equitable. Gaps in insurance coverage remain, particularly for the working-age population and vulnerable groups such as poor households, minority populations, and individuals without jobs. OOP payments are relatively high and lead some households to fall below the poverty line—even households that would otherwise be affluent. There is evidence that public health care resources flow from the relatively healthy working-age population to groups that require more health care services—the elderly and children. But households’ greatest effort toward paying for care occurs through OOP and such payments are not pooled or redistributed across households.

Purchasing efficiency of services

Payment and contracting methods are key policy levers that could help achieve a set of macro objectives, such as overall cost containment, and micro objectives, including effective access and the efficient delivery of services at facility level. However, operational obstacles in Bulgaria are hindering progress toward these objectives. The NHIF, with its unified set of rules and incentives for payments, manages some 40 percent of all health spending and has important impacts on provider behavior and spending levels. Many aspects of Bulgaria’s purchasing arrangements conform to global good practices, such as capitation for GPs, prospective case-based payments to hospitals, caps on provider spending, and referral penalties. However, the ways in which these arrangements have been implemented, both individually and collectively, leave room for improvement, as they contribute to the health sector’s bias toward expensive hospital care.

GPs and ambulatory care specialists face incentives for containing costs but no disincentives to refer patients to hospitals. Like many other countries, Bulgaria has chosen a mixed remuneration system for GPs, consisting of a risk-adjusted capitation payment (representing around half of payments to GPs) combined with additional fee-for-service payments to encourage desirable provider behaviors. Capitation payments are supplemented by fees for preventive services and treatment of patients with chronic conditions (“dispensary” patients). Ambulatory care specialists are paid on a fee-for-service basis. Both

types of outpatient providers manage tight monetary budgets for investigations and diagnostic tests and numerical ceilings on referrals. However, neither class of providers is limited in hospital referrals.

In fact, the referral budget holding mechanism may serve to encourage referrals to hospitals. First, GPs are required to refer certain types of chronic care patients (such as those with hypertension and chronic obstructive pulmonary disease) regularly, even patients who could be treated effectively in the primary care setting or do not require the service. As chronic patients represent a large share of the population, savings could well be achieved if these patients were managed in primary care. Second, while the referral caps for specialists and investigations are very strict, and physicians are fined for every referral over their individual limits, they are not rewarded for achieving any savings in their referral budgets. Third, GPs and specialists are not held accountable for unnecessarily referring patients for hospital-based care, which can be used to overcome the strict limits put on ambulatory care volumes.

Other rules and procedures that apply to GPs and specialists exacerbate this bias toward hospital care. Some services that could be delivered on an ambulatory basis are provided in hospitals only, and a referral may be the only way to access them. For services such as CT scans or MRIs, waiting times and prior authorization procedures may be so onerous that a referral to a hospital can become a more effective way to ensure patient access to a service, even where it would be possible for a GP or ambulatory care specialist to provide the appropriate care. When a patient is admitted to a hospital and assigned to a clinical care pathway, the overall payment for the service can be significantly higher in the inpatient setting.

Additionally, ambulatory care specialists argue that reimbursement levels for some services they could provide are too low for the required investments to be financed (e.g. purchase and maintenance of necessary equipment). Finally, specialists who work both in ambulatory care and inpatient settings may have additional incentives to refer to hospitals, as their hospital contracts contain some rewards for the volume of patients they treat. A specialist can benefit by being paid for his or her service by the NHIF, while receiving an incentive payment from the hospital for bringing in the patient.

There are also a number of ways in which the contracting and payment system for hospitals contributes to perpetuating the problems. First, since hospitals are paid on the basis of a bundled fee for service system, they have strong incentives to admit ever increasing numbers of patients. In principle hospitals are subject to volume caps, which should limit the number of admissions. In practice, however, once allocated budgets are spent, hospitals continue to provide services and simply petition the NHIF for additional funding—which they generally receive. In other words, the macro pressure to limit the volume of hospital care appears much less effective than the pressure to limit other types of care.

Second, the NHIF cannot refuse to contract with any hospitals approved by the MOH, regardless of whether the NHIF considers the facility's services to be appropriate or necessary. In other words, the NHIF cannot benefit from the well-documented advantages of selective contracting. Moreover, as the numbers of facilities and beds have continued to grow, the number of cases has had to be shared among an increasing number of players, further reinforcing individual incentives to do more, and limiting any one facility's ability to benefit from economies of scale.

Third, Bulgaria lacks standard hospital admission criteria, which results in facilities admitting any and all patient types. Patients can self-refer to the emergency department to be admitted. Neither rules nor incentives exist to encourage patients to seek care in a more cost-effective and appropriate primary care setting. In fact, in many cases, admission to the hospital results in lower OOP costs for the patient, and minimal or no waiting time for tests and procedures.

Finally, the way in which the CCPs—initially conceived as clinical guidelines—have been operationalized has resulted in a number of inefficiencies. The list of CCPs and their prices are negotiated annually and

not based on costing data. Over time, new (often higher-valued) CCPs have been introduced, splitting CCPs into multiple groups and/or creating new groups. Changes often give the appearance of being introduced to “benefit” a particular specialty or particular facilities, or to limit competition in specific segments of the market. Moreover, no comprehensive exercise has been undertaken to ensure that CCPs are resource homogenous, or that their relative CCP values reflect efficient resource allocation—or even current clinical practice guidelines or protocols. CCP algorithms also require certain levels of inputs to be present, and certain types of services to be delivered, and they define minimum (not maximum) lengths of hospital stays that must be met to be eligible for payment.

In other words, CCP requirements dictate what and how medical care must be provided regardless of whether it is in the patient's best interests or clinically indicated. Although some limits can be justified to ensure patient safety, this is a potential source of waste and generally undermines the incentives for production efficiency and quality embedded in most diagnostic-based case payment systems. CCPs can also be fairly easily gamed, since hospitals—and physicians—are the ones who select the CCP for each hospital stay. (The allocation of a patient to a diagnosis-related group [DRG] is based on a computerized algorithm, which is more difficult to manipulate.)

It is also important to keep in mind that OOP payments are the single largest source of provider payments in the system. Thus providers derive a significant share of their income from individual patients—the price takers of unconstrained fee for service—and this dilutes the impact of the NHIF. Additionally, the population appears not to have much faith in lower levels of care.

The primary and outpatient care systems lack a credible quality assurance framework that could be used to measure and reward quality of care and efficiency of service delivery. Most of the rules on referrals appear to be geared toward containing cost. There are no data—and certainly no transparent mechanism—on which to build consensus or to demonstrate that they necessarily reflect modern evidence-based practice

In summary, the administrative rules and regulations, embedded practice requirements, price negotiations, and lack of enforcement of spending caps together create massive distortions and inefficiencies in the health system, even though Bulgaria appears to have moved away from input- to output-based financing methods, and uses widely accepted good-practice international payment methodologies across care settings. In reality, rigid input elements, rather than clinically determined norms and output-based methods, govern delivery of care. As a result, providers at each level of care focus on maximizing revenue rather than treating their patients in the most appropriate setting.

Purchasing efficiency of medicines

The pharmaceutical sector in Bulgaria lacks an overarching, integrated national medicines policy, and current policy settings appear most acutely focused on limiting NHIF outlays rather than providing financial protection to patients. While regulatory standards and processes have been largely brought into line with current EU standards, mechanisms for listing and pricing medicines in the Positive Drug List (PDL) are not ensuring adequate value for money for the NHIF, and are contributing to inefficiencies in the health sector. Pharmaceuticals account for 37 percent of health care expenditures (compared with an EU average of around 25 percent) and OOP costs for medicines account for nearly three-quarters of all OOP expenditure.

The principal price-setting mechanism for medicines is international (external) reference pricing, with prices set at the level of the lowest of 10 primary and seven secondary EU member states. However, the referenced prices are “official” prices and may not capture confidential discounts and negotiated rebates, and they may not reflect (and may not have been assessed for) reasonable value for money in the

referenced member states. Medicines may also be subject to strict controls on utilization to offset unit prices in reference countries, and this is unlikely to be taken into account in a simple pricing look-up. Finally the reference prices are drawn from EU member states that all enjoy substantially higher per capita GDP than Bulgaria, so even if the price of a drug were shown to reflect reasonable value for money in the source country, this may not be the case in Bulgaria.

In addition, current processes for listing medicines in the PDL are insufficiently influenced by considerations of cost-effectiveness, and there are no explicit links between the conditions of listing and any approved treatment guidelines. Medicines with evidence of coverage in at least five of the 10 primary reference countries may be considered for listing via an assessment of clinical and economic data, but the weight given to economic considerations is too low to ensure that products approved for listing necessarily demonstrate reasonable cost-effectiveness. Moreover, Bulgaria's Pricing Council does not have sufficient expertise in pharmacoeconomic evaluation of medicines to undertake rigorous assessments of the data submitted by applicants.

Nor are there mechanisms to drive competition within the off-patent medicines market. While the ex-factory price of the first (and any subsequent) generic version of a medicine listed is subject to a statutory price reduction, generic prices are otherwise determined by external referencing.

As a result of these listing and pricing mechanisms, the prices of some medicines in Bulgaria's PDL are as high as—and some are even higher than—in much wealthier countries. Insufficient consideration of cost-effectiveness when listing and pricing medicines together with potentially inadequate or ineffective restrictions on prescribing result in fast-growing expenditures on some very high unit-cost and potentially non-cost-effective medicines. For multisource, and particularly high-volume medicines for chronic conditions, some prices also compare unfavorably with, for example, prices in the United Kingdom and New Zealand. At the same time, discounting in the supply chain suggests scope for lowering prices and clawing back some of the savings currently accruing to pharmacies.

Table ES1: Price comparisons for selected medicines in Annex I of the PDL

INN	Indication	Bulgarian reference price (€)	N.Z. Price (€)	U.K. Price (€)
adalimumab	rheumatoid arthritis	1,047	1,141	889
etanercept	rheumatoid arthritis	508	602	451
insulin glargine	diabetes	53.26	59.92	52.36
insulin lispro	diabetes	112	75.48	74.34
ivabradine	angina, heart failure	57.95	N/A	50.68
metformin	diabetes	0.47	0.23	3.60
olanzapine	antipsychotic	2.56	1.62	1.83
salmeterol/ fluticasone	asthma	32.35	31.51	44.16
valsartan/ HCTZ	hypertension	4.12	N/A	3.61
vildagliptin/ metformin	diabetes	47.38	N/A	42.87

Source: N.Z. prices from <http://www.pharmac.health.nz/tools-resources/pharmaceutical-schedule>. U.K. prices from http://www.ppa.org.uk/edt/September_2014/mindex.htm. Exchange rates as of August 2, 2014 from www.oanda.com. Some N.Z. and U.K. prices have been prorated to accommodate different pack sizes.

Note: All medicines are in the NHIF Top 25 by reimbursement value in 2014. Bulgarian prices shown as at August 1, 2014. Where multiple presentations are listed, Bulgarian price shown is for product with lowest unit cost. All prices over €100 are rounded.

The focus on cost-containment contributes to high OOP expenses. For multisource products containing the same International Nonproprietary Name in the same pharmaceutical form, the amount of NHIF reimbursement is set as a proportion of the product with the lowest cost per defined daily dose. Therapeutic reference pricing is also applied across different molecules within the same therapeutic class where the products are considered to be of similar efficacy and safety in a particular indication (often called “cluster reference pricing”). Since actual prices can substantially exceed benchmark prices and as levels of reimbursement by the NHIF are set as a proportion of the benchmark price, OOP costs to patients can be extremely high, often exceeding the NHIF contribution.

Other policies related to the pharmaceutical sector contribute to high costs for patients that end up being regressive. Wholesale and retail markups, set by the MOH, are proportional to drug prices. In addition to statutory markups, pharmacy revenues include dispensing fees of Lev 2 per prescription (not per item), but this is only payable for prescriptions comprising items that are 100 percent reimbursed by the NHIF. Because dispensing fees are low and retail margins proportional to drug costs, this creates incentives for pharmacists to dispense more expensive medicines. Prescribing by International Nonproprietary Name is not encouraged and substitution at pharmacy is not permitted. There is also widespread mistrust in the quality and safety of generics. Many prescriptions are therefore written and dispensed for products with prices higher than the reference or benchmark price, which increases OOP costs to patients, often by far more than the coinsurance amount. Finally, there are no safety nets or “stop-loss” provisions to protect individuals from catastrophic OOP costs.

OOP costs for key medicines are also likely to be undermining access and adherence to treatment for medicines that are important for delaying or preventing progression of NCDs, particularly cardiovascular and chronic respiratory disease.

In summary, current listing and pricing mechanisms provide little or no assurance of value for money for new medicines in the PDL. Current policy settings do not promote competition in the off-patent market and many prices for both patented and off-patent medicines compare unfavorably with countries with far greater capacity to pay. Several high-cost medicines contributing significantly to rapid expenditure growth are unlikely to be cost effective in Bulgaria and should be subject to price (re)negotiation, tight restrictions on use, and in some cases, delisting. If Bulgaria were also able to encourage greater competition in the off-patent medicines market, this, alongside measures to address demand and promote rational prescribing, could vastly improve efficiency in pharmaceutical expenditure.

An actuarial assessment

Every year, in line with the Public Finances Act, the NHIF prepares a draft law presenting its own budget which is ultimately submitted to the Council of Minister for approval with the consolidated fiscal program and the draft budget law of the Pension Fund. The Council of Ministers may make adjustments, in particular to ensure that the consolidated fiscal program adheres to the predetermined budget balance which is set in the Public Finances Act. The package is then sent to Parliament where it can also be adjusted, while remaining within the macro-fiscal parameters of the Public Finances Act. If in the course of the year, it appears that there could be an overrun, shortfalls can be accommodated through measures taken by the NHIF, through implicit rationing, which impacts providers (through deficits) and/or consumers (through rationing of services), or additional budget allocations. The latter must ensure continued compliance with the Public Finances Act and be approved by Parliament (as occurred twice in 2014).

While virtually all insurance funds undertake studies to assess their actuarial soundness, neither the NHIF nor any other government agency in Bulgaria appears to perform such analyses to systematically review revenue and expenditure trends or their causal factors, and how they will likely manifest themselves in the future. Also absent is an assessment of the long-term solvency and financial sustainability of the NHIF.

Thus the NHIF and the government more generally are hampered in their capacity to strategically manage nearly 40 percent of all health spending, 10 percent of the government budget, and over 3 percent of GDP.

Since understanding the actuarial soundness of the NHIF is necessary for both the health system diagnostic and development of reforms, an actuarial model for the NHIF was being developed as part of this study. The actuarial model analyzes trends in the underlying variables that determine the growth in costs and revenues of the insurance scheme, as well as their potential contributions to the government's fiscal balance.

The costs and revenues of the NHIF are largely determined by the size and composition of the covered population, the benefit package, the age and gender cost structures resulting from the provision the existing package, the provider-payment mechanisms used, employment and labor force trends, and government fiscal and social policy. This effort thus entails taking in to account projections of macroeconomic indicators (income, employment, prices, GDP, etc.), labor projections, demographic developments, and so on.

The development of the actuarial model proved challenging for reasons relating to information access to determine underlying trends and forecasting assumptions for critical parameters. Much of the necessary underlying information is scattered among multiple agencies, sometimes multiple data sources are inconsistent (on the number of uninsured, for instance), and in other cases data are simply unavailable—or could not be accessed. The NHIF itself has to rely on external sources to determine coverage, and has little information on the eligibility basis of those it covers and those uninsured who are required by law to enroll.

The model confirms several findings from the above analyses: for example, the state seems to be paying its appropriate share as mandated by law; most people on labor contracts appear to be enrolled; the bulk of the uninsured appear to be self-insured individuals, usually poor or near-poor; the costs of outpatient health care are not growing rapidly; and the largest and fastest-growing sources of costs for the NHIF are drugs for home treatment and hospital care.

Forecasts based on the model were developed. They rely fundamentally on assumptions and parameters. If past trends are simply projected forward, results suggest—as with other, earlier studies—that future health-care cost pressures could threaten the integrity of the government's medium-term macroeconomic framework.

It is critical to underline that, ultimately, the government has the capacity to keep any NHIF deficit in check by imposing strict caps, reducing or rationing benefits implicitly or explicitly. In other words, potential deficits may never materialize, but the efforts required would most likely lead to further shifts to private and OOP spending, a continued rise in poverty, and diminishing financial protection.

Still, the model provides a much-needed analytical tool to assist in the fiscal management of potential threats to public finance, highlighting the underlying and undermanaged cost drivers.

Fiscal space

Bulgaria was seriously affected by the global economic crisis and continues to face a challenging macroeconomic environment. Structural health sector-specific cost pressures could worsen the fiscal balance. The International Monetary Fund projects that excess health care pressures could add 1.3 percentage points to GDP in public health spending by 2030 and 3.2 percentage points by 2050 (an amount equivalent to 45 percent of Bulgaria's current GDP).

Bulgaria's income (current and projected), future fiscal situation, and current macro management objectives largely preclude substantial revenue increases, future borrowing, and grants. In particular, while Bulgaria gets high marks for macroeconomic management in controlling its expenditures and debt, limited economic growth prospects, coupled with already high revenue and spending levels, check any steep increases in revenue and overall expenditure effort in the medium term. As an EU member state Bulgaria is not a candidate for development assistance. It receives EU funding, but health is not a major priority for these funds. Given its challenging macroeconomic environment and prudent fiscal management policies, borrowing is not a likely fiscal space option. Thus creating fiscal space for health or indeed any other government programs will heavily depend on the country's ability to achieve efficiency gains in health (or other sectors), possibly with greater prioritization of health in the budget.

Efficiency gains in the health sector could lead to much better outcomes and could substantially offset the need to increase expenditures. Measures to reduce costs and improve efficiency revolve around implementing reforms in service delivery and include adopting a technically driven hospital rationalization plan, strengthening alternatives to hospital-based care, and addressing human resources constraints by adjusting the financial factors and other incentives needed to retain trained health workers in the country.

Another fiscal space option is to increase the share of public expenditure going to health. However, the budget share for health is already 12 percent, which is above average for the country's income. Current overall government expenditure is also high for that income. Health policy makers would need to convince the government that the net social benefits of increases in health spending were greater than their costs and greater than the potential net social returns in other public sectors as well as the private sector. This may be a hard sell given already high health spending levels and the significant inefficiencies in the health system.

Assessment of the health insurance information system

A well-functioning, modern, integrated, and reliable health management information system (HMIS) is crucial to the operation of any modern health care delivery system, and perhaps equally indispensable to the operation of smoothly functioning health financing processes. The health financing diagnostic assesses the readiness of existing information systems, and in particular of the health insurance information ecosystem, to accommodate any significant changes to functionality or transaction load that might be precipitated by changes to the health financing scheme, provider-payment methods, or health policy more broadly.

Such an ecosystem has four main components, which must all operate adequately and reliably: a health data dictionary defining a language common to all stakeholders; provider information systems; payer information systems; and transaction links between providers and payers.

The current health insurance information ecosystem

In Bulgaria, provider information systems function adequately given the demands currently exerted on them. Providers seem relatively satisfied with the systems in place. In particular, they can send claims electronically to the NHIF for payment, which is the most crucial requirement related to the health financing function.

Health information system standards (the repository for which is the health data dictionary) will require considerable further attention to increase interoperability between the various components. De facto standards have usefully emerged as a consequence of the very few vendors of provider information systems. However, a more top-down approach will be needed to continue their development into the

future, which will need to be overseen by the MOH and involve as many as possible stakeholders in the health industry, including the private sector.

The complex issue arises of whether to keep the existing CCP method of encoding hospital cases for payment or to move toward DRG case-mix encoding. Resolution will require further discussion. Looking at the question squarely from an information systems perspective, the adoption of DRG-based payments would facilitate the move to more automated adjudication of claims, which could increase productivity, accuracy, and consistency of adjudication, as well as likely lower the administrative burden.

On the status of payer information systems, the health insurance information system (HIIS) at the NHIF does not function adequately and is in need of urgent attention. It is slowly deteriorating for want of support and cannot even handle the NHIF's current business needs. It lacks comprehensiveness and it can only produce routine monitoring reports that revolve around the payment and administrative control functions. The system cannot perform other basic functions, such as monitoring the insured population (beyond knowing a person's insurance status on any given day), the eligibility category of insured individuals, or the utilization of care across settings and over time for specific patients (and thus groups of patients). It does not appear equipped to respond to any significant reorganization in information processes, take on additional responsibilities or transaction loads, or offer additional services such as improved reporting or analytic functions.

The future of provider information systems

Like all countries, Bulgaria now is at the cusp of dealing with two issues: an electronic medical record (EMR) and the improvement of upward and downward referrals. The national EMR would become the receptacle for all health information in the country, theoretically accessible by any accredited stakeholder anywhere, any time—the ultimate goal of provider information systems. The need for a unifying EMR flows from the fact that the hand off (referral) of patients between lower and higher levels of care remains problematic. The current referral forms are too limited and do not contain enough information to ensure an efficient hand off from one facility to another. Similarly, the downward referral (returning a patient back to primary care, for example) is even more problematic. The discharge summary is often inadequate to ensure the desired continuity of care between levels once the patient arrives “home” at a lower level.

There is also room to improve connectivity links between providers and the NHIF and between both of these parties and the MOH itself. But the current health information network may not be robust enough to support a multiplicity of payer and provider transactions needed for the efficient and effective functioning of the NHIF in achieving its basic health system objectives. A more centrally managed network (a so-called “star network”) overseen by a network management center seems advisable.

The future of payer information systems

The next generation of the HIIS must be planned for. Long-term issues relate to the system's comprehensiveness, modifiability, and expandability, and ability to be integrated with other systems more easily. The HIIS must span a larger universe if it is to have enough information to determine whether a claim is complete and legitimate, and the medical services necessary and appropriate, etc., which means that the HIIS will one day have to be attached to the national EMR. It also means that data from the HIIS must naturally feed into actuarial projections and other financial forecasting systems.

The next HIIS will need to have far more robust forecasting and financial-modeling capabilities, as well as better workflow management so that the “factory-like” processing of claims results in accurate and timely payment, is regularized, and is far less labor-intensive. Finally, the next HIIS will need to accommodate a far larger variety of provider-payment methods, which might include DRG, hybrid capitation, incentives,

and pay-for-performance. Since systems development efforts can take several years, the time to address the future of the HIIS is now.

Summary assessment of the governance, management, and performance of the NHIF

Like all countries, Bulgaria's health financing system embodies major transformations over its Semashko predecessor. It also faces serious challenges, which in part stem from the country's demographic and epidemiological transitions and its challenging economic situation. The country spends more than other income comparators. Total and private spending are higher and public spending is similar to global averages. Health outcomes are average and financial protection at both macro and micro levels is poor, inequitable, and declining. Given Bulgaria's already high fiscal effort and challenging future growth prospects, sustainability will be tough.

Efficiency gains are the key area for generating future fiscal space and such gains can be found in the NHIF's purchasing procedures for services and medicines, better rationalization of the benefit package on the basis of cost-effectiveness and financial protection criteria, and holistic control over and enforcement of financial and clinical policy levers that affect spending, etc. Thus assessing the structural and operational performance of the NHIF is essential for establishing the health financing reform baseline. Indeed, as the core health financing institution, the NHIF should help design, and will in all likelihood be driving implementation of, any major health financing policy change.

The efficient management of mandatory health insurance funds such as the NHIF requires standards of good governance to be met. In particular, the rules and regulations governing the system must be consistent. Further, the direction (stewardship) of mandatory health insurance, its stability, and its independence must be influenced by coherent decision-making structures.

These conditions are not adequately met in Bulgaria. On paper, the NHIF is ultimately accountable for meeting its obligations to provide the services included in the benefit package to all insured within the allocated budget. In order to assure solvency, mandatory health insurance funds can typically use a raft of policy levers, organized in three broad categories:

- On the revenue side, for adjusting contributions and managing reserves, the NHIF has little or no effective control over its revenues and reserves.
- On the expenditure side, a first critical lever is the management of the "entitlements" or "benefits" guaranteed to the insured. Again, many of these elements are set by law and through ordinances and not directly by the NHIF. In fact, other institutions including the MOH and the Pricing Council (for medicines) set most parameters. At the same time, neither of these institutions is accountable, responsible, or has the necessary expertise for ensuring that the NHIF budget is sustainable. In addition, there is no evidence that these decisions are based on thorough economic and financial analyses of their current and future implications for the NHIF budget or their impact on consumers. In many respects, responsibility for defining the benefit package and accountability for actually delivering it within a given budget are not aligned in Bulgaria.
- For contracting and payment, the current methods contribute to reinforcing some of the features of service delivery that undermine NHIF's capacity to cope effectively and sustainably with the burden of NCDs, in particular the widening imbalance between inpatient and outpatient care. Further, the NHIF faces important barriers to becoming an "active" purchaser, including the fact that it cannot selectively contract providers.

The NHIF thus has only a few instruments to fulfill its public financial management responsibilities as the country's single universal mandatory health insurer—and is hindered in using those open to it.

The fragmentation and misalignment of roles and responsibilities between the NHIF, MOH, and MOF need to be resolved if only because they perpetuate a costly and inefficient system. Future cost projections for Bulgaria and virtually all EU and many emerging market countries suggest that the financial pressure generated by the current service delivery and payment arrangements, coupled with demographic and epidemiological changes, will not abate, and that it will be important to promote service delivery reforms that will help curb costs and use the NHIF to leverage implementation. Ultimately, a decision needs to be made about which organization—NHIF, MOH, MOF—has the final say in ensuring the system becomes and stays efficiently run and financially sustainable.

The assessment also suggests that even if conditions were met for the core insurance and public financial management functions to be organized coherently, the system would still need to develop some essential tools to run these functions: the NHIF's health information system severely compromises its operational effectiveness and is inadequate for future needs; economic and financial instruments are underused; and information gaps are legion.

In conclusion, the fragmentation and misalignment of roles and responsibilities precludes an effective holistic approach to health financing policy making and implementation. On the one hand, some of the basic health policy goals embodied in the country's National Health Strategy 2014–2020, including the need for more primary care, prevention, and management of NCDs, as well as long-term care, are not fully analyzed in their health financing dimensions. On the other, some core health financing issues receive very little attention, including the impact of limitations to population coverage and of diminishing financial protection.

Overall strengths, weaknesses, and options for reform

A critical analysis of the health financing situation in Bulgaria reveals a number of strengths, opportunities, weaknesses, and threats (SWOT). The SWOT analysis results are in Table ES1, with a corresponding menu of options for reform. Part II of the report, which follows the table, develops further some items, reflecting the government's immediate priorities in the recently adopted "Concept Note: Health 2020 Goals" (MOH 2015a).

Table ES1: SWOT in the health financing system and a menu of options for reforms

Strengths and opportunities	Weaknesses and threats	Options for reform
Configuration of service delivery system, public health, and system incentives		
<ul style="list-style-type: none"> Well-developed public health programs and comprehensive delivery system. Purchaser-provider split with virtually a single payer (NHIF). Near universal insurance. Disadvantaged receive free insurance and emergency care is free to all. Payment systems modernized and contain elements of global best practices. 	<ul style="list-style-type: none"> Public health programs are not well aligned with the large and increasing NCD burden. Service delivery system, including human resources, and NHIF’s BBP, is based on an acute care model, lacking focus on primary care. The long-term care system is not well developed and is poorly integrated with the acute care system. The NHIF is inadequately empowered or incapable of leveraging its purchasing power. Provider incentives are aligned in a perverse way to encourage hospitalization and increase inefficiency. High OOP costs for drugs used in primary and secondary prevention of cardiovascular disease and management of other NCDs undermine access and adherence to treatments, potentially resulting in increased downstream costs. 	<ul style="list-style-type: none"> Reassess NCD policies and the public health framework and reprioritize as necessary. Develop a comprehensive assessment and long-term strategy for human resources in health. Over time, rebalance service delivery, by developing a needs-based hospital and long-term care master plan, empowering the NHIF to fully leverage its purchasing power, strengthening primary care, and assuring better coordination between MOH- and NHIF-funded activities and programs. Align payment systems and accountability mechanisms by reviewing NHIF payment policies, implementing contracting reforms, and linking payments to results and quality using tools such as DRGs and other pay-for-performance methods.
Investment in health and future cost pressure		
<ul style="list-style-type: none"> High overall revenue raising and public expenditure efforts. Health is prioritized in government spending. Solid fiscal framework and budget law. 	<ul style="list-style-type: none"> Substantial challenges in future growth and fiscal space due to declining population and labor force, lack of natural resources, and the underlying industrial structure. 	<ul style="list-style-type: none"> Prioritize reforms that increase the efficiency of public spending. Revise the governance framework to better align responsibilities and authorities.

Strengths and opportunities	Weaknesses and threats	Options for reform
<ul style="list-style-type: none"> • Relatively equitable financing of the NHIF, with cross-subsidization. • Possible access to EU Structural Funds. 	<ul style="list-style-type: none"> • High turnover in leadership and frequent changes in legislation fragment decision making, misaligning responsibility, authority, and expertise. • Insufficient weight is given to cost-effectiveness in deciding the benefit package, medicines, technologies, and clinical algorithms. • Hospital admissions are escalating. • Structural reforms for service delivery are lagging behind. 	<ul style="list-style-type: none"> • Review the BBP to improve cost-effectiveness of existing spending, starting with medicines. • Develop skills to monitor and to project cost (using actuarial methods, analysis of NHIF claim data) • Perform cost-effectiveness and other economic evaluation studies.
Financial protection		
<ul style="list-style-type: none"> • National health insurance with near universal coverage, single purchaser having diversified set of revenues which promotes redistribution and cross-subsidization. • Coverage is subsidized separately for numerous “needy” or high-priority groups. • Benefit package is comprehensive and inclusive of modern technologies and innovative medicines. 	<ul style="list-style-type: none"> • The poor are disproportionately less likely to be insured, and pay higher OOP for health. • OOP payments are outstandingly high against internationally acceptable standards and peers. • Medicines account for some three-quarters of OOP costs, raising concerns about effectiveness of NHIF’s BBP pharmaceutical coverage, as well as its copayment and pricing policies. 	<ul style="list-style-type: none"> • Regularly generate the information required to understand and monitor OOP payments so as to develop target policies for improving financial protection. • Develop policies to ensure coverage of the uninsured. • Promulgate options to reduce the size, and increase the clarity and predictability of, copayments, with priority emphasis on the medicines included in the BBP.
Pharmaceutical policy and practice		
<ul style="list-style-type: none"> • Regulatory processes are in line with European standards. • The PDL is comprehensive. 	<ul style="list-style-type: none"> • There is no overarching national medicines policy to establish agreed priorities and guide consistent policy development. 	<ul style="list-style-type: none"> • Develop an integrated national medicines policy that explicitly defines priorities and guides future policy settings.

Strengths and opportunities	Weaknesses and threats	Options for reform
<ul style="list-style-type: none"> • A range of high-cost medicines, without copayment, is available. 	<ul style="list-style-type: none"> • Inadequate consideration is given to cost-effectiveness or affordability. Controls on prescribing and utilization are insufficient. • The copayment structure creates excessive OOP costs, creates uncertainty for patients, and undermines adherence to treatment. • Policy settings do not promote use of generic medicines or adequately facilitate competition in the off-patent market. 	<ul style="list-style-type: none"> • Review processes for listing and pricing of medicines to ensure that all new medicines are assessed for cost-effectiveness (value for money) and budget impact (affordability). • Establish mechanisms to promote prescribing, dispensing, uptake, and confidence in generic medicines; reduce incentives for prescribing and dispensing higher-cost medicines; and facilitate competition in the off-patent market. • Develop capacity for health technology assessment and priority setting.
HMIS and e-health		
<ul style="list-style-type: none"> • Two or three main vendors have led to de facto standards setting and provided some reasonable interoperability between providers and the NHIF, as well as between providers and the MOH. • Considerable capacity and experience exists in software development and large-scale systems administration. 	<ul style="list-style-type: none"> • The HIIS at the NHIF is incapable of supporting many automatic financial and planning functions and is not prepared to accommodate changes that reforms require. • Systems lack the flexibility to provide the NHIF with information that is core to modern risk management, including comprehensive information on the enrolled population, health status, utilization, and the capacity to analyze them. • The MOH’s leadership in shaping the electronic health agenda has not been decisive enough and its efforts to engage stakeholders on policy appear limited. 	<ul style="list-style-type: none"> • Launch a requirements assessment to define a new HIIS for the NHIF. • Develop and implement consistently a carefully phased electronic health strategy—taking into account budget constraints and priority business needs. • Convene a permanent advisory panel of national and international experts to discuss future systems development—provider and payer—to provide input for systems design and administration.

Part II: Review of envisaged reforms

In the “Concept Note: Health 2020 Goals” (MOH 2015a) recently adopted by the Council of Ministers, the MOH lays out its ambitious plan for reforming the health system. Activities to be undertaken are in four major priority areas:

- Ensuring the financial sustainability of the health system by means of increasing government health spending, adopting strategies on both the supply and demand sides to curb health-care cost growth, and employing a range of measures to increase cost efficiency. The benefit package is being separated into three packages (basic, additional, and emergency) to allow for prioritized government funding and to encourage voluntary contribution;
- Ensuring quality of service delivery by means of reorganizing outpatient care, hospital care, emergency medical care, human resources for health, and e-health;
- Ensuring supportive services and environments for vulnerable population; and
- Strengthening the capacity for public health care through health promotion and disease prevention.

The health reform agenda is complex and overarching, but the reform’s contours seem better defined in some areas than others. Adopting a health financing lens—informed by international experience—and anchored on the diagnostic in Part I, Part II contains a collection of essays tailored to the degree of specificity in the reform document on several key areas. The purpose is to provide analyses and evidence to inform the government in its efforts to add detail to the implementation plan and to progress further in its health reforms.

Issues pertaining to the basic and additional benefit packages, and recommendations

Countries strive to provide the most comprehensive health care to their citizens but, due to budget constraints, rationing of services and interventions is unavoidable. Policy makers in all countries working on an explicit BBP, like Bulgaria, must ask themselves: What services do we include to best deliver health policy goals? What guiding principles underpin the selection of services? How do we balance comprehensiveness with financial constraints and sustainability? To what extent should targeting apply (limited to people with certain conditions or to children, etc.)? How can we ensure effective coverage of the BBP? How will the BBP be kept up to date? How will the BBP be defined legally? And how will disputes be resolved?

A review of OECD countries’ experience highlights the increasing importance of health technology assessment (HTA) to evaluate current and potential new interventions and benefits to be covered in the BBP.² In the Bulgarian context, HTA calls for augmenting existing capacity in the medical field with new capacity to conduct economic evaluation of drugs and technology, as well as costing the BBP and assessing associated financial sustainability. Experience with BBP processes elsewhere also stressed the importance of identifying upfront key principles guiding the priority setting and involvement of stakeholders from various fields to ensure that benefits are medically sound, financially feasible, and ethically acceptable.

² HTA is a multidisciplinary process that summarizes information about the medical, social, economic, and ethical issues related to the use of a health technology in a systematic, transparent, unbiased, and robust manner.

For the additional benefit package, the plan is to ration services through officially setting up waiting lists and allowing options to purchase voluntary health insurance. Both are new ventures for Bulgaria, for which a review of international experience cautions it to weigh the potential benefits and costs, and adopt strong oversight and regulation capacity to mitigate the negative impacts.

Specifically, waiting time—though a popular means to ration health services—can be politically unpopular. Long waiting periods may have a negative impact on some health outcomes, especially when urgent procedures are held up, and may differentially impact people with lower socioeconomic status who are less likely to afford supplementary health insurance. To measure waiting time properly, one needs to go beyond the waiting list and look at the whole journey the patient makes from referral to treatment. Once in place, waiting time is not easy to get rid of: OECD countries, for example, have tried multiple ways to reduce waiting time but with little success. The most promising measure involves a guaranteed maximum waiting time coupled with sanctions on the provider side and incentives on the patient side.

Voluntary health insurance, while improving treatment choice and financial protection for its beneficiaries, has not performed well in equity and cost efficiency from the societal perspective. More particularly, it creates two-tier access to services in favor of a population group that is disproportionately wealthier—and sometimes even healthier—than average. If not managed properly, voluntary health insurance may skew the distribution of public resources in a pro-rich direction. Competition among insurance providers has not consistently resulted in cost efficiency; rather, expenditure on private, voluntary health insurance has been found positively correlated with total health expenditure in OECD countries.

As the Bulgarian government progresses in the design and implementation of voluntary health insurance, the authors of this report advise against subsidizing enrollment in the form of income-tax deductions on premium for formal sector employees. Such subsidies are typically pro-rich and have the potential to distort the labor market. We also caution against allowing risk-rated premiums and strongly recommend setting up a regulatory framework upfront.

Moving forward, the government needs to assure the public that the separation of the NHIF package into basic and additional components, with the latter obtained through voluntary insurance, will not take away some of their current entitlements. This is particularly important because benefits are already perceived as limited, and patients who cannot afford to bypass the public system and pay OOP privately already waiting for services. Assuring that poor people will not suffer disproportionately from waiting time and inaccessibility to additional services should be the highest priority.

Aligning incentives in the provider-payment system to improve efficiency quality

Although supply-side strategies are included in the “Concept Note: Health 2020 Goals” (MOH 2015a) among measures to improve cost efficiency, no steps are proposed to address a critical gap that emerges from Part I’s diagnostic: provider incentives are not aligned to assure efficiency and value for money. Particularly for outpatient care, low spending and strict caps on activities contributes to pushing patients upwards. At the same time for inpatient services, financial incentives to hospitalize patients stem from the absence of selective contracting, well-documented issues with CCP, and ultimately not credibly enforced caps. Incentives from both primary and inpatient levels are aligned in a perverse way, leading to unnecessary and costly hospital services.

International experience with provider payment reveals that there is no “right” method. As all payment methods have differential positive and negative impacts on costs, access, and quality, one often needs to

employ multiple payment methods to accentuate the positives and offset the negatives. Purchasing systems must be tailored to the institutional realities of each health system encompassing both the demand and supply sides, and policy makers must monitor the effects of alternative purchasing systems closely to make regular corrections.

A critical analysis of the provider-payment system in Bulgaria emphasizes a number of needed changes in purchasing of outpatient and hospitals services to align provider incentives for efficiency and quality. For outpatient services is a need to review the way referral budgets are organized, namely to reassess mandatory cross-referral requirements and to consider expanding the accountability of outpatient providers for hospital and prescription expenses. These should be enhanced with bonus payments if savings are made on current activity caps or if targets for financial budgets, quality, or coverage are met. For hospital services, it is recommended that selective contracting with hospitals by the NHIF be allowed and the financial caps be enforced. One could consider decreasing marginal payments for volumes that exceed targets. Finally, significant reform of hospital payments is required to improve the correlation between intensity of care and payment; increase transparency in price setting and negotiations; and reassess independently the safety and clinical requirements built into the system.

Bulgaria can also consider adopting some of the latest provider-payment practices that have been shown to improve quality or efficiency (or both). For outpatient services, there are recent initiatives to bring some hospital services to ambulatory setting, in particular for simple diagnostic services. For hospitals, an alternative to a profound and through revision of the CCPs would be to move to a DRG-based payment system. As with any payment method DRG has its pros and cons, but the literature leans toward a positive impact on efficiency and no negative impact on quality. At a later stage, it would be advisable to introduce some element of integrated payment to allow for appropriate diagnostic and outpatient developments in hospitals such that there is no incentive for a hospital to repeat a test already undertaken by another provider. And for both inpatient and outpatient care, it is possible to introduce some elements of pay for performance, in particular for quality. Once priorities are selected, reform plans would have to be further elaborated—as was done in in the DRG action plan prepared for this report—and simulations undertaken.

Enhancing financial protection

The government explicitly recognized the importance of financial protection by implementing universal mandatory health insurance coverage through the NHIF in 1999. Through the NHIF, the government enrolls and finances the care of disadvantaged groups such as children, the poor, disabled, pensioners, through its general revenue contributions. Yet poor financial protection is what makes Bulgaria stand out in a comparison with peers. Although the government's proposed health reform program emphasizes poverty alleviation, inequalities, and access for socially disadvantaged groups, it is not clear from the document (MOH 2015a) what specific measures will be undertaken toward these ends.

In general, assuring effective financial protection and equity requires reducing reliance on OOP payments (including informal payments which may not be fully captured by the available data) and increasing reliance on risk pooling and prepayment mechanisms. Other key mechanisms include cross-subsidization, exemptions, subsidies, and effective targeting.

Specifically in the context of Bulgaria, the first step is to understand the composition and distribution of OOP payments. In addition, it is important to also have information on people who have little or no OOP because they are too poor to purchase services and/or face physical/cultural access barriers. Unfortunately, while preparing the diagnostic for Bulgaria, it became clear that there are severe limitations in the data available to measure and understand OOP payments and their impact. No dataset provides simultaneously information at the individual level on OOP outlays, income, insurance status,

health status and utilization of care. The only information about OOP spending is the budget survey, which provides information at the household level. This needs to be remedied in order to understand who is affected by catastrophic payments, the root causes and effectively design policies to improve financial protection in Bulgaria.

Although the information is incomplete, it is expected that to improve financial protection Bulgaria will need to focus on explicit interrelated policy areas on the breadth, scope, and depth of NHIF coverage. These include eligibility and enrollment criteria for NHIF coverage; the scope and content of the NHIF's BBP, including requisite cost sharing and provider-payment procedures for these services; and the level and overall efficiency of health spending.

Thus improving financial protection is not solely a matter of spending more money, but spending it better through increased and equitable prepayment through NHIF. Bulgaria needs therefore to shift significant amounts of its OOP into prepaid, pooled, and relatively equitable NHIF spending. The government needs notably to develop policy options and administrative changes to improve risk pooling by enrolling all the uninsured through fundamental reforms of the NHIF's eligibility and enrollment processes and carefully assessing the risk pooling, equity and cost implications of encouraging private supplementary insurance for additional services.

The restructuring of the BBP including its cost-sharing structures should incorporate explicit financial protection criteria. For the insured, financial protections could be enhanced by revising the coverage of medicines and encouraging or incentivizing the take-up of the least costly drugs through actions targeted at patients, physicians, and pharmacists. More generally, consideration should be given to means-tested caps on OOP payments. Other methods for reducing OOP are broader reforms of provider-payment policies, including those on extra-billing, informal payments, CCP add-ons, and referrals to uncovered private services by dual practitioners, as well as better integration and coordination of NHIF- and MOH-financed services.

E-health—a reform facilitator

E-health is not primarily an end in itself, but more a means to facilitate major reforms. Bulgaria is rich in technology resources, but it seems that the country is now falling behind its peers. The MOH is well placed to play a significant role in encouraging cooperation among all health stakeholders—the release of its E-health Road Map helps here—but before that it must resolve the fundamental issue of the NHIF system being in crisis.

Since 2011, the current Health Insurance Information System at the NHIF has been without vendor support. During the global financial crisis, support payments to the vendor were suspended, and were never restarted when economic conditions improved. System performance has become slower over time, due the natural growth of its database and because normal maintenance has not been done. Additionally, given changes in ordinances and other regulatory decrees, the NHIF has been unable to update its software to comply with the new regulations. Its only choice has been to slowly replace the NHIF automated functions with manual (paper-based or simple “spreadsheet”) functions. At some point therefore the entire system might have to be abandoned since it will no longer reflect the regulatory situation, with huge financial and administrative consequences.

A suggested comprehensive approach to addressing the systems problems at NHIF follows two overlapping tracks: shoring up the existing system and starting plans for the next generation of systems. However, we need to know what the role of the regional offices will be? What provider-payment methods are likely to be used? And what incentive methods might be used? And a prerequisite to the development of any new, interoperable systems is to agree on a “common language.”

Recently a new articulation of the E-health Road Map was circulated for review by a range of stakeholders. Its aim is to create a consensus on actions over the next five years. Some suggestions about the possible continued development of the Road Map are to ensure that strategic objectives are set; that activities are sequenced and prioritized; that a cost-benefits analysis for e-health activities is conducted; and that the new e-health environment has several prototypes created for different interest groups. Finally, identifying a “champion” for e-health development is essential, one respected by the full gamut of stakeholders as impartial. A steering or advisory committee also needs to be formed. Possible collaborators with MOH and the NHIF might include the Bulgarian Medical Association, Public Health Institute, and medical universities in Bulgaria.

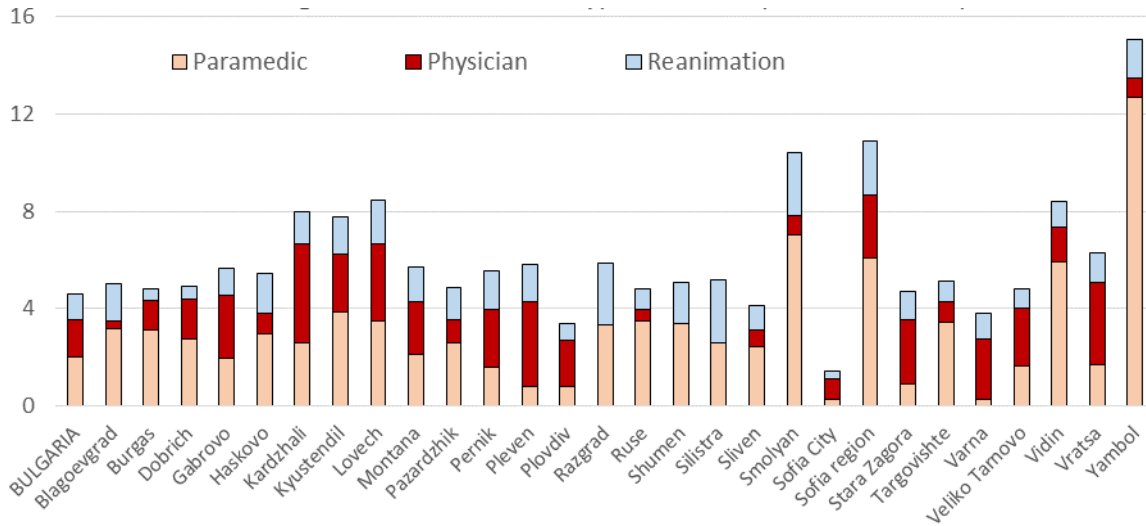
Given the high costs of e-health development, innovative ways to spread costs and risks should be looked at. The cost of e-health applications is steep. A full suite of e-health services might cost Bulgaria in the neighborhood of €500 million over eight years—maybe €100 million each for hospitals, national electronic medical records, and the NHIF system, and perhaps €50 million each for MOH systems and those at the Public Health Institute.

Emergency Care Package and reforms

A review of the Emergency Care Package (ECP) and the related “Concept for the Development of the Emergency Medical Care System in the Republic of Bulgaria 2014–2020” (MOH 2014) revealed areas where attention is needed before the government embarks on further reforms. The ECP, announced as part of the “Concept Note: Health 2020 Goals” in February 2015, will require a more careful analysis and integration of the various types of emergency services to ensure that the correct service is available, and used when clinically appropriate. This implies removing any structural, organizational, and financial impediments to appropriate use of the system by either patients or service providers.

The analysis undertaken during this review revealed considerable regional variation in all areas examined. For example, the ratio of the per capita utilization of emergency room (ER) and visits to subsidiary centers for emergency medical care (SEMCs) combined is 3.3:1 between the highest- and lowest-volume region, although there is some evidence of substitution between the two as would be expected. The underlying reasons for much of the difference in the ratio are not clear from the data, but while more analysis is needed, it seems fairly clear that opportunities for efficiencies exist, and that these should be resolved before the reform concept is implemented. There is also significant variation in the distribution of resources across regions, and the number of teams vary considerably from the approved standards.

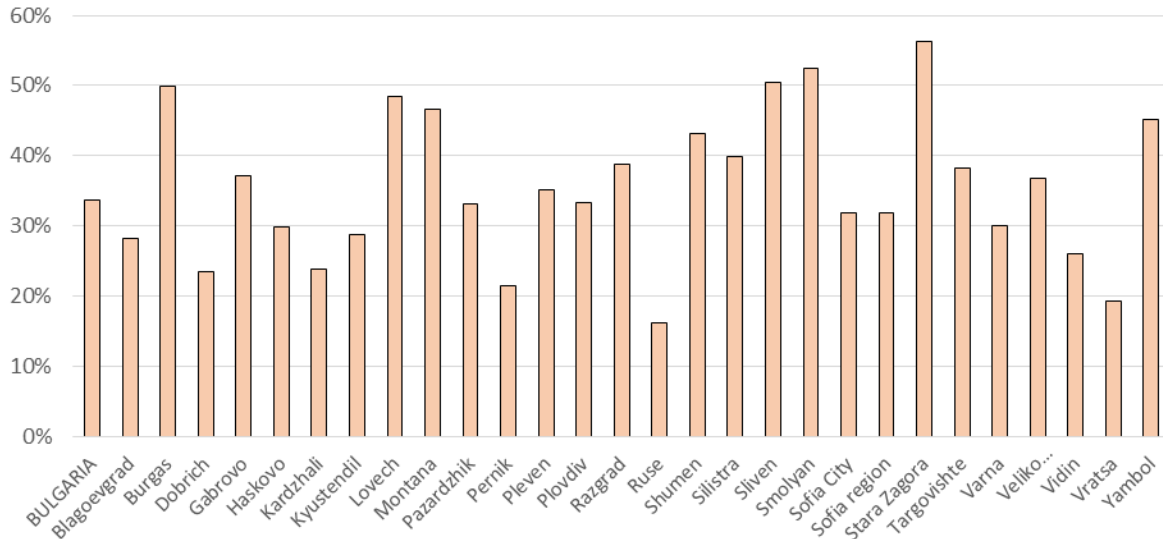
Figure ES8: Number and type of teams per 100,000 population, 2014



Source: Emergency Care and Special Medical Activities Branch

The number and rate of emergency admissions to hospitals is of particular concern, since they are much higher than in other countries (which also needs to be examined further). Other significant variations in patterns of practice cannot reasonably be attributed to differences in the types of patients served, suggesting a need to more clearly define clinical practice guidelines and more aggressively monitor actual patterns of practice.

Figure ES9: Share of ER patients hospitalized (%), 2013



Source: Emergency Care and Special Medical Activities Branch

A review of financial data suggests that spending on salaries and benefits is very high relative to other operating expenses, and it is recommended that a “zero-base” analysis of costs and budgets be undertaken to ensure that the reformed emergency medical care system has an appropriate level and structure of financing.

Overall levels of productivity are low in Bulgaria, in the country as a whole and in most regions. Applying the approved standards would increase overall productivity somewhat but there is still further scope for improvement. The standards themselves also need to be reviewed.

Human resource challenges inherent in attempting to maintain a physician-based approach to ambulance staffing, alongside upcoming demographic concerns and impending staff retirements, suggest that the approach to moving toward a paramedic-based model needs to be prioritized. It is likely to be cost effective if it focuses initially on intermediate paramedic training of around one year, expanding over time to a more limited number of advanced life-support paramedics.

A financing strategy is needed for the entire ECP, addressing issues of composition of costs and the funding of hospitals' emergency services. Hospitals are seemingly "subsidizing" the ECP by at least Lev 25 million for patients who are not admitted to the hospital. Clear financing parameters are needed to ensure that the financial incentives support the proper use of both the emergency care system and the other parts of the health care system. The development and effective implementation of a severity scoring system needs to be pursued on a priority basis.

An important element of any effective emergency medical care system is a fully functional information system that supports both clinical and management decision making, as well as essential communications between parts of the system. Heavy investment is also needed, including rationalization and upgrading of facilities, and replacement and management of a large fleet of vehicles and related equipment, much of which is already obsolete.

Putting it all together: sustainability and reform process

The future sustainability of the government's overall health program—which represents some 4 percent of GDP and 12 percent of the budget—is an important component of the future sustainability of Bulgaria's economy. Key factors in determining sustainability are current public health spending, the efficiency of such spending, and likely future increases in it. Efficiency gains will be key.

As efficiency is affected by all elements of the MOH and NHIF—coverage, benefits, cost sharing, purchasing procedures, management effectiveness, etc.—as well as by efficiency of the overall service delivery system, reforms will be required in all these areas. The government thus needs to decide on how much it is willing to spend on health, and whether it is willing to fund the MOH reform proposal that calls for an increasing share of GDP to be devoted to health.

The government has presented an overall health reform agenda and is working out the details. Thus far detailed proposals to deal with many of the key health financing issues raised have not been fully developed, particularly in financial protection, efficient purchasing, and assuring financial sustainability.

Many governments pursuing an active and comprehensive health reform agenda take their reform blueprint and then set up a health reform task force that reports to top government officials. Bulgaria has tasked a very small group of cadres housed primarily within the MOH to coordinate the process.

It is recommended that this group be expanded to represent all key stakeholders with diverse qualifications chaired jointly by the Minister of Health and the NHIF Director, to report to the Council of Ministers and/or the prime minister. The task force could constitute separate work groups on, for example, revenue raising and sustainability issues, NHIF administrative and operational reform, the definition and costing of the redefined benefit package, provider-payment reforms, public health programs, emergency care, pharmaceutical policies, information systems, and delivery-system rationalization. It should have a dedicated staff and budget. Given that health reform is a long-term undertaking that may go through

iterations—indeed, several governments—it is crucial that the task force is shielded from political upheaval.

Introduction

Assignment

1. In August 2014, the Government of the Republic of Bulgaria and the World Bank entered into an agreement generally referred to as the Health Financing Reimbursable Advisory Services. This agreement's objective is to support the government as it lays the groundwork for implementing its Health 2020 Strategy, the concept for which ("Concept Note: Health 2020 Goals," MOH 2015a) was approved in February this year. Specifically, the Bank is helping the Ministry of Health develop, evaluate, and implement options in health financing to improve the efficiency, equity, financial protection, and long-term sustainability of the health system.

2. To achieve this objective, the first step was to assess how the Bulgarian health financing system operates and performs. In the second phase, following discussions with the government, a set of proposed policies was reviewed and options elaborated. In both cases, the approach and the reference framework were the same, as now briefly presented.

Approach and framework for health financing and health systems analysis

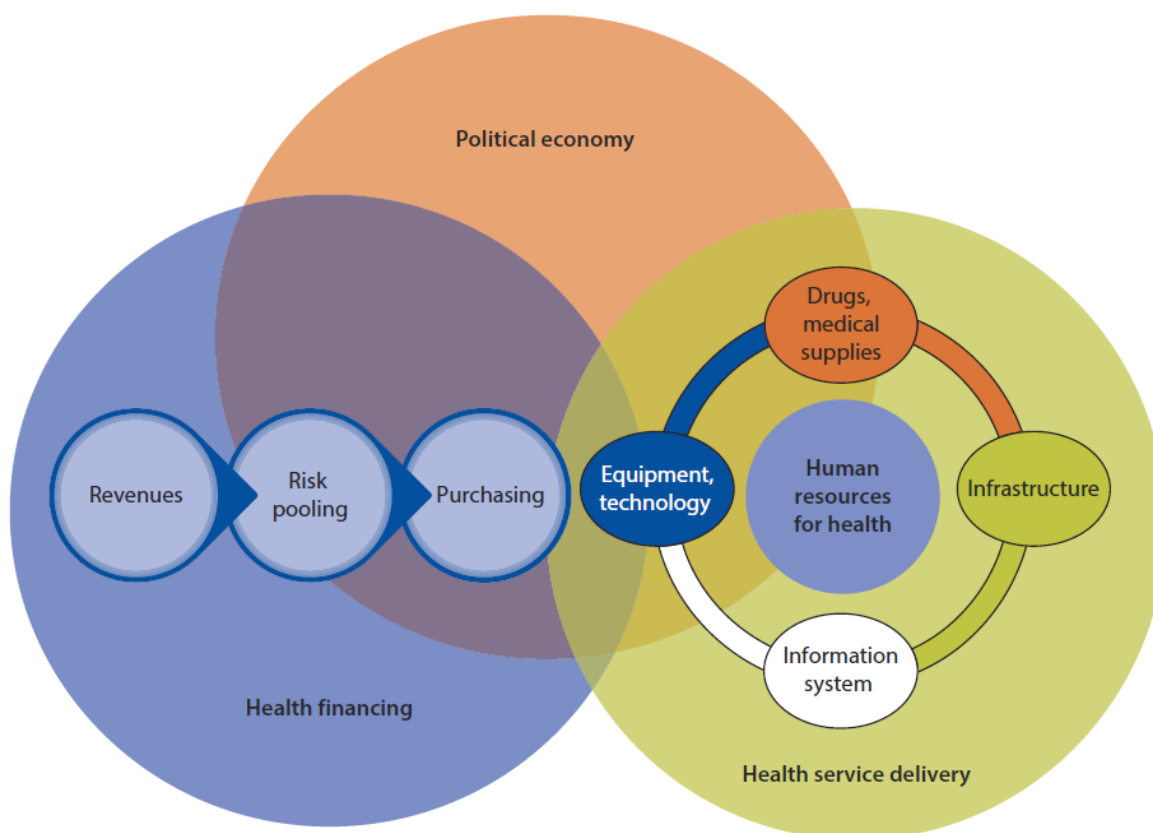
3. Health systems research has moved away from discussing reforms in terms of how close they bring a given health system to some form of "model," or at least "archetype." Today, the organization of health systems is analyzed by looking at how they set up a set of core "functions," and their performance is measured against universally accepted goals that all health systems are expected to achieve. Further, increasing attention is being paid to the "science of delivery," in other words, how the rules or principles guiding the system are being implemented in practice, in a given context. The following section describes the framework that will be used to describe how—in the context of Bulgaria's socioeconomic, demographic, geopolitical, governance, and overall health systems configurations—the health financing function is organized and how its performance is assessed.

Goals and objectives of health financing and the wider health system

4. Any evaluation of Bulgaria's health financing system has to be made in the context of the system's goals and objectives, as well as its interactions with other critical components of the wider health system. This document employs the globally accepted World Health Organization (WHO)/World Bank taxonomy of health systems and the related goals and objectives: (i) improving health outcomes; (ii) assuring financial protection; and (iii) being responsive to consumers in an equitable, efficient, and sustainable manner (WHO 2000 and 2010; Gottret and Schieber 2006; Maeda et al. 2014).

5. The basic components of a health system include health service delivery, political economy (Figure 1), and health financing, which is the core of this report. Health service delivery encompasses health infrastructure, human resources for health, information, drugs, medical supplies, equipment, and technologies. The political economy includes leadership, governance, and stewardship. The three components interact, determining how well a health system reaches its *ultimate goals* of improving health outcomes, assuring financial protection, and being responsive to consumers.

Figure 1: Health system components and interactions



Source: Maeda et al. 2014.

6. Kutzin (2001) proposed a framework to analyze the health care financing component, which covers three key functions:

- the *collection of revenues* that will ultimately be used to purchase health services;
- *risk pooling*, which describes the extent to, and the manner in which, the money raised is “pooled together” to provide coverage; and
- the *purchasing of health services*, which describes the interaction between the intermediaries who manage the prepaid/pooled funds and those who deliver the services.

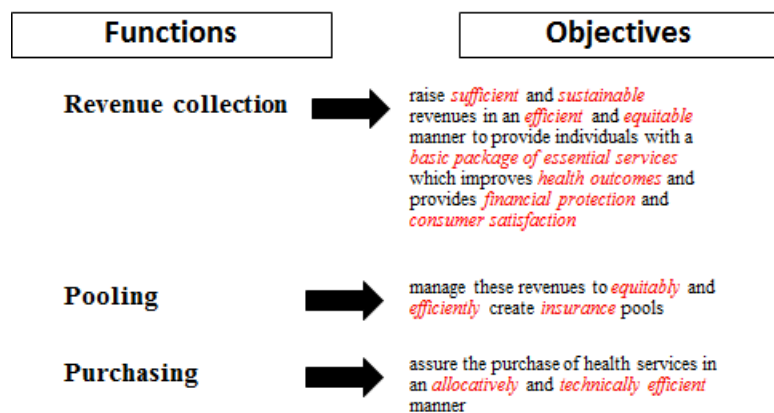
7. To perform these health financing functions in a manner which contributes to achieving the above stated health system goals:

- Countries need to raise revenues in an equitable and efficient manner, minimizing economic distortions from the revenue-raising instruments.
- Revenues also need to be pooled efficiently (especially minding for administrative overheads and insurance underwriting costs) and equitably, to provide individuals with health insurance coverage against large, unpredictable, impoverishing medical care costs.
- Health services, too, need to be purchased and provided equitably and efficiently.

- Countries must raise revenues in a sustainable manner as well, to provide their populations with a basic benefits package (BBP) that helps achieve the three ultimate goals.

8. Figure 2 illustrates how health financing functions contribute to achieving health systems goals and objectives

Figure 2: Health financing functions and objectives



Source: Gottret and Schieber, *Health Financing Revisited*, World Bank 2006

From measuring performance to providing reform options

9. Structured by the above framework, for each of the functions a fairly standard set of indicators assesses each performance objective. To give an example, one indicator for financial protection is “impoverishment due to out-of-pocket (OOP) payments,” usually based on Household Budget Surveys. The first step to assessing performance is thus to determine which indicators for which objectives can be computed given the information available.

10. Most performance indicators however, only imperfectly or partially correspond to specific objectives, and there is no such thing as a “perfect score,” which is why benchmarking is a core technique used to assess relative performance. In Bulgaria's case, benchmarking involves (i) assessing levels and trends over time relative to similar neighboring countries and relative to EU12 and EU15 averages; and (ii) benchmarking Bulgaria's performance on readily measurable health financing parameters and health systems outcomes/inputs against other countries comparable for income and health spending. Benchmarking is generally done by estimating the average relationships for countries globally and assessing the country's divergence from the global averages (i.e. the point on the global average regression line for comparable income countries).³ Nevertheless, large deviations from the average performance of similar income comparators provide some indications of areas that may require more in-depth analyses and policy changes.

11. One of the limitations of such analyses is that there is no single measure of a health financing system's performance—or indeed of a health system—and numerous country characteristics can influence performance (age distribution of the population, geography, etc.). By performing numerous two-by-two comparisons of outcome, input, and financing elements, and adding micro studies of

³ There is nothing “right” or “wrong” about a global average, of course.

particular aspects of the system as well as the rich health policy literature on Bulgaria to parts I and II of this report, one can get a fairly objective overall picture of the health system's performance along multiple policy dimensions, the likely implications for the achievement of health financing and health system goals, and areas for reform.

12. While some limited comparative analyses have been done before for Bulgaria, this report provides a comprehensive analysis using the latest available health spending and outcome information from the WHO National Health Accounts (NHA) database, the World Bank's World Development Indicators (WDI) database, and the latest Regional Economic Outlook (REO) and macroeconomic statistics of the International Monetary Fund (IMF), as well as the most recent Household Budget Surveys.

13. Once progress along these dimensions of performance is assessed, the next step is to identify root causes. The attribution of a "performance result" back to a given function and thus a "root cause" can appear straightforward. Financial protection, for instance, is generally the domain of health financing, and more specifically the result of revenue raising and pooling. However, as well articulated in the literature, all health system and health financing evaluations are difficult. Issues may be definitional (defining specific key health financing components); or relate to measurement (health outcomes or health insurance coverage), attribution of causality in complex interactive systems, separation of demand- from supply-side factors, and controlling for the impacts of exogenous (nonhealth system) factors like education, water, sanitation, and infrastructure. Attributing a result to a specific health system feature thus requires (i) a solid understanding of the country-specific context that covers how the system is organized in principle, as well as how this principle is followed in practice; and (ii) a global knowledge of which system features are associated with better (or worse) performance.

14. Once the diagnostic work is completed, the framework is then used to evaluate policies envisaged by the government. By reviewing how a given policy will modify how each function is performed, and by drawing evidence from international experience of how this can be expected to help achieve a goal, one can present a technical view of how relevant the policy is to help bridge performance gaps in Bulgaria and an outline of what successful implementation might require. Policy makers thus need to focus on the basic objectives they want to achieve given Bulgaria's context, and must consider both the institutional arrangements and economic incentives inherent in their policy choices.

Outline of the report

15. Part I presents a comprehensive diagnostic of health system performance, with a focus on health financing:

- Chapter 1—elements of the underlying demographic, labor market, economic, and health system context, for framing a discussion on health financing;
- Chapter 2—a description of the health financing system, outlining its main features, presenting some calibration elements, and shedding light on how the system operates in practice;
- Chapter 3—an empirical assessment of how well Bulgaria's health financing system performs against the universally accepted goals and objectives of improving health outcomes, financial protection, and consumer responsiveness in an equitable, efficient, and financially sustainable manner;
- Chapter 4—a discussion of some constraints to reforms including fiscal space, information systems, and the current governance framework of the National Health Insurance Fund (NHIF);

- Chapter 5—a conclusion to the diagnostic exercise, the main results are summarized and put in the context of a broader analysis of the strengths and weaknesses of the health system, outlining possible areas for reform.

16. Part II assesses a set of policy options of interest to the government. For details, see the introduction to Part II.

Part I: Diagnostic

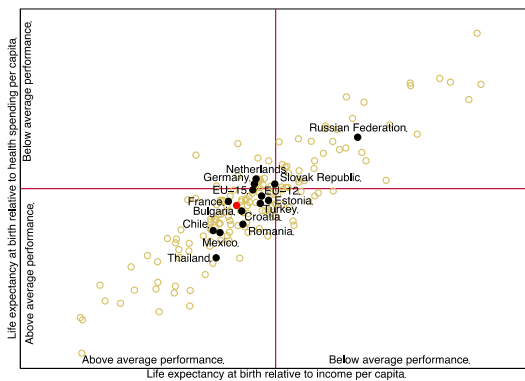
Chapter 1. Health financing in context

1. This chapter discusses epidemiological, demographic, and economic trends and features of the Bulgarian health system that point to current inefficiencies and pose challenges for public finance of adequate health services for the population in the future. Since accession to the European Union (EU) in 2007, Bulgaria has been unable to close gaps in health outcomes or other aspects of health system performance, despite income convergence with the rest of the bloc. Its population is aging and remains relatively poor. Thus health costs are expected to rise, but prospects for increasing revenue for health are limited.

2. On a global scale, indicators for life expectancy and disability-adjusted life years (DALYs) per capita suggest average to above average performance against other countries with similar levels of income and health spending per capita (Figure 3 and Figure 4). For outcomes such as maternal mortality, Bulgaria has been making steady progress and has converged to levels of EU15 countries (Figure 5 and Figure 6). As shown in detail elsewhere,⁴ despite the significant reduction, however, Bulgaria's infant mortality rate is still more than three times higher than the EU15 average of 3.2 infant deaths per 1,000 live births and almost twice as high as the EU12 average of 5.5 infant deaths per 1,000 live births.

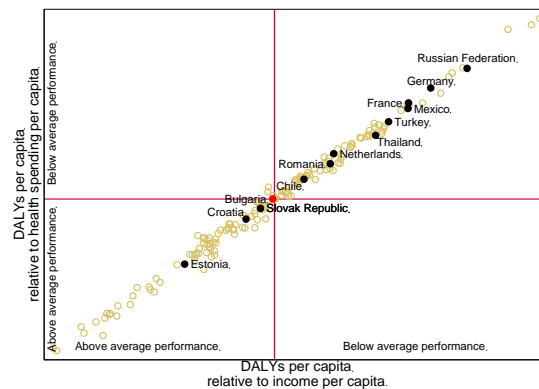
1.1. Health outcomes

Figure 3: Life expectancy at birth relative to income and expenditure, 2012



Source: World Development Indicators and WHO NHA 2014.

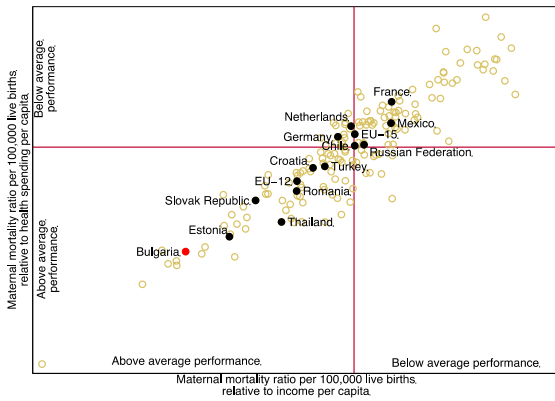
Figure 4: DALYs per capita relative to income and expenditure, 2012



Source: World Development Indicators and WHO NHA 2014.

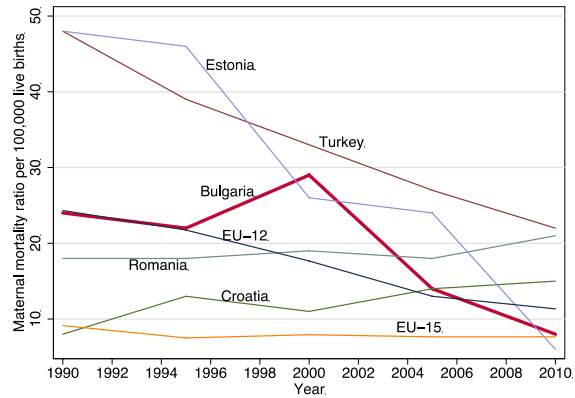
⁴ A background document shared with the government presents further analyses, international comparisons, and trends.

Figure 5: Maternal mortality relative to income and expenditure, 2010



Source: World Development Indicators and WHO NHA 2014.

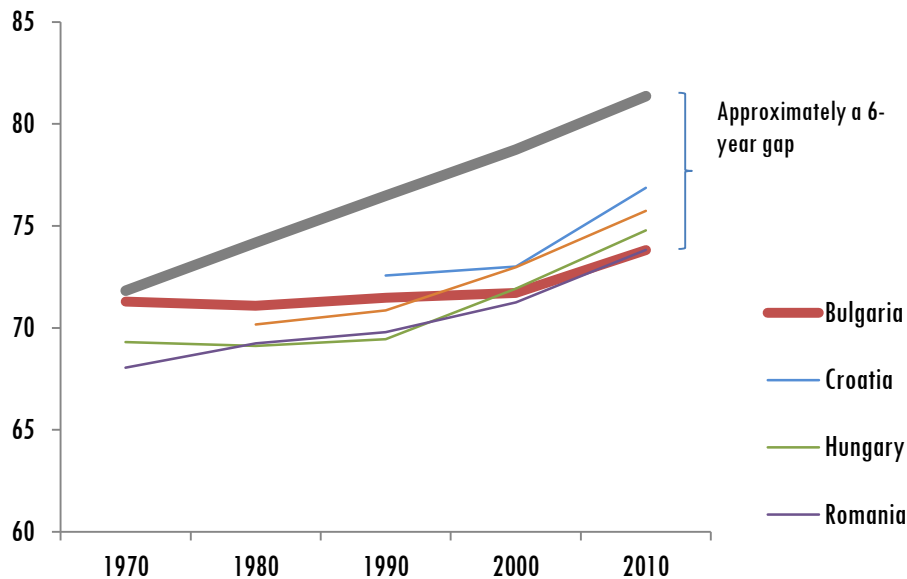
Figure 6: Maternal mortality, 1990–2010



Source: World Development Indicators and WHO NHA 2014.

3. An aggregate indicator like life expectancy at one point in time, however, hides poor performance in the specific disease conditions that contribute the most to premature mortality and high rates of morbidity. In fact, since its accession to the EU, Bulgaria has failed to catch up with EU15 countries in overall life expectancy (Figure 7), despite a convergence in income, and has even been losing ground to countries it had once outperformed.

Figure 7: Life expectancy, 1970–2010

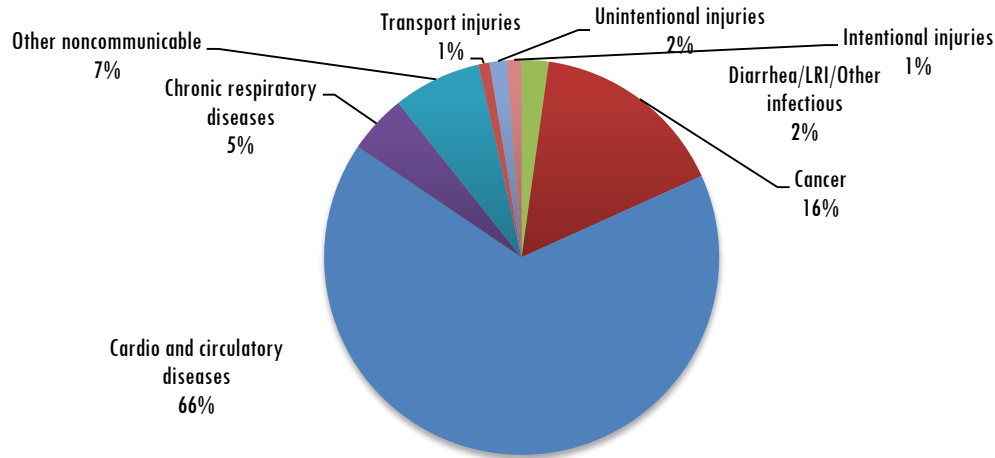


Source: WHO Health For All Database 2014.

4. In 1970 for example, life expectancy at birth in Bulgaria was virtually equivalent to that among EU15 countries, and was much higher than in Croatia, Hungary, and Romania; by 2010, however, it trailed even Romania's, and lagged behind the EU average by around six years, a gap that has remained fairly constant since 2004. Life expectancy has improved only slightly since the 1960s (World Bank 2013).

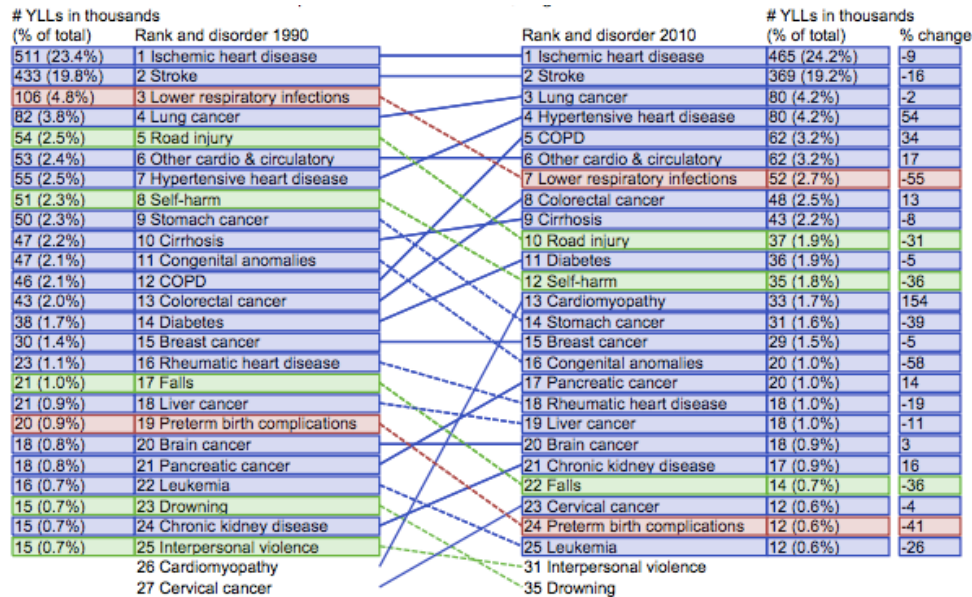
5. This relatively good performance for maternal mortality alongside slow gains in life expectancy may perhaps be explained by Bulgaria’s slow progress in controlling chronic diseases during its epidemiological transition. According to the most recent Global Burden of Disease Study by the Institute for Health Metrics and Evaluation (IHME 2014), the disease burden has been transitioning from infectious disease toward noncommunicable diseases (NCDs). In fact, by 2010 almost 94 percent of deaths in Bulgaria were caused by NCDs (Figure 8). Cardiovascular disease in particular—heart attacks, heart failures, and strokes—accounts for more than 66 percent of all reported deaths (Figure 9), with 24.2 percent and 19.2 percent of years of life lost (YLLs) attributed to ischemic heart disease and stroke.⁵

Figure 8: Causes of death in Bulgaria, 2010



Source: IHME 2014.

Figure 9: Causes of premature death (YLLs), 1990 vs 2010, Bulgaria

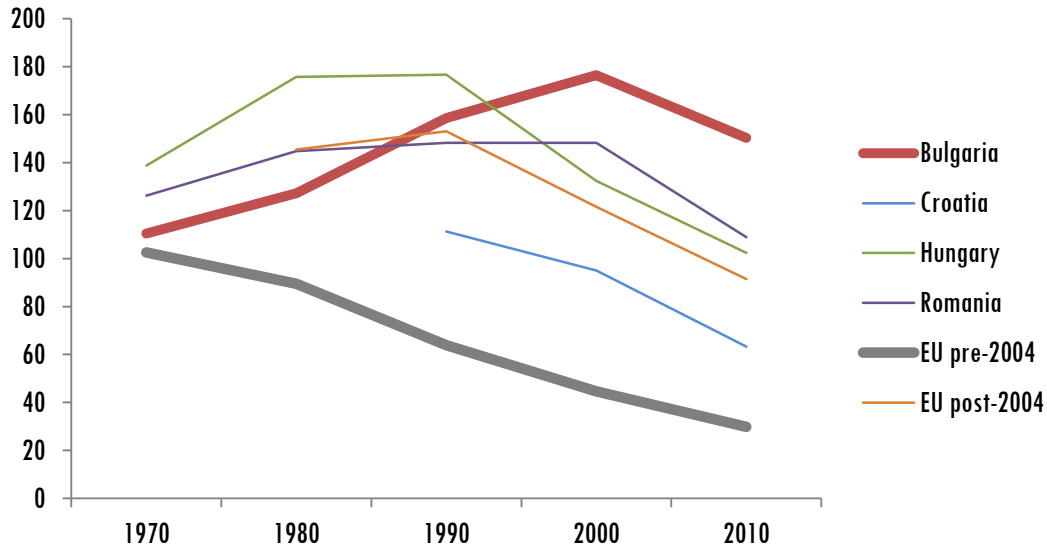


⁵ The mortality figures from 2010 disaggregated by cause of death in Figure 8 differ only marginally from the National Statistical Institutes 2012 figures in *Public Health Statistics, Bulgaria 2013, Annual*.

Source: IHME 2014.

6. Similar to life expectancy, Bulgaria has lost ground on mortality due to diseases of the circulatory system (Figure 10). Standardized death rates from cardiovascular disease more generally far exceed average rates in the EU, and even just countries that joined the EU after 2004.

Figure 10: Standardized death rate for diseases of the circulatory system (0–64 years) per 100,000

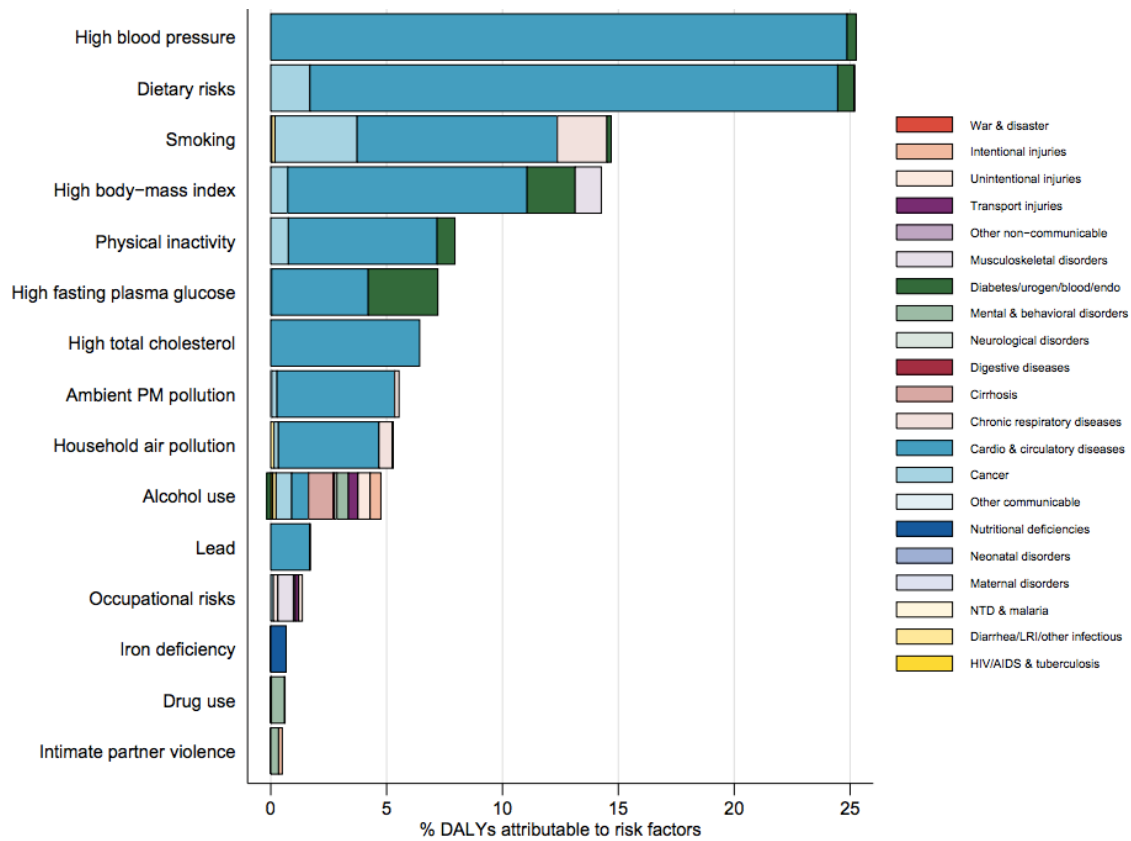


Source WHO Health for All Database 2014.

7. Cardio and circulatory diseases also contribute heavily to morbidity rates in Bulgaria. Almost 37 percent of DALYs are attributable to these diseases, the highest share among EU28 countries. Other main causes of DALYs include cancer (13 percent), musculoskeletal disorders (9.8 percent), injuries (8.3 percent), and mental and behavioral disorders (IHME 2014).

8. Yet the risk factors associated with this high disease burden could probably be adequately treated and managed with appropriate primary care services, including health promotion and prevention. The majority of DALYs are attributable to high blood pressure, dietary risks, smoking, and high body mass index (Figure 11). In 2008, 41 percent of the adult population (over the age of 25) in Bulgaria suffered from raised blood pressure (SBP \geq 140 or DBP \geq 90) (WHO Global Health Observatory 2014).

Figure 11: Burden of disease in Bulgaria attributable to 15 leading risk factors in 2010, expressed as a share of DALYs



Source: IHME 2014.

1.2. Health system design and efficiency of service delivery

9. The health system does not appear designed for Bulgaria's disease profile and does not provide the right mix of services. (The main features are summarized in Box 1; Dimova et al. 2012 provide more detail.)⁶

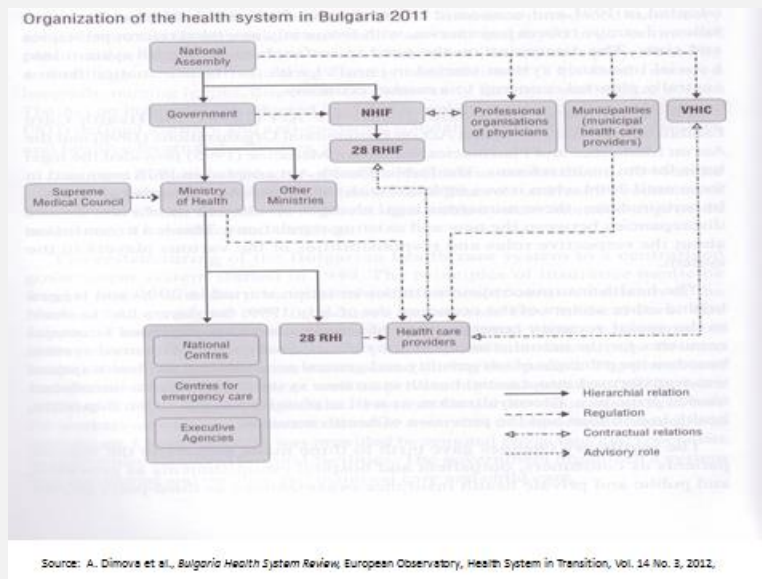
Box 1: Bulgaria's health system

The health system is diverse with a mix of public and private, centralized and decentralized features among financiers and providers of health care. At the center of the public funding system lies the NHIF, created in 1999 to cover all citizens, and through which the bulk (about 80 percent) of public resources are channeled into the health system.

Health services are delivered by a network of providers who operate in the public or private sector. Outpatient care is provided in single and group practices, and in medical, diagnostic, and dental centers, most of which are private. Hospitals operate as commercial companies and are predominantly owned by central and local governments. Around 10 percent of the beds and a third of hospitals are private. Virtually all providers have a contract with the NHIF.

General practitioners (GPs) are paid primarily based on capitation and other outpatient services on a fee basis. Hospitals are paid for services on the basis of clinical care pathways, which are case-based payments. Private expenditure—almost all OOP—accounts for 49 percent of the money spent on health.

The organization of the health system is shown in the box figure.



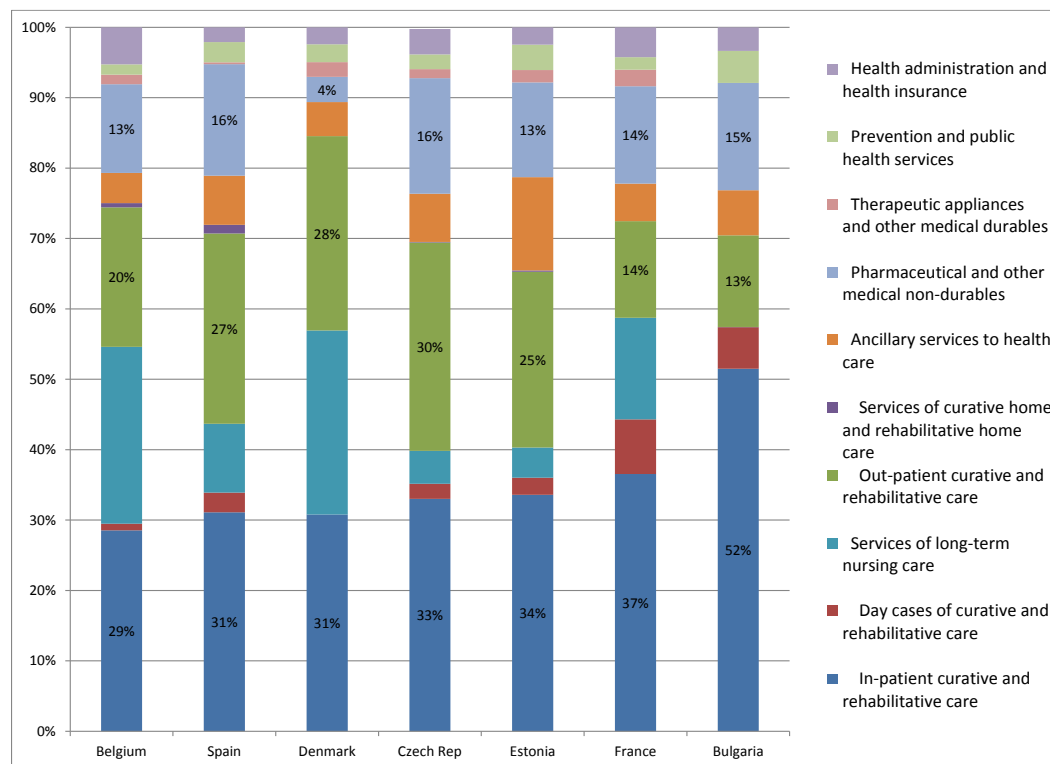
Source: Dimova et al. 2012.

10. The treatment and management of NCDs require a service delivery model centered on primary care; a cadre of trained primary care physicians; and payment mechanisms that reward prevention, early detection, and long-term case management, as well as coordinated care. Bulgaria's health system, provider-payment processes, and utilization patterns, however, appear oriented toward inpatient treatment.

⁶ Several recent publications have described the health system organization in detail (Dimova et al. 2012) and have discussed the challenges posed by the organization of service delivery (Sanigest Solutions 2008; Dimova et al. 2012; World Bank 2013).

11. An analysis of public spending across countries suggests, for example, that Bulgaria spends more on inpatient services and less on outpatient care (Figure 12). The former represents 52 percent of health expenditure, and is close to 20 percentage points above the share spent on hospitals in other EU countries. (Bulgaria spends more than most countries even controlling for income.)

Figure 12: Public expenditure by category of health service in Bulgaria and selected OECD countries

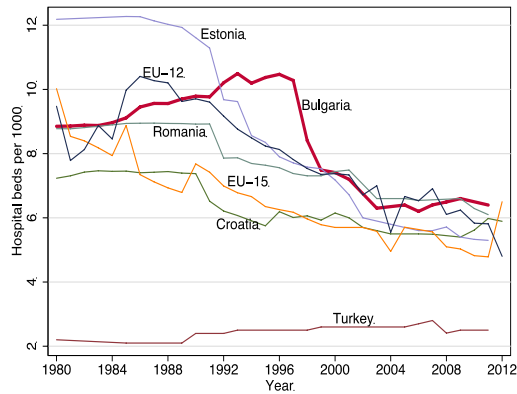


Source: OECD health and Bulgaria NHA.

Note: Choice of countries is driven largely by data availability.

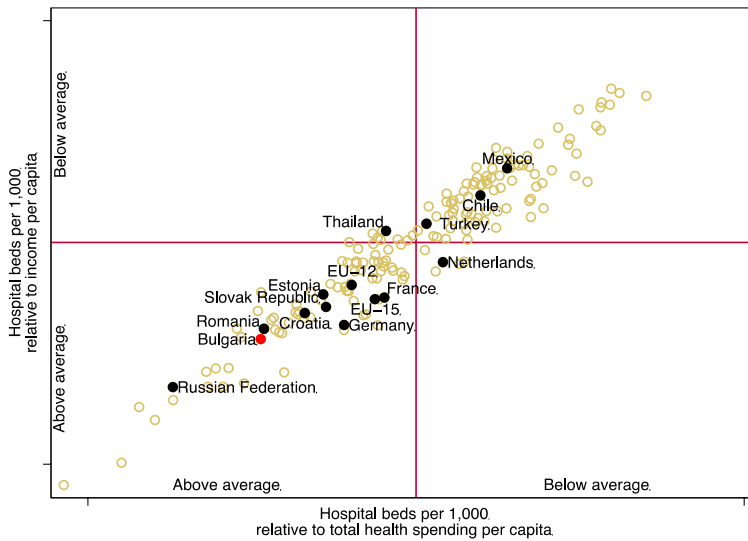
12. Hospital capacity and hospitalization rates rank above average, even when comparing Bulgaria to countries of similar levels of income and health spending. The number of hospital beds per 1,000 people came down sharply from a peak in the 1990s (Figure 13), but this decline started to reverse around 10 years ago. The number of hospital beds is much higher in Bulgaria than in other countries for given income and health expenditures (Figure 14).

Figure 13: Hospital beds per 1,000, 1980–2012



Source: World Development Indicators and WHO NHA 2014.

Figure 14: Hospital beds to population ratio relative to total health spending and income



Source: World Development Indicators and WHO NHA 2014.

Note: Beds and GDP per capita data are for the latest/earliest available year.

13. The distribution of hospitalizations across hospitals suggests considerable excess capacity and fragmentation (Table 1, Figure 15, Figure 16). The average length of stay in Bulgaria has been decreasing steadily since 2000 and is probably on the low side compared with the rest of Europe.⁷ While such a decrease can be consistent with advances in medicine, over the same period, trends in occupancy rates of hospital beds point to systemic inefficiencies deriving from the many beds and hospitals in the country. The hospital bed-occupancy rate was around 65 percent in 2000 and rose to 80 percent around 2005—a norm by international standards. The 2012 level of 70 percent is very low, especially considering the large proportion of care that could be provided outside of the hospital.

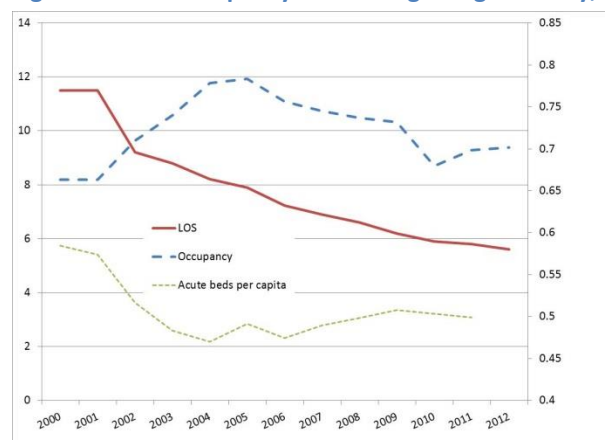
⁷ Definitional problems preclude direct comparisons.

Table 1: Number of hospitalizations per year across hospitals, 2012

Number of hospitalizations	Number of hospitals
Less than 500	51
500–1,000	27
1,000–5,000	161
5,000–10,000	61
More than 10,000	53
Total	353

Source: Authors' computations using NHIF data.

Figure 15: Bed occupancy and average length of stay, 2000–2012



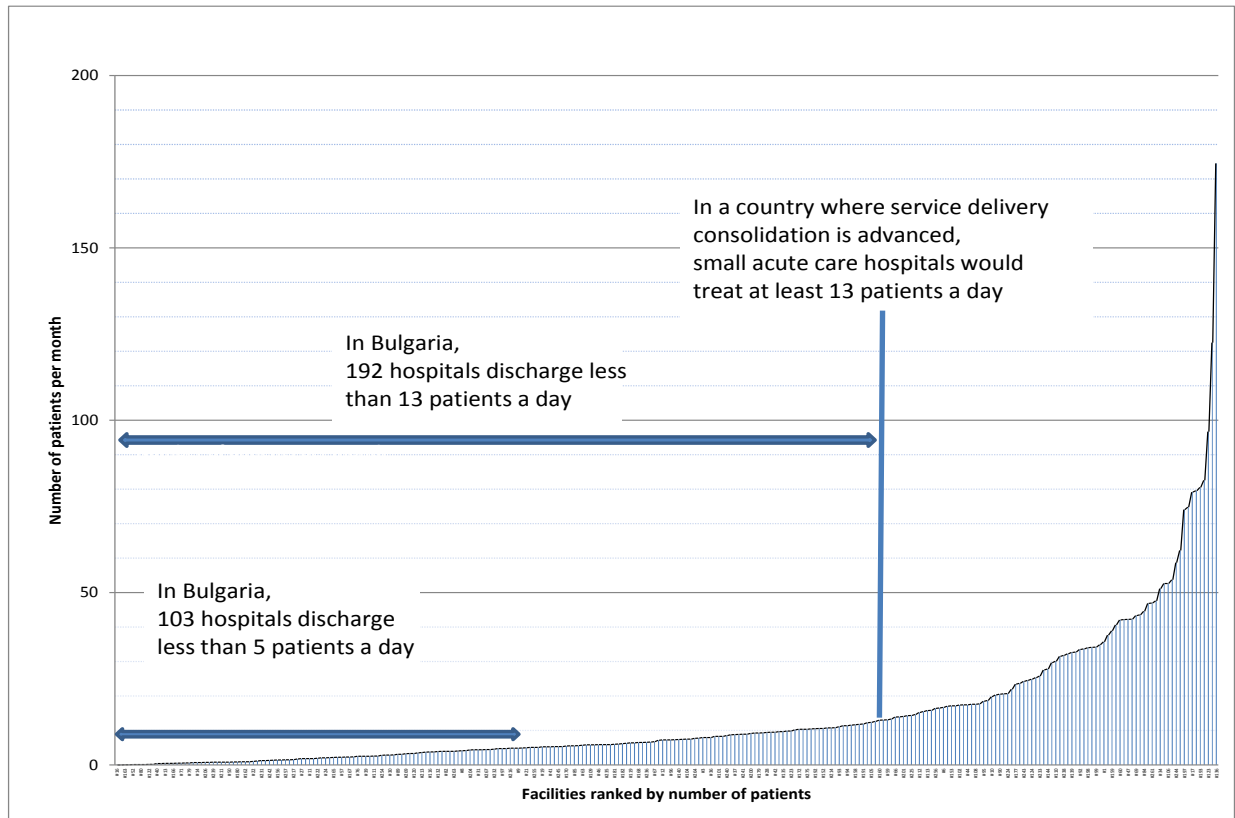
Source: Authors' computation based on data from National Center of Public Health and Analyses.

14. Evidence of fragmentation can also be illustrated from the distribution of discharges across hospitals (Figure 16, where hospitals are ranked by increasing number of discharges per day). The three busiest hospitals in the country discharge more than 95 patients a day. At the other extreme, the 103 facilities with the lowest number of discharges account for 5 percent of hospital stays in Bulgaria. Further, if the smallest acute-care hospital in Bulgaria had 130 beds,⁸ it could be expected to discharge around 13 patients a day. Countrywide, 192 (out of a total of 275 reporting data) discharge fewer patients than that.⁹ Thus the hospital sector is composed of an exceedingly large number of facilities, many of which are small, that account for very few admissions, and there appears to be considerable room for consolidating the sector on efficiency and quality grounds.

⁸ World Bank (2013). The assumptions underlying this simulation are plausible. For instance, in the Netherlands in 2011, the smallest hospital had 138 beds (the threshold used here is 130). Historically this was not the case: in the 1950s, more than half the hospitals in the Netherlands had fewer than 130 beds, but the system has since been profoundly remodeled. Other assumptions are as follows: the occupancy rate of beds is 70 percent (which is rather low: in 2008 in Bulgaria it was close to 76 percent) and each patient stays 7 days in the hospital (the average length of stay in Bulgaria in 2011 was 5.8 days).

⁹ Even accounting for long-term care hospitals (under 35 out of 275) where stays would be longer than in acute care hospitals.

Figure 16: Number of patients per month across hospitals



Source: World Bank 2013. Data from 2011–2012.

15. This extent of hospital fragmentation can be detrimental to economic efficiency and undermine quality of care. Some evidence that this is happening comes from standardized deaths rates for appendicitis and for hernia and intestinal obstruction. Mortality for both conditions is particularly high in Bulgaria (Figure 17, Figure 18), suggesting that many hospitals may not be offering quality services. An analysis of 21,095 deaths registered in the NHIF databases in 2007 suggested that 6,954 (33 percent) were avoidable according to the definition of amenable mortality (Sanigest Solutions 2008).

Figure 17: Standard death rate, appendicitis, age 0–64, per 100,000, 2011

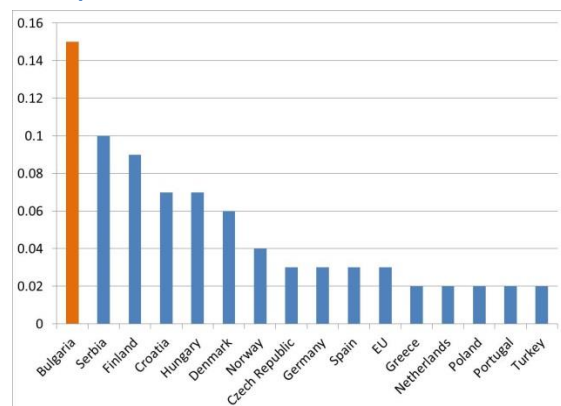
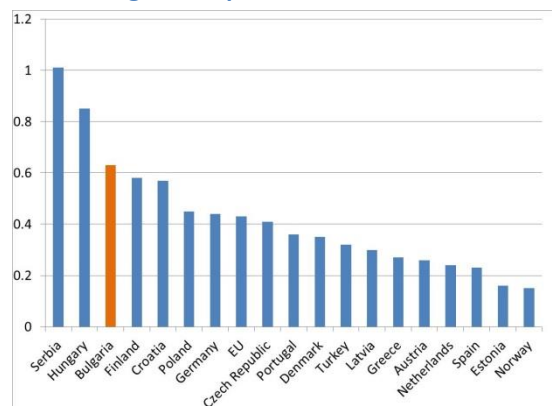


Figure 18: Standard death rate, hernia and intestinal obstruction, age 0–64, per 100,000, 2011



Source: WHO Health For All Database 2014.

16. One feature of this excess infrastructure is much higher than average utilization of hospital services. While hospitalization rates in the region have either stabilized or decreased over time, Bulgaria seems to be *increasing* treatment in hospital settings (Table 2). In 2011, its hospitalization rates were nearly 40 percent higher than those in recent EU members. In contrast, outpatient contacts are relatively low in Bulgaria, with an average of 5.5 outpatient visits per person per year in 2011 (Atanasova et al. 2013), against an average of 7.23 in countries joining the EU after 2004 (WHO Health for All Database 2014).

17. A 2013 analysis of hospitalizations in Bulgaria also suggests that at least 20 percent of procedures performed on an inpatient basis there could have been completed in basic outpatient settings (World Bank 2013). These hospital admissions for services, which for the most part do not need to take place in the hospital, do not even account for late-stage conditions like cancer, congestive heart failure, or diabetes-related amputations that should have been identified and treated in a primary care setting. The 2008 Sanigest study reported that 10 percent of all hospital admissions were due to ambulatory care-sensitive conditions, suggesting that patients are not receiving the care required at an early stage (Sanigest Solutions 2008).

Table 2: Inpatient discharges per 100 population

	1980	1990	2000	2010	2011
Bulgaria	17.56	19.02	15.44	25.5	26.69
Croatia	13.89	15.35	15.73	16.88	17.03
Hungary		21.76	23.56	20.27	20.42
Romania	22.99	20.13	21.22	23.56	21.61
EU pre 2004		16.64	17.53	16.77	16.75
EU post 2004	17.42	16.70	18.57	19.40	19.24

Source: WHO Health For All Database 2014.

18. Indeed, data suggest that the primary care sector is not equipped to deliver the types of services required for NCDs that must be prevented, treated early, and managed over long periods of time. For example, coverage of preventive services is considerably lower in Bulgaria than in other EU countries

except Romania (Table 3). Only 10 percent of women aged 50–69 years underwent a breast exam with a physician, while less than 20 percent of adult women had a cervical smear test. Romania aside, these figures represent half or less of what has been attained in other new EU member states.

Table 3: Prevention, screening, and immunization rates, 2008

	Breast exam (women 50-69) (%)	Colorectal cancer screening age 50-74 (%)	Cervical smear test (women 20-69) (%)	Cervix Cancer death rate* (per 100,000)	Influenza immunization (%)
Bulgaria	10.3	8.5	18	7.9	4.8
Czech Republic	39.8	14.1	46.3	4.9	19.4
Germany	44.7	36.6	58.3	2.5	56.2
France	50.3	13.6	48.7	1.9	66.7
Latvia	23.1	8.5	41.7	5.9	2.9
Hungary	37.4	2.9	35.4	5.7	30.3
Poland	29.4	1.7	35.8	7.1	12.9
Romania	3.5	0.7	4.4	13.4	18.1
Slovenia	25.6	3.3	38.5	3.7	22.3
Slovakia	31.9	9.6	33.1	6.3	24.4

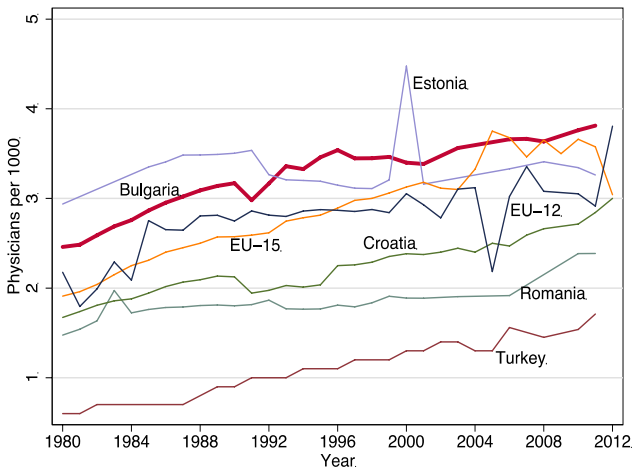
Source: Eurostat database.

Note: Based on the same Bulgarian survey, the website of the National Statistical Institute of Bulgaria (NSI) publishes much higher estimates.¹⁰

19. The deployment of human resources does not support a strong primary care sector. Bulgaria has no overall shortage of physicians, and in fact ranks above both the EU15 countries (Figure 19) and other countries with similar income and health spending profiles (Figure 20). Still, GPs and nurses are in short supply (Table 4). Bulgaria ranks among the lowest among European countries on number of nurses, and out-migration has proceeded at a rapid pace in recent years, particularly among young health professionals (Dimova et al. 2012). Moreover, only 5 percent of GPs have been trained in family medicine, and with an average age over 50, aging is a huge concern. Chapter 3 analyzes how the relative dominance of inpatient services and poor coverage of primary care services stems in part from incentives created by provider-payment mechanisms.

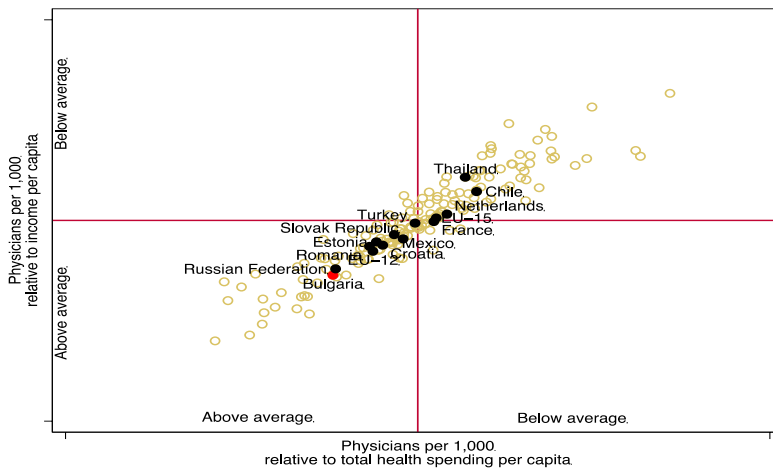
¹⁰ <http://www.nsi.bg/en/content/5636/use-health-care-service>

Figure 19: Physicians per 1,000, 2012



Source: World Development Indicators and WHO Global Health Observatory Data 2014.

Figure 20: Physician population ratio relative to total health spending and income



Source: World Development Indicators and WHO Global Health Observatory Data 2014.

Note: Physicians and GDP per capita data are for latest/earliest available year.

Table 4: GPs and nurses, 2011

	GPs per 100,000	Nurses per 100,000
Bulgaria	63.92	474.64
Croatia	51.01	578.84
Hungary		638.41
Romania	68.15	550.84
EU pre 2004	87.40	868.35
EU post 2004	46.13	619.51

Source: WHO Health for All Database 2014.

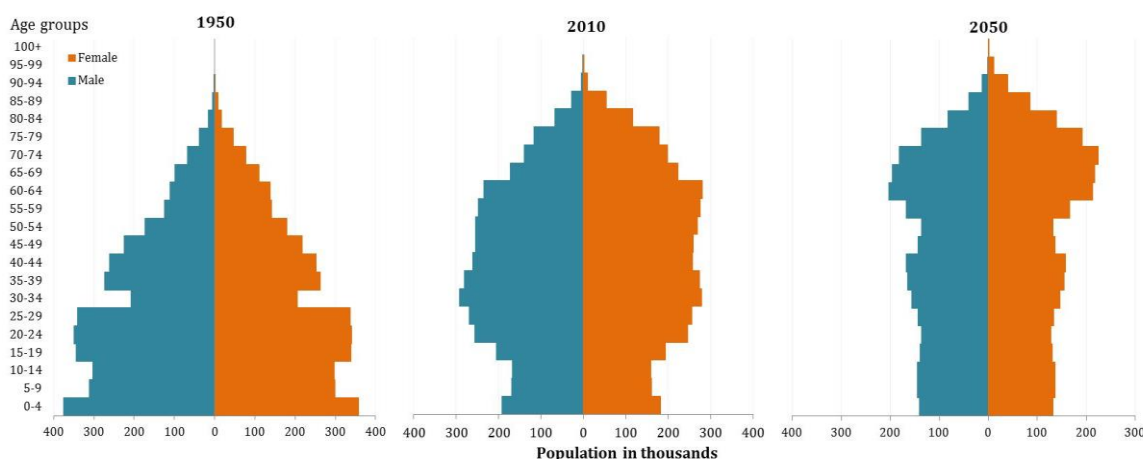
1.3. The broad socioeconomic outlook

20. As this report highlights throughout, tackling inefficiencies in the health system is key to improving health outcomes in the medium to long run, especially as demographic and economic trends will increase the pressures on public resources and limit prospects for economic growth (World Bank 2013).

1.3.1. Aging and migration

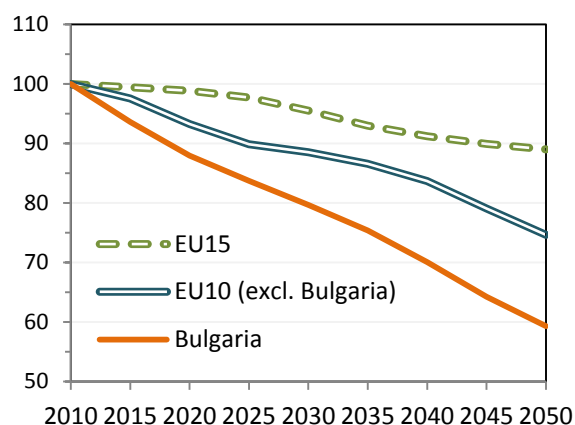
21. Current demographic trends will likely exacerbate the prevalence of NCDs and threaten long-run economic growth. Beyond the relatively constant life expectancy, low fertility and high emigration have led to a population that is both aging and shrinking rapidly. In 2011, the total fertility rate (1.51) was well below the replacement rate. By 2050, one in three Bulgarians is projected to be 65 or older, while only one in two Bulgarians will be of working age (Figure 21). The United Nations (UN) projects net emigration of 10,000 people per year until 2050, while Eurostat forecasts an even larger cumulative loss of population from out-migration. By 2050, the old age-dependency ratio is expected to roughly double, and labor supply projections suggest a decline of up to 40 percent (Figure 22). Because the proportion of the population that works is a key determinant of a country's income, this decline is likely to depress economic growth. Further, there will be fewer working Bulgarians to support those outside the workforce.

Figure 21: Age structure of the Bulgarian population, 1950–2050



Source: World Bank 2013. Calculations based on data from United Nations Population Division 2011.

Figure 22: Working-age population index, 2010–2050



Source: World Bank 2013. Calculations based on data from United Nations Population Division 2011.

Note: 2010 = 100. The working-age population is defined as the population aged 15–65 years.

22. This aging of the population and increases in dependency burdens will be exacerbated by current migration patterns in which individuals below the age of 40 out-migrate, while those over 40 in-migrate back to Bulgaria (Table 5). At a very broad level, this means that working-age individuals who can both contribute to overall economic activity and pay taxes leave the country, while those who are costly and less like to contribute are returning.

Table 5: Migration by age group, 2007–2013

	2007	2008	2009	2010	2011	2012	2013
Migrants under 40 years	- 1,671	- 1,010	- 11,719	- 15,621	- 3,412	- 3,903	- 3,179
Migrants 40 years and above	+ 274	+ 134	- 4,010	- 8,569	- 1,383	+ 1,391	+ 2,071
Total	- 1,397	- 876	- 15,729	- 24,190	- 4,795	- 2,512	- 1,108

Source: NSI.

1.3.2. Vulnerability and informality

23. Aggravating these pressures is the sizable and increasing fraction of the population that is either poor, or highly vulnerable to falling below the poverty line and can therefore ill afford to pay for essential services themselves. Poverty rates have been increasing since 2008. In 2011, more than 21 percent of the population lived below the national poverty line (World Development Indicators 2014), and more than 16 percent of the population lived on \$5 (purchasing power parity [PPP]) or less per day (Eurostat). Close to 4 percent lived on \$2 per day or less. Nearly half the population, however—3.6 million Bulgarians—are at risk of poverty or social exclusion, the highest percentage in the EU (Eurostat).¹¹

24. The elderly population especially is poor. More than 60 percent of the population aged 65 or older is at risk of poverty or social exclusion (Eurostat). In the future, an increasing share of the elderly may not be able to count on any financial protection from the national pension system, as it currently covers only about 55 percent of the working-age population, and is in financial difficulty. Coverage is expected to

¹¹ The Europe 2020 Strategy defines “risk of poverty or social exclusion” using a three-part indicator comprising risk of (relative) monetary poverty, severe material deprivation, and low work intensity.

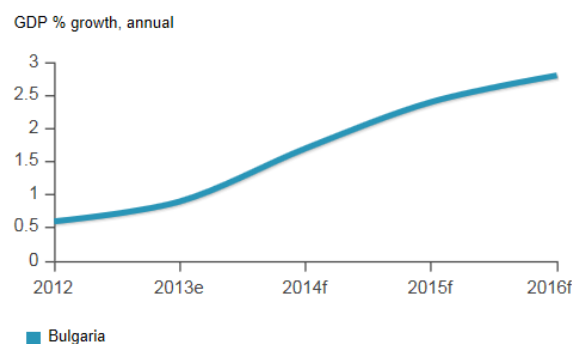
decline as a result of high unemployment in the medium term and sporadic contribution patterns due to a large informal workforce. The share of the elderly with pension rights who benefit from government subsidies to the pension fund is therefore projected to decline, raising the question of how to provide the elderly with a decent standard of living (World Bank 2013).

25. These trends in vulnerability and decreases in the tax base are not aided by the substantial (and relatively static) informal labor force. In 2007, the “shadow” economy was estimated at more than one-third of GDP (Schneider, Buehn, and Montenegro 2010) with, in 2008, 16.5 percent of all workers in informal activities (Packard, Koettl, and Montenegro 2012).

1.3.3. Fiscal and macroeconomic prospects

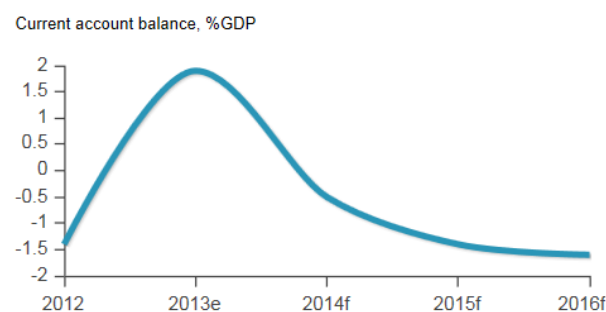
26. Absent reform, Bulgaria’s macroeconomic prospects are bleak. In the short term, the recovery from the global financial crisis has been weak on the employment front (IMF 2014).¹² The number of unemployed more than doubled between 2009 and 2013, to 433,000, while the number of discouraged workers increased by nearly 60,000 to 207,000. Growth forecasts suggest sluggish growth and a current account deficit over the next few years (Figure 23 and Figure 24).¹³

Figure 23: Annual GDP growth, 2012–2016



Source: World Bank *Economic Prospects* 2014.

Figure 24: Current account balance as a percentage of GDP



Source: World Bank *Economic Prospects* 2014.

27. Moreover, the demographic trends described above will likely take a massive fiscal toll when the workforce contracts by a possible 40 percent. The macroeconomic model developed for the World Bank

¹² And http://ec.europa.eu/economy_finance/eu/forecasts/2014_autumn/bg_en.pdf.

¹³ These projections from the World Bank’s *Economic Prospects* differ from those made by the European Commission (2014), but are consistent with the latest projections of the IMF.

aging report (World Bank 2013) suggests that even under optimistic assumptions, the demographic transformation will exert steady fiscal pressures and depress economic growth. If labor shrinks by close to 40 percent through 2050, real GDP growth is projected to slow to 0.7 percent a year by the end of the projection horizon under the baseline scenario. Public expenditures as a share of GDP are expected to increase in the long term as a result of spending for public health care, long-term care, and government transfers to the pension system, raising Bulgaria's debt-to-GDP ratio from 18 percent in 2012 to 51 percent by 2050.

28. The poor health outcomes and shortfalls in the mix of services to prevent, treat, and manage the disease burden are indicative of inefficiencies in the health system, some of which stem from the current system of health financing (and are explored in greater detail in subsequent chapters). Moreover, the increasing health and long-term care needs of the population and the narrow prospects of increasing public resources for health suggest the need for policy makers to appreciate more deeply how money flows through the system, allowing them to better leverage resources.

Chapter 2. Health financing in Bulgaria: organization and functional analysis

1. This chapter provides a schematic view of the Bulgarian health financing system. Its objective is not to describe the system in detail (for that, see Dimova et al. 2012), but to present a summary description of the key features, combined with more detailed analysis of operational and institutional conditions. This overview will assist in later highlighting that, though many design features of the health financing system—including legislation, financing, and risk pooling, as well as purchasing methods—are at par with several elements of global good practices, the political economy, institutional arrangements, and division of operational roles often preclude a holistic policy focus or an alignment of authority with responsibility among decision makers.

2.1. Health financing system and financing flows

2. The architecture of the health financing system and the organization of financing flows can improve—or worsen—a country’s health system and ultimately its economy. Capturing this structure requires us (see Figure 1) to (i) distinguish the public and private shares of expenditure financed via, respectively, mandatory taxes and contributions—revenue collection; (ii) understand precisely how public and private flows are organized and pooled together (or not)—pooling; and (iii) discern how they are ultimately injected into the health system as payment for goods and services—purchasing.

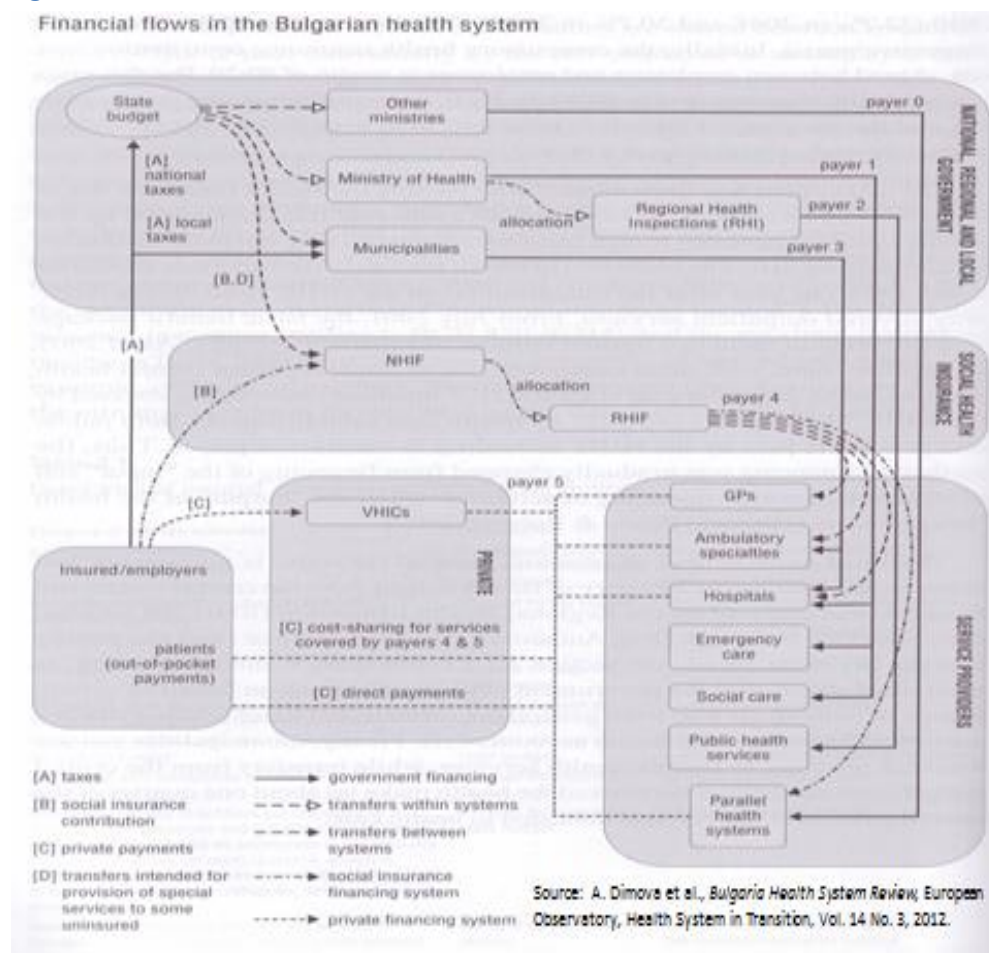
3. Each of the three financing functions influences system performance:

- The revenue sources determine the distortion in the economy (such as the excess burden of taxation), fairness of the system, affordability of universal coverage, and extensiveness of the BBP, which in turn determine financial protection and influence health outcomes, as well as the long-run financial sustainability of the system.
- The public and private shares have important implications for overall equity, risk pooling, efficiency, and the country’s prioritization of health.
- Payment methods affect the efficiency of service provision, which in turn affects access, quality, and spending, as efficiency gains are, in effect, another financing source.

4. In 2012 around Lev 6.3 billion was spent on health in Bulgaria.¹⁴ Starting from the most macro level, 51 percent of the money going into the system is public, in other words, collected and pooled through some form of mandatory tax or contributions, and distributed based on rules set by law. The rest is private money, mostly spent by households at the time individuals seek care (OOP). Figure 25 displays the sources and flows of revenues in Bulgaria’s health financing system as well as the channels through which they ultimately become expenditures.

¹⁴ NHA 2012 preliminary data. The figure is for current expenditure, not total. In previous years the difference was around 0.5% (public). The data on private expenditure are developed according to the system of health accounts and implementation of the Regulation of the European Parliament and of Council No 1338/2008 on Community Statistics on Public Health and on Health and Safety at Work.

Figure 25: Sources and flows of funds



5. Of the public money going into the health system, 48 percent comes from general taxes, and the rest from mandated and earmarked social health insurance contributions that flow directly to the NHIF. The NHIF pools and distributes around 80 percent of all public health funding and is thus the largest manager of public funds in the system.¹⁵ The NHIF also receives some transfers from general taxes and some minor other sources (see below). On the private side, over 98 percent of “revenues” for health arise through the direct purchase of services and copayments and other OOP costs by consumers; private voluntary health insurance is insignificant.¹⁶

6. In sum, OOP—generated by all patients based on individual decisions and NHIF cost-sharing requirements—is the single largest source of revenue and expenditure in the health system, representing 47 percent of the total (2012 NHA).¹⁷ The second largest is the NHIF, which “commands” in a formal and

¹⁵ Authors’ calculation based on NHIF and BOOST data. The Bulgaria BOOST database is a micro fiscal public expenditure database developed by World Bank staff based on MOF data. It follows the national budget consolidation rules and includes information on the approved, executed, and amended budgets, broken down by level of government, administrative units, subnational spending units, economic and functional classification, and financing source, as recorded in Bulgaria’s Treasury system.

¹⁶ According to 2011 NHA, such insurance represents 1 percent of private expenditure, and corporations another 1 percent. The rest is OOP.

¹⁷ Preliminary 2012 data from the NSI, which indicate a rapid increase in private expenditure. The 2011 data for private expenditure showed 46 percent of total health expenditure, with OOP of 45 percent.

organized way 40 percent of total health expenditure. All public and private revenues are turned into health expenditures, some directly by governments at all levels; some through the NHIF; some via direct OOP payments by consumers to public and private medical providers, which include GPs, ambulatory specialists, hospitals, emergency care, public health services; and some via parallel governmental health systems (such as the Ministry of Defense).

7. From policy and financial perspectives, the decisions of many public and private stakeholders largely determine levels and distribution of health system resources. Key players include:

- the Parliament, which ultimately decides on the levels of total public spending, allocations between sectors, and within health, the Ministry of Health (MOH) and NHIF budget;
- the government, including the Council of Ministers, MOH, and Ministry of Finance (MOF), as well as numerous other ministries and agencies (Ministry of Labour and Social Policy, National Social Security Institute National Revenue Agency [NRA]);
- the National Council on Prices and Reimbursement of Medicinal Products (the Pricing Council);
- the NHIF and its 28 regional branches, municipalities, and private voluntary insurers; and of course
- individuals who purchase goods and services—the patients and consumers.

8. The other set of stakeholders who influence the level of spending and allocation process are:

- providers of health services, legally represented by the Bulgarian Medical Association;
- companies that sell drugs, consumables, and medical equipment; and
- labor unions and patients' organizations, represented on the Board of the NHIF.

9. Bulgaria's National Health Accounts provide aggregate information on the levels, sources, and "destination" of public and private funding flows. Over 1995–2012, total health spending increased from 5.2 percent to 8.0 percent of GDP, the government increased the share of its budget for health from 8.5 percent to 11.8 percent, yet overall the government share of total health spending *decreased*, from 74.0 to 51.4 percent (Table 6; more detail is in the next chapter).

Table 6: Health expenditure and basic structure, 1995–2012

	1995	2000	2005	2012
Total expenditure on health as % of GDP	5.2	6.2	7.3	8.0
Public share of total expenditure (%)	74.0	60.9	60.9	51.4
<i>Breakdown of public expenditure by source</i>				
<i>by NHIF</i>	0	12	53	79
<i>by state budget</i>	<i>n.a</i>	<i>n.a</i>	40	17
<i>by municipalities</i>	<i>n.a</i>	<i>n.a</i>	7	4
Private share of total expenditure	26.0	39.1	39.1	48.6
<i>from OOP</i>	100	100	96.9	97.7
Public health as % of government expenditure	8.5	9.1	11.9	11.8

Sources: WHO NHA 2012; BOOST; NHIF accounts; and authors' calculations.

10. Changes in health spending over time relative to GDP and overall public expenditure provide an empirical measure of how the government prioritizes health spending relative to overall economic growth (that is, all activities). Total health spending has increased faster than the economy, and despite the creation of the NHIF much of that growth has come from private health spending.

11. Since the NHIF was created in 1999 through 2012 and relative to GDP, annual public health spending increased slightly less fast (3 percent), but private health spending climbed far faster (around 29 percent) (Table 7), in a period when annual total health spending increased 10 percent faster than GDP. Over roughly the second half of that period, 2005–2012, these trends were consolidated. Chapter 3 discusses public health expenditure set against the overall fiscal situation in further detail.

Table 7: Nominal elasticities of health and government spending, 1995–2012

	1995–2012	1999–2012	2005–2012
Total health spending relative to GDP	1.112	1.100	1.135
Public health spending relative to GDP	1.046	0.970	0.930
Private health spending relative to GDP	1.232	1.287	1.402

Source: IMF *World Economic Outlook* and WHO NHA 2014.

12. Netting out NHIF expenditures, most of the remaining public spending is managed by the MOH. It covers programs divided into three policy areas: public health, diagnostics and treatment, and medicinal products and medical devices (plus administration). The shares of total MOH spending on these four components in 2013 were 16.9 percent, 75.1 percent, and 5.3 percent, leaving 2.8 percent for administration (MOH 2013). Although the exact content may change slightly each year, public health programs generally include health control, prevention and management of communicable and noncommunicable diseases, and demand reduction for narcotic substances. Under diagnostics and treatment, the two highest-spending programs used to be Emergency Medical Care and Hospital Care (but the latter was dissolved as a separate program and merged into other programs from 2014).

13. Some of the responsibilities under the MOH have been transferred to the NHIF and others have gone back and forth between the two institutions. Examples of the latter are activities for assisted reproduction and mandatory vaccines, which were transferred to the NHIF in 2013 but then reverted to the MOH in 2014. Conversely, some other major expense items have gone to and stayed with the NHIF, such as intensive care, cancer drugs, and hemodialysis.

14. Reflecting these shifted roles, MOH spending is decreasing appreciably, from Lev 590.9 million in 2010 to Lev million 399.7 in 2014 (MOH reports, respective years)—a 36 percent cut after inflation. All three major policy areas were hit (Table 8), *including* public health for which the MOH still has full responsibility.

Table 8: Change in real MOH expenditure relative to 2010 (%)

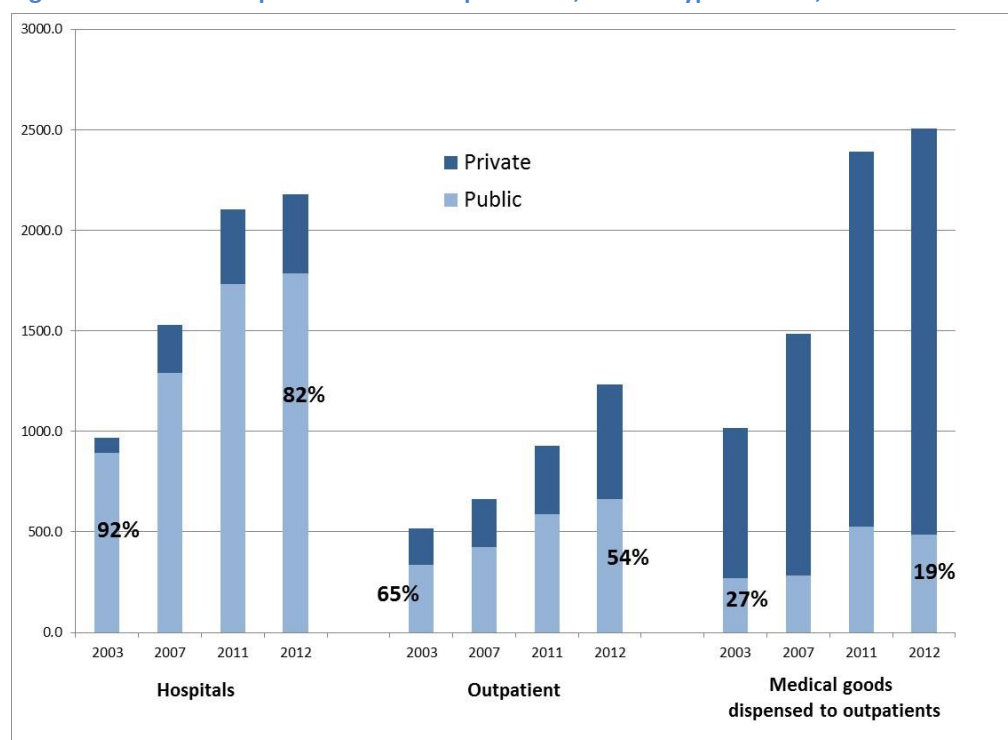
Major policy area	2011	2012	2013	2014 (as of Dec. 31)	2015 (Budget Law)
Public health, promotion and prevention	15.85	11.32	(37.09)	(32.39)	(16.89)
Diagnostics and treatment	36.11	(8.34)	(24.72)	(20.24)	(14.64)
Medicinal products and medical devices	(35.97)	(91.64)	(86.93)	(87.04)	(83.66)
Administration	51.01	12.21	22.86	125.44	21.88
Total MOH spending	15.88	(24.84)	(40.91)	(36.18)	(30.99)
Total MOH spending (2010 constant Lev, thousand)	684,737	444,096	349,180	377,109	407,776

Source: IMF/MOF.

Note: The change is calculated using real expenditures (constant at 2010 value). Real expenditures were calculated using the GDP deflator.

15. Different provider categories receive varying proportions of the public and private funds. According to the National Health Accounts, hospital services (largely) and outpatient services (more than half) are publicly funded. Medical goods including pharmaceuticals are mainly privately funded (in 2012 only 19 percent were publicly funded). The private share has gradually increased for all types of services (Figure 26).

Figure 26: Private and public shares of expenditure, various types of care, 2003–2012



Source: Bulgarian National Health Accounts. Data from 2012 NHA are not verified by Eurostat.

2.2. History and design of the NHIF

2.2.1. History and evolution

16. In evaluating the performance of the NHIF, one must understand its historical context and its current institutional characteristics and operational realities. These realities result from endogenous and exogenous institutional, legal, and political factors as well as the organization’s own modus operandi. This section examines the historical context of the NHIF and summarizes its key organizational features in terms of governance, eligibility, financing, benefits covered, provider payment and contracting, pharmaceuticals, its health management information system (HMIS), and other key structural factors. In particular, it describes the system of rules and regulations in the operational environment.

17. From a historical perspective, Bulgaria’s health financing and health system reforms exemplify the movement from the Soviet (Semashko) model. In this model, universal coverage was provided through a public, general revenue-funded, national health service, where all providers were public entities, hospitals received global budgets, physicians and other health workers were salaried public employees, and private practice and insurance were prohibited. Semashko systems were traditionally underfunded as health was not considered a productive sector, and were hospital centric. With only limited resources, they generally performed relatively well in communicable diseases, but many features of their service delivery system are not well adapted to tackling the current and future burden of chronic diseases of an aging population.

18. Bulgaria has shifted toward a more pluralist health system since the 1990s. The introduction of the social health insurance fund separated purchasing from provision with the intention that money would follow the patient rather than finance existing facilities, irrespective of their performance and usage. Provider-payment reforms were implemented, private provision and private health insurance were

authorized, ambulatory care was privatized, and hospitals became autonomous. The MOH retained responsibility for public health, emergency care, tuberculosis, HIV/AIDS, mental health, and some other services, and its role evolved toward that of a “steward” in the system.

19. The NHIF became the core entity responsible for health financing. Typically, a social health insurance fund is responsible for the bulk of (public) revenue raising and expenditures; it pools health risks through a single national risk pool, and purchases services on behalf of its enrollees. Social solidarity is achieved in principle by having a single national risk pool and compulsory enrollment for the entire population. The NHIF was established in 1999 (by the Health Insurance Law of 1998) and since then the NHIF legislative and regulatory structure has gone through numerous changes (some 100 changes to date),¹⁸ many reflecting Bulgaria’s volatile political environment. The NHIF’s underlying Health Insurance Law of 1998 and the country’s 2004 Health Law specify its structure and operational requirements, now summarized.

20. From a big picture perspective, the NHIF appears to be fairly comparable to many “social” (or mandatory) health insurance funds of the EU. The entire population is in principle covered through a compulsory, universal, and autonomous public health insurance fund. Workers (and their employers) pay a social health insurance contribution based on income. The poor, unemployed, children, pensioners, the disabled, and other socially dependent or priority groups are financed by the government. The single national public fund pools the health risks for the whole population, and purchases services from public and private providers.¹⁹

2.2.2. Governance

21. The NHIF is a public nonprofit institution managed by a governor, under a supervisory board. Since 2010, the governor has been elected by Parliament. The board has nine members: a representative of patients’ organizations, two representatives of employees’ unions, two representatives of employers’ unions, and four representatives of the state, appointed by the Council of Ministers.

22. While the MOH is responsible for overall health policy, the NHIF is an autonomous agency subordinate to Parliament, and operates under the consolidated public expenditure framework. Since its foundation, the NHIF has had 12 governors. The NHIF focuses on administering the system according to the rules and managing inherent tensions between patients’ and providers’ expectations on the one hand, and the budget constraints imposed by the fiscal framework on the other. Its internal organization does not explicitly include strategic or analytical departments, which could (for instance) assess its performance, simulate the possible impact of changes in policy, systematically and statistically monitor the behavior of providers or patients, and evaluate its financial solvency and fiscal sustainability. Although most of the rules under which it operates are set in law, the NHIF retains important responsibilities for negotiating the annual National Framework Contract (NFC—see “The NFC and macro negotiations”), enrollment, claims payments, and otherwise dealing with providers. To date, either due to capacity constraints or for political reasons, it has not put much emphasis on leading a technical dialogue within its mandate to try to manage some of its constraints.

2.2.3. Eligibility

23. The Health Insurance Law mandates coverage for all Bulgarians (Table 9). It is an employer/employee mandate for formal sector employers/workers and an individual mandate for the

¹⁸ The situation for all health and health-related legislation is even more tumultuous. Over 1999–2014 numerous laws were adopted affecting health: 13 acting directly in the health care system and nine indirectly related to health care; 293 changes were made affecting the first set of laws and 373 changes the second (Todorova and Salchev 2014).

¹⁹ See Gottret and Schieber, 2006, pp. 82–96 for a detailed discussion.

self-employed, including informal sector workers. Unemployed individuals not entitled to unemployment compensation or social supports are also required to enroll. The rest of the population, including children and pensioners, are enrolled automatically by the state. The contribution rate is 8 percent but the calculation basis and the party responsible for paying differ by category.

Table 9: NHIF source and contribution levels by eligibility category

Category of insured individual	Calculation basis	SHI paid by	Elements of calibration, ^a 2013
Employed individuals	Salary with minimum and maximum income subject to contribution	60% by employer; 40% by individual ^b	Minimum contribution Lev 34 with employee share: 13 (€7) Average contribution Lev 52 with employee share: 21 (€11) Maximum contribution Lev 176 with employee share: 70 (€36)
Self-employed individuals, registered farmers and tobacco growers, unemployed individuals not entitled to compensation or social support	Declared income (with min. and max.)	Individual	Minimum contribution Lev 34 (€17)
Children up to 18 years, full-time students up to 26 years	Half the minimal insurance income	State budget	Flat contribution Lev 17 (€9)
Civil servants	Salary with min. and max. income subject to contribution	State budget (100%)	Salary with minimum and maximum income subject to contribution
Pensioners	Size of pension	State budget	Average contribution Lev 24 (€12)
Unemployed individuals entitled to unemployment compensation, individuals with disabilities eligible for social support, recipients of social assistance, refugees, detainees, veterans, spouses of soldiers participating in international operations and missions, adults who take care of disabled people in constant need of care (and a few other categories)	Half the min. insurance income	State budget	Flat contribution Lev 17 (€9)

^a Based on National Social Security Institute. The 2013 minimum insurance is Lev 420 (€214). Amounts are computed on a monthly basis. ^b In some cases, the employer contributes on behalf of the employee (e.g. during maternity leave, in case of temporary disability).

24. Effective enrollment is subject to the enrollee having paid the required contributions or being recognized as exempt. The NRA, among other functions, collects contributions from employees and employers, data from the Social Security Institute on pensioners and other categories, verifies compliance, and provides to the NHIF a roster of insured persons, in which they are identified by their national identity number. When a person needs care, providers (and the NHIF) essentially check their current insurance status against this list. The NHIF incidentally is not aware of the grounds on which a person is covered (which limits its capacity to analyze the various subpopulations' risk profiles).

25. Uninsured people can activate coverage at any point, and may be motivated to do so when hospitalized or faced with catastrophic expenditure, resulting in potential adverse selection for the NHIF. If a person is not covered, he or she needs to pay three years of contributions (and interest) into the

system to become effectively insured, or any amounts outstanding over the preceding 36 months if they did not contribute regularly. A retroactive 36-month contribution based on the minimum contribution would amount to around Lev 1,200 (at most). In 2013, the actual average payment for a hospital stay by the NHIF was around Lev 660. In the NHIF price list for hospital stays, however, around a quarter of the prices are above Lev 1,200. If the patients' condition requires a costly hospital stay, both they and the provider have a strong incentive to retroactively "purchase" NHIF coverage and receive the NHIF payment.²⁰ No data are to hand to assess whether this occurs frequently or on the characteristics of the people who might use this form of adversely selected catastrophic coverage. However, given the above coverage rules, one can assume they would be found among otherwise healthy working-age adults who are either not working or working in the informal sector.

2.2.4. Benefits covered and cost sharing

26. The Health Insurance Law stipulates that the insured are entitled to receive "medical care within the scope of the basic package of health-care activities guaranteed by the budget of the [NHIF]." In practical terms, however, the BBP is quite opaque and the coverage of services ultimately limited by the budget parameters of the NHIF budget approved by Parliament for the year. The BBP is not specified by the NHIF, but in three main ordinances issued by the MOH. It is further operationalized in the context of the NFC, negotiated between the NHIF and the organizations representing medical care providers (see "The NFC and macro negotiations").

27. Broadly, the BBP includes primary and specialized ambulatory medical and dental care, drugs, laboratory services, inpatient hospital care, and some highly specialized medical services like renal dialysis and oncology treatment. It does not include long-term nursing care, long-term care for elderly people, spa treatment, alternative therapy, elective cosmetic surgery, elective termination of pregnancy, and contraception. Emergency care, mental health care, renal dialysis, in vitro fertilization, and transplants are covered by the MOH.²¹ Planned treatment abroad can be paid by the NHIF if the patient has prior authorization from it (Dimova et al. 2012). Over the years, the MOH has transferred responsibility for funding additional goods and services to the NHIF. For instance, the NHIF started covering hospital care only in 2006. Most recently, in 2012, the NHIF became responsible for covering purchase by hospitals of listed specialty medicines, including drugs for oncology, post-transplant immunosuppression, and various orphan diseases (see Section 2.4 "Pharmaceuticals").

28. Of the three main ordinances, the most important (No. 40, of 350 pages) presents the services covered for all patients. In many respects it is very detailed, giving for instance a positive list of all the specialized outpatient services covered by specialty, and all the tests covered, etc. In contrast, for inpatient hospital care it provides only a list of clinical care pathways (CCPs)—case-based payments. The ordinance also lays out how GPs are supposed to ensure access to urgent care to their patients outside working hours. Another ordinance (No. 39) sets out the activities to be performed as part of a "prevention examination" and for "dispensary patients" who suffer from one or more of a list of chronic diseases in the ordinance.^{22, 23} Overall, the contours of the BBP are difficult to understand for patients who need to rely on providers—starting with GPs—to assess which services are covered or not.

29. The inclusion of new services in the BBP is driven by experts who work in or advise the MOH, mostly medical practitioners. No systematic method or objective criteria are used, such as efficiency or

²⁰ Hospitals may even have an incentive to pay on behalf of the patients.

²¹ Article 82 of the Health Act describes medical services covered by the MOH beyond the scope of mandatory health insurance. Article 45 of the Health Insurance Act describes in general terms the scope of services covered by the NHIF.

²² A dispensary patient is someone who suffers from one of the listed chronic diseases.

²³ The last ordinance, No. 38, covers medicines in the reimbursable drug list discussed elsewhere in this report.

effectiveness. With the possible exception of drugs (see Section 2.4 “Pharmaceuticals”), the economic aspects of decisions to include new services are not assessed.

30. The Health Insurance Law requires cost sharing for certain services and sets out the main exemption criteria.²⁴ The level of copayment is established by ordinance of the Council of Ministers. The NFC also sets copayments for tests.

31. Table 10 displays the cost-sharing requirements by type of service. Exemption criteria are linked to age (e.g. all children) and health status: patients suffering from diseases listed in the NFC are exempted from payment for services irrespective of the specific reason they access the system. Some groups (prison inmates) are also exempted, as well as medical personnel. Since 2014, old-age pensioners’ copayments for GP visits are reduced. No exemption criteria are linked to income.

32. Copayments for health services are collected and retained by the providers, thus constituting a formal additional payment for services covered by the NHIF. Providers are meant to issue receipts for copayments. Exempt patients are expected to show the provider documentation that justifies why they should not pay. Apart from pensioners’ visits to GPs, the provider is not compensated when patients are exempt.

33. Extra-billing is allowed in hospitals if the patients choose a “VIP” room or elect to be treated by a specific physician or team, when it is capped at about Lev 700 (€357) for choosing a doctor or Lev 950 (€486) to choose a team. If patients require services not in the BBP, they must pay OOP.

Table 10: Cost-sharing requirements by type of service

Type of service	User charge (2014)	Exemptions
GP or specialist visit	Lev 2.9 (€1.5)	Children, war veterans, war invalids or war victims, inmates.
Hospital	Lev 5.4 (€2.8) with a maximum of Lev 54 per year (10 days). Extra billing is allowed if patients choose “VIP rooms” or their physician (with a cap for the latter)	Patients suffering from one of a list of diseases listed in the NFC (irrespective of reason for consultation). Pensioners pay Lev 1 of the user charge for GP visits (and the state pays Lev 1.9 as a state transfer).
Laboratory tests	Defined in the NFC: Lev 2 (€1)	No
Dental care	Depending on service (many services are not covered)	Reduced for children
Pharmaceuticals	The NHIF covers a fixed percentage (10, 25, 50 or 100) of the reference price established by the Pricing Council. Coverage is determined by the Pricing Council as part of its decisions on the Positive Drug List. A dispensing fee of Lev 2 is payable only for prescriptions including up to three fully reimbursed items.	None

Source: Information collected by authors.

34. For prescribed outpatient pharmaceuticals, the NHIF reimburses a variable share of the reference price for a given class of drug determined by the Pricing Council (Table 10). The reference price is based

²⁴ Dimova et al. 2012 p. 59.

on the product with the lowest cost per defined daily dose (DDD), and this is prorated across all pack sizes. The patient's OOP costs consist of the reference price minus the NHIF contribution, plus any difference between the reference price and the retail price of the product.

35. Table 11 illustrates the implication of this reimbursement method for ranitidine, a drug used in treating esophageal reflux and peptic ulcer disease, for which the NHIF reimbursement rate is 25 percent. The drug is available in three forms. For a treatment course corresponding to 30 days of 300mg/day (300mg being the DDD),²⁵ the patient pays either Lev 5.96, 15.17, or 13.61 OOP, but the NHIF contribution stays unchanged (Lev 1.99). There are no copayment exemptions for drugs (see Section 2.4 "Pharmaceuticals").

Table 11: Example of reimbursement for ranitidine (Annex I of the Positive Drug List, December 12, 2014)

	Ranitidin Tchaikapharma (lowest price per DDD = reference price)	Ranitidin Accord (form 1)	Ranitidin Accord (form 2)
Unit dose	150mg	150mg	300mg
Quantity in pack	20	30	30
Number of DDDs in the package	10	15	30
Retail price for package (Lev)	2.65	8.58	15.6
Reference price adjusted for amount of active ingredient in the package (Lev)	2.65	3.98	7.95
Amount paid by patient for the package (Lev)	1.99	7.59	13.61
Amount paid by patient for 30 DDD (Lev)	5.96	15.17	13.61
Amount paid by NHIF for 30 DDD (Lev)	1.99	1.99	1.99

Source: Author's computation based on Annex I of the Positive Drug List.

2.2.5. NHIF budget and financing

36. In line with the Public Finances Act, the NHIF every year prepares a draft law presenting its own budget that is submitted to the Council of Ministers for approval, along with the consolidated fiscal program and the draft budget law of the Pension Fund. The Council may make adjustments, particularly to ensure that the consolidated fiscal program adheres to the predetermined budget balance set in the Public Finances Act. The package is then sent to Parliament, which can also modify it within the macro-fiscal parameters of the Public Finances Act. If during the year it appears that there could be an overrun, shortfalls can be accommodated through measures taken by the NHIF, through implicit rationing, which affects providers (through deficits) or consumers (through rationing of services), or through further budget allocations, which must, however, still comply with the Public Finances Act and be approved by Parliament (as happened twice in 2014).

37. The main criterion driving the proposed allocation to the NHIF is the requirement to meet the MOF's NHIF budget target, which embodies the government's macro-fiscal rules on the deficit, consonant with both EU fiscal targets and the government's fiscal framework. Following a procedure outlined in the Law on Public Finance, these targets are set by the MOF and strictly applied. If the NHIF spends more than the amount budgeted (and is unable to introduce cost-saving measures) the NHIF budget law needs to be

²⁵ The defined daily dose is a statistical measure, not a therapeutic one. In reality, to obtain the same therapeutic effect, the prescription for each drug (the therapeutic dose prescribed) may differ across the three products and correspond with different DDD amounts.

revised, with approval from Parliament. (This can lead to cuts in other ministries' spending.) The NHIF can also run a deficit, but this is unusual. It can also postpone or suspend payments to medical care providers.

38. The NHIF's funding sources are specified in statutes and decrees. As shown in Table 9 these include social contributions from employed and self-employed workers based on their income, and government contributions for children, disabled, unemployed, and other socially dependent groups. The government also pays the contributions of its employees. There are also some small direct contributions from the MOH, fines, and investments.

39. Contributions are collected by the NRA and transferred to the NHIF. The MOF transfers to the NHIF the amount set in the budget law that corresponds to its anticipated obligations under the law (see Table 9).²⁶ If in the course of the year the NHIF receives more contributions than budgeted, it is allowed to spend them. If there is a shortfall, one of the above options is applied.

2.2.6. Purchasing/contracting medical services

40. This section describes the contracting and payment methods used by the NHIF, the main purchaser of services in the health system. For services to private patients, whether they purchase services directly or are privately insured, providers are generally paid fee for service. Private insurers usually negotiate their payment levels with providers, but given the very limited penetration of private voluntary health insurance due to the extensiveness of the NHIF's BBP and the country's low income, private insurers lack the market clout to negotiate efficient payment rates and tend to be price takers.²⁷

The NFC and macro negotiations

41. The NFC is negotiated every year between the Bulgarian Medical Association and the NHIF. It includes services provided by all categories of medical professionals and in facilities. It is a legal document that each provider/entity must sign to indicate its acceptance. It is also ultimately the instrument through which the budget targets set at macro level are implemented. Contract negotiations typically start in August/September and are finalized at the end of the calendar year. If the negotiations fail, the government can step in and ensure the system continues running (which in recent years has tended to happen more frequently). The following describes the steps in the negotiations.

42. The NFC itself sets for all the providers of services and pharmacies, the following (among other elements):

- the conditions that providers must meet to enter into a contract with the NHIF;
- the contracting procedures, the documents they must provide, and document flows;
- the conditions under which medical services are covered and the rules for coverage. In particular, it details the CCPs, based on which hospitals are paid (see just below). Each CCP algorithm contains (i) input requirements (human resources, equipment); (ii) the list of services that hospitals must offer (procedures, tests); and (iii) the manner in which they must be provided (e.g. length of stay). Unless these conditions are met, the hospital is not entitled to deliver the CCP (i) or to receive payments for it (ii and iii). The NFC also establishes norms for the number of services that will be reimbursed based on various circumstances (e.g. for chronic care patients); and

²⁶ Detailed computations for that amount are not readily available.

²⁷ See Section VII National Framework Agreement from the HIL and Dimova et al. 2012 for a detailed discussion of private voluntary health insurance coverage and payment procedures.

- the obligations of the parties as to information provision and exchange.

43. The next step is the “price and volume” determination, which is set outside the NFC through separate negotiations between the NHIF and the Bulgarian Medical Association. The binding constraint is that the budget target of the NHIF must be met. If no agreement is reached at this stage, prices and volumes are set in an ordinance from the Council of Ministers. At the price–volume agreement stage, the global finance envelope is divided between subcategories of providers. In effect, prices and volumes are renegotiated mainly at the margin based on previous years’ outcomes. In this process, which is typically more antagonistic than cooperative, the providers associations’ overall incentive is to try to negotiate unit prices rather than volumes increases. Indeed, if the planned volumes are exceeded before the end of the year, the threat to suspend or postpone the service delivery is more likely to lead to renegotiations and to more money being put in the system.

44. Once the process is completed, the NHIF divides the budget between regions, and the Regional Health Funds are responsible for verifying eligibility of providers, signing contracts with them, establishing individual hospital budgets, setting GP and specialist referral and lab test ceilings, paying claims, and conducting medical audits. The methods for dividing budgets across categories of providers, among regions, and to each provider individually are decided by the NHIF.

45. The NHIF employs a wide range of payment methods differing by provider type. Hospitals are typically reimbursed from the NHIF on the basis of a bundled fee for service payment for some 300 CCPs, and are also subject to annual budget ceilings. GPs are paid on the basis of capitation and fee for service, and ambulatory specialists, laboratories, and dentists are paid fee for service. The following highlights these approaches.

Hospitals

46. For inpatient hospital services, Bulgaria uses a form of case-based payment that defines cases by a CCP system—a mix of a classification system, clinical guidelines/protocols, and contracting rules. The country differs from most others using classification systems driven by diagnosis and procedure codes in that it embeds both clinical guidelines and payment/contracting rules into what it considers the grouping/classification system. As said, the CCP algorithm—set out in the NFC—lays out the inputs/capacity (number of doctors and nurses, type of equipment, etc.) a hospital must meet to obtain a contract for a given CCP and the services to be delivered and stay eligible for payment under a CCP. When CCPs were introduced in 2001, there were 30 of them; today, there are 308.

47. All hospitals that meet the NFC standards for a given CCP are allowed to sign a contract with the NHIF, which in turn has no legal ground to deny them one, essentially prohibiting the NHIF from selective contracting. Since 2010, the MOH has established standards for three types of competency levels for hospitals, based on the inputs/capacity, which indirectly drives the number and type of CCPs it is allowed to perform, based on which the hospital signs a contract.

48. Hospitals have a price and volume contract with the NHIF and are paid according to the CCPs assigned to their inpatient discharges. Contracts are renegotiated each year. A flat payment is made to hospitals for each CCP reported. Hospitals that exceed (or are at risk of exceeding) their contracted amount of CCPs approach the NHIF for additional funding, which they usually get. As in all fee-for-service systems, hospitals have a strong incentive to maximize the number of admitted patients and to assign them to the highest-paying CCPs. Yet even though all hospitals have budget ceilings, these ceilings are not enforced, which means physicians and hospitals have no incentives to keep patients out of the hospital even if they could be treated as outpatients. Cases of patients being admitted to the hospital to avoid waiting times for certain tests or procedures, or to avoid an OOP payment, are quite common.

49. The CCP system does not rely on grouping logic; instead, hospital physicians select and report the CCP name and number on the bill that best represents the case treated. Then they select an appropriate diagnosis code (and procedure code if applicable) for the case that meets the CCP contracting criteria. Hospitals also aim to ensure that they meet all other rules established for the CCP to obtain reimbursement from the NHIF, rules which were developed by the NHIF with the Bulgarian Medical Association. They include: the minimum length of stay for the CCP; diagnosis and procedure codes; contracting requirements related to the equipment, and number of physicians and other staff that must be available; instructions for completing procedures; and post-treatment guidelines.

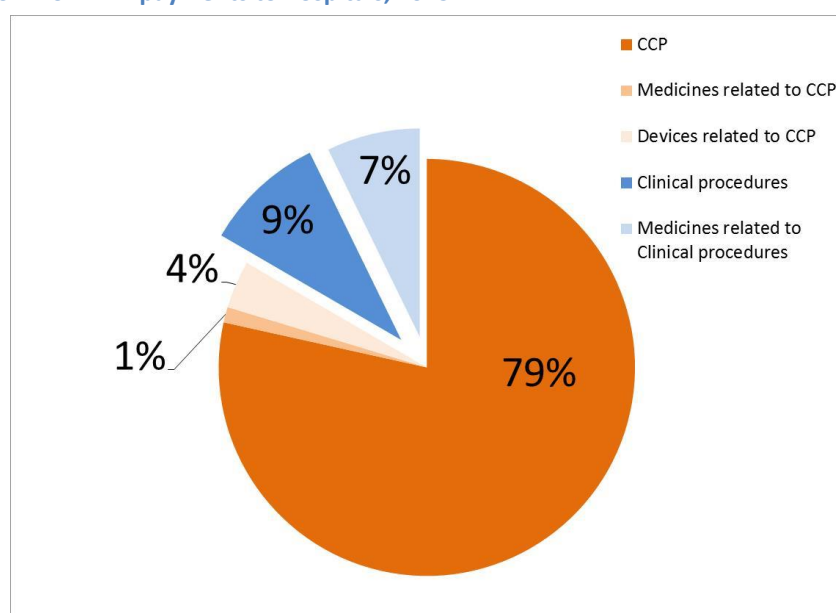
50. The price of the CCPs is the result of negotiations between the NHIF and the Bulgarian Medical Association. According to the Health Insurance Law, the prices of CCPs—and in fact all services paid by the NHIF—should be computed following a methodology developed by the NHIF (and on which the MOH and MOF give an opinion) and approved by the Council of Ministers. In reality, prices are the result of negotiations between the NHIF and the Association. Increases are negotiated at these bodies' initiative, motivated either by evidence of distortion and over- or underpricing, or to reflect changes in the CCP algorithm (for instance, on the introduction of a new technology or technique). Experts agree that the pricing matrix of CCPs contains distortions within and across specialties.

51. In addition to payments for CCPs, hospitals receive from the NHIF:

- Payment for specific drugs not included in the CCP prices, including cancer drugs. The hospitals procure the drugs selected by the Pricing Council. The list sets the maximum hospitals are allowed to pay for any of these drugs.
- Payment for some medical devices.
- Payments for a series of “clinical procedures” and related drugs, which include hemodialysis, some chemotherapy, and intensive care (paid on a per-diem basis).

52. As Figure 27 shows, CCP and related payments account for around 85 percent of NHIF payments to hospitals.

Figure 27: Breakdown of NHIF payments to hospitals, 2013



Source: Authors' computations using NHIF data.

53. Three-fourths of public funding to hospitals is channeled through NHIF, the rest from other sources (National Health Accounts 2011). There is no clear picture of how these flows are organized but to highlight some of the main channels:

- Psychiatric hospitals and a handful of specialized facilities (social care children's homes) are paid per diem by the MOH.
- "Mainstream" hospitals can also receive payments for certain services (emergencies, transplants) and functions such as research and teaching, as well as investments.
- Some ministries and the Council of Ministers run their own hospitals which, while they can contract with the NHIF, also receive block grants and investments from their own ministries. Municipalities also fund the hospitals they own.

54. There are no readily available data on hospital finances. Hospitals are autonomous organizations registered as trade companies owned for the most part by municipalities. By law their accounts are public and should be available at the MOH and NSI but access could not be secured and no consolidated data are available. The media and officials periodically report numbers on the "debts of hospitals" but data are too patchy to assess public hospitals' financial viability.

GPs

55. GPs hold consultations, carry out basic examinations, provide simple tests and treatments, prescribe drugs in the Positive Drug List (PDL), and provide some preventive services for patients.

56. GPs receive two types of payments from the NHIF: an age-adjusted capitation for all the patients in their list and additional fees for (mainly preventive) activities, such as immunization and check-ups, and for services provided to "dispensary patients" (chronic patients) they manage²⁸ (for hypertension,

²⁸ The NFC lists to which extent each type of chronic patients can be "managed" by GPs or specialists and the services they are entitled to.

diabetes, asthma, etc.). GPs working in sparsely populated and remote areas receive an additional per capita remuneration. In 2013, the capitation amounted to 49 percent of payments to GPs, prevention activities 31 percent, and fees for chronic patients 19 percent (plus some very minor payments).

57. These NHIF payments are the main source of income for GPs' practices, which are private, and most of them are individual practices that employ a nurse, salaried by the practice. There are some practices in which physicians practice in groups, but patients (and referral quotas and budgets) remain tied to individual GPs.

58. GPs also manage a virtual referral budget that sets limits and requirements for referring patients to specialists (a numerical quota) and for diagnostic and therapeutic testing (a monetary budget). The method allocating referral budgets between GPs and specialists as well as among them is defined by the NHIF, based on the profile of patients. A large proportion of these referral and testing budgets are actually earmarked for dispensary patients, who are entitled (or supposed) to receive certain regular services and tests.²⁹ These referrals are required even when GPs can treat the patients or their risk factors are under control, as with patients who have hypertension or chronic obstructive pulmonary disease (COPD). If GPs overrun their referral/testing budgets they are fined but are not rewarded for "saving" funds in the referral or testing budget. GPs have no limits on the number of acute patients they can refer for hospital care.

Specialists

59. Specialists have contracts with the NHIF for consultations and tests for patients referred by GPs or other physicians, and are paid according to a fee-for-service model. Patients can access specialists directly, but without GP referral must pay OOP. Specialists can refer patients to other specialists, refer patients for tests/procedures, and admit patients to the hospital.

60. Specialists are allowed to see a patient at most twice within 30 days for each GP referral (which is good for 30 days), and are not paid for any additional visits. If the need arises, the specialist can send the patient back to his or her GP for another referral, refer the patient to a different specialist, see the patient without being compensated by the NHIF (and most likely seek payment from the patient), or admit the patient for hospital care. There are no limits on the number of referrals that specialists can make to the hospital.

61. Similar to GPs, specialists manage annual referral and testing budgets set by the NHIF. Specialists must follow the NFC's rules and payment requirements when referring patients for diagnostic services.

62. Also as with GPs, specialists work in single or group practices. They may have laboratory and diagnostic imaging services on site, though this is more likely in group practices. However, specialists interviewed claimed that many unit prices of some diagnostic tests are too low for them to purchase and maintain the equipment and they are only left with the option to refer patients to hospitals where the tests are carried out on an in-patient basis.

63. Many specialists practice in ambulatory settings and in the hospital.³⁰ Specialists then have an employment contract with a hospital that specifies their salary and "additional incentive" payments (for providing high-quality care, bringing in business, etc.). This second contract may create incentives for specialists to admit patients even when the patient could be treated as an outpatient. While specialists

²⁹ This proportion would vary depending on the mix of patients but GPs generally claim that around half of the budget they manage is absorbed by dispensary patients for mandated activities.

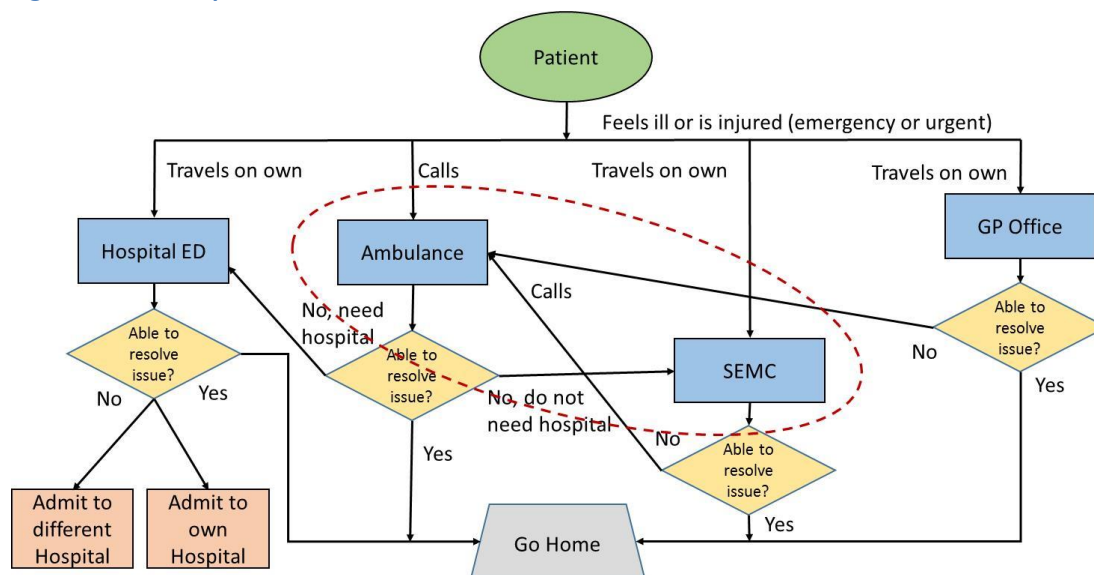
³⁰ Numbers are not readily available. Estimates vary between 20 and 30 percent.

do not formally refer patients to specific hospitals, patients are, in reality, very likely to present to the hospital with which their specialist is associated.

2.3. Organization and financing of emergency medical care

64. The emergency medical care (EMC) program comes under the auspices of the MOH. The main providers are (i) 28 regional centers for emergency medical care (CEMCs) and their 198 subsidiaries (SEMCs) operated by the MOH; and (ii) emergency departments in 37 multi-profile hospitals. In addition, GPs are meant to provide 24-hour “urgent” care,³¹ and hospitals that do not have an emergency department are also supposed to provide reception of emergency patients 24 hours a day.³² Figure 28 depicts the emergency care system in its totality and as an integral part of the health system.

Figure 28: Patient paths to EMC



Source: Authors, based on MOH 2014.
ED = emergency department.

65. There are no data on the shares of patients among the different paths. While data are known for the CEMC/SEMC and emergency department activity, no statistics are available for GP services. It is generally agreed among experts that patients travel on their own to hospital emergency departments, that GPs rarely provide 24-hour urgent care (as they are meant to under their contract with the NHIF), and that emergency cases are more frequent among patients without health insurance. In 2014, the CEMC/SEMC system (the dashed oval in the diagram) completed over 737,000 calls and performed more than 558,000 outpatient exams (MOH 2014).³³ In 2013, about 1,063,400 emergency patient encounters took place in hospital emergency departments, with one-third admitted and two-thirds not subsequently admitted to the same hospital, in which case the MOH pays the hospital (NCPHA 2014).³⁴

³¹ According to the NHIF payment system, about 2.5–4.5 percent of the total GP capitation payment was for “24-hour monitoring” of patients.

³² Article 19, paragraph 3 of the Medical Establishment Act.

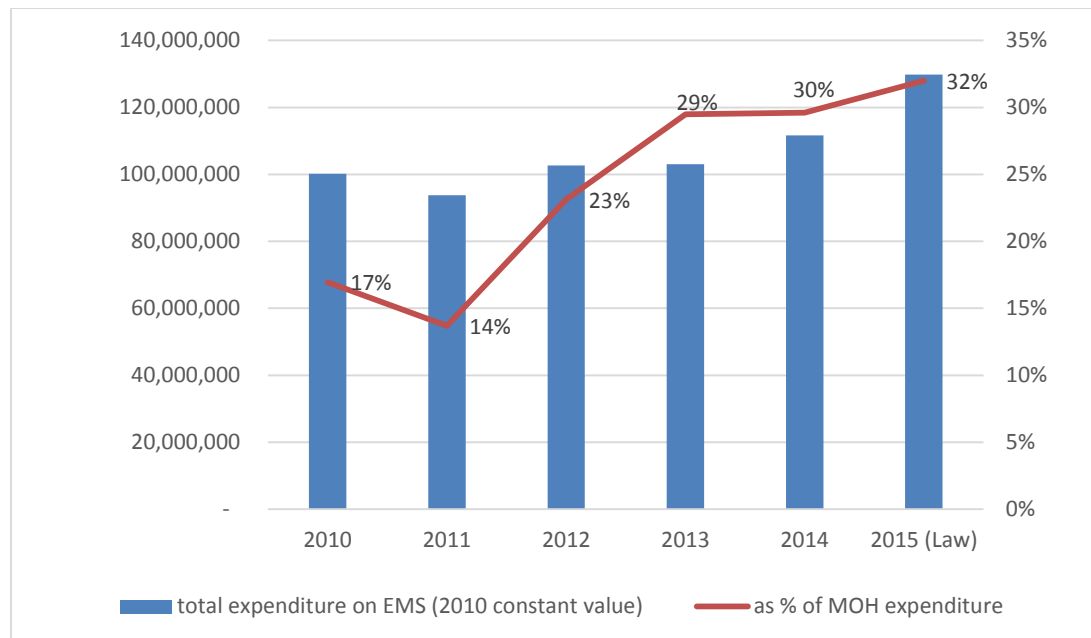
³³ Detailed CEMC statistics provided by the Emergency Care and Special Medical Activities Branch, Ministry of Health, March 13, 2015.

³⁴ Data from the National Center for Public Health and Analysis data for 2013.

66. The MOH has a program budget for EMC. Program funding is used primarily for the CEMC/SEMC system. Since 2012, the EMC program has had funding for CEMC/SEMC (“departmental cost”) and hospitals providing emergency care (“administrated cost”). Before 2012, the program had funding only for CEMC/SEMC; the funding for emergency care provided in hospitals was included under “hospitals.” In 2013, EMC expenditure was Lev 110.4 million, of which Lev 94.1 million (86 percent) was spent on the CEMC/SEMC system (“departmental cost”).

67. Spending on the EMC program increased quite sharply in absolute terms and as a share of MOH spending—the latter to 30 percent of the MOH budget in 2014, up from 17 percent in 2010 (Figure 29).

Figure 29: Total expenditure on EMC in absolute value and as share of MOH expenditure, 2010–2015, Lev



Source: MOH.

Note: Expenditures for all years were converted to 2010 value using GDP deflators from IMF/MOF. Figures include both “departmental cost” and “administrated cost.”

68. Funding to the CEMC/SEMC system is allocated to the 28 regional centers and their subsidiaries to cover staff salaries, maintenance, and purchases of fuel, medicines, and other consumables. Of these, staff salaries are fixed (based on the number of staff, which is set by the Council of Ministers). Recurrent costs are based on actual volume, which is proxied by indicators such as number of calls answered and number of treated patients. During 2010–2013, the share of staff salary in the total “departmental cost” ranged from 77 percent to 83 percent (MOH reports, various years).

69. The EMC program also provides funding to emergency departments in the multi-profile hospitals to cover mainly the maintenance cost for providing EMC. The amount in 2014 was Lev 13.7 million, or about 12 percent of EMC program spending that year (MOH 2015a).³⁵ Total funding for each medical treatment facility is determined on the basis of the summed evaluation of three parameters for relative share: population served, volume of activities, and amount paid the previous year. For regions with more than one medical treatment facility, the funding is allocated proportionally to the volume of activities in the facility. Further, a coefficient for level of competence is applied to the amount determined based on

³⁵ Data provided by the Budget and Finance Directorate to the World Bank mission in February 2015.

the three parameters, depending on the level of care of the treatment facility: Level III—1.3; Level II—1.0; Level I—0.7. The level of funding cannot be less than 90 percent and more than 115 percent of the amount paid the previous year. In 2014, the total amount paid came to about Lev 20 per patient.

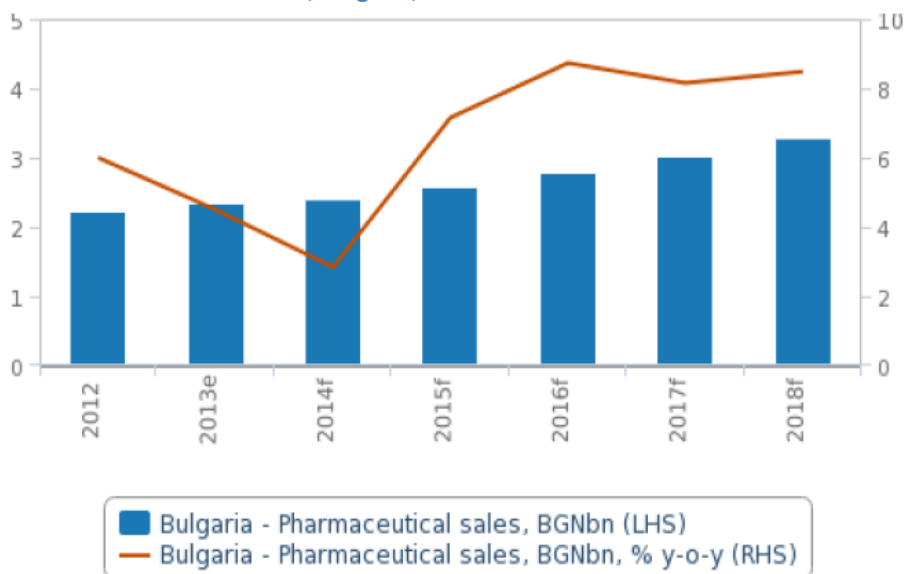
2.4. Pharmaceuticals

70. The Bulgarian pharmaceutical market is one of the EU’s smallest, but has grown strongly over the past few years, such that medicines represent a high and arguably excessive proportion of health care expenditure, especially OOP.

2.4.1. Background

71. The pharmaceutical industry is one of the fastest growing sectors of the economy.³⁶ The market was valued at Lev 2.1 billion in 2011, up 12 percent from 2010, and grew another 10.5 percent to Lev 2.32 billion (\$1.57 billion) over 2011–2013.³⁶ Recent years’ growth is attributable mainly to two factors: increased NHIF expenditure on oncology and other high-cost medicines, and consumer spending on over-the-counter (OTC) products. It may also earlier have been stimulated in part when Bulgaria harmonized its regulatory processes with EU regulations, preparatory to EU accession in January 2007.³⁶

Figure 30: Pharmaceutical sales, Bulgaria, 2012–2018



Source: Ministry of Foreign Affairs, Denmark. Pharmaceutical and Healthcare Sector, Bulgaria, 2014. http://bulgarien.um.dk/en/~media/Bulgarian/Documents/Pharmaceutics%20and%20Healthcare_2014.pdf

72. Medicines constitute a high and arguably excessive proportion of health care expenditure (37 percent of total health expenditure in 2009,³⁷ against an EU average of around 25 percent) (Rohova et al. 2013). OOP costs on pharmaceuticals are also extremely high, with the 2012 preliminary National Health Accounts suggesting they may amount to as much as 81 percent of the total spent on drugs.

³⁶ Ministry of Foreign Affairs, Denmark. Pharmaceutical and Healthcare Sector, Bulgaria, 2014. At http://bulgarien.um.dk/da/~media/Bulgarien/Documents/Pharmaceutics%20and%20Healthcare_2014.pdf

³⁷ 2012 NHA data put the Bulgarian figure at 40 percent.

73. Hospital consumption was around 18 percent of the market in 2009, with another 18 percent ambulatory care medicines reimbursed by the NHIF. OTC medicines made up nearly 17 percent (the rest is non-reimbursed prescription medicines) (Andre and Semerdjiev 2010).

2.4.2. Regulatory framework

74. The Medicinal Products in Human Medicine Act (MPHMA) is the main law.³⁸ It was drafted in 2007 to align the Bulgarian regulatory framework with European standards, but has since been amended up to 20 times.

75. The scope of the MPHMA is broad, covering the role and responsibilities of the Bulgarian Drug Agency; provisions on pricing of prescription and OTC medicines;³⁹ and establishment and maintenance of the PDL. For product registration it provides for centralized, decentralized, and national procedures.

76. The sector is also subject to many other laws and ordinances, particularly:

- Health Law (January 1, 2005);
- Health Facilities Law (July 5, 1999);
- Ordinance on the Terms, Rules and Procedure for Regulation and Registration of Prices for Medicinal Products (April 30, 2013);
- Ordinance No. 4 on the Terms and Conditions for Prescribing and Dispensing of Medicines (March 4, 2009);
- Ordinance No. 10 on the Terms and Conditions of Payment for Medicinal Products, Dietary Food under Art. 262, Para 6, pt.1 of the MPHMA, as well as Medicinal Products for Health Related Activities under Art. 82, Para 2, pt. 3 of the Health Act (March 24, 2009)
- Ordinance No. 28 on the Structure, Terms and Conditions of Work of the Pharmacies and Nomenclature of Medicinal Products (December 9, 2008);
- Ordinance No. 34 on the Terms and Conditions for Payment from the State Budget for the Treatment of Diseases Outside the Scope of Mandatory Health Insurance (November 25, 2005);
- Ordinance No. 38 defining the List of Diseases for which Medicines, Medical Devices and Dietary Foods for Outpatient Treatment Fully or Partially Paid for by the NHIF (November 16, 2004);
- Ordinance No. 39 on the Principles and Requirements of Good Distribution Practice (September 13, 2007);
- Ordinance No. 40 of for Determining the Basic Package of Health Services Guaranteed by the NHIF Budget (November 24, 2004).

77. The Bulgarian Drug Agency is a regulatory agency reporting to the MOH, responsible for the quality, efficacy, and safety of medicinal products. Its role includes marketing authorization for medicines; authorization and oversight of manufacturing, import, wholesaling, and retailing of medicines;

³⁸ Medicinal Products in Human Medicine Act 2007. At http://en.bda.bg/images/stories/documents/legal_acts/ZLPHM_en.pdf

³⁹ In conjunction with the Ordinance on the Terms, Rules and Procedure for Regulation and Registration of Prices for Medicinal Products, effective April 30, 2013

authorization and oversight of clinical trials; advertising; pharmacovigilance and drug information; and classification (scheduling) of medicines.

78. The Bulgarian Drug Agency is funded in part by the MOH and by revenues generated by its activities, including fees for laboratory analyses, application and evaluation fees, annual registration charges, and Good Manufacturing Practice inspections. Tariffs are set by the Council of Ministers.

2.4.3. Drug selection and pricing

79. A 2011 amendment to the MPHMA replaced two commissions (with responsibility for pricing of pharmaceuticals or management of the PDL) with a single new entity, the National Council on Prices and Reimbursement of Medicinal Products (the Pricing Council).⁴⁰ The Council registers the maximum retail selling prices of OTC medicines and makes decisions on the inclusion and pricing of medicines in the PDL, as well as setting maximum (ceiling) prices for all other medicines.⁴¹ The price-setting mechanisms and processes are outlined in the MPHMA and set out in more detail in the 2013 Ordinance on the Terms, Rules and Procedure for Regulation and Registration of Prices for Medicinal Products (the Pricing Ordinance).⁴² The Council's role also includes approving, revoking, or modifying pharmacotherapeutic guidelines⁴³ that include criteria to assess the effectiveness of the therapy, as well as recommendations for treatment algorithms proposed by the National Consultants, medical societies, and other clinical experts.

80. The Council is a legal entity supported by the state budget, with the status of a state commission, based in Sofia. It comprises a chair and six members (three of whom must be physicians or pharmacists, two economists, and two lawyers, all with experience in their specialties of not less than five years) and is supported by a secretariat.⁴⁴ It meets weekly, and gives direct updates to the reimbursement list every two weeks, which involve changes to prices, brands, and reimbursement for any of the medicines in that list. It may routinely adjust prices for inflation.

81. The MPHMA sets out timeframes for the Council's decision making:

- 60 days for listing and pricing of new prescription medicines to be included in the PDL; and
- 30 days for listing and pricing of generic medicines, and for setting maximum prices for prescription medicines not subject to reimbursement and OTC products (from the date of filing of the application with the Council).

82. The primary price-setting mechanism is international (external) reference pricing. For new prescription medicines ex-factory prices are determined by considering "official"⁴⁵ prices in 10 primary EU member states (Romania, France, Latvia, Greece, Slovakia, Lithuania, Portugal, Italy, Slovenia, Spain and Denmark) and seven secondary members (Belgium, the Czech Republic, Denmark, Estonia, Finland, Poland

⁴⁰ See <http://www.ncpr.bg/en>

⁴¹ The Pricing Council thus sets the price of all drugs marketed in Bulgaria. The PDL is the more restrictive list of drugs that are (to a varying degree) paid from public funds. The reimbursement list is the list of outpatient medicines reimbursed by the NHIF (Annex I)

⁴² Ordinance on the Terms, Rules and Procedure for Regulation and Registration of Prices for Medicinal Products, effective April 30, 2013. At <http://www.ncpr.bg/en/regulations/bulgarian-legislation/regulations/>. This supersedes Ordinance 10 of March 24, 2009 on the Terms and Conditions for Payment of Drug Products.

⁴³ To date, none have been completed or disseminated.

⁴⁴ See <http://www.ncpr.bg/en/ncprmp/structure/organogram>

⁴⁵ Official prices may not reflect the actual prices paid by countries.

and Hungary). The Bulgarian ex-factory price is then set at the level of the lowest price among these jurisdictions. Links to the sources of the pricing information are provided on the Council’s website.⁴⁶

83. The ex-factory price of the first generic version of a medicine listed in the PDL may not exceed 80 percent of the ex-factory price of the reference product in the PDL. Thereafter, generic pricing is subject to external referencing. For OTC medicines the Council simply records the maximum retail prices proposed by the producer or importer.

84. The PDL comprises four annexes:

- Annex I (the reimbursement list): lists outpatient medicines paid for by the NHIF and the subsidy they receive, as set by the Health Insurance Act (HIA);⁴⁷
- Annex II: specifies medicines funded from the budgets of “medical-treatment” facilities;
- Annex III: gives medicines for treating HIV/AIDS, certain communicable diseases, orphan drugs, oncology medicines outside the scope of the HIA, and vaccines for compulsory immunizations; and
- Annex IV: sets out the ceiling prices for medicines not covered by the HIA or the NHIF, including OTC medicines.

85. Chapter 6 of the Pricing Ordinance sets out the criteria for the inclusion of medicines in the PDL. To be considered for listing, the medicine must first have marketing approval in Bulgaria, as well as evidence of coverage by health insurance programs in at least five of the 10 primary reference countries. For new medicines, a range of clinical parameters and pharmacoeconomic indicators are then evaluated, from material presented in the application dossier submitted by the drug’s manufacturer or supplier. The pharmacoeconomic indicators include the cost of therapy; a comparison of the costs of therapy with available alternatives; the cost-benefit ratio; an economic evaluation of the additional benefits offered by the therapy; and an analysis of anticipated budget impact. For each group of criteria a number of points is awarded, with clinical factors receiving a maximum of 95 points, and pharmacoeconomic factors a maximum of 40 points. A minimum of 60 points is required for approval, thus a product reflecting a high degree of clinical effectiveness may be approved even if scoring poorly on economic factors.

86. A Pricing Council decision to refuse an application to include, change, or exclude a medicine from the PDL, or to endorse a proposed price, can be appealed to the Transparency Commission. The Commission is established by the MPHMA, with members appointed by the Council of Ministers from nominations from multiple agencies.⁴⁸

87. The Pricing Ordinance sets out the procedures for setting reimbursement of products in the Reimbursement List. For multisource products containing the same International Nonproprietary Name (INN) in the same pharmaceutical form, the amount of reimbursement is set at the level of the cheapest product determined by the cost per DDD.⁴⁹ Therapeutic reference pricing is applied across different molecules within the same subgroup in the Anatomical Therapeutic Chemical (ATC) Classification System where the products have been shown to be of similar efficacy and safety for treating an indication—often

⁴⁶ http://www.ncpr.bg/images/Referentni_darjavi/Tablica%20za%20saita_03.10.2014-ENGLISH.htm

⁴⁷ The reimbursement list in Annex I also includes some medical devices such as glucose test strips and stoma appliances.

⁴⁸ Including the MOH, Ministry of Labour and Social Policy, Bulgarian Drug Agency, NHIF, Bulgarian Physicians' Union, Bulgarian Dentists' Union, Bulgarian Pharmacists' Union, and patient and pharmaceutical industry bodies.

⁴⁹ The DDD is the assumed average maintenance dose per day for a drug used for its main indication in adults. The DDD is a unit of measurement and does not necessarily reflect the recommended or actual prescribed dose. An observation that two drugs for the same indication have the same DDD does not imply that they are of equivalent efficacy.

referred to as cluster reference pricing. The benchmark or reference price is calculated according to the lowest cost/DDD in the cluster. Therapeutic reference pricing is not applied to medicines considered by the Pricing Council to have narrow therapeutic indexes (e.g. anti-convulsants, immunosuppressants).

88. Reimbursement rates differ according to clinical significance, as determined by the Pricing Council. All products in Annex III, as well as those in Annex I for chronic diseases causing “severe disruptions in the quality of life or disablement and requiring prolonged treatment” are subject to full reimbursement. Medicines for chronic diseases with widespread prevalence attract 75 percent cover; for all others, reimbursement is up to 50 percent, determined by a complex assessment of a range of factors that include whether use of the product is considered by the Council to be essential, preventive, palliative, symptomatic, or for maintenance treatment; the social significance of the condition under treatment; the duration of treatment; accepted treatment algorithms; the number of patients with the condition; expenditure the previous year; and budgetary capacity. For some reimbursed products the NHIF pays as little as 10 percent of the reference price.

89. The PDL is published by the Pricing Council, and is updated on the 2nd and 16th day of each month. New products are added only on January 1 each year, and the Pricing Council may change a medicine’s reimbursement rate in the PDL once a year, although price changes can be more frequent. The ceiling price can be increased no sooner than 12 months after the last price approval, but the applicant can reduce the ceiling price at any time.⁵⁰

2.4.4. Procurement and payment

90. For medicines used in in-patient facilities (Annex II) procurement procedures fall within the scope of the Public Procurement Act. Each public hospital undertakes procurement annually. Prices cannot exceed those set by the Pricing Council. The costs of medicines used in hospitals are included in the estimations of the costs of the CCPs, thus medicines for in-patient use should theoretically be fully covered by hospital budgets. However, patients with chronic diseases who receive medicines subsidized by the NHIF as outpatients are meant to bring their medicines with them when hospitalized.

91. For outpatient medicines, the NHIF is responsible for payment in accordance with the decisions of the Pricing Council and the specified subsidies. The NHIF has no role in determining the content of the PDL, though NHIF representatives attend meetings of the Council and may make representations to it.

92. In 2012, the MOH transferred responsibility for payment for a list of specialty medicines to the NHIF. These are 100 percent reimbursed and include certain oncology drugs funded outside the CCPs, as well as drugs for post-transplant immunosuppression, and various orphan diseases. Although some funding allocation went with the transfer, it is increasingly too little to meet demand, and the NHIF has only limited capacity to moderate prescribing. Oncology outpatient treatment is provided for breast, endometrial, renal, and prostate cancers, etc. Expenditure on oncology medicines is one of the fastest growing areas of expenditure, and demand routinely outstrips the budgeted amount. Table 12 shows the level and growth of NHIF medicines reimbursed over 2011–2013.

⁵⁰ Center for Corruption and Organised Crime Prevention 2014.

Table 12: Level and growth of NHIF medicines reimbursed, 2011–2013

Group	Reimbursement value (Lev)			Growth 2011–2013 (%)
	2011	2012	2013	
Digestion and metabolism	92,808,240	104,747,617	117,120,031	26
Blood & blood forming organs	32,824,625	31,318,475	43,739,413	33
Cardiovascular	85,977,845	92,560,215	85,446,570	-1
Genitourinary system	7,365,411	9,541,809	9,439,385	28
Hormonal drugs for systemic use	4,275,308	6,078,292	6,802,846	59
Anti-infectives for systemic use	9,585,803	13,759,580	14,694,574	53
Antineoplastic and immunomodulatory drugs	57,207,328	72,330,816	88,998,443	56
Musculoskeletal system	1,484,054	1,582,023	1,647,346	11
Nervous system	76,839,656	70,244,941	61,120,038	-20
Anti-parasitics	143,278	164,268	157,412	10
Respiratory system	70,171,764	79,307,232	82,691,317	18
Sensory organs	9,159,309	9,434,214	7,796,674	-15
Various	5,236,690	7,740,345	8,483,802	62
Monitors and test-strips	8,757,904	8,814,316	9,093,592	4
Dietary foods	1,141,747	1,336,403	1,520,639	33
Medical devices	10,184,124	10,651,520	11,252,539	10
Total	473,165,097	519,614,078	550,006,634	16

Source: Draft Concept Paper on Bulgarian National Drug Policy.

2.4.5. Distribution and supply chain

93. The Bulgarian pharmaceutical industry has around 30 domestic companies. The largest is Sopharma, vertically integrated with a wholesaling operation, and owner of many pharmacies. The largest of the international companies with local manufacturing and packaging facilities is Actavis.

94. As of December 2014 there were 273 registered wholesalers in Bulgaria, with more than 320 warehouses. However, just five wholesalers supply more than 80 percent of the market.

95. In January 2014, there were 4,217 registered pharmacies in Bulgaria, of which approximately half were authorized to dispense NHIF subsidized prescriptions. Prescription medicines may only be dispensed and sold in pharmacies, whereas OTC medicines may be sold in both pharmacies and drug stores. According to the MOH in 2010 there were 965 drug stores registered in Bulgaria. While one individual may only own a maximum of four pharmacies, the same individual may own multiple entities of which each, in turn, owns up to four pharmacies, thereby controlling a large network and creating scope for anti-competitive behavior. One network of around 300 pharmacies is owned by a single entity, which also owns a wholesaler.

96. Wholesale and retail markups, set by the MOH, are proportional to drug costs, and are regressive. Wholesale markups range from 4 percent to 7 percent, with a maximum of Lev 10. Retail markups vary from 16 percent to 20 percent, with a maximum of Lev 25. These are added along with 20 percent VAT to form the maximum retail price via a complex formula (Table 13).

Table 13: Wholesale and retail markups for medicines

Ex-factory price			Wholesale price					Retail price				
Price (Lev)	VAT (Lev)	Total	Markup (%)	Markup (Lev)	Price (Lev)	VAT (Lev)	Total	Markup (%)	Markup (Lev)	Price (Lev)	VAT (Lev)	Total
5	1.00	6.00	7	0.35	5.35	1.07	6.42	20	1.00	6.35	1.27	7.62
10	2.00	12.00	7	0.70	10.70	2.14	12.84	20	2.00	12.70	2.54	15.24
30	6.00	36.00	6	1.80	31.80	6.36	38.16	18	5.40	37.20	7.44	44.64
50	10.00	60.00	4	2.00	52.00	10.40	62.40	16	8.00	60.00	12.00	72.00
100	20.00	120.00	4	4.00	104.00	20.80	124.8	16	16.00	120.00	24.00	144.00
200	40.00	240.00	4	8.00	208.00	41.60	249.6	16	25.00	233.00	46.60	279.60
500	100.00	600.00	4	10.00	510.00	102.00	612.00	16	25.00	535.00	107.00	642.00

97. In addition to statutory markups, pharmacies’ revenues include dispensing fees of €1 per prescription (not per item), but this is only payable for prescriptions for items fully reimbursed by the NHIF. Because dispensing fees are low and retail margins proportional to drug costs, this creates incentives for pharmacists to dispense more expensive medicines.

2.4.6. Prescribing and dispensing

98. Prescribing by INN is not required and pharmacists are not legally permitted to dispense anything other than the brand of product in the prescription. Anecdotally, however, it seems that because retail margins are proportional, higher-priced products may be dispensed, especially without a prescription.

99. Many drugs are obtained without prescription, in part because of low and unpredictable rates of NHIF reimbursement and therefore of OOP costs, but also because it enables patients to avoid the cost and time of consulting a physician. Only medicines prescribed by a GP or specialist and bought in an NHIF-contracted pharmacy are reimbursed. Sales of prescription medicines via the Internet are not permitted.

100. Direct-to-consumer advertising of prescription medicines is not allowed, but promotion to prescribers by the industry is, and is thought to be influential in driving prescriptions of more expensive products. There has been some criticism over the effectiveness of the Bulgarian Drug Agency in controlling and supervising the advertising market.

101. Anecdotally there is also a high degree of mistrust of generic medicines and a lack of understanding of the evaluation processes or requirements for their marketing approval. Where a physician prescribes a medicine with a price higher than the reference or benchmark price, the patient must pay the difference OOP.

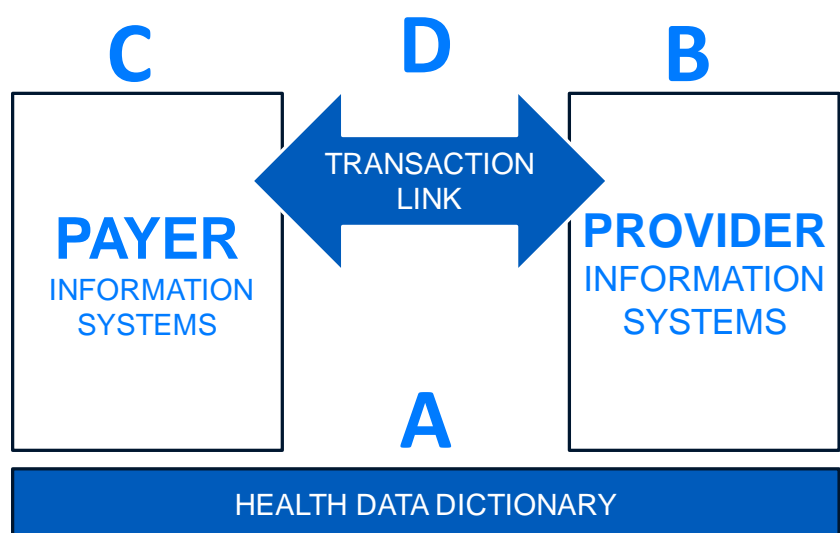
2.5. Health management information systems

102. A well-functioning, modern, integrated, and reliable health management information system (HMIS) is crucial for the operation of any modern health care delivery system, and perhaps equally indispensable to the smooth functioning of health financing. While health care in general lags behind other productivity-intensive industries by perhaps as much as 30 years in deploying full-function information systems, the gap is beginning to narrow, given the push from ever-more complex health financing programs. Without adequate systems, transactions require ever-larger staffs, suffer human errors, and create ever-longer delays in payments to providers.

2.5.1. A framework to describe and assess the performance of information systems supporting financing

103. With an aging population, fiscal pressures on health financing are unlikely to abate. Thus the complexity of health insurance systems and the pressure on efficiency in health delivery will only continue to increase. The management of a modern health financing system—which in Bulgaria means a health insurance fund—requires a solid yet flexible capacity to forecast needs (actuarial analysis—see Box 5), to analyze and monitor the use of funds (fund management), to adjudicate claims (claims processing), and to ensure accounting strength (financial accounting and reporting). A health insurance information system (HIIS)—or payer information system—is usually one of four main components in this environment (Figure 31). The following subsection looks at how each component is organized in Bulgaria.

Figure 31: The environment of an HIIS



Source: Authors.

104. *Standards setting* is the first step in creating an appropriate environment. Without consistent health information standards—contained in what is often called the “health data dictionary” (HDD)—consistent forms (electronic and paper-based for claims, appeals, authorizations, etc.), and consistent definitions for common statistics,⁵¹ there can be no “interoperability” between the payer and provider information systems (C and B in the figure).

105. The *provider information system*, supplying claims and receiving payments, and encompassing the hospital, clinic, pharmacy, and laboratory, etc. information systems,⁵² is at the point of service where costs are incurred (as medical services are rendered). So, collecting information as near as possible to where the service is rendered is important, and thus hospital information systems (etc.) have become more and more real time, fed with information before, during, and immediately after services are performed. In

⁵¹ Some examples: What do we mean by occupancy rate? What do we mean by nosocomial infection rate and how can it be consistently measured?

⁵² We use the terms provider information system and hospital information system synonymously. However, there are differences, as the former term can include systems in health venues other than hospitals, such as polyclinics and primary care clinics.

building such a system computers move from the back office to when and where services are given, used directly by caregivers for data input.

106. The HIIIS (or *payer information system*),⁵³ which must adjudicate claims and initiate payments, often becomes the largest system in the health industry overall, sometimes the largest in an entire country (depending on the complexity of the health finance method). Unlike provider information systems, which are now well understood and fairly ubiquitous around the world in all but the poorest of countries, payer information systems are more frequently one-of-a-kind custom-made software systems crafted for a specific environment, program, or country. This makes them complex, costly to develop, and even more expensive to maintain. Few people understand HIIIS designs, few vendors have had experience in developing and supporting them, and most governments pay little attention to them because they are hidden in the health insurance “factory” which, if running well, is out of sight.

107. Finally, to make the components work together, are the *transaction links between provider and payer*. The days of passing paper between these arms-length partners have passed. These transactions must flow electronically, with little friction, in a timely and secure way. Shared data (with proper controls and security) become available to all stakeholders, the quality and timeliness of these data are improved, and the ultimate usefulness of data flowing in this channel is optimized. The long sought-after quest for data that can more accurately measure quality of outcomes and utilization of resources can be accomplished if robust communication links are in place. In most countries, a subtle shift is taking place from the era of strung together, point-to-point connections between providers and payer(s) toward an era of closely managed and optimized star networks⁵⁴ of connections, including “clearinghouses” for routing transactions between financial partners.

2.5.2. The HDD and other information standards

108. Countries build their HDD in one of two ways—top down or bottom up. With the top-down approach, one or more working groups meet over perhaps a year to propose the national standards for coding, definitions for common terms, standardization of forms, etc. When finished, they ask the MOH and other stakeholders for comments and to accept their standards and agree to enforce them. Vendors and other systems builders are given some time (usually two years) to retrofit their existing (legacy) systems to make them compatible with the new standards. Vendors can even be ousted from the market if they do not comply within a reasonable time. This way the MOH can assure that every system “speaks the same language.”

109. With the bottom-up method, standards evolve, as ad hoc standards, and become gradually accepted owing to their widespread use by systems in the field. Incremental changes are made from time to time to improve the standards or to move to the latest coding standards,⁵⁵ but otherwise they evolve in a natural, organic way in response to changes in medical practice, laws, and regulation.

⁵³ We use the terms payer information system and HIIIS synonymously, though there are differences, depending on the nature of the payer or payers involved.

⁵⁴ A star network is simply a network through which all stakeholders communicate through a single point. At the center of the “star” can be a passive hub which merely routes messages between stakeholders, or it can be an intelligent point at which some edits can be run, some contextual data gleaned, and statistics generated. The earliest form of these “intelligent hubs” became known as clearinghouses, and today we see the trend to toward ever smarter “smart clearinghouses” which can play an important function organizing and tracking the flow of documents which pass through its gates.

⁵⁵ Coding standards of course change. The current standard for diagnostic coding is “ICD-10.” The next revision of the International Classification of Diseases, ICD-11, will be released by WHO sometime in 2017.

110. Bulgaria is building its standards from the bottom up. Its standards have evolved due to the presence of two or three active vendors of provider information systems, generating quite high standardization and strong acceptance of existing standards.

111. One of the unique features of the Bulgarian coding system is the CCP as the “case classifier” for hospital claims (see “The NFC and macro negotiations”). This case-rate-based convention is grounded in multiple clinical parameters and legislative ordinances into the hospital payment system. The mandated clinical characteristics of a case are combined with the details of particular ordinances if a case meets the qualifications of a CCP code. This mixture of clinical parameters and ordinances makes it very challenging to adjudicate claims by computer.

2.5.3. Provider information systems in Bulgaria’s health facilities

112. Unlike most other countries of the EU, Bulgaria’s market for provider information systems is dominated by only two or three vendors. The most common systems are used in the public and private sectors, particularly hospitals. From a system perspective, this presents an advantage, as in many countries these two sectors of the market tend to develop along different pathways and favor different vendors. In Bulgaria, the market dominance of the few large vendors has injected some discipline, giving rise to some useful de facto standards, which many other countries lack. However, there is also a downside—the fewer dominant vendors may have slowed the pace of innovation in recent years given a paucity of start-up competitors.

113. However, a rapid review of the products in hospitals and among all providers (including primary care and specialty care) suggests that the vendors in this marketplace have done a more than adequate job in introducing modern functionality, as well as making them compatible with data transmissions to the NHIF and MOH. The systems are usually at par with those in other countries of Bulgaria’s economic development, offering similar financial, clinical, and administrative performance.

2.5.4. The HIIS at the NHIF

114. The NHIF has operated three systems since its first in 1991. Each time, the development work was started from scratch and there is little evidence that the lessons learned from the earlier rounds were used in later incarnations. Despite long experience with earlier HIIS systems and while Bulgaria’s provider-side systems demonstrate reasonable functionality, the current system at NHIF is disappointing and limited.

115. The most recent system, built by BULL-Siveko, an international partnership (Bulgaria-Romania-France, the chief technical component is Romanian), was delivered in 2008 and last upgraded in 2010. Its cost has been estimated at about Lev 7 million, although it is likely that total expenditures from 2008–2014 amount to much more (perhaps three times) when one factors in indirect costs.

116. The system warranty expired three years after delivery and there does not appear to be any work for maintaining or upgrading the system (Box 2). The source code for the system is still held by the vendor, although a copy of an old version (which is now of questionable use) is held in escrow. Thus the staff of NHIF is largely hamstrung because they cannot themselves intervene in a system crisis even if they wanted to. Relations with the vendor are strained and even informal conversations between client and vendor appear rare.

Box 2: A danger facing the HIIS system

During discussions with NHIF for this report, we discovered that their HIIS system is without maintenance and support from its vendor. Nor can NHIF staff maintain the system because they lack the source code.

This is critical. Without maintenance, the NHIF risks having to abandon automation support for NHIF altogether if the system fails, for whatever reason. This would cause a serious crisis in NHIF operations, including disruptions and payment delays.

117. This poses serious challenges to the NHIF operations as the information system simply cannot be adapted to reflect the frequent regulatory changes in the NHIF environment. Increasingly, when a new requirement comes into play, the NHIF has had no alternative but to abandon those functions of the system that no longer agree with current laws and regulations. Little by little, the NHIF has had no choice but to revert to a manual process (paper-based) as these modules continue to be abandoned. Even the still-automated processes frequently also require paper submissions (creating “double-work” and “paper bloat”) because certain elements of the electronic submission no longer meet regulatory demands.

2.5.5. Transaction links between payer and providers, and between providers

118. Health finance transactions require careful orchestration of responsibilities between payer and provider. Each plays an important role (as buyer and seller of services) to make sure that the underlying financial transaction is processed correctly and (it is hoped) quickly. Thus the carrier of this information between the two parties—the transaction links—is important.

119. Transaction links exist with all major providers, have adequate bandwidth, and appear to work well enough. The other links—to the MOH, and more importantly between providers (for exchanging referrals, medical protocols, etc.)—are not so well run. These latter links are mostly ad hoc, and lack central management.

2.5.6. A brief summary of current HMIS systems in Bulgaria

120. Given present demands on the provider information systems, Bulgaria’s function adequately. Providers seem relatively satisfied with the systems in place, and can send claims electronically to the NHIF for payment, which is the most crucial requirement for such systems as it relates to supporting the health financing function. Obviously the first requirement of such systems should be the smooth functioning of the work of the health care delivery system, that of treating patients by serving information when and where it is needed to clinicians and allied health workers.

121. The HIIS is far more problematic. It is slowly deteriorating for lack of adequate support, and the NHIF is therefore reverting step by step to a manual processing system. The government seems to have no alternative but to directly tackle this issue and restore maintenance, or the system may well fail outright. These themes are picked up in more detail in the last two sections of Chapter 4, which follows an assessment of the performance of the health financing system.

Chapter 3. Assessment of health financing system performance

1. This chapter reviews the performance of Bulgaria’s health financing system on trends relative primarily to neighboring countries and EU averages, and spending efficiency. It uses the methodology described in the introduction and in particular international benchmarking on many dimensions, analyses based on micro data, and findings from the global and Bulgaria-specific health policy literature.
2. In analyzing this performance, it is important to keep in mind that it results from numerous public and private flows of funds, most importantly the NHIF and OOP spending,⁵⁶ each potentially having very different performance impacts and being subject to different policy levers.
3. As discussed, the NHIF is the largest *single unified* source of funding in the health system, accounting for 40 percent of all health spending, in principle covering the entire population and pooling health risks. Through its design, it embeds some core principles and a key question is whether it succeeds in meeting them. At the same time, OOP payments from millions of Bulgarian citizens constitute 47 percent of all health spending. These large amounts of unpooled OOP payments raise serious questions about equity, financial protection, and purchasing-efficiency aspects. Thus in analyzing financing performance—whether purchasing and risk pooling efficiency or equity, efficiency, and sustainability of revenue raising—one needs to consider the differential impacts of each of these two major financing sources beyond their combined impact.
4. This chapter shows that, while public health expenditure in Bulgaria is average for a country of its income, pervasive private (particularly OOP) expenditure explains above-average total health expenditure. Unsurprisingly, this translates into poor performance on providing financial protection to the population, both insured people and the 7–10 percent of uninsured Bulgarians. The efficiency analysis of NHIF contracting methods and pharmaceutical purchasing practices suggests that they also contribute to public funding being used suboptimally and limiting financial protection.

3.1. Trends and global comparisons in health financing: expenditures and revenues

5. This section summarizes trends and global comparisons holding income constant for 2012 for a range of health financing measures, in particular total, public, private, and OOP health spending in US\$ (at national exchange rates and international dollars, which correct for cost-of-living differences using PPP), total and per capita, and as a share of GDP.⁵⁷ (The full analysis is in Annex I.) Overall public revenue and expenditure efforts are assessed through global comparisons of government revenues and expenditures as a share of GDP, and prioritization is assessed through a global comparison of health spending as a share of the overall government budget. These measures are used as there is no single “right” way to determine “appropriate” health spending levels in a given country. Each measure provides complementary information about health spending.

3.1.1. Trends in expenditure: level and breakdown between public and private

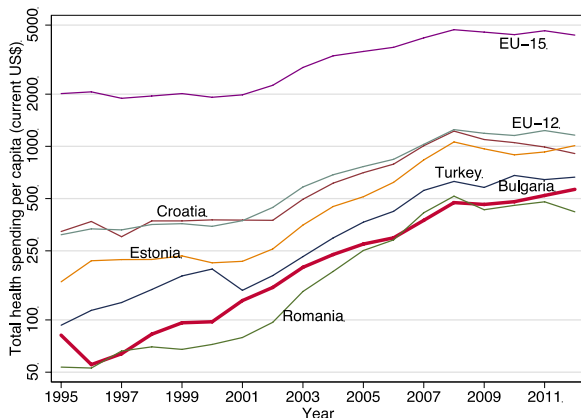
6. While per capita health spending in Bulgaria is still below EU averages, correcting for income, Bulgaria spends more than other comparable-income countries in the rest of the world. Total expenditure in Bulgaria increased from 5.2 percent to 8.0 percent of GDP between 1995 and 2012 (see Chapter 2).

⁵⁶ This is not meant to suggest that the composition of Bulgaria’s public spending is not problematic as the relatively lower non-NHIF public spending on basic public health activities than on hospitals has important impacts on health outcomes and equity.

⁵⁷ A background document shared with the government presents further analyses, international comparisons, and trends.

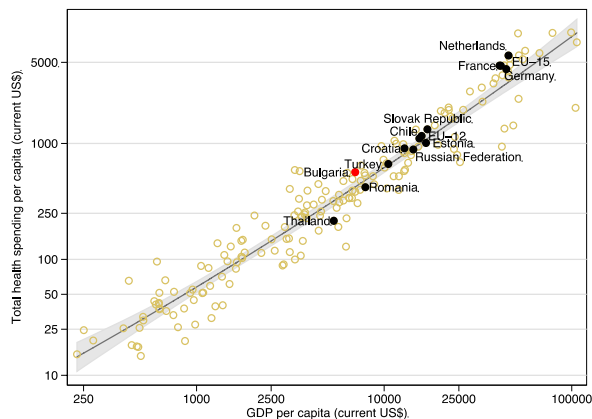
Over the same period, per capita health spending at national exchange rates climbed from \$82 to \$566, while at PPP it increased from \$295 to \$1,139. Compared with regional neighbors, Bulgaria's total per capita health spending started from a much lower base but its upward trend generally mirrored those of regional neighbors like Croatia and Romania. Still, it remained lower than the EU12 and EU15 averages in 2012 (\$1,160 and \$4,379—Figure 32), but on a global scale total health spending per capita (Figure 33) and as a share of GDP⁵⁸ in 2012 was above the average of countries at similar incomes.

Figure 32: Total health spending per capita, Bulgaria and comparators, 1995–2012 (current US\$)



Source: World Development Indicators and WHO NHA 2014.

Figure 33: Total health expenditure per capita versus income per capita, 2012 (current US\$)



Source: World Development Indicators and WHO NHA 2014.

7. Public spending on health in Bulgaria is similar to that in comparable-income countries worldwide. Public spending on health can be measured in several ways, including as shares of total health spending and GDP, public spending per capita in exchange-rate and international dollars, and public spending on health as a share of all public spending, which measures the priority given to health relative to other public expenditure. In 2012, public health spending represented 51 percent of total health spending. As a share of GDP, this constituted 4.1 percent, or \$291 per capita. Figure 34 and Figure 35 provide global comparisons for 2012. Public health spending is about average for all measures, except that the public share of total health spending is slightly below average.⁵⁹ At around 12 percent, public health spending as a share of the total government budget is slightly above average.

⁵⁸ See Background document.

⁵⁹ This is the result of higher than average private expenditure rather than below average public expenditure per se.

Figure 34: Public health expenditure per capita versus income per capita, 2012 (current US\$)

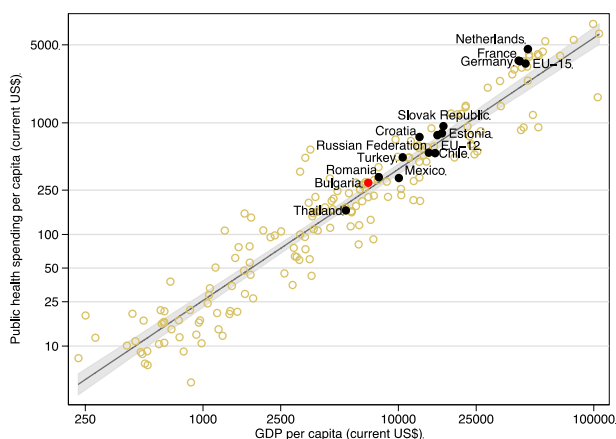
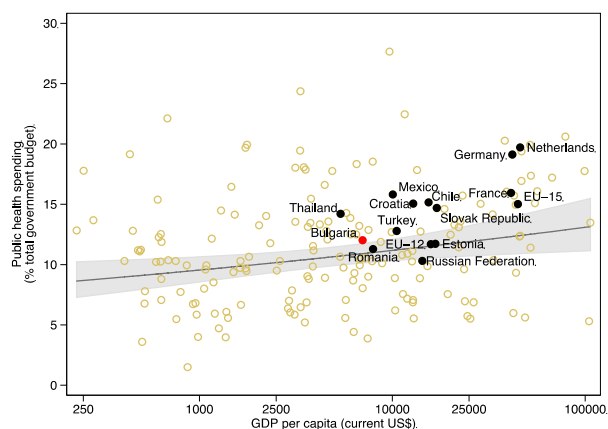


Figure 35: Public health expenditure as a share of total government expenditure versus income per capita, 2012



Source: World Development Indicators and WHO NHA 2014.

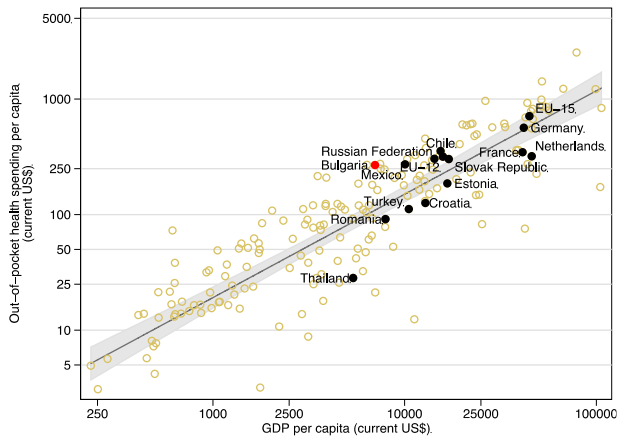
Source: World Development Indicators and WHO NHA 2014.

8. Bulgaria is, however, an outlier on private, notably OOP, expenditures, reflecting the rapid growth of private spending since 1995. Private spending has very important implications for financial protection and the equity of the health system, as it comes out of households' budgets and is thus more likely to be constrained by wealth but driven by need. Private insurance can provide some financial protection through the pooling of risks and their redistribution between healthy and sick individuals and households, but without public subsidies this does not happen between the poor and better off. OOP payments are thus likely to directly affect the household's financial status and can push households into poverty. The WHO considers that a system in which OOP payments represent more than 20 percent of total health expenditure cannot be expected to protect people from falling into poverty due to unexpected high health costs. Given that OOP payments account for almost 98 percent of all private health spending in Bulgaria, the following discussion focuses on them.⁶⁰

9. OOP payments that limit the financial risk protection provided by the system are remarkably high in Bulgaria. As a share of total health spending (47 percent), as a share of GDP (3.8 percent), and per capita (\$268 in exchange rates and \$540 in PPP), OOP spending in 2012 is far above global averages (see for instance Figure 36). Bulgaria is thus far from meeting the WHO criterion of financial protection, as OOP is much higher than the threshold of 15–20 percent as a share of total health spending. Further, comparisons with neighboring countries highlight that the situation has deteriorated markedly: OOP has increased by more than 20 percentage points from 1995 to 2012 (Figure 37). Figure 38 highlights that countries such as Thailand, Chile, Mexico, and Turkey, which started from a similar or higher base, have made tremendous progress in reducing OOP expenditure.

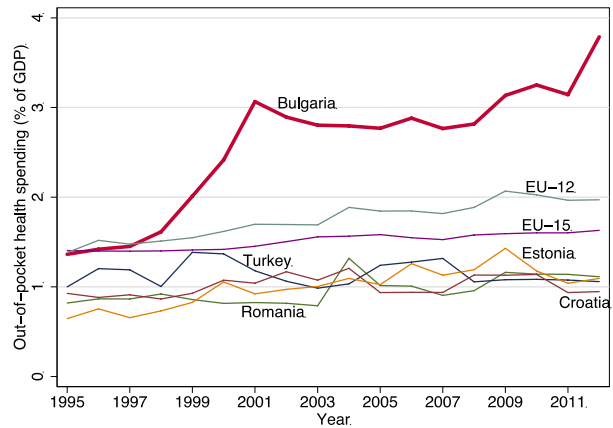
⁶⁰ All analyses and global comparisons of private expenditure are presented in a background document shared with the government.

Figure 36: OOP health expenditure per capita versus income per capita, 2012 (current US\$)



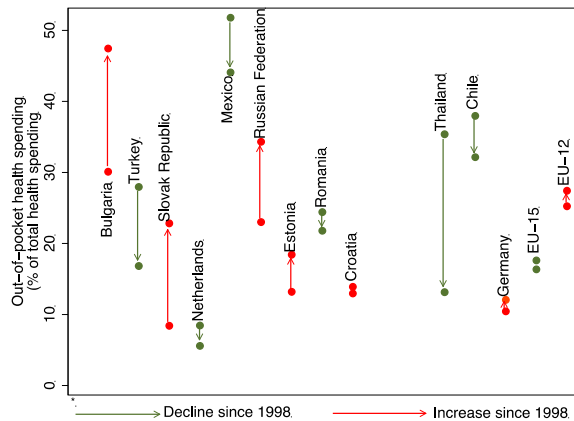
Source: World Development Indicators and WHO NHA 2014.
Note: x-axis log scale.

Figure 37: OOP health expenditure as a share of GDP, Bulgaria and comparators, 1995–2012



Source: World Development Indicators and WHO NHA 2014.

Figure 38: Changes in share of OOP spending, 1998–2012



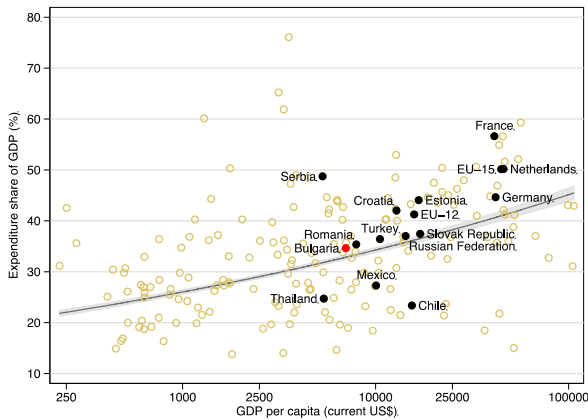
Source: World Development Indicators and WHO 2014.

10. In sum, relative to both EU averages and neighboring countries, while total and public health spending increases mirror those of regional comparators, private—particularly OOP—shares far exceed those comparators’ shares, having risen sharply. This is rather counter to the well-established relationship of diminishing private (and OOP) shares associated with increasing GDP and is potentially problematic for equitable financial protection to households—points further explored below.

3.1.2. Trends in government finance and health prioritization

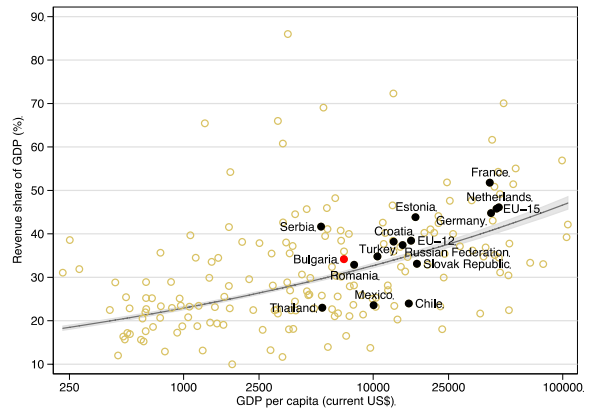
11. Bulgaria gives relative priority to health, in the context of an overall prudent fiscal policy. Total government spending relative to GDP (the expenditure effort) and total revenues relative to GDP (the revenue effort) are both slightly above other similar-income countries’ averages (Figure 39 and Figure 40). The government’s prioritization of health in the budget is also slightly above the global trend (Figure 41), but mirrors that of neighboring countries and EU averages.

Figure 39: General government expenditure share of GDP versus GDP per capita, 2012



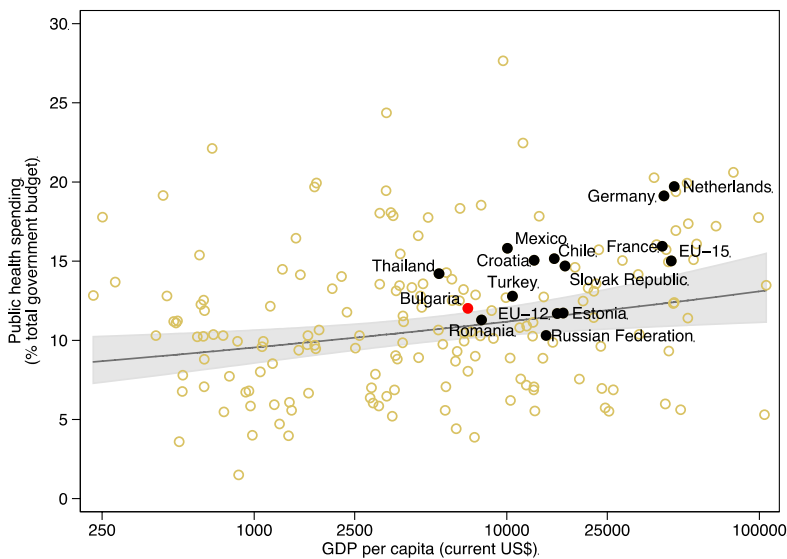
Source: World Development Indicators, WHO NHA, NSI NHA 2014.

Figure 40: General government revenue as a share of GDP versus GDP per capita, 2012



Source: World Development Indicators, WHO NHA, NSI NHA 2014.

Figure 41: Public health expenditure as a share of total government expenditure versus income per capita, 2012



Source: World Development Indicators, WHO NHA, NSI NHA 2014.
Note: Both axes log scale.

12. Although Bulgaria’s current public revenue and spending efforts are slightly above those of other comparable-income countries, from 1999–2012 both revenues and expenditures grew 7 percent a year less rapidly than GDP (Table 14). In the most recent period (2005–2012), revenues grew 23 percent less fast than GDP, while expenditures grew 3.1 percent more quickly, indicative of government deficits in the wake of the global financial crisis. In terms of the prioritization of health in the budget, in recent years (2005–2012) expenditure on health has grown some 10 percent per year less rapidly than total public expenditure. Yet overall between 1999 and 2012, public spending on health grew 3.6 percent a year faster than overall government spending.

Table 14: Nominal elasticities of health and government spending

	1999–2012	2005–2012
Public health spending relative to GDP	0.970	0.930
Government revenue relative to GDP	0.928	0.770
Government expenditures relative to GDP	0.929	1.031
Public health spending relative to government expenditures	1.036	0.898

Source: IMF *World Economic Outlook* and WHO 2014.

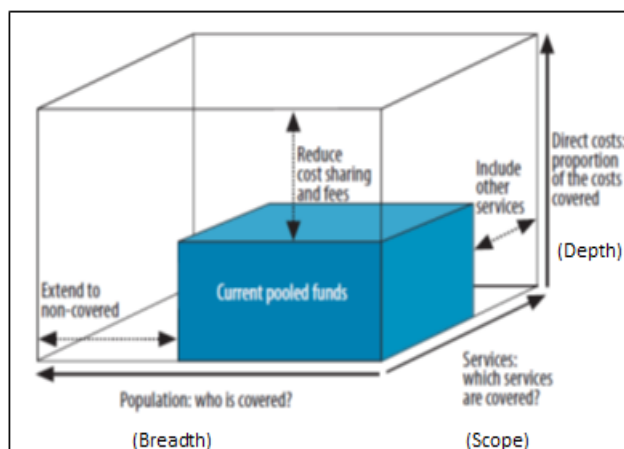
13. In short, despite a recent curbing in the growth of health expenditure relative to other government spending, it appears that health has been given priority in the last 15 years, which helps explain its slightly above-average share (11.8 percent) of overall public expenditure. These trends, coupled with the total, public, and private health spending-to-GDP elasticities, help explain (i) the absolute increases in total, public, and private health spending; (ii) the increasing total and private shares as a share of total health spending, combined with a declining public share; (iii) large increases in the total and private spending shares of GDP and a relatively constant public share; and (iv) an increasing government health spending share of the total government budget.

3.2. Financial protection and equity

14. The core objective of any health insurance system is to protect individuals from unexpected large health expenditures that they cannot afford. Given heterogeneity in health needs and ability to pay, providing adequate financial protection equitably usually entails cross-subsidies from the healthy to sick and from the rich to poor.

15. More generally, the goal of universal health coverage, as espoused by WHO, is to ensure that individuals have access to the health services that they need without suffering financial hardship when paying for them. To assess whether a health system is meeting these objectives, three dimensions of health coverage are typically considered: *breadth* (or who is covered); *scope* (which services are covered); and *depth* (the proportion of health care expenditures covered) (Figure 42).

Figure 42: The dimensions of health insurance coverage



Source: WHO 2010.

16. This section, first, summarizes the evidence on the population’s insurance coverage. While according to Bulgarian law all residents should be insured, this is not the case, and there are many questions on how many people are not covered and who they are. Second, it analyzes data on OOP payments—existing and new—to determine the extent to which the health financing system contributes to providing financial protection to the population, and if it does so equitably.⁶¹ Lastly, it reviews NHIF data on expenditure by age, gender, and district, for an analysis of distribution.

3.2.1. Insurance coverage

How many uninsured?

17. Identifying who is covered and who has access to the NHIF’s BBP is not straightforward in Bulgaria. In 2013, estimates for those lacking coverage ranged from 24.4 percent of the population to 7.3 percent (Table 15 and Table 16). The true rate likely lies somewhere in between, and considerable measurement issues related to seasonal migration and adequate representation of minority groups make triangulation of multiple data sources necessary.

18. According Dimova et al. (2012), 23 percent of the population lacked insurance coverage in 2011. An analysis by the NRA provides an explanation. Under the Health insurance Act, all Bulgarian citizens should be covered.⁶² The NRA compares data on the number of Bulgarian citizens with health insurance at one point in time (from the NHIF Register of Health Insured Persons) to estimates of the total number of Bulgarian citizens (from the Single Civil Registration and Administrative Services to the Population system). Using this method, it finds that 24.4 percent of Bulgarian citizens lack coverage.

19. However, most experts agree that this high estimate does not reflect reality because many Bulgarians live abroad, more or less permanently. While there is no accurate information on their number (who by law can be covered by the NHIF’s benefits package but likely receive coverage from their host countries as well), it is estimated to be high (more than 1.1 million people). Once this is taken into account and the NRA restricts its attention to Bulgarian citizens residing in the country, it estimates that 11.8 percent of the population lacks coverage (see Table 15).

Table 15: Past estimates of the uninsured population

Source	Estimate (%)	Year	Calculation
Media/Dimova et al. (2012)	23	2011	Not known
NRA (1)	24.4	2013	Includes all citizens of Bulgaria
NRA (2)	11.8	2013	Adjusts for estimates of citizens permanently living abroad
Nationally representative survey in Atanasova et al. (2013)	12.1 9.3	2011 2012	Does not use population weights

Sources: Dimova et al. 2012; National Revenue Agency 2013, “Analysis of Persons Lacking Health Insurance”; Atanasova et al. 2013.

⁶¹ According to the OECD, household OOP payments comprise: “cost-sharing, self-medication and other expenditure paid directly by private households, irrespective of whether the contact with the health care system was established on referral or on the patient’s own initiative.”

⁶² Article 33. The following shall be covered by compulsory insurance provided by the National Health Insurance Fund: 1. all Bulgarian nationals who are not citizens of another State as well; ...

20. The lower NRA figure is more in line with estimates obtained from household surveys. Using two nationally representative cross-sectional surveys, Atanasova et al. (2013) estimate that 12.1 percent (in 2011) and 9.3 percent (in 2012) of the population lacked coverage. While this study arrives at estimates in range of the NRA’s estimate that takes into account long-term migration, both analyses leave some questions open. Both census data and standard household survey designs could miss minority populations, such as the Roma population or the poorest households, especially if they live in informal settlements or in segregated communities that may be difficult to access by surveyors.⁶³ Not only would such omissions affect the estimated proportion of Bulgarian residents without insurance, but would also make it hard to accurately (representatively) estimate the coverage rates for these potentially vulnerable populations.⁶⁴

21. Another series of nationally representative household surveys, however, was designed to avoid this issue of missing minority populations and to provide separate estimates for various population groups. The Crisis Monitoring Surveys (CMS) of 2010 and 2011 and the Bulgarian Longitudinal Inclusive Society Survey (BLISS) of 2013 included a booster sample of nearly 900 communities identified by experts of the Roma population as having a predominantly Roma population. These surveys were designed to be household panels, so it is possible to follow the same households over time and track transitions into and out of insurance to obtain estimates of the stability of insurance coverage.

22. Estimates from the BLISS survey suggest that only 7.3 percent of Bulgarian residents lacked insurance coverage in 2013, with similar coverage rates implied by the three CMS rounds of 2010 and 2011 (Table 16). Like most household surveys, the BLISS and CMS samples included only households who were living in Bulgaria at the time of the survey. Thus seasonal migrants—in addition to those who do not reside permanently in another country—are not captured. To the extent that this group can be captured by Census data and that it has a higher propensity to be uninsured, it is reasonable to expect a representative coverage estimate from the BLISS and CMS surveys to be slightly lower than the NRA estimate.

Table 16: New estimates of uninsured population based on population-weighted surveys

Source	Estimate (%)	Date
BLISS	7.3	2013
CMS—Round 1	6.0	February 2010
CMS—Round 2	7.5	October 2010
CMS—Round 3	7.4	February 2011

Note: All four estimates used weights and a booster sample of segregated communities. Samples do not include migrants.

23. The triangulation of the various above sources suggests that 7–8 percent of the population living in Bulgaria at any point in time is not covered by the country’s statutory health insurance. It is also likely that some people who work broad seasonally may not be insured when they come back, putting the proportion of the uninsured at perhaps 7–12 percent of the Bulgarians who do not live abroad permanently. While these estimates are lower than media reports, the uninsured population still potentially poses a problem, especially if those excluded are not outside the system by choice and cannot afford to pay the premiums.

⁶³ Estimates from the European Commission (2011) suggest that 10.3 percent of the Bulgarian population comes from the Roma community, while the latest census suggests that the Roma account for 4.9 percent of the population.

⁶⁴ The representativeness of the basic coverage estimates in Atanasova et al. (2013) may also be a concern. The estimates of the proportion of the population without insurance coverage appear to be raw means, rather than population-weighted averages, and there is nothing in the description of the survey to suggest that a self-weighting sampling design had been used.

Who are the uninsured?

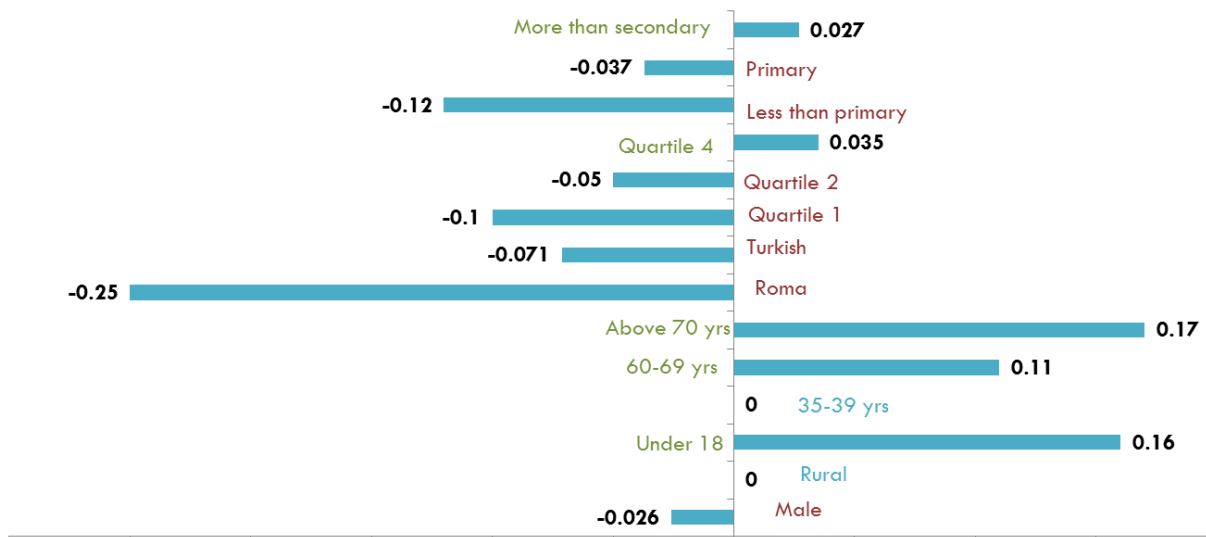
24. These representative household surveys permit an analysis of heterogeneity to ascertain whether particular population groups are more or less likely to lack coverage and to gauge whether lack of coverage is associated with low socioeconomic status (and thus low ability to pay for coverage). The data from the 2013 BLISS indeed suggest a pronounced disadvantage for minorities and populations with lower socioeconomic status and for age groups whose contributions are not covered by the state. Children and the elderly—whose contribution is paid by the state and who are statutorily insured—almost uniformly have coverage (only 1 percent of those under 18 years of age and only 0.5 percent of those over age 70 report a lack of coverage). On the other hand, 13 percent of individuals 18–34 years old and 12.5 percent of those 35–59 years report no coverage. Around 16.5 percent of those in the bottom quartile of a wealth distribution defined by household amenities and asset ownership did not have coverage, while only 2.7 percent of those in the highest quartile did not.⁶⁵ Nearly 35 percent of the Roma population lacked coverage, against only 4.7 percent of the ethnically Bulgarian population (although Bulgarians still represent more than half the uninsured). More than 11 percent of those reporting to have not worked in the previous four weeks lacked coverage, against 4.5 percent of those reporting having worked.

25. These patterns persist in a multiple regression framework that accounts for the fact that many of these factors may be correlated—for example, the Roma population also tends to be resource poor and to exhibit low rates of educational attainment (Figure 43).⁶⁶ The results suggest that compared to female residents, Bulgarian men are on average 2.6 percentage points less likely to be covered, when all other characteristics are the same. Rural residents are statistically indistinguishable from their urban counterparts, just as individuals aged 35–59 are indistinguishable from those aged 18–34 years. The age groups whose contributions are handled by the state—those under 18 years and the pension-eligible population—are 11–17 percentage points more likely to be covered, all else equal. Relative to the third quartile of the wealth distribution, the bottom two quartiles are 10 and 5 percentage points less likely to have health insurance, while those who have not completed primary schooling are similarly disadvantaged—12 percentage points less likely to report coverage than those who have completed a secondary education. The Roma population, even after controlling for resource poverty and low rates of educational attainment, is still 25 percentage points less likely to be covered, while the Turkish population is 7 percentage points less likely. Having a university degree confers a slight advantage for coverage. All results remain virtually unchanged even when comparisons are made within each district and the effects of district-specific attributes are thus removed.

⁶⁵ Items in the wealth index include total area of the dwelling; the availability in the dwelling of water supply, hot water, electricity, piped in gas, flush toilet, bathroom, central heating, cable TV connection, internet connection, and sewerage; and the number of televisions, video or DVD players, satellite antennae, audio systems, microwave ovens, refrigerators, freezers, and washing machines.

⁶⁶ Regression coefficients were estimated with a linear probability model so that they could be interpreted as changes in probabilities. In some instances, however, this produces predicted probabilities greater than 1. Results are robust to maximum likelihood estimation, such as a logistic regression, which limits predicted coefficients to a range between 0 and 1.

Figure 43: Estimated coefficients of a multiple regression of insurance coverage on demographic and socioeconomic characteristics



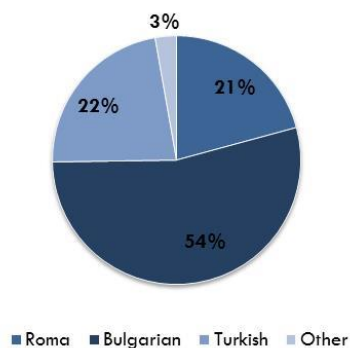
Source: BLISS 2013 data. The omitted category is an ethnic Bulgarian 18–34-year-old female with secondary education from the 3rd quartile of a wealth distribution calculated from ownership of assets and the presence of certain household amenities. Her coverage probability is 91 percent. For each variable, the coefficient indicates the change in her probability of being insured if one characteristic changes while all others stay the same. So, if this woman were in the poorest 25 percent of households, her probability would decrease from 91 percent to 81 percent.

26. These figures are instructive for comparing the propensity for different population groups to report insurance coverage, but do not provide a complete picture of the composition of the uninsured as they do not account for differences in the size of each group. Despite the strong disadvantage in coverage rates, the Roma population is still a minority among the insured (Figure 44). The majority of uninsured people (54 percent) are ethnically Bulgarian. Because each quartile of the wealth distribution contains by definition the same number of households, if wealth played no role in coverage, a quarter of the uninsured population should fall in each income quartile. The bottom quartile, however, accounts for 42 percent of the uninsured (Figure 45). As pointed out by NRA (2013), a substantial share of the uninsured are people who are aware they should contribute but cannot afford it.

27. This disproportionate representation of the poor among the uninsured likely not only reflects financial constraints. Other explanatory factors include rigid eligibility criteria for social assistance, a lack of understanding by the uninsured of options available to them to obtain assistance in paying contributions, a reluctance to take advantage of these options, and misperceptions of the need for coverage. For instance, the 2009 Open Society Institute (OSI) survey among uninsured showed that around half of them did not know that they could seek support from government institutions and 20 percent did not trust that help would be forthcoming if they asked. In other words, financial constraints are not the only barrier that needs to be overcome to increase coverage (OSI 2009).

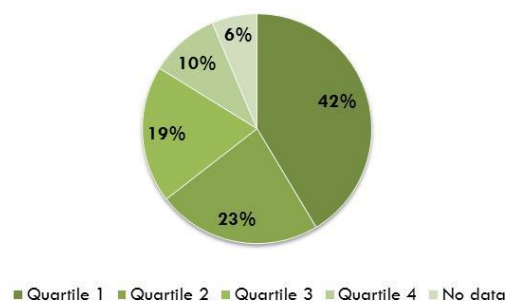
28. The top income quartile accounts for 10 percent (see Figure 45) of the uninsured, so while clearly the majority of the uninsured are poor, a non-negligible part of the uninsured are quite well off. The top two quartiles account in fact for nearly 30 percent of uninsured Bulgarian residents, a fraction consistent with (i) estimates by the NRA of the population who “are aware of the fact that they owe health insurance contributions, who can afford to pay them, but are unwilling to do so;” and (ii) qualitative findings that suggest a “pay-for-services-obtained” mentality toward health insurance (OSI 2009).

Figure 44: The uninsured population by ethnic group



Source: BLISS 2013 data.

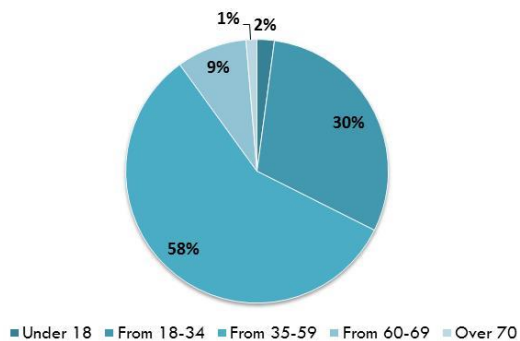
Figure 45: The uninsured population by wealth quartile



Source: BLISS 2013 data.

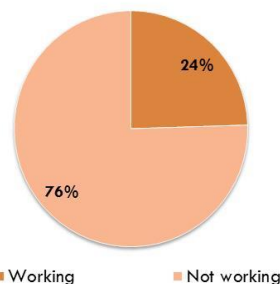
29. Consistent with the regression results—and as expected because they are covered by the state—children and the elderly account for a very small fraction of the uninsured (Figure 46). Finally, and as expected given that coverage is for a large part linked to employment, the vast majority of the uninsured are not working (Figure 47). In 2013, the NRA cites data from the NSI to estimate that more than 240,000 people had been without a job for 12 months or more. Given that after 12 months of unemployment individuals must pay their contributions on their own to receive coverage, it should not be surprising that the unemployed forgo coverage.

Figure 46: The uninsured population by age group



Source: BLISS 2013 data.

Figure 47: The uninsured population by employment status



Source: BLISS 2013 data.

Stability of insurance coverage

30. Since 2010, individuals lose their statutory health insurance coverage when they fail to make three monthly contributions over 36 months, and some reports suggest that there is some flux when it comes to coverage—that individuals may gain and lose coverage over certain intervals (OSI 2009). The coverage estimates discussed above could be misleadingly low if people are constantly transitioning into and out of coverage—in particular, if the set of the uninsured is constantly changing or if all individuals have a high chance of joining the uninsured for some time, however brief. Data from the CMS and BLISS surveys suggest that while around 6 percent of the Bulgarian resident population transitioned into or out of coverage between 2010 and 2013, nearly half of those lacking coverage in 2013 had been covered in

2010. Additional analyses⁶⁷ suggest greater risk for people aged 18–59, minority populations, the poor, and those with limited education.

31. The above analysis of representative household surveys suggests that Bulgaria is falling short of its intention of providing coverage to all citizens. Children and the elderly are well protected, but 7.4–11.8 percent of the (mostly) working-age population lacks health insurance coverage at any given time. The data further suggest that while 6 percent of the population changed coverage status between 2010 and 2013, nearly half the uninsured in 2013 had been covered in 2010. Around a third of the uninsured could probably afford to pay for their coverage; the rest, however, tend to be in poor households with little education in which minorities are more frequently represented than among the general population.

3.2.2. Effective financial protection

32. The proportion of total expenditure paid OOP in Bulgaria is far higher than in countries with comparable income, as said. Patients who have to pay substantial amounts this way may be pushed into poverty because of health care costs or may simply be put in a position where they have to forgo care. Although budget surveys have limitations, and in particular cannot disentangle the effects of the three dimensions of insurance coverage (breadth, scope, and depth—see Figure 42), they provide insights into the nature and impact of OOP payments for care (Box 3). This section now estimates OOP payments and health-induced impoverishment from the Bulgarian Household Budget Survey.

Box 3: Using the Household Budget Survey to assess financial protection: strength and weaknesses

Bulgaria conducts yearly budget surveys for which households provide information on how much they spend on consumption items and health care. When assessing the financial burden of health payments, surveys are known to have some biases.

For instance, with relatively rare events like access to health services, the recall period needs to be longer, which may compromise accuracy. Households are also reluctant to report informal payments. Surveys, particularly if the health module is not detailed, also tend to underestimate private payments and underreport informal payments.

The budget survey is a unique source to understand the level and nature of health payments and link them to household characteristics. The NSI survey is conducted yearly. For this report, the World Bank team secured access to the data for 2010 and 2013 (2007 data were already available), and results of the analysis are presented in this section. One limitation of the recent surveys is that while in 2007 expenditure was available at the individual level, in most recent waves it is not the case, therefore variations in spending cannot be correlated with individual characteristics such as age, health status, or insurance coverage.

OOP payments by households include cost sharing (see Section 2.2.4 “Benefits covered and cost sharing”), as well as direct payments by the households for goods and services not covered by the NHIF or MOH, in particular medicines, medicinal products, and medical devices, which represent a considerable share of the total according to the NHA from the NSI. The survey instrument does not distinguish between these various types of OOP payments.

OOP payments

33. OOP payments are a common metric for assessing the extent of financial protection. In Bulgaria, the share of household budgets spent on health is relatively high, at 5.3 percent in 2013, against about 3 percent on average in Western Europe (Smith and Nguyen 2013). As expected given the OOP trends captured in the NHA data discussed earlier, this proportion has also risen steadily,⁶⁸ from 3 percent in 1999.

⁶⁷ Available on request from the authors.

⁶⁸ <http://www.nsi.bg/en/content/5703/annual-data>

34. Expenditures on drugs account for the biggest share of OOP payments—across all income quintiles, 74 percent in 2013 (Table 17). This rate mirrors the NHA findings on private expenditure on health, and likely results from a mismatch between the objective of NHIF pharmaceutical policy—limiting the funds’ financial exposure—and the broader principle of providing financial protection and access to essential drugs (see Chapter 4). A multiple regression analysis of the Household Budget Survey suggests that OOP expenditure varies across households. When household demographics and characteristics of the household head are held constant, an additional elderly person above 65 years old in a household is associated with 34 percent more OOP spending, while every child below 14 years is associated with 4 percent more.

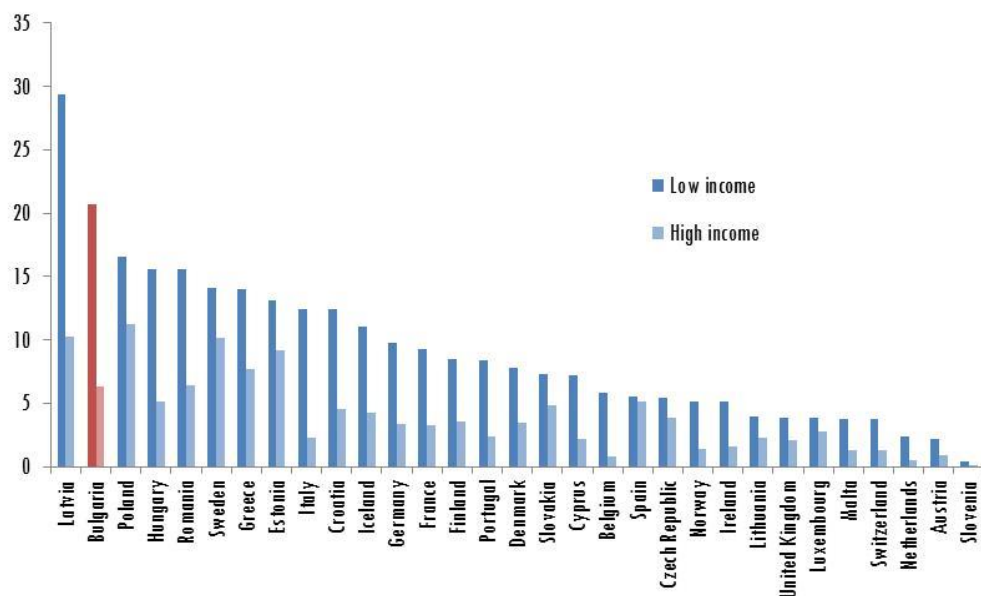
Table 17: Breakdown of OOP payments by type of care and by income quintile, 2013 (Lev, %)

Quintile	Pharmaceutical products (%)	Other medical products (%)	Therapeutic appliances (%)	Medical services (%)	Dental services (%)	Paramedical services (%)	Hospital services (%)	Total
Poorest	300.6 (85)	0.8 (0)	9.2 (3)	10.9 (3)	8.6 (2)	3.9 (1)	20.6 (6)	354.6
2	386.4 (84)	2.7 (1)	16.7 (4)	13.7(3)	17.2 (4)	8.1 (2)	17.3 (4)	462.1
3	437.5 (72)	3.8 (1)	24.4 (4)	21.1 (3)	31.3 (5)	10.3 (2)	79.8 (13)	608.2
4	390.1 (73)	2.3 (0)	32.7 (6)	22.8 (4)	43.3 (8)	17.1 (3)	28.3 (5)	536.6
Richest	452.8 (64)	3.4 (0)	34.2 (5)	40.7 (6)	98.0 (14)	36.2 (5)	44.6 (6)	709.9
Bulgaria	393.4 (74)	2.6 (0)	23.4 (4)	21.9 (4)	39.7 (7)	15.1 (3)	38.1 (7)	534.2

Source: Household Budget Survey 2013; authors’ calculations.

35. The level of OOP spending increases with income (see the table). A regression adjusting for other characteristics shows that households below the poverty line spent 51 percent less OOP than those above the line. Part of the difference is explained by household choices: for instance, richer households can more easily choose to pay for private services if they want to avoid long waiting periods. At the same time, lower-income households are more likely to focus on care that is more necessary and they may even have to forgo care (which would also explain lower OOP spending). Given that poorer households are typically more prone to poor health, this might point to some of the poor forgoing care (Atanasova et al. 2013). Indeed, Bulgaria ranks second only to Latvia on self-reports of unmet need among the lowest income quintile, according to EU-SILC data from 2012 (Figure 48).

Figure 48: Proportion of the population declaring having forgone care

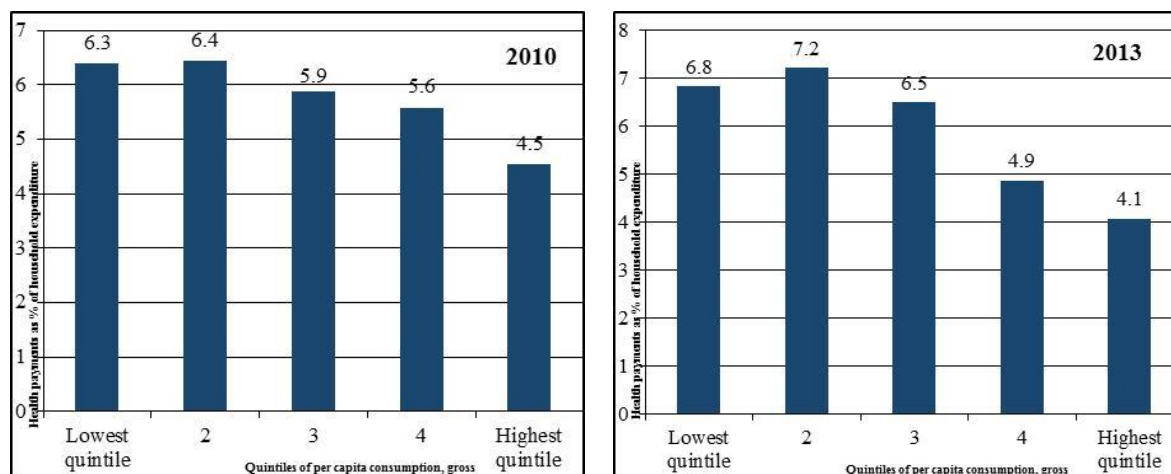


Source: EU-SILC data 2012.

Impoverishment

36. To assess the burden of OOP payments in Bulgaria, a natural starting point was to examine if the proportion of the income households spend on health varies with their wealth. Figure 49 shows a very clear gradient: the richer the household, the lower the proportion of income spent on health. That households in the poorest quintiles allocate a slightly lower share of expenditures on health care than the second quintile also suggests that they are probably limited in how much they can spend without compromising other essential necessities and that they do forgo necessary health care. A comparison between 2010 and 2013 data suggests that these differences between the poorest and most affluent groups are becoming more marked, and the financial burden on the bottom three quintiles is increasing, while decreasing for the better off.

Figure 49: Health payment shares by quintiles



Source: Authors' calculations using Household Budget Surveys 2010 and 2013.

37. Spending a large proportion of their budget on health care payments, households may deprive themselves of consumption of other goods and services. The international literature deems health payments as “catastrophic” when they represent a high proportion of household income. Table 18 shows the proportion of households for which payments represent more than various thresholds (5–40 percent). Almost 20 percent of households in Bulgaria spent 10 percent or more of their total outgoings on health care in 2010 and 2013. This figure is well above the EU15 average of 5.8 percent and even higher than countries such as Vietnam and Bangladesh, with 15 percent of households above this threshold (van Doorslaer et al. 2007). In most Europe and Central Asia countries, catastrophic spending is more frequent among better-off households (Smith and Nguyen 2013). In Bulgaria, however, catastrophic spending is more prevalent among poorer households regardless of the threshold, suggesting weak financial risk protection.

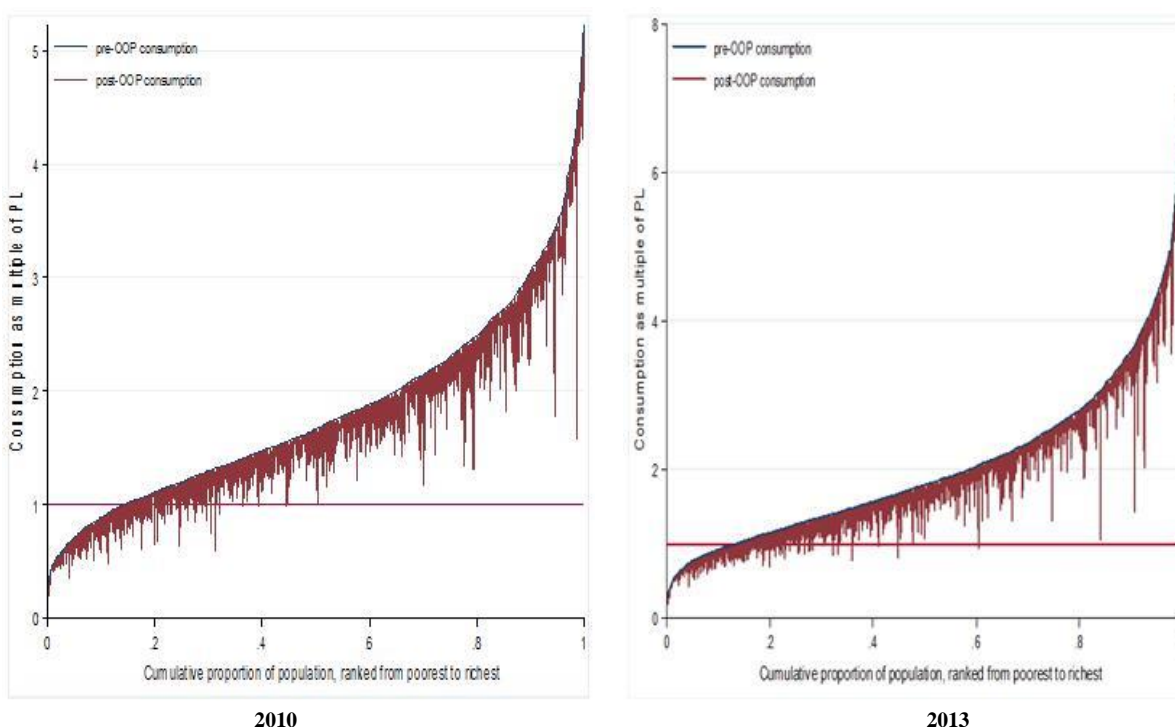
Table 18: Catastrophic expenditure headcounts, by various thresholds

	2010					2013				
	5%	10%	15%	25%	40%	5%	10%	15%	25%	40%
Lowest Quintile	38.8	24.3	15.5	3.5	1.0	47.6	27.5	13.7	3.2	0.2
2	43.6	25.2	12.1	2.5	0.4	49.5	27.7	14.2	3.3	0.1
3	39.8	20.8	9.6	1.8	0.1	45.6	21.1	10.7	2.9	0.7
4	36.4	17.7	7.5	2.1	0.5	32.4	13.7	5.7	1.8	0.2
Highest Quintile	29.9	10.6	5.1	1.8	0.3	21.8	7.9	5.0	1.7	0.6
Total	37.7	19.7	9.9	2.4	0.5	39.4	19.5	9.9	2.6	0.4

Source: Authors’ calculations using Household Budget Surveys 2010 and 2013.

38. Excessively high household expenditures on health payments can push some households into poverty. If a household has total consumption expenditures (pre-OOP) above the national poverty line but its total nonmedical spending (post-OOP) is below the poverty line, it could be considered to have suffered impoverishment due to OOP spending for health. Figure 50 shows households ranked per capita by consumption expenditure (x-axis) and health expenditure (y-axis). The spikes show the difference between expenditure of the household before and after health spending, and how some households are pushed into poverty. The figure depicts relatively weak financial risk protection that is worsening—in 2013, even some households in the richest quintile fell below the poverty line after spending on health.

Figure 50: Per capita expenditure, gross and net of health spending



Source: Authors' calculations using Household Budget Surveys 2010 and 2013.

39. In 2010, 14.2 percent of the population had expenditure below the official poverty line. When payments for medical care are taken into account, the headcount rises to 18.0 percent (Table 19). This means that 3.8 percent of the population who previously did not fall below the poverty line did, once health payments are factored in (those whole spikes fall below the line in Figure 50). In 2013, this figure rose to 4.2 percent, a rate high for Bulgaria's economic position, giving it the second highest level among its regional neighbors. Only 1.3 percent fell below the poverty line for these reasons in Kyrgyz Republic and 0.5 percent in Latvia.

Table 19: Changes in poverty headcount due to health spending, European Region and Bulgaria (%)

	Gross of health payments	Net of health payments	Change
Bulgaria (2010)	14.2	18.0	3.8
Bulgaria (2013)	13.1	17.3	4.2
Bosnia and Herzegovina	7.4	8.7	1.3
Georgia	46.6	51.2	4.6
Kazakhstan	9.7	12.4	2.7
Kyrgyz Republic	43.0	44.3	1.3
Latvia	7.2	7.7	0.5
Russian Federation	24.8	26.8	2.0
Turkey	12.3	15.7	3.3

Source: Authors' calculations using Household Budget Surveys 2010 and 2013 and ECA Health Equity and Financial Risk Protection Datasheet.

40. So, it would seem that Bulgaria's health system does not offer much financial protection. OOP payments are very high internationally, as is the fraction of household health expenditure for Bulgaria's

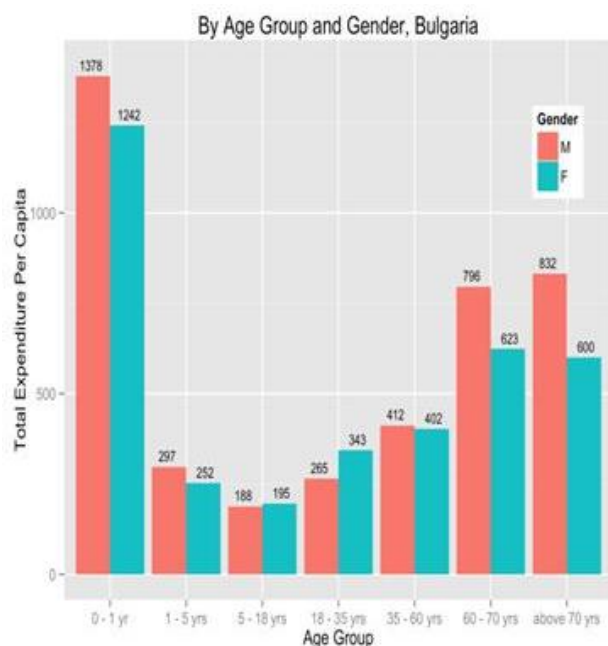
income. This lack of financial protection pushes large numbers of households under the poverty line—mainly those near the official poverty line but even some who otherwise would be considered wealthy.

3.2.3. Equity and redistribution

41. Beyond ensuring that households do not suffer financial hardship from health care spending, an equitable health financing system should be guided by the principle that resources are distributed according to need, not ability to pay. To ascertain the extent to which this is happening in Bulgaria, a benefit-incidence analysis is required to check whether, for a given health status, similar amounts of public resources go to patients irrespective of their income. Although data limitations preclude such an analysis, existing data on how public funds are distributed by age and gender can help shed some light on this area and even who pays for whom—or the extent of redistribution—in the system.

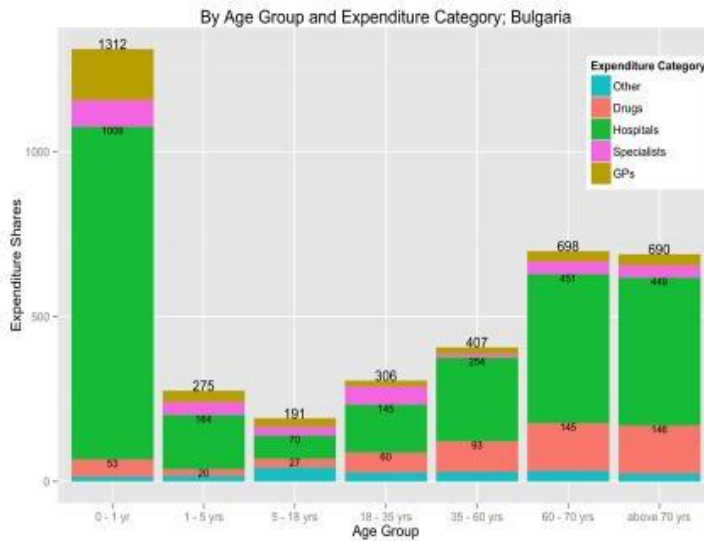
42. Data on NHIF expenditure by age and gender are in Figure 51. The profile by age is quite typical, with infants incurring high expenditure, a drop in expenditure after age five, and a progressive increase until later ages. Women in childbearing years have slightly higher expenditure than the men. Men have notably higher expenditure than women after 60. Figure 52 displays the structure of expenditure by age group. While most of this expenditure is attributable to hospitals, the share devoted to pharmaceuticals rises with age.

Figure 51: NHIF expenditure per capita by age and gender, 2013



Source: Author's computation based on NHIF data.

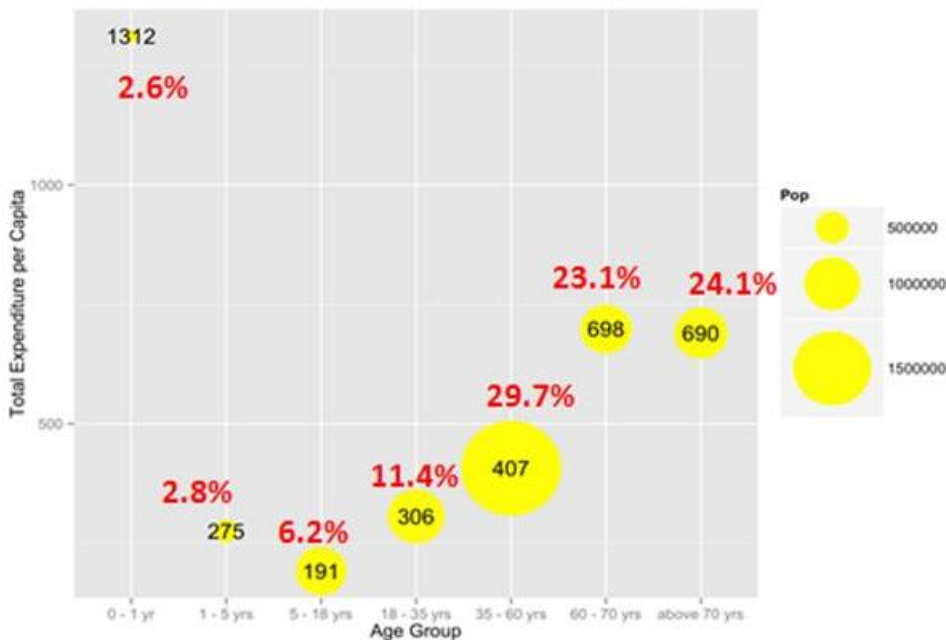
Figure 52: Expenditure per capita by age broken down by category of care



Source: Author's computation based on NHIF data.

43. Figure 53 shows how NHIF expenditures flow toward different age groups. Infants rank the highest on total expenditure per capita (averaging Lev 1,312) but are a small part of the population and account for less than 3 percent of total spending. The elderly, conversely, account for nearly half of all spending, even though they do not have a dominant population share.

Figure 53: Total health expenditure per capita and share in total health expenditure by age, 2013



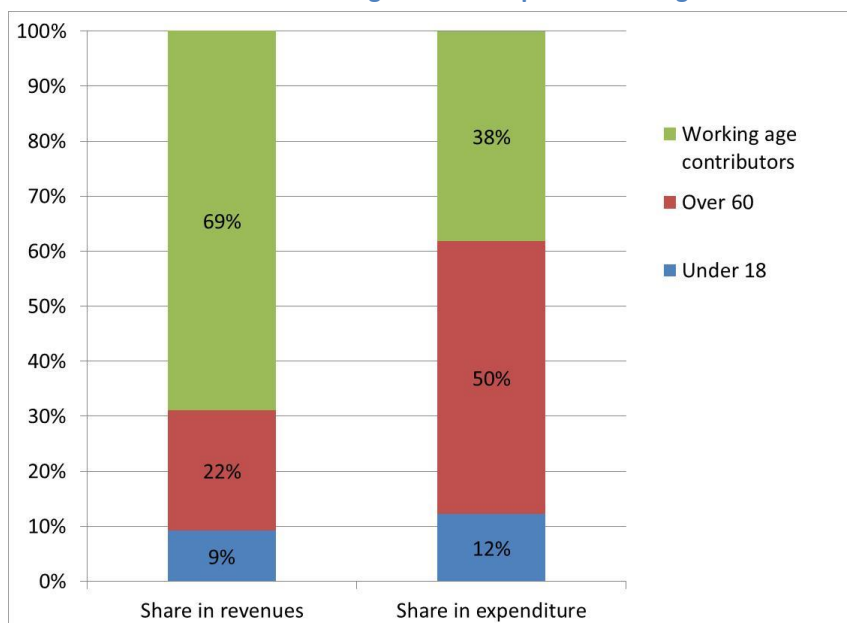
Source: Authors' computation based on NHIF data.

44. These data provide an opportunity to crudely assess the redistribution across generations. The law states how much is paid out of the government budget for children and pensioners; data are also available on the contributions paid by the working-age insured (see Chapter 2). Under a number of

assumptions,⁶⁹ it is thus possible to compare the shares of these age groups in NHIF revenues and expenditures.

45. The payroll contributions from the working population contribute to financing the coverage of children to a degree, but more so that of the older generation (Figure 54). State contributions for the elderly are based on their (fairly low) pensions, but their expenditures are high and they represent a large share of the population. Our estimate is that for every Lev 100 paid in payroll contributions, Lev 45 help cover the cost of care for the children and the elderly.⁷⁰ The state makes contributions on behalf of children and the elderly lower than what it spends on these groups, and contributions from the working-age population fill the gap.

Figure 54: Rough estimate of redistribution across generations operated through the Health Insurance Law 2013



Source: Authors' computation based on NHIF data.

3.3. Services purchasing efficiency

46. Any provider who delivers a (health) service deserves payment. The use of the term purchasing to describe what could be a mere financial transaction highlights that the scope of the contract between the payer and provider of health services can expand beyond that. This is especially true when a purchaser buys services on behalf of the population, as the NHIF does. The purchaser is—or should be—empowered to seek value for money in the system, and ensure that the services are of good quality, provided in the right setting, and done so efficiently. In other words, the purchaser is in a position to influence the configuration, resulting technical and allocative efficiency of service delivery, and the consumer responsiveness of the system.

⁶⁹ The main assumption is that the vast majority of contributors are above 18 and below 60 (retirement is at 60 for women and 63 for men). Other assumptions are to account for the fact that the government contributes for some categories of non-contributing adults.

⁷⁰ Countries can—and do—of course choose very different ways to finance subsidies that flow from the relatively healthy working-age population to the younger and older generations. In Estonia for instance, insurance is entirely financed from contributions with no state contribution for children or pensioners.

47. Payment and contracting methods thus provide the key policy levers that purchasers of services can use to help achieve a set of macro objectives, such as overall cost containment, and micro objectives, including effective access and efficient delivery of services at facility level. Table 20, based on an OECD study, provides an extensive categorization of policies and their likely health system impacts and trade-offs.

Table 20: Policies for cost containment and improved efficiency

Characteristics, impacts, and trade-offs	Impact on expenditure		Objectives and trade-offs			
	Strength	Impact lag	Financial protection and access to care	Quality of care	Responsiveness	Cost-effectiveness
Macroeconomic policies aimed at expenditure restraint						
Volume controls (high tech/pharmaceuticals)	++	Short	-	-	-	+/-
Budget caps (sector and global)	+++	Short		-	-	+/-
Shifting costs to private sector (increased financing of cost by users)	++	Medium	-	+/-	+/-	+
Microeconomic policies aimed at increasing efficiency						
<i>Demand side</i>						
Disease prevention and health promotion	+ /+++	Long	+	+	None	+
Gate-keeping/triaging	+	Long	+	+	+/-	+
Care coordination/Integrated care/self-care	++	Long	+	+	+/-	+/-
<i>Supply side</i>						
Strengthening the purchasing role of NHIF	++	Long	+/-	+	+/-	+
Further shift from hospital to ambulatory care	+++	Long	-	+/-	-	+
Improving hospital contracting/purchasing/payment systems	++	Long	None	+/-	+/-	+
Increasing hospital autonomy	+	Long	Unknown	+	+/-	+
Improving provider-payment methods/incentives for hospitals (DRGs) and outpatient care	++	Long	+	+	+/-	+
Overseeing technological change and the pricing of medical goods	+ /+++	Long	+/-	+/-	+/-	+
Increased use of ICT for information transmission	+ /+++	Long	+/-	+	+/-	+/-

Source: Adapted from OECD 2010a.

48. In assessing payment systems' allocative and technical efficiency it is helpful to keep in mind the following basics of all payment systems:

- There is no “right” method.
- Purchasing systems must be tailored to the institutional realities of each health system encompassing both the demand and supply sides.
- Payment systems in which there is either a single payer or a single set of rules affecting the entire system have the largest impacts on provider behavior.
- Policy makers need to be concerned about effects across different governmental levels, provider types, different payers (public, private health insurance, OOP), and overall health spending.
- As all payment methods have differential positive and negative impacts on costs, access, and quality, one often needs to employ multiple payment methods to accentuate the positives and offset the negatives and monitor their impacts—HMIS is critical.

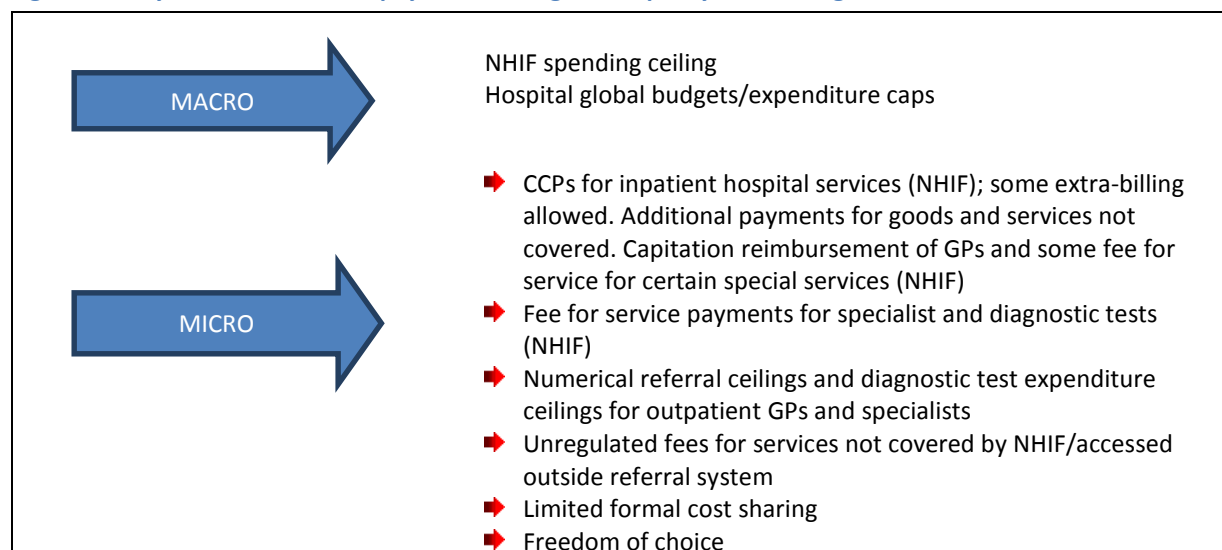
49. Assessing purchasing efficiency is inherently difficult.⁷¹ Yet Chapter 1 highlighted that given what is already spent on health, overall health outcomes in Bulgaria are not improving as fast as they could, which points toward an inefficiency problem. It also provided evidence that patterns of care are distorted toward hospital care to the detriment of ambulatory primary and specialized care. Given the burden of disease, this alone suggests that there is considerable allocative inefficiency in the system.

50. The rest of this chapter discusses whether and how the NHIF contracting and purchasing methods may contribute to the efficiency of service delivery. It focuses on the incentives inherent in the NHIF payment and contracting policies as it is the single largest purchaser of services. The NHIF with its unified set of rules affects some 40 percent of all health spending, which has important effects on provider behavior and spending levels. However, the single largest source of provider payment is OOP, and individual patients are price takers of unconstrained fee-for-service. The provider–patient relationship is characterized by a strong asymmetry of information (Arrow 1963) which the provider can leverage, especially where the details of what is covered or not by the NHIF are probably not known to patients. These payments are most likely resulting in poor equity and little efficiency, but sometimes better access and quality depending, of course, on payment levels.

51. From a high-level perspective, the NHIF has adopted many globally accepted good practices—capitation for GPs, case payments to hospitals, budget and expenditure ceilings, referral penalties, etc. (Figure 55). But the key question is whether their manner of implementation accentuates the positive and attenuates the negative incentives.

⁷¹ Issues cover definitions, measurement, data availability, payment-method interactions, NHIF policies on e.g. defining the BBP, cost sharing, referral, and interactions are among numerous demand- and supply-side factors.

Figure 55: Key cost-containment/payment strategies and policy levers, Bulgaria



Source: Authors.

3.3.1. GPs and specialists in ambulatory care

52. Many countries have a mixed remuneration system for GPs, primarily a risk-adjusted capitation that links the provider and patients (with the possibility of changing providers at defined intervals) combined with some additional payments to incentivize desirable provider behaviors. In theory, the capitation, which renders the provider accountable for the patient’s health, encourages efficiency, cost control, and preventive care. In Bulgaria, capitation is supplemented by fees for preventive services and chronic (dispensary) patients (see sections 2.2.4 “Benefits covered and cost sharing” and 2.2.6 “Purchasing/contracting medical services”). They complement the provider’s income and encourage the delivery of these services. Lastly, the GPs’ budget-holding mechanism makes them accountable and puts them at risk for diagnostic tests and the specialists’ referrals they give out, further strengthening cost control. Specialists working in ambulatory care are paid on a fee-for-service basis and also manage referral and testing budgets.

53. What kind of incentives does the elaborate remuneration system generate in Bulgaria? First, from a macro perspective, it caps the amount publicly spent on primary and specialist care in ambulatory settings (but not hospital referrals)—all well and good. At micro level, however, the analysis suggests problems. The referral budget-holding mechanism has limitations, some of which are more critical for GPs and others that apply to GPs and specialists.

54. First, GPs are required to refer certain types of chronic care patients (e.g. hypertension, COPD) at regular intervals, even when these patients could be effectively treated in the GP setting or do not require the service. There are also restrictions to testing, For instance, GPs used not to be allowed to order diagnostic mammography for women with potential tumors and had to refer patients to a specialist, who referred the woman for a mammogram. Thus a large share of the referral budget is earmarked and GPs are constrained in how they can use it. As chronic patients represent a large share of the population, savings could probably be achieved if these patients were managed and treated by their GPs. Thus the current NFC not only unnecessarily limits what GPs can do but also requires what may be unnecessary referrals. GPs interviewed in the course of the work believe that the current rules prevent them from providing more substantive care to patients at primary care level and that the rules should be changed.

55. Second, while the referral caps for specialists and testing are very strict, and physicians are fined for every referral beyond them, they are not rewarded for achieving any savings in their referral budget. In addition, as suggested in some discussions, if some physicians do receive informal payments from the specialists they refer to, they may in fact be incentivized to use their entire referral budget for the given period without going over it (i.e. the ceiling becomes the floor).

56. A third issue is that GPs and specialists are not held accountable for unnecessarily referring patients to receive hospital-based care, which can thus be used to overcome the strict limits put on outpatient care volumes.

57. There appear to be many potential additional incentives to refer to the hospitals:

- Some services that could technically be provided on an ambulatory basis are provided in hospitals only—a referral may be the only way to access them;
- Even when a patient can be cared for in the ambulatory setting, either by a GP or a specialist or outpatient diagnostic center, for services such as CT scans or MRIs, waiting times and procedures required to obtain authorizations to perform these tests are such that a referral to the hospital might become a more effective way to ensure the patient’s access to the service.
- Admitting a patient and assigning him or her to a CCP can make the overall payment for the service far higher in the inpatient setting. Additionally, specialists interviewed for this work argue that reimbursement for some services they could technically provide are too low for the required investment and maintenance of equipment in ambulatory settings.
- Finally, specialists who work on an ambulatory basis and in hospitals may have further incentives to refer to hospitals, as their contracts in hospitals contain some rewards for the volume of patients they treat. While specialists do not admit patients to specific hospitals, patients are very likely to present to the hospital with which their specialist is associated. The specialist can then benefit by being paid for his or her service by the NHIF, and by receiving an incentive payment from the hospital for bringing in the patient.

58. The 2008 Sanigest report detailed other factors that contribute to upward referrals, including the lack of trust among the population in lower levels of care and the low capacity of the majority of primary care physicians to resolve problems. Critically, the primary and ambulatory specialized care systems lack a credible quality assurance framework that could be used to measure and reward the quality of care and efficiency of services. Most of the rules surrounding referrals appear to be geared toward containing cost. There is no evidence—and certainly no transparent mechanism—to build consensus and demonstrate that they necessarily reflect modern evidence-based practice.

3.3.2. Hospitals

59. Bulgaria has many more hospital beds, per capita, than countries of similar incomes and health spending and than the EU12 and EU15 averages, partly due to a lack of strong planning mechanisms: it has minimal requirements to determine whether a hospital can open, but lacks a system to determine whether another hospital is needed in a given spot. Implementation of a hospital master plan drawn up in 2008 to restructure service delivery is still being debated (Credes 2009).

60. The NHIF contracting and payment systems exacerbate the problems. First, providers who work in ambulatory settings are incentivized to refer patients to hospitals. Similarly, there are strong incentives for hospitals to admit patients; these factors increase the volume of admitted patients. This is one of the

most powerful incentives associated with case-based financing, regardless of what tool is used (whether CCPs in Bulgaria or DRGs in many places worldwide). Because this incentive is so common, countries that use case-based financing closely monitor and regulate it to minimize unnecessary hospitalizations. For example, some countries use volume caps or budgetary limits to hold hospitals accountable for admissions. In Bulgaria, hospitals are in principle subject to volume caps, which should limit the number of cases they provide. In practice, however, when allocated budgets are spent, hospitals continue to provide services and petition the NHIF for additional funding. They are often successful, though sometimes with a delay. These expenditures are ultimately reflected in the NHIF budget either through renegotiations during the fiscal year or by partial absorption of these costs in the next year's budget. In other words, the macro pressure to limit the growth of hospital care appears less effective than for other types of care in Bulgaria.

61. Second, the NHIF has no legal basis to refuse a contract with all hospitals approved by the MOH, and so cannot obtain the well-documented benefits from selective contracting. This is critical because, as the number of hospitals and beds in the country grows, more facilities are forced to share cases, creating even stronger incentives for facilities to produce more and limiting individual hospitals' benefits from economies of scale.

62. Third, the NHIF does not appear to use formal hospital admission criteria or any sort of preapproval process similar to what private insurers do to limit unnecessary hospitalizations. Their absence leads to hospitals admitting all types of patients, whether their condition is acute or not. Patients may also self-refer by accessing the emergency department. Some CCPs include language that could be interpreted as admission criteria but compliance does not appear to be enforced through auditing mechanisms. If this language were strengthened and enforced, CCPs could curb some unnecessary hospitalizations and create incentives for patients to seek care in other settings, such as at an ambulatory clinic or from a GP. Another issue is that many patients experience lower OOP costs and shorter waiting time for tests and procedures in the hospital than ambulatory settings, again giving rise to an incentive for hospital admission.

63. Finally, the CCP tool used to finance hospital care may, itself, create inefficiencies in the health system, generate incentives for hospitals to admit patients, or encourage hospitals to deliver a large range of unnecessary services (Sanigest Solutions 2008; Credes 2009) (Box 4).

Box 4: The pros and cons of CCPs

CCPs were initially developed as clinical practice guidelines and as such remain a useful tool. They provide a common understanding of a patient's general clinical treatment pathway and the range of appropriate clinical care. They also include information about minimum personnel, staff, equipment, and other capacity that is necessary for hospitals to have so as to provide services safely and appropriately. These requirements can be useful to ensure patient safety and quality, particularly absent other guidelines or regulations such as conditions of participation or mandatory hospital accreditation. More systematic efforts could, however, be made in Bulgaria to ensure that these conditions are transparently updated, aligned with international best practices, and aimed at ensuring high quality of care. Using clinical practice guidelines or more generally quality assurance instruments and criteria as part of the contracting process is in line with best practices.

CCPs were not, though, intended as the basis for hospital financing. As they started to perform this role, the clinical tool was adapted to it but neither comprehensively nor systematically. Over time this has created heavy distortions. When CCPs were adopted in 2003, there were around 50 of them, and most Bulgarian experts agree that they were appropriately costed, in the main clinically and resource homogenous, and therefore constituted a reasonable basis to move from input-based hospital financing. Subsequently, many changes were introduced that created new categories or split groups (often to create higher-valued CCPs); restrictive input requirements were added; and the contracting process morphed into a negotiation of individual CCP prices rather than an exercise based on hospital cost data.

Today, CCPs do not organize inpatient hospital services into clinically and resource-homogenous groups, encouraging under- and overpayment for services. For example, there is only one CCP payment level for a normal delivery and a Cesarean section despite wide differences in cost. In contrast, most case-based hospital financing tools, such as DRGs, strive to separate out such services so that different prices are paid in recognition of cost differences. Hospitals can thus receive identical payments for more, or less, complex services—certainly not the most equitable way to distribute limited resources.

That CCPs algorithms require certain levels of inputs for the CCP to be paid (number or type of staff, specific types of equipment, certain types of lab tests, etc.), may also be problematic on a number of levels. First, there are concerns that CCP changes can be introduced to benefit a specialty, or even specific facilities. Indeed, if a CCP is updated to mandate the use of a specific technology for that clinical pathway, only facilities that already have the appropriate equipment will be able to contract that CCP. To the extent that these requirements are important to ensure patient quality of care and safety, they are appropriate but if they restrict competition in certain market segments by granting some facilities a competitive advantage—even if temporary—they should be revised. In any case, these changes raise the risk that providers may drift in and out of compliance with CCP ordinances and standards from one year to the next, even perhaps with no material changes either at the hospital or in the procedure's provision.

Second, a detailed review of a few CCPs reveals that they include, in addition input requirements related to patient quality of care and safety, unnecessary, controlling requirements that more closely resemble old-style input-based financing mechanisms (under which hospitals had little or no autonomy or flexibility in making clinical and management decisions) such as minimum lengths of stay or the provision of certain diagnostic and laboratory tests, regardless of what is clinically indicated. This may be because CCPs have evolved to do more than they were intended to originally. In other words, today's CCP requirements greatly dictate how and what medical care must be provided to patients. This is a huge potential source of waste, and generally undermines the types of strong incentives for production efficiency and quality embedded in most case-payment systems.

Although all provider-payment systems, including CCPs and DRGs, can be “gamed,” the dangers appear greater with CCPs. Because hospitals (and physicians) select the CCP for each hospital stay rather than a computer algorithm that would assign the CCP based on raw clinical and administrative data, the risk and impact of gaming can be more severe and harder to detect than with other output-based financing systems. Physicians know exactly what requirements must be met to maximize CCP payments and are incentivized to use more complex CCPs. Some physicians even privately acknowledge that the CCP-based financing system creates incentives to manipulate clinical data to match the CCP requirements (such as by modifying lab values, or recording specific diagnoses and procedures). They also recognize that only the patient diagnosis and procedure information required to meet the CCP requirement tend to be recorded rather than a full and complete picture of the patient’s health situation. Therefore, and somewhat paradoxically given their origin, the CCPs—because they are used for financing purposes—may undermine the integrity of health records and, potentially, the quality of care.

All of this has resulted in a skewed financing mechanism. No comprehensive exercises have been attempted in recent years either to ensure that CCP prices reflect efficient resource costs or best clinical-practice guidelines or protocols. It is also unclear whether CCPs have been compared to other tools that describe care paths. CCPs as a tool remain probably best suited to describe clinical paths and could be revised to do just that. A different tool, developed specifically to serve as the basis of an inpatient financing system such as DRGs, might be more appropriate to finance hospitals.

Source: Authors.

64. From a conceptual perspective, Bulgaria has moved from input- to output-based financing and now uses widely accepted good practice international payment methods across care settings. Still, problems remain. The unnecessary clinical stipulations and administrative rules and requirements (unrelated to patient quality of care and safety) embedded in CCPs, CCP price negotiations, and no enforcement of spending caps all appear to create distortions and inefficiencies in the health system. Thus the health care system fails to garner the benefits normally expected when a true, output-based case-based financing system is used.

3.3.3. The role of the emergency medical system

65. Emergency medical services in Bulgaria are in a sense “purchased” by the MOH. The payment method to CEMC/SEMC is a mix of a fixed global budget (based on staff size) and an output-based budget based on actual service volume of the preceding year. This appears reasonable, but what could be an issue is that the share of the fixed budget is very high (78–84 percent of the CEMC/SEMC system budget is for salary), in effect limiting funding for operating costs or for replacing equipment and vehicles, thereby penalizing providers with a high volume of services. There is evidence that the share of the total budget allocated to fixed costs is very high relative to other countries.

66. Another issue is the unequal allocation of staff to different centers that are not based on catchment population or characteristics of the terrain. While there are standards for distribution of teams based on objective criteria such as population, population density, and regional area, they are not followed (at least under current conditions) and the number of staff appears based more on historical factors and often due to lobbying (MOH 2014, p. 7). As staff salary is a major cost driver, the budget for the emergency medical system is not fairly allocated.

67. As an integral part of the health system, emergency care can be affected by—and can affect—the purchasing of other services. Hypothetically, it might be argued that GPs not generally providing 24-hour care places a further burden on emergency care. As in many other countries, emergency care providers could be the primary source of the care for the uninsured population: for lack of insurance, the uninsured would wait until their condition became severe and required emergency care, or would go straight to emergency care even for conditions not warranting this type of expensive service, knowing that no medical establishment can turn patients away. For hospital emergency departments, because MOH

payment per patient is rather small, they would have an incentive to admit the emergency patient so that the NHIF would cover the cost. (The incentive for admission is reverse if the patient is uninsured.)⁷² However, one would need to obtain data from emergency departments, hospital admissions, and the NHIF to ascertain if these hypotheses are valid or not.

68. Yet there is evidence that the amount of funding provided for emergency patients is insufficient to cover the cost of these patients, with an implicit subsidy by hospitals to the MOH of Lev 25 million or more for non-admitted emergency-department patients. There are also potential subsidies from the NHIF for the emergency care provided in hospitals to patients who are subsequently admitted. These issues need to be addressed if a stand-alone “emergency package of health services” is going to be developed, as indicated in the “Concept Note: Health 2020 Goals” (MOH 2015a), complete with the necessary financing to provide such a package (see Chapter 9 in Part II).

3.4. Purchasing efficiency for medicines

3.4.1. Overview

69. A well-functioning pharmaceutical policy framework and its key components should be guided by an overarching national medicines policy, which in addition to setting out policy goals and objectives, and obligations and responsibilities of stakeholders, at a minimum provides for:

- a framework for ensuring access to drugs that are safe, effective, and of adequate quality;
- well-managed decision processes for rational formulary selection, together with mechanisms for using purchasing power to ensure value for money;
- mechanisms for ensuring affordable, equitable access to necessary medicines; and
- strategies for supporting rational and cost-effective use.

70. Although small, the Bulgarian pharmaceutical market is showing strong growth (Ministry of Foreign Affairs, Denmark 2014). (See Chapter 2.) Medicines account not only for a disproportionate share of health expenditure (38 percent of the total, compared with an EU average of around 25 percent) (Rohova et al. 2013), but the burden of OOP costs is also excessive, possibly as high as 81 percent of total pharmaceutical spending. Perhaps of greatest concern is that expenditure is growing rapidly without obvious gains in health outcomes, and at the expense of population equity.

71. Lacking an integrated national medicines policy, the pharmaceutical sector is characterized by multiple, highly complex, and at times counterproductive policy levers. While the regulatory framework has been largely brought into line with EU standards, mechanisms for listing and pricing medicines are not ensuring adequate value for money for the NHIF and are contributing to inefficiencies in the health sector. Pharmaceutical policy appears focused on limiting NHIF outlays, affording little financial protection to patients.

72. For multisource—and often high-volume—medicines for chronic conditions, many prices compare unfavorably with those in New Zealand or the United Kingdom for example. Reports of discounting in the supply chain suggest scope for lowering prices and clawing back some of the savings accruing to pharmacies. Adjusting approaches to listing, pricing, and procurement of multisource and therapeutic cluster medicines to create greater competition could generate substantial savings. Despite

⁷² Although as mentioned earlier hospitals could have an incentive to pay contributions on behalf of the uninsured and receive payment from the NHIF.

high NCD prevalence, particularly cardiovascular and chronic respiratory disease, OOP costs of key medicines are likely to be undermining access and adherence to treatment, while contributing to underutilization of medicines important for preventing or delaying disease progression. Savings from improved procurement processes could be used to make chronic therapies available with lower and more predictable patient contributions.

73. For single-source—and often high-cost—medicines, the practice of setting wholesale prices through external reference pricing provides no assurance that these represent reasonable value for money in Bulgaria. In some cases, this mechanism leads to prices in absolute terms as high or even higher than in countries of much greater national wealth (a proxy for capacity to pay). Processes for listing medicines in the PDL are insufficiently influenced by considerations of cost-effectiveness and there are no explicit links between circumstances of listing and approved treatment guidelines. There are as yet no officially approved pharmacotherapeutic guidelines, despite at least three pieces of legislation with provisions stipulating their development, authorization, and enforcement in clinical practice in Bulgaria,⁵⁰ likely contributing to the utilization of several very high cost and potentially non-cost-effective medicines.

74. The structure of patient contributions—set at different levels of coinsurance, rather than as fixed copayments—is regressive and creates uncertainty for patients. Moreover, many prescriptions are dispensed for products that are not at the reference or benchmark price, thus increasing OOP costs to patients, often by many times the coinsurance amount. Matters are exacerbated by widespread mistrust of the quality and safety of generics, mainly brand-name prescribing, and lack of substitution at pharmacies. The upshot is that patients pay far more than is necessary, and there are no safety nets or “stop-loss” provisions to protect individuals from catastrophic OOP costs.

3.4.2. Regulatory framework

75. Bulgaria’s accession to the EU and participation in the nCADREAC Agreement⁷³ has facilitated establishment of EU standards of drug regulation, aided by the Medicinal Products in Human Medicine Act of 2007 (MPHMA).⁷⁴ There is, however, evidence of inadequate enforcement of some aspects of regulation of medicines, particularly with respect to the dispensing of prescription-only medicines to patients without prescriptions. While this presumably reduces costs to the NHIF (while increasing OOP costs to patients) it may well be adding to the burden of medication-related adverse events and their associated costs, as well as to patterns of anti-microbial resistance. Conversely, there are areas in which the regulatory framework seems overly prescriptive. Ordinance No. 28, for instance, which sets out the structure and conditions of conduct of pharmacies, specifies the order in which they must dispense the prescriptions they receive. It is unclear why this would be necessary, nor how compliance could be monitored.

3.4.3. Drug selection and pricing

76. The primary price-setting mechanism is international (external) reference pricing, with prices drawn from 10 primary and seven secondary EU member states (see Chapter 2). The Bulgarian ex-factory price set is at the level of the *lowest* price among these jurisdictions. There are a number of issues with this approach:

- The referenced prices are official prices and may not capture confidential discounts and rebates negotiated by the referenced member states;

⁷³ New Collaboration Agreement between Drug Regulatory Authorities in Central and Eastern European Countries. See www.ema.europa.eu/docs/en_GB/document_library/Regulatory_and_procedural_guideline/2009/10/WC500004508.pdf

⁷⁴ Medicinal Products in Human Medicine Act 2007. At http://en.bda.bg/images/stories/documents/legal_acts/ZLPHM_en.pdf

- The referenced prices may not reflect (and may not have been assessed for) reasonable value for money in these member states;
- These member states may offset high prices with narrow indications and strict controls on utilization (submitted pricing data do not take into account indications for use);
- All these member states have far higher per capita GDPs than Bulgaria, so even where the price of a drug reflects reasonable value for money there, this may not be so in Bulgaria. At the very least the drug will be less affordable in Bulgaria.

77. To be considered for listing, a medicine with evidence of coverage in at least five of the 10 primary reference countries is subject to an assessment of clinical and economic data, with clinical factors receiving a maximum of 95 points and pharmacoeconomic factors a maximum of 40 points. As only 60 points are required for inclusion in the PDL, a product may be approved for listing without demonstrating reasonable cost-effectiveness. The process and criteria for assessing the economic data are not detailed in Ordinance No. 28. Moreover, staff of the Pricing Council indicated that they did not have adequate expertise in pharmacoeconomic evaluation of medicines to undertake rigorous assessments of the data submitted by applicants. The pharmacoeconomic reports are themselves often prepared locally by academics with limited expertise in the field.

78. The assessment is made more difficult by virtue of the short timeframes specified in the MPHMA for the Pricing Council's decision making (60 days for listing and pricing of new prescription medicines to be included in the PDL). While this decision timeframe may appear favorable, given the practices of other bodies undertaking similar assessments, it is unlikely to be enough for rigorous assessment of the clinical and economic performance of new medicines, particularly those likely to have a high budget impact, and for which new or updated treatment guidelines or protocols may be needed. The European Transparency Directive No 89/105/EEC⁷⁵ allows member states up to 90 days for pricing decisions and up to 180 days for combined pricing and reimbursement decisions.

79. For the evaluation of a new medicine for inclusion in the PDL and establishment of a price under Article 261 a of MPHMA, the Pricing Council receives a fee of only Lev 1,500.⁷⁶ This appears modest for the effort required and the potential market available to a medicine listed in the PDL and subject to NHIF reimbursement.

80. While the ex-factory price of the first (and any subsequent) generic version of a medicine listed in the PDL may not exceed 80 percent of the ex-factory price of the originator's product in Bulgaria, generic prices are otherwise determined by external referencing. In other words, although a statutory price reduction is applied at the point of initial generic entry, there is no mechanism to mandate further price reductions within the off-patent market. For off-patent medicines more competitive pricing could create scope to increase NHIF reimbursement rates, particularly those for serious and chronic conditions for which long-term adherence is important.

81. For each medicine a reference or benchmark price is set at the level of the lowest cost per DDD for any brand or presentation of that medicine. This therapeutic reference pricing is also applied across

⁷⁵ This directive specifies a series of procedural requirements to ensure transparency of pricing and reimbursement measures adopted by member states. These include specific time limits for pricing and reimbursement decisions (90 days for pricing, 90 days for reimbursement or 180 days for combined pricing and reimbursement decisions). The directive also requires the competent national authorities to provide a statement of reasons based on objective and verifiable criteria for each of their decisions and to provide appropriate legal remedies to applicants. A 2012 proposal to shorten the time limits to 60/120 days has not yet been adopted, but would still allow twice the time currently allowed for the Pricing Council's decision making.

⁷⁶ http://www.ncpr.bg/images/News/Tariff%20on%20the%20fees_exerpt_GS.pdf

different molecules within the same ATC subgroup where the products are considered to be of similar efficacy and safety for a particular indication (known as cluster reference pricing). The benchmark price within the cluster of drugs is then set at the level of the lowest cost/DDD for any of the drugs *within the cluster*.

82. There are therefore few incentives for competition in the off-patent market. As long as the ex-factory price of a multisource medicine is not higher than 80 percent of the originator's, and the price is shown no higher than the lowest price for the same presentation in any of the specified reference countries, the price can far exceed the current benchmark price in terms of cost/DDD, with any excess becoming an OOP cost to the patient. The actual price can often be many times the benchmark price.

83. Section 264.2 of the MPHMA sets out notification requirements for suppliers of products whose prices set benchmarks, but it is not clear if suppliers are required to guarantee supply of a minimum proportion of the overall market. It is also not specified whether and how the unavailability of the benchmark-priced product triggers a review of the benchmark price. It is therefore unclear as to what, if any, mechanisms exist to ensure that benchmark-priced products are either available for supply or stocked by pharmacists.

84. Whether it is for multisource products (containing the same INN in the same pharmaceutical form) or for medicines within a given cluster, the level of NHIF reimbursement is set as a *proportion of the benchmark*, not the actual price. As a result, the OOP payment for a drug subject to, for example, 75 percent reimbursement may be considerably higher than 25 percent of the actual product's cost, if the product is not a benchmark-priced product.

85. Moreover, the actual level of NHIF reimbursement is determined according to perceived clinical significance of the condition, but this appears to be applied inconsistently. In Annex I of the PDL, full (100 percent) reimbursement is said to be provided for products for chronic diseases causing "severe disruptions in the quality of life or disablement and requiring prolonged treatment." However the subsidies for oral agents for diabetes, for example, vary between 25 percent and 100 percent (Table 21). In a system where neither the physician nor pharmacist has an obligation or incentive to minimize patients' OOP costs, there is no reason to imagine patients are empowered to determine which of the available drugs is genuinely better value.

86. Prices of selected drugs in Annexes I and II are shown in Table 21 and Table 23, and comparisons with prices in the United Kingdom and New Zealand presented for the Top 25 (by NHIF expenditure) Annex I (mainly off-patent) medicines, and for the Top 25 (by value) Annex II (mainly high cost, patented oncology) medicines with prices in the United Kingdom alone. While for off-patent medicines better prices may be expected in the much larger and more competitive U.K. market, the same cannot be said for New Zealand, with a population of only 4.4 million.⁷⁷ For Annex II, U.K. prices were selected because there, medicines are subject to rigorous assessment of value for money by the National Institute for Health and Care Excellence (NICE).

⁷⁷ The New Zealand Pharmaceutical Management Agency, PHARMAC, extensively uses sole-supplier tendering for off-patent products, and the New Zealand market is highly competitive. The successful tenderer gets sole subsidized supply of the medicine for a fixed term, thus creating maximum incentive to offer the best price.

Table 21: Price comparisons for selected medicines in Annex I of the PDL

INN	Indication	Dose	Pack size	Share of NHIF reimb't (%)	Bulgarian reference price (€)	N.Z. Price (€)	U.K. Price (€)	2013 NHIF spending (€) (all forms)
adalimumab	rheumatoid arthritis	40mg	2	75	1,047	1141	889	7,704,996
amlodipine	hypertension	10mg	30	50	1.65	0.79	1.30	807,731
clopidogrel	anticoagulant	75mg	30	75	3.28	1.24	16.38	2,112,993
enalapril	hypertension, heart failure	10mg	30	25	1.23	0.28	1.31	754,988
etanercept	rheumatoid arthritis	25mg	4	75	508	602	451	8,657,724
imiglucerase	Gaucher's disease	400U	1	100	1,579	1,360	1,352	2,698,990
insulin glargine	diabetes	300IU	5	100	53.26	59.92	52.36	3,938,996
insulin lispro	diabetes	300iU	10	100	112	75.48	74.34	4,237,697
ivabradine	angina, heart failure	7.5mg	56	50	57.95	N/A	50.68	2,765,659
latanoprost	glaucoma	125mcg	1	50	3.92	1.26	2.25	1,684,087
lisinopril	hypertension	10mg	30	25	2.57	0.86	1.31	926,484
metformin	diabetes	500mg	30	100	0.47	0.23	3.60	3,192,340
metoprolol	hypertension	100mg	30	50	2.29	1.53	1.43	1,073,497
olanzapine	antipsychotic	10mg	28	100	2.56	1.62	1.83	3,214,028
salmeterol/fluticasone	asthma	50/250mcg	60	100	32.35	31.51	44.16	11,632,711
valsartan/HCTZ	hypertension	160/12.5mg	28	50	4.12	N/A	3.61	4,590,649
vildagliptin/metformin	diabetes	50/1,000mg	60	50	47.38	N/A	42.87	3,248,351

Note: Text in bold denotes medicines in the NHIF Top 25 by reimbursement value in 2014. Total expenditure is for all presentations and dosage forms of the INN. Bulgarian prices shown as at August 1, 2014. Where multiple presentations are listed, Bulgarian price shown is for product with lowest unit cost. All prices over €100 are rounded. N.Z. prices from <http://www.pharmac.health.nz/tools-resources/pharmaceutical-schedule>. U.K. prices from http://www.ppa.org.uk/edt/September_2014/mindex.htm. Exchange rates as of August 2, 2014 from www.oanda.com Some N.Z. and U.K. prices have been prorated to accommodate different pack sizes.

87. Table 21 shows that there are a number of high unit cost, single source medicines for which Bulgarian prices may not reflect reasonable value for money. The prices of *adalimumab* and *etanercept*, for example, are 18 percent and 13 percent higher respectively, than in the United Kingdom. Further, in the United Kingdom the assessment by NICE has limited use within the National Health Service to circumstances in which the drugs are considered cost effective. Bulgarians not only appear to be paying higher prices for these drugs, they are among those showing most rapid growth in expenditure (Table 22) and the extent of any limitations on usage is unclear. Similarly, while the prices of insulin analogs such as *insulin glargine* are comparable with those in the United Kingdom (notwithstanding the very substantial difference in per capita GDP and therefore capacity to pay), use of these products in the United Kingdom is largely limited to patients with Type I diabetes, as they are not considered cost effective in most patients with Type II diabetes.

Table 22: Top 25 medicines in Annex I of the PDL, by anticipated value of NHIF reimbursement in 2014

INN	Indication	2012 aggregate reimb't (Lev)	2013 aggregate reimb't (Lev)	2014 anticipated reimb't (Lev)	Change Y-O-Y 2012–13 (%)	Change Y-O-Y 2013–14 (%)	Change 2012–14 (%)
budesonide/formoterol	asthma/COPD	24,263,812	25,144,791	24,466,772	3.6	-2.7	0.8
salmeterol/fluticasone	asthma/COPD	22,831,674	22,757,030	23,455,888	-0.3	3.1	2.7
adalimumab	rheumatoid arthritis	9,465,942	15,073,256	22,501,544	59.2	49.3	137.7
etanercept	rheumatoid arthritis	8,613,710	13,903,970	16,937,074	61.4	21.8	96.6
insulin human	diabetes	18,249,329	16,651,920	14,271,725	-8.8	-14.3	-21.8
tiotropium	COPD	14,858,952	15,411,605	12,948,482	3.7	-16.0	-12.9
coag factor VIII	hemophilia	9,479,592	12,740,752	12,168,645	34.4	-4.5	28.4
insulin aspart	diabetes	10,728,807	11,323,993	12,113,798	5.5	7.0	12.9
insulin lispro	diabetes	5,833,106	8,290,191	10,779,352	42.1	30.0	84.8
interferon beta 1a	multiple sclerosis	9,111,680	9,965,819	10,405,744	9.4	4.4	14.2
interferon beta 1b	multiple sclerosis	10,195,459	9,990,980	9,340,537	-2.0	-6.5	-8.4
paliperidone	antipsychotic	4,333,022	7,706,792	9,132,993	77.9	18.5	110.8
insulin glargine	diabetes	6,447,253	7,705,843	8,358,265	19.5	8.5	29.6
valsartan/HCTZ	hypertension	6,878,636	8,980,669	8,344,729	30.6	-7.1	21.3
deferasirox	thalassemia	6,897,317	7,507,064	7,618,020	8.8	1.5	10.4
vildagliptin/metformin	diabetes	5,645,987	6,354,738	7,286,397	12.6	14.7	29.1
aripiprazole	antipsychotic	7,065,294	6,479,568	6,492,006	-8.3	0.2	-8.1
tafamadis	hereditary amyloidosis	N/A	1,625,885	6,308,127	-	288.0	-
olanzapine	antipsychotic	9,023,707	6,287,592	6,291,927	-30.3	0.1	-30.3
ticagrelor	acute coronary syndromes	597,799	4,194,705	6,277,811	601.7	49.7	950.2
insulin detemir	diabetes	4,919,898	5,449,875	6,209,601	10.8	13.9	26.2
golimumab	rheumatoid arthritis	1,775,888	4,807,398	6,177,455	170.7	28.5	247.9
ivabradine	heart failure	4,516,473	5,410,449	5,922,462	19.8	9.5	31.1
gliclazide	diabetes	5,783,239	5,873,388	5,912,065	1.6	0.7	2.2
insulin aspart	diabetes	5,269,551	5,519,240	5,888,881	4.7	6.7	11.8

Source of data: NHIF.

Note: Figures for 2014 have been prorated from data for January–July 2014.

88. Similarly within Annex II there are a number of drugs for which prices are similar to, and sometimes even higher than, the United Kingdom's (Table 23). Given that the United Kingdom has a PPP-adjusted per capita GDP more than twice that of Bulgaria, many of these drugs are clearly unlikely to be cost effective in Bulgaria. Many of them are also among those contributing most to rapid expenditure growth (Table 24).

89. Moreover, many of the medicines listed in Table 23 and Table 24 are subject to very tight constraints on use in the United Kingdom, or not approved for use in the National Health Service. For example, NICE does not recommend *bevacizumab* for use in any solid tumours, *sunitinib* is only recommended for first-line treatment, and *sorafenib* is not recommended for either first- or second-line treatment in renal cell carcinoma. Use of many of the other drugs listed is very heavily restricted in the United Kingdom to ensure cost-effective use.

90. A more extensive review of the existing PDL is likely to reveal further examples of drugs unlikely to be cost effective at current Bulgarian prices, especially where clinical treatment algorithms do not take into account the cost-effectiveness of different therapies. Absent very significant reductions in price,

several drugs might require very tight restrictions to approach cost-effective use, or may need to be considered for delisting altogether.

Table 23: Price comparisons for selected Top 12 medicines by value in Annex II of the PDL

INN	Brand	Dose	Pack size	Bulgarian price (€)	U.K. price (€)
bevacizumab	Avastin	400mg	1	1,234	1,166
trastuzumab	Herceptin	150mg	1	599	514
nilotinib	Tasigna	200mg	28	1,054	767
imatinib	Glivec	100mg	120	486	2,176
rituximab	Mabthera	500mg	1	1,293	1,102
pazopanib	Votrient	n.a.	n.a.	n.a.	n.a.
sunitinib	Sutent	25mg	30	2,486	2,121
bortezomib	Velcade	3.5mg	1	1,088	962
erlotinib	Tarceva	150mg	30	2,093	2,058
pemetrexed	Alimta	500mg	1	1,215	1,009
cetuximab	Erbix	5mg/ml, 20ml	1	216	224
sorafenib	Nexavar	200mg	112	3785	3748

Note: Some U.K. prices have been prorated to accommodate different pack sizes. Bulgarian prices as at August 2, 2014. Where multiple presentations are listed, Bulgarian price shown is for product with lowest cost/DDD. All prices over €100 are rounded. U.K. prices from http://www.ppa.org.uk/edt/September_2014/mindex.htm. Exchange rates as of August 2, 2014 from www.oanda.com.

Table 24: Top 25 medicines in Annex II of the PDL, by anticipated value of NHIF reimbursement in 2014

INN	Indication	2012 NHIF aggregate spending (Lev)	2013 NHIF aggregate spending (Lev)	2014 NHIF <i>anticipated</i> spending (Lev)	Change Y-O-Y 2012–13 (%)	Change Y-O-Y 2013–14 (%)	Change 2012–14 (%)
bevacizumab	multiple cancers	10,542,387	22,655,540	35,863,368	115	58	240
trastuzumab	HER2+ breast cancer	19,213,305	25,737,247	30,850,905	34	20	61
nilotinib	chronic myeloid leukemia	7,365,426	11,001,962	14,730,149	49	34	100
imatinib	chronic myeloid leukemia, GI stromal tumor	12,522,185	12,713,847	12,280,117	2	-3	-2
rituximab	non-Hodgkins lymphoma	6,573,673	8,902,784	11,165,340	35	25	70
pazopanib	renal cell carcinoma, soft tissue sarcoma	2,234,502	5,636,499	8,734,802	152	55	291
sunitinib	renal cell carcinoma, GI stromal tumor	4,451,781	6,158,572	7,801,703	38	27	75
bortezomib	multiple myeloma	3,363,275	6,155,061	7,666,315	83	25	128
erlotinib	non small cell lung cancer	2,622,949	5,114,310	7,641,139	95	49	191
pemetrexed	non small cell lung cancer	3,752,392	4,997,414	6,933,525	33	39	85
cetuximab	colorectal cancer	1,869,311	2,878,789	6,334,842	54	120	239
sorafenib	renal cell carcinoma, liver cancer	2,997,950	4,679,733	6,181,226	56	32	106
abiraterone	hormone refractory prostate cancer	-	-	5,960,008			
panitumumab	colorectal cancer	2,347,526	3,834,203	5,886,700	63	54	151
pegfilgrastim	granulocyte colony stimulating factor	2,121,336	3,639,723	5,843,921	72	61	175
everolimus	immunosuppression post organ transplant	1,728,260	2,011,974	5,726,439	16	185	231
denosumab	osteoporosis, bone metastases	-	723,940	4,636,412		540	
romiplostim	thrombocytopenia	1,394,614	2,204,425	4,149,283	58	88	198
clofarabine	acute lymphoblastic leukemia	933,453	1,609,962	3,968,177	72	146	325
cabazitaxel	hormone refractory prostate cancer	-	-	3,894,716			
lapatinib	breast cancer	1,442,569	2,323,999	3,584,892	61	54	149
zoledronic acid	osteoporosis, bone metastases	9,575,436	9,025,084	3,441,422	-6	-62	-64
dasatinib	chronic myeloid leukemia	2,409,378	2,581,825	3,193,215	7	24	33
gefitinib	non small cell lung cancer	654,512	2,069,502	2,649,458	216	28	305
octreotide	growth hormone-producing tumors	1,184,774	1,817,878	2,601,109	53	43	120

Note: Table 12 in Chapter 2 illustrated the growth in NHIF expenditure in different therapeutic areas. This shows the Top 25 medicines by value of NHIF expenditure, as well as growth in outlays over 2012–2014.

3.4.4. Distribution and supply chain

91. Wholesale and retail markups are proportional to drug costs, and therefore create incentives for the distribution and dispensing of more expensive medicines (see Chapter 2). This is perhaps

understandable given that dispensing fees of Lev 2 are payable only for prescriptions consisting entirely of products 100% reimbursed by the NHIF—for which no retail markup applies. Options for reducing incentives for dispensing more expensive medicines include flat margins, higher dispensing fees, and encouraging substitution (currently not permitted) of more expensive brands for benchmark-priced products.

92. As discussed, therapeutic reference pricing for multisource medicines tends to discourage rather than promote competition, and thus maintain rather than reduce prices. As a result, where competition occurs it tends to take the form of discounting within the supply chain, with savings accruing to the pharmacy rather than the payer. In addition, anecdotal evidence suggests that the extent of vertical and horizontal integration in the pharmacy sector is also reducing scope for competition in this market.

3.5. Development of actuarial assessment capacity

93. The NHIF is typical of the social/mandatory health insurance approach to health financing prevalent in most OECD and former Soviet Union countries, and increasingly in emerging market economies. Key aspects of this approach are governance by an independent or quasi-independent public entity, and a reliance on earmarked payroll contributions, general revenue contributions for disadvantaged and other priority groups, and a link between contributions and a defined set of rights/benefits for the insured population. In the context of an insurance model, public or private, whether it covers health or other risks (or both types), a solid understanding of the relationship between revenues and expenditures and their respective drivers is generally important to guide policy making or management. An actuarial model serves that purpose.

94. Virtually all advanced and many emerging market countries use health care cost-projection models.⁷⁸ Models can forecast spending at multiple levels from the unit of observation (individual consumers, families, communities, or a country as a whole) and the types and levels of expenditure and revenue (public or private spending, OOP, social insurance contributions, etc.). OECD identifies three broad categories of health expenditure forecasting models:

[M]odels focusing on individuals as the unit of analysis for the projection are referred to as micro models and use microsimulation techniques. Those stratifying sections of health expenditure into groups, or stratifying individuals into groups, or combinations of these two dimensions, are identified here as component-based models. Component-based models include cohort and actuarial models [Box 5], which often base forecasts by age group and/or other socioeconomic characteristics. Finally, macro-level models focus on total health expenditure as the unit of analysis. Within this group, some macro-level models (called computable general equilibrium models) project future health expenditure trends within the context of the whole economy (Astolofi, Lorenzoni, and Oderkirk 2012, p. 18).

95. Component-based models are the most widely used of the three and often analyze expenditures by financing agents (including consumers), applying different techniques and underlying data to analyze different agents, such as providers vs consumers, and developing group-specific analyses of the underlying cost drivers (Figure 56).

⁷⁸ See for example Astolofi, Lorenzoni, and Oderkirk 2012; Mohanan2009; and Przywara 2010.

Figure 56: Underlying cost drivers of health expenditures

	Demographic factors	Health factors	Economic and social factors	Public policy factors
Demand side factors	<ul style="list-style-type: none"> • Size and structure of the population 	<ul style="list-style-type: none"> • Health status of the population, in particular of elderly cohorts • Death-related costs 	<ul style="list-style-type: none"> • National/ individual income • Income elasticity of demand for health care • Social determinants of health (environment, living conditions) and health-related behaviour • Public expectations and real convergence in living standards 	<ul style="list-style-type: none"> • Health promotion and disease prevention policy
Supply side factors			<ul style="list-style-type: none"> • Development of new technologies and medical progress • Unit costs in health care sector relative to the other sectors of economy • Resource inputs, both human and capital 	<ul style="list-style-type: none"> • Contribution of public and private budgets to the financing of health care • Insurance schemes • Remuneration schemes in health care sector • Regulation and/or liberalisation of the market for health care services and pharmaceuticals

Source: Przywara 2010.

96. Actuarial analysis helps assess whether “projected premiums in the aggregate, including expected reinsurance cash flows, governmental risk adjustment cash flows, and investment income, are adequate to provide for all expected costs, including health benefits, health benefit settlement expenses, marketing and administrative expenses, and the cost of capital” (American Academy of Actuaries 2012) (and see Box 5).

97. No such model exists for the NHIF (or any other institution in Bulgaria), even though it collects the contributions with which it is supposed to consistently and over time provide access to a benefits package for the vast majority of the population. There is little analysis or understanding of underlying expenditure trends and pressures, nor of their causal factors, nor how they will likely manifest themselves in the future—all critical aspects of designing reform policies and assuring the long-term financial sustainability of the NHIF. Without such information the NHIF (and the government more generally) is hamstrung in managing the public funds for some 40 percent of all health spending.

98. It was agreed that an actuarial model for the NHIF would be developed as part of this study. The model, initially shared with the government in December 2014, was later revised and is presented in a separate document. Developing the model proved surprisingly challenging, mainly for information-access reasons. Much of the needed information is scattered among multiple agencies, data sources are often inconsistent (the number of uninsured, for example), and data may just not be available—or could not be accessed. NHIF itself has to rely on external sources to determine coverage having, as seen, little information on the eligibility basis of those it covers and on the uninsured.

Box 5: Actuarial analysis

Actuarial analysis is a form of statistical analysis, typically conducted using health-related financial cost data, in the context of calculating insurance premium rates or otherwise determining expenditure needs. It entails estimation of average expenditures of a risk pool so that financing needs can be estimated to ensure that revenues balance expected outlays.

Actuarial models often exploit historical claims and utilization data—combined with adjustments made to account for population and inflationary trends—to project expected expenditures. Financial sustainability, or “actuarial soundness,” implies that expected expenditures (including administrative costs and any reserve requirements) for a risk pool be less than or equal to expected revenues.

Traditional costing methods, e.g. top-down costing (which estimates and allocates aggregate outlays across activities) and bottom-up costing (which costs granular service delivery activities and aggregates them up to estimate outlays), generally focus on a production approach to estimating resource outlays that may be needed to deliver health services, taking the consumption of health services largely as a given. Actuarial analysis, in contrast, takes the production of health services largely as a given, focusing instead on estimating costs from a consumption approach, probabilistically determining utilization and associated expected expenditures needed to finance health care from a pool of resources.

Sources: Tandon forthcoming; Cichon et al. 1999; Wang et al. 2012.

99. The actuarial model analyzes the trends of the underlying variables that determine the growth of the revenues and costs of the NHIF and examines its contribution to the government’s fiscal balance. These incomings and outgoings are largely determined by the size and composition of the covered population, the benefit package, the age and gender cost structure resulting from the provision of the existing package, the provider-payment mechanisms, employment and labor force trends, and government fiscal and social policy. The effort thus entails considering projections of macroeconomic indicators (income, employment, prices, GDP, and so on), labor projections, and demographic developments, etc.

100. In practice, the model worked as follows: on the revenue side, the number of people in the different eligibility groups were analyzed and projected forward to 2020; projections were made of spending for the different types of health care taking into account the number of insured people, demographic developments, trends in costs, and other macroeconomic variables. The model was calibrated by projecting backwards to find the underlying factors influencing trends so as not to miss critical volume and price effects.

101. The actuarial report presented to the government presents all the assumptions made to prepare the model as well as a set of estimates for the NHIF revenues and expenditures prepared under various scenarios. A spreadsheet was also shared with the government so it can use the model in the future and adapt it as data become available. Developing, testing, and institutionalizing the model as an input to health policy decision making should now be considered.

Chapter 4. Constraints to improving health financing performance

1. This chapter reviews structural elements that affect the performance of the NHIF and Bulgaria's health financing system, and that must be considered before reforms are pushed through. The first section puts health financing in the current and future macro-fiscal context to assess how much it constrains the reform agenda. The main conclusion is that efficiency gains are likely the principal source of the necessary fiscal space to accommodate rising public health spending pressures. Getting more value for money requires an increasingly sophisticated management of risks and of quality delivered by each actor. This requires intelligence gathering, monitoring, and analysis at all levels of the system.

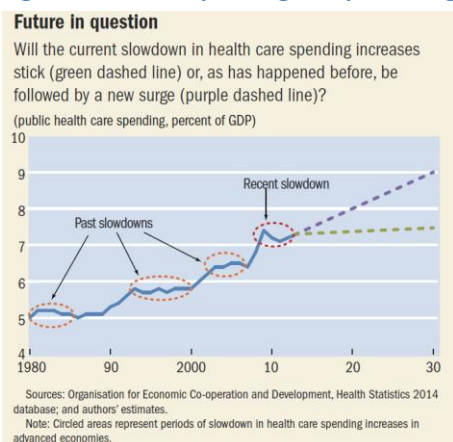
2. The second section assesses the current state of preparedness of the HHS to deal with these issues, highlighting its crisis due to lack of vendor maintenance, or even a contract for this. The last section offers a summary assessment of the NHIF's current capacity to tackle the agenda given the realities it operates under.

4.1. Fiscal space and fiscal policies for health

3. Health care reforms must be undertaken within the context of the country's current and likely future macroeconomic—particularly fiscal—environment. Like other advanced and emerging market economies, Bulgaria will continue to face strong pressures to increase health spending. While some of these pressures may be due to inherent inefficiencies in the current health policies and institutions, many are exogenous to the health system and include population aging, income growth, and technological advances (see Chapter 1).

4. A recent IMF study highlights the persistence of these cost pressures over the long term in advanced and emerging market countries, and they are likely to continue mounting (Figure 57). To meet their fiscal targets and absorb the projected growth in public expenditure over 2014–2020, such economies will need to increase their primary balance (government revenues less interest charges) on average by 2.25 percentage points of GDP. The IMF estimates that for Bulgaria, public health spending will need to increase by 3.2 percentage points of GDP by 2050 to accommodate its demographic and excess cost growth trends (Clements, Gupta, and Shang 2014, p. 25; and IMF 2014, p. 20). In a tight fiscal environment, this puts strong pressure on governments to raise revenues, control spending, and prioritize among sectors.

Figure 57: Public spending as a percentage of GDP, 1980–2030



Source: Benedict Clements et al. 2014.

4.1.1. Fiscal space: concepts

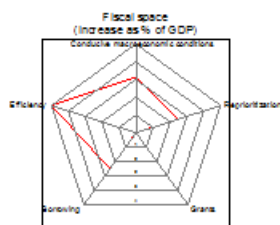
5. The analytical framework for analyzing the macro-fiscal situation is embodied in the concept of fiscal space, which may be defined as “the availability of budgetary room that allows a government to provide resources for a desired purpose without any prejudice to the sustainability of a government’s financial position” (Heller 2006 pp. 75-79). Fiscal space may be represented as a diamond with five basic sources of fiscal space (Figure 58). It is a general concept that applies to the entire economy, not just the health sector, although health policy makers often focus on applying the concept to health alone. Fiscal sustainability in turn is an explicit aspect of fiscal space, and refers to the capacity of a government, at least in the future, to finance its desired expenditure programs, to service any debt obligations (including those that may arise if the created fiscal space arises from government borrowing), and to ensure its solvency (a country’s ability to meet the present value of its external obligations).

Figure 58: Sources of fiscal space

Sources of Fiscal Space -- Finding Room in the Budget for Increasing Spending without Jeopardizing Economic Stability

- From a theoretical perspective, fiscal space could arise from:

- Increasing government revenues.
- Increasing sovereign debt.
- Higher levels of foreign aid.
- Reprioritizing some sectors over others.
- Increased efficiency of existing outlays.
- Seigniorage (printing money/inflationary finance).



Seigniorage is not viable over the medium/long-term.

Source: Tandon and Cashin 2010.

6. As the diamond shows, there are five potential sources of fiscal space. The first is an increase of government revenues. Conducive economic conditions such as economic growth can result in higher absolute revenues and possibly larger revenue shares in GDP. Countries can create fiscal space in the short to medium term by borrowing, but borrowed funds need to be repaid. Poorer countries can rely on foreign aid, but aid is often unpredictable, tied to specific programs, and unsustainable in the long term. Fiscal space for a particular sector can also be created by reprioritizing, such as shifting spending from defense to health. Efficiency gains in government programs also create it, and recent IMF studies argue that in advanced economies such gains are likely to be the principal source of the fiscal space needed to accommodate rising public health spending (Grigoli and Kapsoli 2013; Coady Francese, and Shang 2014, pp. 30–32). Governments can also create fiscal space by printing money, but in the long term this is unsustainable as it depreciates the value of the currency.

4.1.2. Perspectives for increasing fiscal space in Bulgaria

7. As one of the poorest countries in the EU and one without important natural resources, Bulgaria was seriously affected by the global economic crisis and still faces a tough macroeconomic environment. While it gets high marks for macroeconomic management in controlling its expenditures and debt, limited economic growth prospects coupled with its already high revenue and spending levels limit future fiscal space in the medium term.

8. Bulgaria will be challenged to fund the NHIF and public health spending increases projected above given its restricted fiscal headroom. Underlying demographic and excess health care growth trends driving expenditures upward, combined with labor market trends holding back revenue growth, could result in increasingly large NHIF deficits and public health shares of the budget.

9. The IMF projects that by 2030 public health spending pressures will add 1.3 percentage points in public health spending to GDP, and that will increase to 3.2 percentage points of GDP by 2050 (equivalent to 45 percent of Bulgaria’s current GDP) (IMF 2014, p. 20; Clements et al. 2010, p. 57). Thus even if some additional revenues become available, revenue enhancements will not solve the cost escalation problems due to the NHIF’s inefficiencies and demographic changes. Moreover, is the government willing to use its very limited additional revenues for health among its other priorities? Relatedly, is it willing to further prioritize health in the budget by reducing spending in other sectors? And finally, can it find efficiency gains in other sectors, and would it be willing to use those funds for health?

10. The rest of this section shows why Bulgaria is constrained in using some of the instruments theoretically available to increase its fiscal space. As an EU member state the country is not a candidate for development assistance. It receives EU funding, but health is not a major priority for these funds. Given the macroeconomic environment and prudent fiscal management, neither printing nor borrowing money are likely options. Thus creating fiscal space for health—or indeed any other sectors—will largely depend on a mix of the government’s ability to raise additional revenues, on efficiency gains in health and other sectors, and on prioritization of health in the budget.

11. Growth is forecast to be weak. The most recent forecasts by the EU and MOF (Table 25) are lower than earlier IMF projections, entailing slow growth in government revenues for all purposes unless the revenue effort improves. Given the government’s target to reduce the (cash) deficit to 2 percent of GDP by 2017, additional fiscal space from good macroeconomic conditions and increased revenues will be very limited. Strict adherence to maintaining the public debt at reasonable levels also likely precludes additional borrowing, underscoring the need for efficiency gains or reprioritization.⁷⁹

Table 25: Macroeconomic projections (%)

	2014	2015	2016	2017
Real growth (MOF)	1.5	0.8	1.5	2.3
Real growth (EU)	1.2	0.6	1.0	
Cash deficit (MOF)	4.0	3.0	2.5	2.0
Accrual deficit (EU)	3.6	3.7	3.8	

Source: EU November 2014;⁸⁰ MOF.

12. Measures to reduce costs and improve efficiency revolve around reforms in service delivery and include implementing a technically driven hospital rationalization plan, strengthening alternatives to hospital-based care, and addressing human resource constraints by adjusting financial and other factors needed to retain trained health workers in Bulgaria (Lakwijk, Garcia, and Weber 2014; World Bank 2013).

⁷⁹ Grigoli and Kapsoli (2013) conducted a cross-country stochastic frontier analysis, controlling for educational attainment, lifestyle behaviors (such as alcohol consumption), environmental factors (access to sanitation facilities and to clean water), and communicable disease indicators. The results suggest that at the current expenditure levels Bulgaria could increase life expectancy by four years simply by addressing inefficiencies.

⁸⁰ http://ec.europa.eu/economy_finance/eu/forecasts/2014_autumn/bg_en.pdf

Public spending prioritization is relatively simple conceptually but extremely difficult practically and politically.

13. The public finance criteria for prioritizing government spending within and across sectors are well known (Figure 59). In short, the marginal net social benefits within each sector and across all sectors should be equal to the marginal net benefit of spending on private programs. In practice, given the numerous nonpecuniary benefits in health and other social services and the difficulties in measuring externalities and deadweight losses from taxation, prioritization decisions are not simple analytical exercises. Nevertheless, health policy makers need to reflect these criteria in any rationale for expansion.

Figure 59: Conceptual prioritization rules of public spending

Some Conceptual Prioritization Rules: Health is Not the Government's Only Priority

- The marginal net social benefit of the last dollar spent (i.e., marginal social benefits minus marginal social costs) should be equal within and across all government programs and equal to the marginal, social, net benefit of spending on private programs.
 - Because we must focus on social benefits and costs, policy makers need to consider the sum of the private benefits and costs that accrue to individuals plus any additional benefit or cost that accrues to society as a whole plus the costs involved in raising revenues.
- $$MSB = MPB + MXB$$

$$MSC = MPC + MXC + MDWL$$

Efficiency Criteria:

$$MSB \geq MSC \quad (\text{Within and Across all Public Programs})$$

$$MPB \geq MPC \quad (\text{For Private Market Based Activities})$$

where:

MSB = marginal social benefits
 MPB = marginal private benefits
 MXB = marginal societal positive externalities benefits
 MSC = marginal social costs
 MPC = marginal private costs
 including taxes paid
 MXC = marginal social negative externality costs
 MDWL = marginal dead weight loss
 from taxation

Source: R. Gillingham, "Fiscal Policy for Health Policy Makers", World Bank, 2014

14. But policy decisions are seldom explicitly assessed or debated in terms of public expenditure trade-offs. For instance, a recent reversal of the 2011/2012 pension reforms can be expected to further limit the fiscal space for health, and in July 2014 automatic indexation of pensions began, in which pension increases are tied to the average growth of insurable income and consumer price index inflation (not just the latter, as previously). In addition, Bulgaria has also halted the gradual increase in the retirement age, which would have taken it to 65 for men by 2017 and 63 years for women by 2020 (IMF 2014). These changes will have large effects on the pension deficit and could crowd out other spending. IMF projections indicate that the pension deficit will increase to 6 percent of GDP by 2040 instead of the previously estimated 4 percent.

15. In summary, health financing reforms are being undertaken in a difficult fiscal environment with little additional fiscal space for health over any time horizon, such that Bulgaria will need to rely on efficiency gains and, possibly, reprioritization of health.

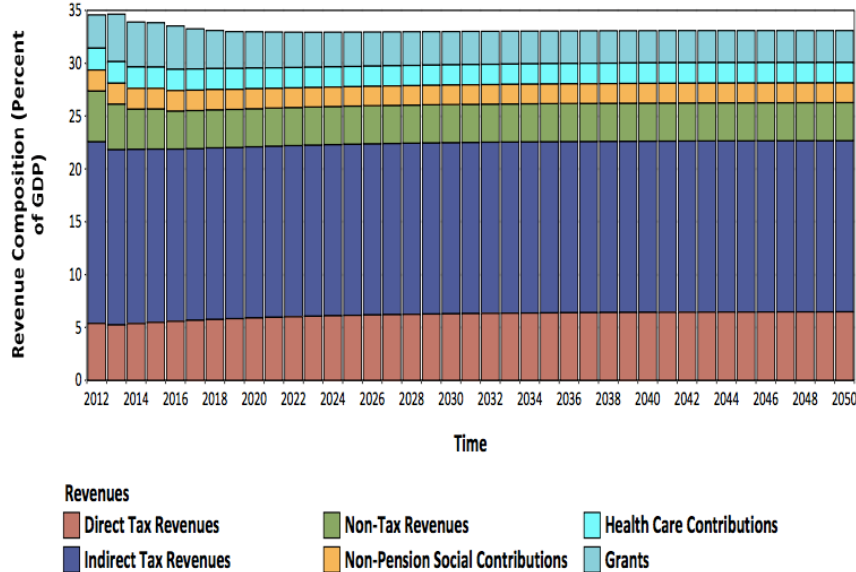
4.1.3. Brief discussion of public revenue mix

16. The composition of revenues (including tax and non-tax) has important additional equity, efficiency, and sustainability implications for the economy, as does the way in which revenues are raised. These will depend on the tax base being broad or narrow, the rate structure, floors and ceilings, exemptions, exclusions, and deductions, and the commodities, entities, and factors of production subject to tax. Governments aim to find a mix which minimizes distortions of the economic behavior of consumers

and producers, while still allocating the tax burden equitably. Public revenues for health are often raised through earmarked taxes.

17. A recent IMF assessment of Bulgaria’s fiscal policy deemed it “growth friendly on the revenue side”.⁸¹ direct tax rates are low and most revenues are collected through indirect taxes. Bulgaria is one of two countries in the EU that rely heavily on indirect taxes (Eurostat 2014), which represented more than 55 percent of government revenue in 2012.⁸² VAT⁸³ accounted for 61 percent of indirect tax revenue, and excise duties 33.3 percent. Social contributions accounted for 25.8 percent of total taxation in 2012, also among the lowest in the EU.⁸⁴ At 9.2 percent of GDP, revenue from labor taxation is the lowest in the EU, almost 11 percentage points below the bloc’s average. Revenue levels and composition to 2050 are unlikely to shift much (Figure 60).

Figure 60: Revenue composition, Bulgaria, 2012–2050 (% of GDP)



Source: Onder, Pestieau, and Ley 2014.

18. It seems that that no study has been conducted on the tax system’s equity. The reliance on indirect taxation, the existence of minima, and caps for some social contributions suggest, however, that taxation might be heavier for lower income levels.

19. Wider fiscal and more specific health financing reforms have at their disposal the full array of tax instruments that countries can employ to raise revenues. Still, this does not alter the minimal potential for increasing overall revenue.

⁸¹ An exception is an IMF study on fiscal multipliers in Bulgaria. See Weir and Weber 2013.
⁸² The other country is Croatia, where indirect taxes also represent more than 50 percent of government revenue.
⁸³ The standard VAT rate is 20 percent, with a reduced rate of 9 percent applying only to hotel accommodation.
⁸⁴ Social insurance funds include contributions for pensions (17.8 percent), general sickness and maternity (3.5 percent), health (8 percent), and unemployment (1 percent). The contributions are shared between the employer and employee. For pension contributions, the employer is responsible for 9.9 percent and the employee for 7.9 percent. The other social contributions are shared between the employer and employee using a ratio of 60:40. The monthly income ceiling is set at Lev 2,400 (€1,227).

4.2. Preparedness of the HIIIS and its environment

20. This second section reviews whether Bulgaria's information systems are ready to carry the country into a more advanced era when health financing mechanisms will undoubtedly become more complex (as the country continues to strive for higher quality and lower costs) and as other changes appear (possibly, a national electronic medical record). The section is structured on the four-part breakdown introduced in Chapter 2. Underlying this discussion is the potential danger from the lack of system maintenance and poor relations with the vendor. A summary and SWOT analysis round off this section.

4.2.1. Standards setting and the health data dictionary

21. Because of the very few dominant vendors in the HIIIS market, de facto information exchange standards have emerged over recent years (see Chapter 2). The NHIF and providers seem reasonably satisfied with the level and quality of the automation of the health information exchange processes thus far. However, this ad hoc approach will one day soon reach its limits and a top-down effort will be needed to specify a more complete "common language" to support more advanced processing. Linking providers and payers is a delicate art, since the goal is to provide wide access to information needed by both sides while preserving the arms-length business relationship required in a buyer-seller competitive environment. The following discusses specific issues.

Coding for specifications and standards required

22. Bulgaria's health data dictionary (HDD) should contain specifications for the needed coding systems (including for diagnoses, service procedures, medications). It should enumerate the main resources of the health sector, including tables for doctors (providers), allied health workers, facilities, medical equipment, etc. These tables should be maintained by one agency and made available to all stakeholders. Changes to the tables should immediately and easily be visible to all stakeholders.

23. Other standards relating to infrastructure should also be spelled out.⁸⁵ Also, standards relating to privacy and confidentiality need to be spelled out, and appropriate standards from the EU incorporated in the HDD. This includes two main categories of standards—those on the protection of the rights of individual patients to privacy and on securing health data against threats to the dataset as a whole. These threats could originate from cybersecurity breaches, from bad actors inside or outside the health sector, or from natural disaster.

Complications from CCP coding

24. Bulgaria's unique use of the CCP coding method for its hospital-based cases provides its own challenges. The first is that it virtually precludes automated claims adjudication. To adjudicate claims⁸⁶ by computer one wants to create rules that computers can understand and consistently apply. This minimizes human touches on claims, which add considerably to the cost of processing and increase the risk of inconsistency or manipulation. The computer should be able, with little or no human intervention, to adjudicate four-fifths of all claims (the less complex cases), and thus free expert human staff at the NHIF to adjudicate the rest that require human insight and thorough scrutiny. This "80:20" rule uses the

⁸⁵ A good example is the specification of a standardized "Disposition Code" for each patient as they leave a health facility. Where did they go? (home, work, school, morgue, etc.) Were they referred to a higher- or lower-level institution? Were they to receive specialty care to further manage their chronic disease? This example illustrates the opportunity that the government has to facilitate better continuity of care especially as it relates to chronically ill patients. Some information is coded on this in CCPs but it is not uniformly used across facilities or for analytical or monitoring purposes.

⁸⁶ This standard language of the insurance industry refers to the process which involves reviewing a payment request and assessing whether and how much the insurer should pay the provider.

computer to do what it does best—slogging through the river of simple claims and getting them paid, while bringing in human judgment on those claims that are nuanced, complex, very costly, or suspected of being irregular.

25. CCPs (which take into account clinical parameters as well as other variables) are just too complex and may be too arbitrary to be encoded. Regulations on them also frequently change. Thus it would be exceedingly difficult to develop a rules engine that could adjudicate CCP-encoded claims.⁸⁷ Perhaps this is one reason why the NHIF has been left, according to some experts, with the limited job of paying any claim that lands on its desk, with little or no critical review and without the mechanism to reject a claim. As a result, the NHIF is unable to systematically review claims beyond assessing whether they meet some basic requirements and is thus probably ineffective in stemming the inevitable game playing by providers who may submit claims of dubious veracity.

Consistency, timeliness, and enforcement of standards

26. A number of additional questions on the standards need to be answered. First, *are they consistent?* Standards require active management, constant surveillance, and a method for keeping them up to date. Lists of standards can sometimes include conflicting standards, creating more problems than the lack of a standard. It is one reason why constant vigilance is needed by a government department or dedicated agency that has accountability for this task. It is probably unwise to outsource this to a vendor unless the proper oversight is in place as this could lead to further fragmenting and the emergence of inconsistencies in codes—for example, is it possible for two CCP codes to conflict, or overlap, with each other?

27. *Second, are they up-to-date and easily accessible?* Standards age and suffer from entropy like all other artifacts. Today's standards may not be tomorrow's, but no effective way to communicate changes to stakeholders is in place. Stakeholders need an easy way to always access the latest revisions and to be assured that the standards they are following match the latest guidance from the MOH.

28. *And, are they enforced?* Standards of course have no value whatsoever unless they are consistently used; this use must be encouraged and sometimes enforced, the authority for which should flow from the MOH. Some countries have a licensing agency within the MOH that approves a design as compliant with national standards; without this designation a company is not allowed to sell its products. Bulgaria appears to have no such mechanism.

4.2.2. Provider information systems: issues

29. Largely due to the work of the few major vendors, automation in hospitals and other health venues is quite high. The systems reviewed in a number of public and private hospitals are modern and comparable to those in countries of similar income.

30. Like many countries, Bulgaria now is at the cusp of having to deal with the following two issues which, while perhaps not directly related to the domain of health insurance, have even broader implications for further systems development. They are likely to be a catalyst for further development of its provider information systems.

A national electronic medical record?

31. Even today, medical information (paper-based or electronic) is held “captive” by the individual hospitals. It is not possible to (easily) access information stored at another location. Information from

⁸⁷ This is likely one reason that much of the world has abandoned these kinds of parameter-based encoding methods in favor of “grouping” simpler sets of previously declared parameters (e.g. ICD-10 codes, CPT-4 codes) to produce the DRG code for the case.

incoming referrals is not always received at the receiving facility. Thus most Bulgarian hospitals (and other health facilities) operate independently of one another from an information point of view, leading to, for example, duplicated lab tests (re-ordered unnecessarily) and current medication lists inaccessible across the continuum of care (both of which are so important to providing longitudinal health services, especially for chronic-disease patients). Vital problem lists are not easily shared either, which may contribute to a lack of understanding of a patient's comorbidities.

32. A national electronic medical record is required. This needs information be collected, according to common standards, from all health venues (public and private) and accumulated in an easily accessible system ensuring patient confidentiality. The record would become the receptacle for all health information in the country, theoretically accessible by any accredited stakeholder anywhere, any time. This is the ultimate goal of provider information systems.

Upward and downward referrals

33. The hand off of patients from lower levels to higher levels of care is problematic. The referral mechanisms may minimally work to establish health insurance eligibility but they are inadequate to fully turn over responsibility of patients to the new facility. The referral forms today are too limited and do not contain enough information for an efficient hand off.

34. Similarly, the downward referral (returning a patient back to primary care in particular) is even more problematic. The discharge summary is often inadequate to smooth the desired continuity of care between levels once the patient arrives "home" at a lower level of care. This may explain why patients cling to their specialty providers for care long after when a return to lower levels of care would be more convenient and comfortable, and certainly more cost effective. Without a smooth flow of downward information, patients might lack confidence that they will be adequately treated once they return "home," and for good reason, as the primary care physician may not have access to all the details of the earlier, higher-level episodic care.

4.2.3. The HIIS

35. The HIIS at the NHIF is in crisis. It is crippled badly by a long period of neglect, caused largely by the absence of a current maintenance contract (see Box 2). Like automobiles, jet planes, etc., information systems require ongoing, high-quality, professional care. Without it, the current system is vulnerable to any kind of failure, since no repair option exists.⁸⁸ This is a very serious situation that deserves immediate attention and remedy. If the system failed, which is a considerable possibility, the NHIF could be left without any automated support for its business processes, which would be akin to turning the clock back a decade and resuming manual processing. This would be costly, inject inaccuracies, reduce transparency (possibly encouraging abuse), and delay payments to providers dramatically.

36. Given that the current system has been without maintenance since 2011, these risks are substantial and increasing with time. Even if the system did not fail outright, given that more NHIF processes are changing due to regulatory shifts, and because maintenance is deferred, some of the current system's modules are becoming obsolete, and thus abandoned, because they no longer reflect the current legal, financial, and administrative realities.

37. Even if the immediate crisis is overcome, there are still other longer-term issues for the HIIS:

38. *Comprehensiveness.* Can the existing system meet today's business needs of the NHIF? Of course the ultimate answer is, "it depends." However, any move from CCPs or any other major change in

⁸⁸ A note prepared by the team in 2014 was addressed to the MOH detailing the problem and possible options to resolve the issue.

processing rules may be difficult to accommodate in the system, which seems to have been designed for a bygone era where the NHIF was expected to merely be an accountancy and funds-transfer mechanism. The system can only produce routine monitoring reports on payment and administrative control functions. The following functionalities, for example, are very limited or nonexistent: monitoring of the insured population (beyond knowing a person's insurance status on any given day); eligibility category; and utilization of care across settings and over time for specific patients (and thus groups of patients).⁸⁹

39. These are among the most basic data an insurance fund would need to analyze risk, ask questions about quality of care, and project expenditures and revenues. It is unclear whether the NHIF, given the constraints it operates under, actually needs to perform these functions, but it certainly would if its role were to evolve as it has in similar countries. Some entity in the health system must be able to do these functions aimed at managing public funds and this capacity is not in place today, nor is it supported by the HIIS.

40. *Modifiability and expandability.* Closely related, the question then becomes: could one build on and expand the current system to add those functions a new health finance scheme would need? That seems unlikely—the current system was not built with an eye on future changes (in, for example, provider-payment methods).

41. *Integrate-ability.* HIIS must span a large universe if it is to have enough information to determine whether a claim is complete and legitimate, and whether the medical services were necessary and appropriate, etc. This means that the HIIS will one day have to be attached to the national electronic medical record. It also means that data from the HIIS must feed into actuarial projections and other financial forecasting systems. Our experience to date has been that it has been difficult, in many cases impossible, to extract data from the system for all but the most straightforward queries.

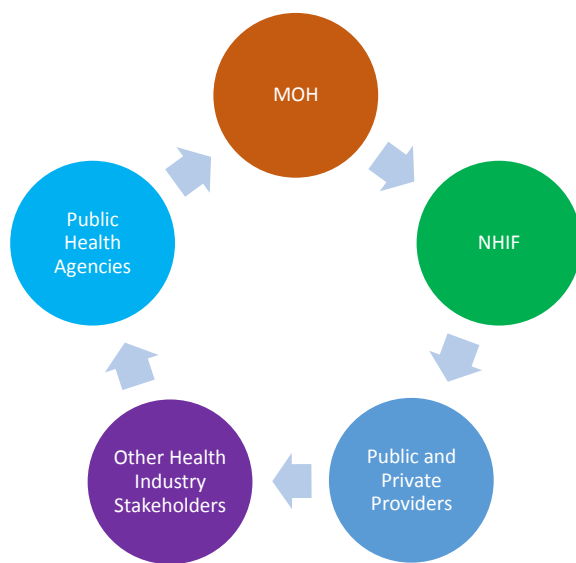
42. On all these measures the HIIS at NHIF scores poorly. This stems largely not from its intrinsic, original design but because it has not been continually maintained and expanded as regulations and the business processes of health insurance have changed. It would appear that the NHIF abandoned certain modules of the HIIS that had been made obsolete by these changes rather than continually adapting the modules. The HIIS thus appears hopelessly outdated. New systems requirements will no doubt emerge and become more urgent if major payment reforms are to be undertaken or if the NHIF is indeed given discretionary powers to more fully adjudicate claims rather than just pay them without scrutiny.

4.2.4. Connectivity and transaction links

43. The other key element binding the above elements together consists of the connectivity links that facilitate the sending and receiving of claims between the NHIF and providers, and among providers (for forwarding patient data as the patient moves from one venue to another), and of course between all these parties and the MOH itself (Figure 61).

⁸⁹ In the context of this report, the team requested an age-gender profile of expenditure by district, which—despite all the best efforts of the IT staff—took nearly six months to process, and even then it could not be completed and some numbers had to be estimated. This anecdote may represent the system's ability to respond to reasonable managerial inquiries.

Figure 61: The health industry's connected stakeholders



44. Though this connectivity network is reasonably well established, it does not appear to be centrally managed, possibly giving rise to unpredictable performance as there does not appear to be a consistent service level agreement in place.

45. To facilitate the payment of providers based on their submitted claims, the network should allow for easy transport of transactions between the NHIF and providers, a set of which is proposed in Box 6. This boxed set gives a sense of the strength of the connectivity network needed to support the business of health insurance as transacted by the service provider and the payer.

Box 6: A proposed message set linking payers and providers

A message set composed of the following business functions is suggested (in order of importance):

1. Claims submission (a message from provider to payer)
2. Claims returned as “rejected” (a message from payer to provider)
3. Claims resubmission of a previously rejected claim (from provider to payer)
4. Eligibility inquiry (from provider to payer)
5. Eligibility inquiry response (from payer to provider)
6. Claims status inquiry (from provider to payer)
7. Claims status inquiry response (from payer to provider)
8. Provider Payment (from payer to provider)
9. Refunds or adjustments (from provider to payer)
10. Payment advice which details the payments and what they are for (from payer to provider)
11. Request for additional clinical information (from payer to provider)
12. Submission of additional clinical information (from provider to payer)

Source: Streveler 2009.

46. The health information network in Bulgaria may not be robust enough to support the depth and breadth of the proposed set of transactions. It appears that further strengthening will be needed by

adding higher speed links (where needed), more security of transmissions and more central oversight (perhaps in a network management center) to make sure these transactions can be completed in a timely, reliable, and secure, manner.

4.2.5. Summary

47. So, as posed at the start of this section, are information systems in Bulgaria ready to carry the country into a more advanced era? The short answer is no, unless the government takes the lead in tackling the issues vigorously.

48. Standards setting and the HDD will require considerable attention. A more top-down approach will be needed to continue developing coherent standards, overseen by the MOH but involving as many stakeholders as possible in the health industry, including the private sector.

49. The complicated issue of whether to keep the current CCP method or move toward DRG case-mix encoding will continue to require continued thoughtful discussion. Much of the world has adopted the DRG method. Looking at this question squarely from an information systems perspective, the adoption of the DRG would facilitate the move to more automated adjudication of claims.

50. Provider information systems should continue to advance naturally, as a result of improvements in technology and as the world continues to develop systems which improve the health care delivery processes directly, and health finance processes indirectly as a by-product of the real-time systems in place in health facilities. They will no doubt end up contributing information in the national electronic medical record which will force new communication links to be built to accumulate the data from the individual facilities so they can be shared more easily.

51. The HIIS is in a desperate situation at present and could fail. Beyond this immediate crisis, the challenge will then be to plan for the next generation of HIIS. The next HIIS will need to be far more robust than the current system, including better forecasting and financial modeling. It will need to have better workflow management so that the “factory-like” processing of claims results in accurate and timely payment, is regularized, and is far less labor-intensive than it is today. Finally, the next HIIS will have to accommodate a far larger variety of provider-payment methods, which might include the DRG, hybrid capitation, incentives, and pay-for-performance regimes.

52. To conclude, the following SWOT analysis puts the assessment into perspective (Table 26).

Table 26: SWOT analysis

Strengths	Weaknesses
Bulgaria is a European and EU country with close cooperation with its members. EU-Health is an effective leader of the eHealth applications design, because it sets standards for international interconnections, such as the epSOS system for reciprocal health services.	The cooperation between NHIF and MOH in the systems area could be improved. The “wiring” of the health sector should be carefully monitored and guided by MOH so as to make connections between providers and payer as efficient as possible. However, individual entities are best able to understand their own requirements and thus play a leadership role in some applications. This applies especially to the NHIF whose systems have very specific requirements in specific domains.
Bulgaria has an excellent education system for the training of STEM (science, technology, engineering, mathematics) students, thereby assuring a steady supply of well-trained professionals.	The political nature of the eHealth leadership position at MOH may lead to frequent turnover of this crucial position which can cause a lack of continuity, a fluidity of strategies, and confusion among lower levels. Design activities can take some years, and it is important to create a stable environment for a development strategy to blossom. Significant and abrupt changes can be detrimental, delay progress, and cause inefficiencies.
	The HIIS system at NHIF is now quite antiquated and provides insufficient management information for board members and managers at the NHIF. This might partly explain the limited capacity of the NHIF to manage risks and negotiate reforms.
Opportunities	Threats
While Bulgaria does not appear to have a formal HDD, the fact that a few dominant vendors have captured a large share of the provider system market provides a basis for creating a formal HDD based on the de facto one now emerging.	The HIIS at the NHIF is in a serious state of disrepair and lacks any viable support mechanism. This is a serious threat to the sustainability of the business processes at the NHIF, and could potentially cause the total collapse of the system. If this were to occur, it would likely be necessary for the NHIF to revert to manual (paper-based) processes that would no doubt create inaccuracies and inconsistencies in adjudication, delay payments to providers, and weaken accounting controls and management information.
Bulgaria has long experience in designing, installing, and using provider-based information systems. This allows further advances to be created in perhaps less time than in other countries. A national Bulgarian electronic medical record is a possibility, linking all levels of care, and perhaps also inviting participation from the private sector. A good connection between provider systems and the payer system can also be managed by creating a strong mechanism for the exchange of data between them.	Despite a steady supply of STEM- and computer-trained professionals, Bulgaria loses many of them because of higher salaries in most other EU countries. Thus staff turnover and the resulting lack of continuity are serious threats. Outsourcing development and support efforts might be part of the solution.
	There is currently no evident discussion about what the next generation of systems for NHIF should include. No requirements study has been started. Since the time needed to develop a new system (or procure/install a new system) is several years, the NHIF must try to predict its needs far in advance.

4.3. Overall governance and operation of the NHIF: a summary assessment

53. Like all countries’ health financing system, Bulgaria’s faces serious challenges. Some are grounded in the demographic and epidemiological transitions, others in the weak economy, and yet others in governance, regulatory, and policy issues.

54. Bulgaria spends more on health than its income-peers. Total and private spending are higher than and public spending is similar to global averages. Health outcomes are average and financial protection at both macro and micro levels is poor, inequitable, and declining. Given Bulgaria's already high fiscal effort and gloomy growth prospects, sustainability will be hard. Efficiency gains are the key area for generating future fiscal space and such gains can be found in the NHIF's purchasing procedures for services and pharmaceuticals, better rationalization of the BBP on the basis of cost-effectiveness and financial protection criteria, and holistic control and enforcement of financial and clinical policy levers that affect spending. Thus assessing the structural and operational performance of the NHIF is essential for establishing the health financing reform baseline—indeed, as the core health financing institution, it should be involved in designing and, in all likelihood, driving implementation.

55. A World Bank study (Cangiano, Curristine, and Lazare 2013) highlights some key governance features critical for efficient management of a mandatory health insurance fund against which the NHIF should be evaluated. These include:

- Coherent decision-making structures that influence the direction (stewardship) of mandatory health insurance, its stability and independence.
- Stakeholder participation which influences the accountability of the systems and appropriate representation in the decision-making structures.
- Supervision and regulation that assure compliance, a level playing field under competition, and early intervention and sanction when needed.
- Transparency and information to allow for appropriate stakeholder participation and supervision.
- Consistency and stability, to avoid changes of the rules and regulation based on short-term political considerations.

56. From a high-level perspective, the NHIF has, potentially, assets in its favor: it efficiently pools risks at national level; it carries the responsibilities for public funding of nearly the entire spectrum of care (with the notable exception of emergency care); and, as the single largest unified health payment entity, is in a monopsony position vis-a-vis providers it purchases services from on behalf of the insured.

57. Yet in practical terms the governance structure framing the organizational setup and operational policies of the NHIF undermines the fund's performance in carrying out its financing function and achieving financing goals. In particular, the legislative and regulatory environment, as well as operational procedures, are unstable, nontransparent, and noninclusive, generally failing to meet good governance criteria and misaligning responsibility, authority, and expertise. They provide no mechanism to assure solvency and sustainability, and generate inefficiencies and costly hospital-centric treatment incentives. The result is a fragmented decision-making and operational environment that precludes a holistic and effective approach to policy making.

58. The most critical aspect is, however, for the NHIF to have a coherent decision-making structure, effective stewardship, and—to a degree—independence. On paper, its public financial management responsibilities span all three phases of budget management—formulation, approval, and execution (Cangiano, Curristine, and Lazare 2013). The NHIF is ultimately accountable for meeting its obligations to provide the services included in the BBP to all insured within the budget. In order to assure their solvency, mandatory health insurance funds can typically use policy levers, which can be organized in three broad categories: revenue; expenditure; and contracting and payment.

59. On the revenue side are the adjustment of contributions and the management of reserves. The contribution rates and rules for determining transfers to be received by the NHIF are set in the Health Insurance Law. While this feature is certainly not unique, the NHIF appears to have very little information about: (i) the provenance of the contributions it receives, including from the state on behalf of the statutorily covered populations; (ii) how they relate to the specifications of the law; and (iii) how many people contribute and their contribution history. It is therefore not in a position to assess the adequacy of the contribution levels given the risk and socioeconomic profiles of the insured, to determine how its revenues might evolve over time, and to assess and proactively manage any risks (health and equity) arising from changes in the profile of its insured population or their contributions or transfers. By law, the NHIF must constitute a provision of 10 percent of the contributions it receives for contingencies and urgent expenses, which the supervisory board has the authority to spend. In principle, the funds available in the NHIF budget at the end of the year, including those resulting from overfulfilling the revenues target or from economies in the payments for costs and transfers, are carried forward to the NHIF budget for the next year. Unexpected changes in the NHIF budget deficit must be accommodated in the consolidated fiscal program, and comply with restrictions under the law on the maximum size of the spending and deficit of the consolidated fiscal program, set in the Public Finances Act.

60. On the expenditure side, a first critical lever is the management of the entitlements or benefits guaranteed to the insured. These entitlements primarily include the list of goods and services the insured have access to (BBP). They also cover the circumstances in which services may be received and by whom. This includes deciding which services are covered in the BBP under which circumstance (in other words clinical policies about who should receive what services when), which medicines are covered, as well as copayment requirements. Many of these elements are set by law and through ordinances and not directly by the NHIF. In fact, other institutions including the MOH and the Pricing Council for pharmaceuticals set most parameters. For instance, through ordinances, the Ministry can add new CCPs, define the services which should be received by dispensary (chronic) patients, set referral rules, etc. The Pricing Council, decides on the inclusion of drugs as well as their reimbursement rates. At the same time, neither of these institutions is accountable, responsible, or has the necessary expertise for ensuring that the NHIF budget is sustainable. In addition, there is no evidence that these decisions are individually based on thorough economic and financial analyses of their current and future implications for the NHIF budget or that any single authority has the mandate, tools, or authority to assess their collective impact and ultimately decide whether or how they should be financed and what trade-offs they might require. In many respects, the responsibility for defining the contour of the benefits package and the accountability for actually delivering it within a given budget are not aligned.

61. For contracting and payment, Chapter 3 discussed how the current methods contribute to reinforcing some of the features of service delivery that undermine the NHIF's capacity to sustainably cope with the burden of NCDs, in particular the widening imbalance between inpatient and outpatient care. The following highlights the most critical issues.

62. In the current legal system, no entity has—or feels empowered to exert—the authority to limit the entry of new providers into the market and to decide whether or not they should be contracted. Essentially, if a facility opens that meets some basic criteria, its license cannot be denied, and if licensed, the NHIF cannot refuse to contract with it. The NHIF therefore does not have the authority to make “selective contracting” decisions based on efficiency and quality metrics—or even on population needs.

63. A set of rules on mandatory referrals (from GPs to specialists, for instance), combined with caps, is a check on ambulatory care. Conversely, the limits on how much hospitals can deliver are difficult to enforce. Hospitals, paid on a case basis, have strong incentives to increase volume. Further, the features of the CCPs are such that (i) hospitals can—or are incentivized to—admit patients who could be treated

on an outpatient basis; (ii) are forced to practice in ways that may be inefficient or harmful to patients (because CCPs are prescriptive about what should be done—how long a patient should stay, etc.); or (iii) may have incentives to manipulate the information reported in order to secure payments.

64. In theory, contracting and payments should—even could—be used and adjusted by the NHIF to promote and reward quality and efficiency at individual provider level as well as across the system. The NHIF and Bulgarian Medical Association conduct annual negotiations on the NFC, prices, and volumes. On paper, prices should be elaborated based on a costing methodology developed by the NHIF and reviewed by the MOF and MOH; clinical parameters should combine rigorously evaluated best practices and economic considerations about the affordability of the benefits package. The reality, however, is that the NFC and price–volume negotiations are the only instruments available to the NHIF to manage its budget constraints and to the providers to meet their revenue goals. On the provider side, these negotiations are also a chance for various “specialties” or categories of providers to promote specific agendas. The negotiations are in fact more political than technical, and more confrontational than aimed at collectively resolving systemic problems that hold back health system performance.

65. In sum, the NHIF has only a narrow range of instruments to fulfill its public financial management responsibilities as the country’s single universal mandatory health insurer. In particular, it faces barriers in using the main effectively available lever—to become an “active” purchaser, partly as it lacks some critical legal instruments. Further, perhaps due to frequent changes in leadership and regulations, it appears unable to promote changes that could help reorganize the system. The NHIF has therefore become more or less confined to being the front-line guardian of financial targets and a payment agency, with the government the payer of last resort in case of overruns.

66. The fragmentation and misalignment of roles and responsibilities between the NHIF, MOH, and MOF need to be resolved, if only because they perpetuate a costly and inefficient system. Future cost-projection studies suggest that the financial pressures generated by the current service delivery and payment arrangements will be exacerbated by demographic and epidemiological changes, and it will be important to promote service delivery reforms to help curb costs and use the NHIF to leverage implementation. A closer working relationship between NHIF and MOH might mitigate some of these problems (extensiveness of BBP, better alignment of medical practice standards and payment policies, ceilings, and referral policy). One could even argue that this alignment could be more easily achieved if the NHIF were reorganized as a department of the MOH or MOF. At some stage, a decision needs to be made about who (NHIF, MOH, MOF) has the final authority and responsibility for ensuring the system is efficiently run and financially sustainable.

67. The assessment and the work undertaken so far also suggest that even if conditions were met for the core insurance and public financial management functions to be organized coherently, the system would still need to develop some essential tools to run them. The NHIF’s health information system severely compromises its operational effectiveness and is inadequate to face future needs. Developing and using economic and financial instruments such as actuarial studies and cost-effectiveness analysis are necessary for effective policy design and implementation. Information gaps need to be plugged, including those for data on access to care by the insured and uninsured by socioeconomic and health status characteristics, as well as for NHIF revenues.

68. To conclude on a policy note, the fragmentation and misalignment just mentioned preclude a holistic approach to health financing policy making and implementation. On the one hand, some of the basic health policy goals embodied in the country’s National Health Strategy 2014–2020—including the need for more primary care, prevention and management of NCDs, and long-term care—are not fully analyzed along their health financing dimensions. On the other, some core health financing issues receive very little attention, as seen in two examples. First, the question of how to expand coverage to the

uninsured is mostly viewed as a problem of enforcement in the domain of the NRA, yet this could be justified on equity and efficiency grounds: the uninsured populations are largely indigent and tend to access the system late and not necessarily in a way to ensure the best outcomes for the money invested. Second, the financial protection for those who are insured is poor, inequitable, and not improving. OOP payments are very high, constituting a barrier to access and impoverishing 4 percent of households—a significant number.

69. To summarize, the NHIF lacks the authority to effectively fulfill its role and responsibilities as the country's single universal mandatory health insurer. The 100 or so amendments to the original law and the numerous other interactive regulations have fragmented authority and decision making, and preclude transparency, the fulfillment of public financial management responsibilities, and a holistic approach to policy making and implementation. This diagnostic echoes the conclusions of a November 2014 report prepared by the NHIF (an abstract of which is in Box 7).

Box 7: NHIF decision-making and regulations: an impact analysis

A recently published paper by the NHIF provides a detailed assessment of how numerous regulatory changes—many politically driven—have diminished and co-opted the ability of the NHIF to effectively implement its mandate and have increasingly “transformed the NHIF into an ordinary payments agency, which is a body for implementing decisions adopted outside it and without its active participation and coordination.” The rest of this box quotes word for word from that report.

With the adoption of the Health Insurance Act in June 1998, health insurance was introduced in the Republic of Bulgaria as an activity of collecting health insurance payments and premiums, management of the accumulated funds and their spending to pay for health care activities, services and goods provided for under this Act, in the national framework contracts (NFC) and in the insurance contracts.

The mandatory health insurance as an activity for managing and spending the funds accumulated from mandatory health insurance payments for health care activities was assigned to the National Health Insurance Fund (NHIF) and to its territorial subdivisions: regional health insurance funds (RHIF). The mandatory health insurance guarantees a basic package of health care activities that are reimbursed out of the NHIF budget.

Since the law was passed to this day, it was subjected to 91 amendments and additions. These amendments and additions were also reflected in changes in the National Framework Contract, in the ordinances adopted by the Ministry of Health (MOH), as well as in the medical standards adopted by the MOH for the different specializations.

The overall legislative and regulatory activity was reflected on the work and effectiveness in the management of the resources and on the NHIF stability.

The principal impacts on NHIF influenced:

1. its ability to exercise real control on the spending of the funds to reimburse health care activities, services and goods;
2. the ability to plan the financing correctly on the basis of the population’s real needs of health care services and goods;
3. the ability to conduct policies for effective control and spending of the citizens’ finances and public funds provided for management;
4. the ability to participate in the MOH decision-making on the types, quantity and quality of the health care services and goods to be reimbursed out of the NHIF budget;
5. the ability to engage in real negotiations with the professional organizations on the type, quantity, quality and the price of the services that NHIF buys from them.

The decision-making and the implementation of the decisions through new regulations, or their modification, transformed the NHIF into an ordinary payments agency, which is a body for implementing decisions adopted outside it and without its active participation and coordination.

The decisions adopted by the politicians often contravene the NHIF Budget Act, as well as the Public Finances Act, which additionally complicates the activities of the NHIF and threatens its stability.

It is also necessary to note the strong influence on the NHIF activities on the part of the numerous groups with diverse interests, which easily pass decisions without analysis of their impact on the effective spending of the NHIF finances, notably the professional and patients’ organizations, organizations of the type of the scientific medical societies, of the employers, the unions, and of the corporate and pharmaceutical companies, different unions like those of the hospitals at different levels, etc. The numerous national consultants played a particularly prominent role in this process by offering opinions that often fail to take into account the limitations of the NHIF budget.

Source: NHIF 2014, p. 1.

Chapter 5. The Health Financing System Reform Baseline

1. Concluding Part I, this chapter weaves the diagnostic elements discussed in the earlier chapters into a map of the broader strengths and weaknesses setting the policy baseline for reforming specific institutions and features. As health systems are complex, the intent here is to get a snapshot of the major performance parameters, their interactions, and likely chains of causality,⁹⁰ irrespective of how they are organized typologically. After presenting a SWOT analysis for each of five core messages, the chapter suggests possible reform areas stemming from the diagnostic.

5.1. Bulgaria's health outcomes are average relative to its income and health spending, but its underlying public health programs, system incentives, and delivery-system configuration need to better align with present and future demographic and epidemiological transitions.

2. Health outcomes are average for the country's income and health spending, although both are below EU averages, and have failed to improve as rapidly as those in neighboring countries. Such outcomes are a function of many factors including individual behaviors, underlying disease burden, government public health and physical and financial access to care, the configuration of the human and physical health delivery systems, and other social determinants of health.

Strengths and opportunities

- The country's health outcomes are comparable to those in other countries with similar levels of income and health spending.
- Bulgaria has well-developed and extensive public health programs, including smoking bans.
- There is a well-developed and comprehensive health care delivery system throughout the country.
- Most providers are autonomous entities and the purchaser–provider split creates space for strategic purchasing and arm's-length accountability.
- The NHIF covers the majority of the population, thereby providing financial access to a comprehensive BBP.
- Uninsured individuals can receive free treatment in an emergency.
- The NHIF has become the single largest uniform purchaser of health services responsible for providing a wide spectrum of care (cancer drugs were added most recently).
- The NHIF can thus have a great influence as a monopsonistic purchaser over the entire health system.
- Payment systems have been modernized and contain elements of global best practices (such as capitation for GPs, budget holding for ambulatory care providers, and case-based payments for hospital care).

⁹⁰ As previously discussed, while directly attributing causality is very difficult, we have attempted to use the quantitative information and the globally accepted health policy framework of goals and objectives, global experiences, and actuarial science, etc., to empirically analyze the impacts of system features and policies.

Weaknesses and threats

- Public health programs are not well aligned with the large and increasing NCD burden (Dimova, Popov, and Rohova 2008).
- While recognizing the evolving NCD burden, the National Health Strategy lacks adequate resolution of the necessary trade-offs among competing priorities of the country's health needs.
- The service delivery system is based on an acute care model, and is not well suited to preventing and treating NCDs cost-effectively. The emergency care system may also contribute to this bias toward inpatient care.
- There are too few primary care physicians and the majority of them are inadequately trained in family medicine and the management of NCDs.
- The health workforce is rapidly aging, nurses are in short supply, and large numbers of young health workers migrate.
- The long-term care system, including its social services aspects, is not well developed and is poorly integrated with the acute health care system.
- The NHIF's BBP, while extensive, is not based on cost-effectiveness criteria and is oriented to acute care, rather than being focused on the impending NCD burden.
- The NHIF is not adequately empowered or capable of leveraging its purchasing power. In particular, it must contract with any willing provider that is certified, thus precluding it from using selective contracting to ensure efficiency and quality. Nor does it have an adequate information system to allow for strategic purchasing of services (see the information-technology section below).
- The NHIF has no means of penalizing hospitals for poor performance and has not been successful in enforcing GPs to perform their 24-hour monitoring function. The latter contributes to inefficient use of resources by encouraging unnecessary emergency care.
- The bias toward inpatient care is reinforced by the payment arrangements used by the NHIF, which limit ambulatory care and create strong incentives for inpatient care over other modalities.
- CCPs, initially designed as clinical tools and now used as the basis for case payments, generate important distortions in terms of efficiency and fairness.
- High OOP costs for drugs used in primary and secondary prevention of cardiovascular disease, and management of other chronic conditions are likely to be undermining both access and adherence to treatments that are important for preventing or delaying disease progression, thereby increasing downstream costs.

Possible priority areas for reforms

- Reassess NCD policies and the public health framework and reprioritize as necessary.
- Develop a comprehensive assessment and long-term strategy for human resources in the health sector.
- Over time, rebalance service delivery by:
 - a. Developing a needs-based hospital and long-term care master plan for human and physical capital in light of the present and future NCD burden with strong normative

- objectives, including reducing inequality in access, improving quality, and tightening coordination across all levels of care.
- b. Reorganizing service delivery according to the plan and empowering the NHIF to fully leverage its purchasing power.
- c. Strengthening primary and ambulatory care.
- d. Reassessing the role that emergency care can play in ensuring access and continuity of care within the continuum of care and orienting patients in the system.
- e. Assuring better coordination between MOH- and NHIF-funded activities and programs.
- Modernize and strengthen quality assurance and monitoring at all levels of the delivery system.
- Align payment systems and accountability mechanisms to support the reorganization of service delivery and improve the incentives to provide treatment at the right level of care and coordinate across levels by:
 - a. Reviewing NHIF payment policies, in particular for hospitals.
 - b. Implementing contracting reforms (such as instituting positive incentives in the various risk-sharing arrangements and allowing selective contracting).
 - c. Linking payments to results and quality using tools such as DRGs and other pay-for-performance/value-based purchasing models.

5.2. Bulgaria invests adequately in health but needs to manage macro-fiscal risks and major future health care cost pressures (aging, declining labor force)

3. Bulgaria's total, private, and OOP spending are above global averages and public spending is average. Despite it prioritizing health in its budget, its overall expenditure is driven largely by private spending, and levels of financial protection are well below WHO-recommended thresholds, and are diminishing and inequitable. Excess health care cost pressures and limited economic growth arising from a declining population and labor force, coupled with the aging of the population and a very tight fiscal environment, will place further demands on health spending and future government revenue-raising potential. As a result the major opportunities for "additional" health financing lie in efficiency gains in the current system through reforms in service delivery, payment procedures, the BBP, pharmaceutical policies, and management.

Strengths and opportunities

- Bulgaria's overall revenue raising and public expenditure efforts are high.
- The revenue sources used to finance the overall budget and health sector appear to be pro-growth.
- The financing of the NHIF appears to be relatively equitable, especially as formal sector workers subsidize the disadvantaged groups financed by the government, in particular the elderly.
- Bulgaria prioritizes health in total health spending and in public health spending (as a share of total government spending).
- Bulgaria's fiscal framework is solid and the budget law, voted in Parliament, includes the budget of the NHIF.

- Any shortcoming of revenues or excess in expenditure is explicitly managed through reallocations in line with the finance law.
- Bulgaria can position itself to access EU Structural Funds in the context of the 2014–2020 financial perspectives.

Weaknesses and threats

- A rapidly declining (and aging) population and labor force will give rise to significant future cost pressures, and limit future revenues.
- The declining population and labor force, lack of natural resources, and the underlying industrial structure create substantial challenges in future growth and fiscal space.
- Private spending is well above levels in other countries, and as 98 percent of it is OOP, there is almost no risk pooling or financial protection. An increasing share dilutes the market influence of the NHIF.
- Bulgaria’s approach to policy making, implementation, evaluation, and reform is not comprehensive. High turnover in leadership and frequent changes in legislation have resulted in a fragmentation in decision making, with misalignment of responsibility, authority, and expertise.
- More specifically, the NHIF lacks the authority to fulfill its roles and responsibilities effectively as the country’s single universal mandatory health insurer and largest unified payer.
- Decisions on the benefits package are taken without due consideration to economic criteria, including cost-effectiveness and long-term financial impact for the NHIF.
- Insufficient weight is given to ensuring that medicines and other health technologies, covered services, and clinical treatment algorithms are cost effective and represent reasonable value for money.
- The escalating trend in hospital admissions over the last decade will continue if measures are not taken to change the hospital-centric approach and realign incentives toward a more efficient, primary care–focused, service delivery system.
- Current policy settings do not foster competition in the off-patent medicine market and do not promote the use of cheaper, generic medicines.
- Structural reforms for service delivery may have the potential to improve sustainability, but are lagging behind.

Possible priorities for reform

- Prioritize reforms that increase the efficiency of public spending, including those listed above to reorganize service delivery, and develop and implement purchasing or contracting reforms.
- Revise the governance framework to better align responsibilities and authorities.
- Review the BBP to improve cost-effectiveness of existing spending, starting with medicines.
- Develop a cadre of staff with the necessary skills and tools for employing a refined actuarial model that undertakes cost-effectiveness and other analytic studies for management, policy making, and impact-evaluation purposes.
- Develop information-technology systems of the NHIF to allow risk management and the routine analysis of data by sociodemographic characteristics, disease profile, and types of providers.

5.3. Bulgaria has a mature health insurance system providing universal coverage to some 90 percent of its population, pooling risks and promoting solidarity at the national level, but leaving some people out and providing little and diminishing financial protection.

4. The NHIF was set up to provide universal coverage 15 years ago but some 7–12 percent of the resident population lacks coverage. The poorest half of the population (those with least ability to pay premiums) accounts for about 70 percent of the uninsured, with the poorest quartile accounting for 43 percent. There also appears to be a significant amount of people moving in and out of uninsured status (6 percent of the population between 2010 and 2013, but nearly half of the uninsured in 2013 had been covered in 2010), subjecting a much larger share of the population to periodic denial of financial protection.

5. Despite increased spending on health, private OOP spending has increased much faster than public spending, from 26 percent of total health spending in 1995 to 47 percent in 2012, or more than double the WHO financial protection threshold, with pharmaceutical spending accounting for some three-quarters of OOP. Impoverishment from large OOP medical expenses is also getting worse, with 4.2 percent of households impoverished in 2013, up from 3.8 percent in 2010.

Strengths and opportunities

- The NHIF, as the single compulsory national health insurer and risk pool for the entire population, pools health risks efficiently and is consistent with global trends toward centralizing risk pooling.
- Some 90 percent of the population is enrolled, including most children and most elderly, whose coverage is subsidized by the state.
- The NHIF relies on a diversified set of revenues, mainly (i) social insurance contributions from employers (including the government on behalf of civil servants and other public employees), employees, and the self-employed; and (ii) government general revenues.
- The government provides and finances coverage of numerous “needy” or high-priority groups.
- The benefit package covered by the NHIF is comprehensive and includes modern technologies and innovative medicines.
- Efforts are made to ensure access to coverage to the most vulnerable and poor (the unemployed, individuals with disabilities, eligible for social support, etc.)
- The NHIF revenue structure appears to promote redistribution across groups.

Weaknesses and threats

- Almost 70 percent of the uninsured are poor or near poor and have limited ability to pay premiums.
- Financial protection is poor, with OOP payments at 47 percent of total health spending more than double the recommended WHO 20 percent threshold and the 1995 OOP level.
- OOP is inequitable as the poor spend a much higher share of their nonfood incomes on health care (6.8 percent) than the non-poor (4.1 percent), and these inequities have worsened over time.
- Bulgaria ranks second only to Latvia on self-reports of unmet need among the lowest income quintile (over 20 percent).
- OOP spending as a share of total health spending and of GDP per capita is well above the rates in comparable-income countries.

- Medicines account for some three-quarters of OOP costs, raising concerns about the effectiveness of NHIF's BBP pharmaceutical coverage, as well as its copayment and pricing policies.

Possible priority areas for reform

- Regularly generate the information required to understand and monitor the nature, burden, and explanatory causes of OOP payments to develop and target policies to improve financial protection.
- Develop policies to ensure coverage of the uninsured.
- Promulgate options to reduce the size and increase the clarity and predictability of copayments, with priority emphasis on the medicines included in the BBP.
- Assess the potential for private supplementary insurance to improve financial protection and equity in the system.

5.4. Bulgaria has a pharmaceutical policy framework with European standards of regulation but suboptimal listing and pricing processes, and inadequate linkages between supply- and demand-side policy levers—leading to uncontrolled growth in expenditure and inadequate financial protection.

6. Pharmaceuticals account for some 37 percent of total health spending, against an EU average of 25 percent. The industry critically lacks an overarching, integrated national medicines policy to guide priorities and to ensure policy consistency. Policy appears most focused on limiting NHIF outlays rather than promoting access and providing financial protection to patients, which may be increasing downstream costs in the health care system.

7. While regulatory standards and processes have been largely brought into line with EU standards, mechanisms for listing and pricing medicines in the PDL are not ensuring adequate value for money for the NHIF, and are contributing to rapid growth in drug expenditures. Prices for many patented and off-patent medicines are as least as high as in countries with far greater capacity to pay, and so many high-cost, subsidized medicines are unlikely to be cost effective.

Strengths and opportunities

- Regulatory processes are in line with European standards.
- The PDL is comprehensive.
- A range of high-cost medicines, available without copayment, is available.

Weaknesses and threats

- An overarching national medicines policy to establish agreed priorities and guide consistent policy development is lacking.
- Inadequate consideration is given to cost-effectiveness or affordability in approaches to selection, listing, and pricing of medicines in the PDL.
- There is a dearth of evidence-based clinical treatment guidelines, and inadequate controls on prescribing and utilization.
- The copayment structure creates excessive OOP costs, creates uncertainty for patients, and undermines adherence to treatment.
- Policy settings do not promote the use of generic medicines or adequately facilitate competition in the off-patent market.

Possible priority areas for reform

- Implement pharmaceutical reforms beginning with the development of an integrated national medicines policy that explicitly defines priorities and guides future policy settings.
- Review processes for listing and pricing of medicines to ensure that all new medicines are assessed for cost-effectiveness (value for money) and budget impact (affordability).
- Introduce risk-sharing arrangements for high-cost medicines to ensure that cost-effectiveness is assessed before listing.
- Establish mechanisms to promote prescribing, dispensing, uptake, and confidence in generic medicines; reduce incentives for prescribing and dispensing higher-cost medicines; and facilitate competition in the off-patent market.
- Review the PDL to identify medicines unlikely to be cost effective, and consider delisting, price renegotiation, risk sharing, or tighter restrictions on use.
- Review clinical treatment guidelines and algorithms to ensure that they reflect cost-effective and rational use.
- Develop capacity for health technology assessment and priority setting.

5.5. Bulgaria has a dynamic information-technology industry and ambitions to advance health informatics in the country, but limited concrete steps to tackle the most pressing issues.

8. Many of the essential characteristics of a vital health informatics industry are present, but as in most of the world health applications have lagged considerably behind the frontier. The opportunity exists, however, given Bulgaria's geography and membership in the EU, to advance rapidly. The prognosis for health management information systems remains, therefore, mixed.

Strengths and opportunities

- Two or three main vendors have led to de facto standards setting and provided some reasonable interoperability between providers and the NHIF, as well as between providers and the MOH.
- As a member of the EU, Bulgaria can take part in EU-related activities and innovations.
- Bulgaria has considerable capacity and experience in software development and large-scale systems administration.

Weaknesses and threats

- The HIIS at the NHIF, after several years of lack of maintenance support (due to contractual issues) has reached a point at which many financial- and planning-related functions must be done manually, to circumvent the system. Matters can only become worse.
- Systems lack the flexibility to provide the NHIF with information that is core to modern risk management, including comprehensive information on the enrolled population, health status, utilization, and the capacity to analyze them.
- The NHIF information system is not well prepared to accommodate major changes in either functionality or transaction volumes, which reforms might require.
- The MOH's leadership in shaping the electronic health agenda has not been decisive enough and its efforts to engage stakeholders on policy appear limited.

Possible priority areas for reform

- Find a solution to the NHIF information system problem.
- Launch a requirements assessment to define a new HISS for the NHIF.
- Develop and implement consistently a carefully phased electronic health strategy—taking into account budget constraints and priority business needs.
- Convene a permanent advisory panel of national and international experts to discuss future systems development—provider and payer—to provide input for systems design and administration.

Part II: Review of Envisaged Reforms

Introduction

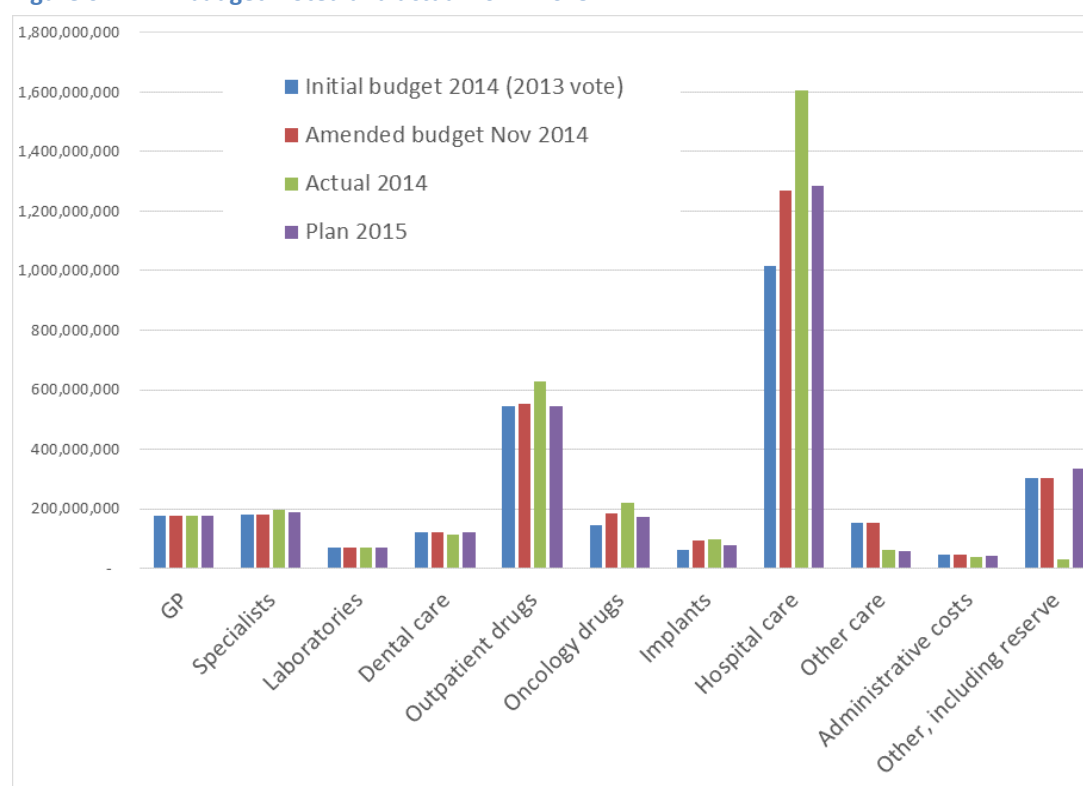
This second and last part of the report is organized around the reform agenda of the MOH approved by the Council of Ministers on February 18, 2015 (based on the “Concept Note: Health 2020 Goals”—MOH 2015a). It discusses and analyzes selected priority areas of the reform agenda to which the Reimbursable Advisory Services is best positioned to contribute. The focus remains on health financing, although we also include some other areas of particular interest to the government, recognizing that health systems are complex interactive organisms within which financing acts on other components to produce certain outcomes.

The impetus for the “Health 2020 Goals” is the recognition that “[Bulgaria] pays more for less health” (MOH 2015b). This conclusion is derived from the systematic analyses included in the “Concept Note” and supported with evidence in the earlier part of this report. Compared with other EU countries, Bulgaria faces more serious challenges in terms of high rates of mortality, high level of disability, and low life expectancy in years and years in good health. Yet as the Bulgarian population continues to bear a larger burden of OOP payment, government expenditure for health keeps rising and financial sustainability of the health system is falling under increasing threat.

The Bulgarian health financing system is under pressure. 2014 was an election year, which might have made it difficult to implement cost-savings measures or strict budget caps. Yet the description of how planned and actual NHIF expenditure evolved since the end of 2013 provides a powerful illustration of the pressure the NHIF is under. Total expenditure in 2014 turned out 28 percent higher than allowed under the initially voted budget law of 2013. The budget law was amended twice in the course of the year, but still actual expenditure exceeded the amount planned in the November amendment.

The 2015 budget anticipates that total expenditure will be 5 percent lower than the actual 2014 expenditure. Figure 62 shows that if the reserve is not used, this will mean a decrease of 20 percent in hospital expenditure compared with the actual of last year. The figure also highlights that hospitals and medicines are the main pressure points on the NHIF budget. The authorities have expressed a strong commitment to the adopted budget but hospitals are already suggesting that they will not be able to provide services until the end of the year.

Figure 62: NHIF budget: voted and actual 2014–2015



Against these wider and narrower backdrops, the “Concept Note” specifies five major national health objectives to reduce mortality and disability while prolonging life expectancy among different population age groups, through integrated prevention, early diagnostics, and effective treatment of diseases and disabilities. To achieve the national health objectives, four priorities are defined:

- Ensuring the financial sustainability of the health system:** three approaches are being considered including: increasing government health spending; adopting strategies on both the supply and demand sides to curb cost growth in health care; and employing a range of measures to increase cost efficiency. The last approach is considered by the government as the most feasible. Central to it is a decision to separate the benefit package into three packages to allow for prioritizing government funding and encouraging voluntary contribution (a base package, additional package, and an emergency package);
- Changing the functioning of the health system,** by focusing on ensuring quality and results, and by attaining the national health objectives: this entails reorganizing service delivery by working on the following key aspects: outpatient care (improving in primary care service and its interaction with other levels), hospital care (restructuring and rationalizing hospital and introducing mechanisms for improving quality and efficiency including payment system), emergency medical care (implementing an integrated model for servicing emergency patients), human resources for health (training, upgrading skills, and improving working conditions for health professionals), and e-health (introducing a national health information system and providing access to the system by means of an electronic ID for citizens).
- Adopting an active approach with respect to care** and the establishment of supportive environments for specific and vulnerable groups of the population: groups include mothers and

young children, children with special needs, elderly, people with chronic mental disorders, people with disabilities, and other socially vulnerable groups; and

- **Strengthening the capacity for public health care:** promotion of health and prevention of diseases, and participation of civil society in health.

The government's health reform agenda is complex and overarching. The identified priority areas and associated activities are highly relevant for addressing critical needs, as pointed out in Chapter 5. In line with global best practices, some highlighted measures include strengthening primary health care; rationalizing hospital services; introducing a ceiling to the NHIF's hospital payment; applying health technology assessment in approving the NHIF's reimbursed services; and implementing a goal-oriented drug policy focusing on quality, safety, and efficiency.

While the reform's contours seem well defined in some areas, other areas are more loosely identified. To best support government health reforms, the rest of this part presents a collection of essays tailored to the specificities of the agenda. Together with the companion reports prepared as part of the Reimbursable Advisory Services ("Final Action Plan for the Implementation of DRGs-based Payments" and "Final Report with Recommendations for Reforming Bulgaria's Pharmaceutical Sector," both 2015), this part of the report aims to provide analyses and evidence that will inform the government of Bulgaria in its effort to elaborate the implementation plan and progress further in its health reforms.

The remaining chapters are organized as followed:

- Chapter 6 is premised on a clear decision to distinguish a base and an additional package of services to be administered through health insurance. Given that the intention is clear but the design and implementation aspects are yet to be worked out, the chapter introduces key issues and pertinent concepts on the basic and additional benefit packages, while sharing lessons from international experience.
- Chapter 7 introduces further options for moving toward a more comprehensive health financing agenda to improve key performance aspects. It analyzes and provides recommendations specifically on two areas that should contribute significantly to the cost-efficiency and equity goals: alignment of incentives in a provider-payment system and measures to improve financial protection.
- Chapter 8 brings in rich international experience in e-health while providing a critical analysis of the current health information system and recommendations on the government's E-health Road Map. The purpose is to prepare the country for ambitious future steps while making sure due attention is paid to sustain the current system.
- Chapter 9 analyses in details the emergency medical package managed by the MOH. Given that the government has produced the "Concept for the Development of the Emergency Medical Care System in the Republic of Bulgaria 2014–2020" (MOH 2014) with a clear vision and plan for EMC, the chapter conducts an in-depth analysis of current and past trends, in order to formulate recommendations for areas of key focus in implementing that concept.
- Chapter 10 concludes the report with a discussion on the first of the government's four key priorities—ensuring the financial sustainability of the health system. It revisits key areas that affect such sustainability and calls for a committed approach in implementing reforms in all these areas.

Chapter 6. Basic and additional packages of services: relevant concepts and lessons learned from international experience

1. According to the “Concept Note: Health 2020 Goals” (MOH 2015a), the separation of the package of health activities paid by the NHIF into basic and additional packages is intended to prioritize medical care purchased by the NHIF. A separate emergency services package will also be created to rationalize the full continuum of benefits from emergency to essential to additional. Emergency health care services and the EMC system are discussed in Chapter 9.
2. To optimize the use of resources while limiting adverse impact on health, “for the activities in the basic package, limiting has to be brought to a minimum, while for the planned activities in the additional package, there will be mechanisms for planning within certain limits and for putting up patients’ waiting lists. Health insured persons who do not want to wait for medical activities in the additional package will be able to get the health service *“by means of a contract for medical insurance with an insurance company of their choice.”* Furthermore, in the same document, one of the main activities listed under Priority 1, “financial sustainability,” is “introducing incentives for voluntary health insurance.”
3. The following two sections highlight key issues pertaining to the basic and additional benefit packages. The aim is to introduce, selectively, key concepts and issues deemed important from international experience, which would help the government anticipate issues and think through strategies as it progresses further in its reforms.

6.1. Issues pertaining to the basic benefit package

4. This section presents some of the fundamental considerations in designing a basic benefits package (BBP). It highlights the key questions that should be addressed throughout priority setting and the inherent difficulties that these choices entail. Drawing from the experiences of middle and high-income countries, it identifies the main steps in defining a BBP.
5. BBPs in most health systems are designed to assure program enrollees access to the services specified in the underlying laws and regulations. In practice, most of these laws and regulations specify broad categories of services, such as primary, secondary, and tertiary care, with, in some cases, certain services covered. There are often “positive lists” of covered services or “negative lists” of uncovered services, sometimes both. In reality, implicit or explicit “medical necessity” criteria and other utilization management techniques are often applied as well (e.g. mandatory second surgical opinions). Benefits are also often limited by explicit numerical or expenditure caps (e.g. 100 hospital days), cost-sharing (deductibles and copayments), and implicit or explicit rationing (World Bank 2015a).
6. While there is very little systematic information on the benefits covered by different public health insurance programs and their historical evolution, the World Bank’s UNICO study of 24 countries summarizes the broad features of the BBPs there (Cotlear et al. forthcoming). The study also states that almost all EU countries use positive lists, though very often only for drugs. Only a minority use implicit rationing and have only negative lists (Carone, Schwierz, and Xavier).

6.1.1. Overall principles

7. While countries strive to provide the most comprehensive health care to their citizens, they are checked by budget constraints. “No country, no matter how rich, is able to provide its entire population with every available technology or intervention that may improve health or prolong life” (WHO 2010). Rationing of services and interventions is unavoidable. But what constitutes an “essential” basic package

of services and how should the government decide which services are provided within the BBP? Although most priority-setting exercises are country specific and depend on societal values, two objectives are common: *maximizing health* and *reducing inequities in health* (Hauck, Smith, and Goddard 2005).

8. Many countries have recently introduced explicit benefits for their citizens as opposed to simply having negative lists of uncovered services. Given the substantial differences in the scope of benefits across countries, instead of focusing on what interventions are covered, the existing literature focuses on the processes through which these priority-setting decisions are made. No single “policy lens” is sufficient, however, for prioritizing health interventions (IOM 2012). The process requires expertise from economics and ethics, knowledge of evidence-based practices, and a focus on population health. Institutions responsible for evaluating and prioritizing new technologies often invite physicians, health economists, representatives of the Ministry of Finance, public representatives, representatives of health funds, and ethicists to take part in priority setting.

9. As indicated by the WHO cube, one needs to consider three important elements before broaching the path to UHC: population coverage (who is covered?); benefits coverage (which services are covered); and depth of coverage (proportion of costs covered). When designing a benefits package, it is important to address the following questions (Busse 2013):

- What services should come within the scope of the BBP, in particular in order to best deliver health policy goals?
- What guiding principles or criteria should underpin the selection of services?
- How can we balance comprehensive, universal coverage with financial sustainability and financial constraints?
- To what extent and what kind of conditions or targeting should apply in relation to coverage of certain services (e.g. limited to people with certain conditions, or to certain groups, like children)?
- What processes and structures need to be established to determine the standard package?
- How will the standard package be kept up to date? What process should apply?
- How will the standard package be defined legally, e.g. what legislative and other approaches should apply and how will these relate to definitions of services for payment purposes?
- How will disputes in relation to the scope and content of the standard package be resolved?

10. Box 8 presents an overview of the key elements that should be accounted for in the design of the benefits package. Box 9 presents the findings on prioritization from the World Bank’s UNICO study.

Box 8: Description of benefit design

Benefit design includes

1. A description of the covered benefits: services, drugs, devices
 - a. Identification of those covered services, drugs, and devices that are variably covered (tiering)
 - b. Identification of those covered services, drugs, and devices that are limited in quantity, frequency, or some other way
2. A description of the cost-sharing process
 - a. Specific definition of and dollar amounts related to deductibles, copayment, coinsurance, and out-of-pocket maximum
 - b. Specific identification of any covered services, drugs, or devices having no cost-sharing
 - c. Specific definition of any covered services, drugs, or devices in which cost-sharing does not accrue to the out-of-pocket maximum
 - d. Specific definition of those services, drugs, or devices whose cost is not included in the out-of-pocket maximum when they are not covered
 - e. The actuarial value
3. A list of coverage exclusions
4. Definitions of key terms affecting coverage, including whether the definition is consistent with an external standard
 - a. Definition of medical service
 - b. Medical necessity
 - c. Experimental, investigational
 - d. Cosmetic
 - e. Dental
5. Identification of benefit design innovations
 - a. Value-based insurance designs that align cost-sharing with value
6. Identification of provider networks, incentives, and care delivery options
 - a. Incentives and disincentives for providers at individual and organizational levels
 - b. Network design: types of networks (e.g., narrow networks, tiered or concentric networks, broad networks) and level of care or site of service for specific procedures or conditions within networks
 - c. Centers of excellence (without any out-of-network coverage for specific conditions)
 - d. Identification of delivery arrangements that could affect care
 - i. Medical homes
 - ii. Disease management
 - iii. Care coordination
 - iv. Specialty referral requirements
7. Identification of approaches designed to influence the use of services, including specific services that need to be authorized prior to provision, to be provided in specific sites (such as surgery in an ambulatory surgery center), or to be provided at a specific level of care (such as “skilled” services in a nursing home)
8. Identification of medical policies that could affect coverage including an explicit statement that these policies may apply to all covered services on an individual patient basis
 - a. Access to specific medical policies affecting coverage
 - b. A description of the process for administering these policies including complaint, request for review, and appeal processes
9. Medical management and/or utilization management programs (e.g., when prior authorization is required for specific services; site of service, level of care, or preferred providers)
10. Payment policies that affect coverage or cost-sharing.
 - a. Hold-harmless arrangements
 - b. Pricing arrangements that may affect cost-sharing and out-of-pocket maximums
 - c. Reference pricing for drugs and medical or surgical services
11. Quality and cost transparency reports on variation by provider, condition, procedure, facility, and geography
12. Overall description of how benefits are administered, including description of the complaint, request for review, and appeals processes

Source: IOM 2012.

Box 9: Prioritization issues

Policy makers committed to systematic prioritization require detailed information and a good understanding of their options on the institutional structure, processes, and criteria to be used.

Institutional mechanism

Their first important decision is on the institutional mechanism for prioritizing services for initial UHC program coverage. In most OECD countries, as increasingly higher health expenditures are allocated to new drugs and technology, decisions on these services are delegated more and more to specialized bodies (Landwehr and Bohm 2011). Specialized agencies can make these decisions more easily and in an apolitical, scientific, and credible manner (Flinders 2008), because, for example, countries using negative lists to define their benefit package will find it unpopular to add to the list. Still, these agencies need built-in safeguards to prevent a potential loss of accountability (Landwehr and Bohm 2011).

A related issue, when establishing the institutional mechanisms for prioritizing, is the extent and nature of stakeholder involvement, which could potentially include that of public and provider representatives. While such involvement can improve buy-in and legitimacy, it also needs to be weighed against a possible increase in transaction costs, greater difficulty in arriving at decisions (Landwehr and Bohm 2011), and the risk of interested stakeholders “capturing” the consultation process (Coen and Thatcher 2005).

A compromise pathway is often adopted: allowing stakeholders a greater say in defining the principles and criteria to be used, and then leaving it to the specialized bodies to make the decisions in a scientific, accountable, and transparent manner. The WHO consultative group on equity and UHC (WHO 2014) suggests that priorities must be set based on scientific evidence, ethical arguments, and public values. To properly integrate these elements, it stressed the importance of explicit, systematic, and continuous processes for priority setting and use of a health technology assessment (HTA).

Criteria for setting priorities and amending them

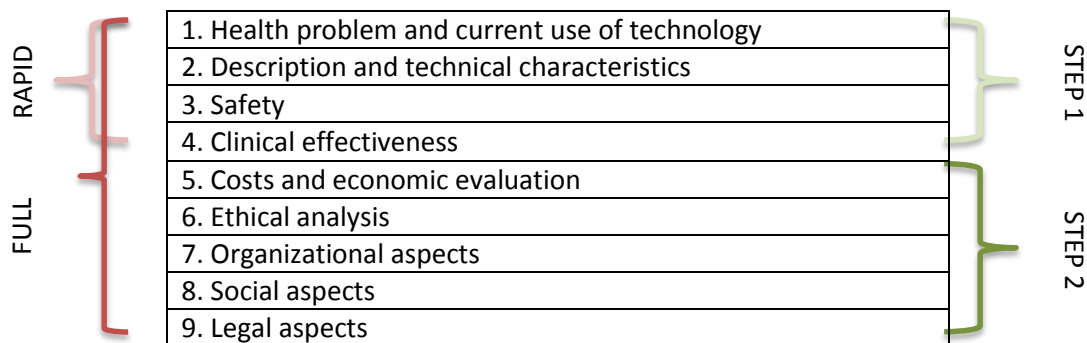
The next decision area requires the criteria for priority setting and subsequent amendments to the benefit package to be defined, in tune with the objectives of the UHC program. The criteria could range from the country’s disease profile and burden—for its vulnerable groups particularly—to evidence from scientific and systematic cost-effectiveness studies and HTAs. Such criteria need to try and meet the twin objectives of adequate financial protection for vulnerable groups and sustainability for the program. However, the role played by the cultural context and political economy can be paramount (an expression of a society’s values that may differ from another’s), and may explain why the pathways to UHC vary.

Source: Cotlear et al. forthcoming.

6.1.2. Key aspects in defining the BBP

11. In Western Europe, countries are increasingly relying on a process called Health Technology Assessment (HTA) to evaluate current and potential new interventions and benefits to be covered in the BBP. HTA is a multidisciplinary process that summarizes information about the medical, social, economic, and ethical issues related to the use of a health technology in a systematic, transparent, unbiased, and robust manner. The aim of HTA is to inform the formulation of safe and effective health policies that are patient focused and that seek to achieve best value. HTA requires detailed data, information, and evidence of the existing burden of disease, available interventions, their costs, and potential effectiveness.

Figure 63: Domains of the HTA Core Model



Source: Kristensen 2012.

12. As demonstrated in Figure 63, the HTA involves nine steps that guide the priority-setting process. Although rapid assessments can be conducted, a full assessment should be made for comprehensively evaluating benefits. Typically, the HTA process is conducted in two steps. First, the burden of disease is measured and reviewed, clinical interventions are identified, and safety and clinical effectiveness of these interventions are established based on available evidence. Second, an economic evaluation is conducted and ethical, organizational, social, and legal aspects are considered (Kristensen 2012). The following paragraphs elaborate further on three key aspects in the HTA.

Burden of disease

13. In designing the BBP, it is important to first measure the burden of disease, identifying any geographic or social inequities. A BBP that does not account for the burden of disease and its relative distribution among the different population subgroups is unlikely to meet the health system's objectives. In the past, health insurance has been typically promoted for more expensive catastrophic health spending instead of primary care. Due to evolving epidemiological profiles, however, individuals are increasingly exposed to financial risks from chronic disease management. As shown for example by Yip and Hsiao (2009) in China, the rising burden of chronic diseases has resulted in expensive outpatient care, which now represents the major source of medical impoverishment. Failure to account for this burden will not only fail to maximize health outcomes but is also likely to result in inequities and impoverishment. But measuring the disease burden requires quality, disaggregated data. For diseases for which data are lacking or of poor quality, a country should make a determined effort to improve data collection to ensure that the information used to guide the design of the BBP is up to date and reflects the population's current health status.

14. Once the disease profile of the country has been identified and analyzed, the discussion can move on to: How should we decide what benefits to include? Economic evaluation methods are one way to assess the costs and gains from a health intervention, and can be used to determine which services should be covered under the benefits package.

Cost-effectiveness

15. Economic evaluations have become increasingly popular tools to inform decisions on allocating scarce health resources. Most often, cost-effectiveness analysis (CEA) is conducted, in which incremental costs per quality-adjusted life year (QALY) or disability-adjusted life year (DALY) gained are measured against some threshold to determine an intervention's value for money. CEA gives us a ratio that indicates how much more (or less) cost-effective an intervention is against an alternative (the status quo, no intervention, or another intervention) (Russell et al. 1996).

16. In CEA, however, all QALY gains are valued equally, and no preference is given for particular diseases or populations. This has been an issue of longstanding debate in view of a society's preferences for some QALY gains over others (young over old, for instance). Several studies have shown that countries are not only concerned about the cost-effectiveness of interventions but also the distribution of interventions across the population, particularly based on severity of the health condition. In the United Kingdom for example, Dolan et al. (2000) found that priority was given to the worst off or most disadvantaged members of the society. In Sweden, results from a household survey revealed that care for chronically ill, terminally ill, and severely handicapped patients was considered essential despite such services ranking extremely low on cost-effectiveness (Calltorp 1999). Although it is possible to incorporate weights in CEA calculations, they are generally difficult to determine and can also lead to societal discontent. CEA is thus unlikely to lead to an outcome that society perceives to be "fair." Some of the more detailed limitations of CEA are in Box 10.⁹¹

Box 10: Limitations of cost-effectiveness analysis

Cost-effectiveness is a useful tool that allows us to estimate the cost of an intervention relative to its effectiveness (Russell et al. 1996). In most cases, DALYs or QALYs are the standard metric it uses and as such the cost-effectiveness of interventions is measured as monetary costs per DALY or QALY gained). Calculation differences of CEA, however, make it hard to compare across different countries or studies. What is cost-effective in one setting can be cost-ineffective in another. Moreover, undergoing CEA is a lengthy and often costly process, which requires information on the burden of disease, cost of interventions, and evidence on the interventions' effectiveness. While CEA is useful to compare interventions for a particular disease to choose the one with the best cost-effectiveness ratio, CEA does not indicate whether an intervention is affordable, and it cannot be used to establish the health budget needed.

CEA has several other important drawbacks:

Which costs and benefits should be included? This is perhaps one of the most important questions that directly links to which consequences are considered in CEA. There is an ongoing debate as to whether CEA should include only direct costs (those directly associated with the provision of services) and direct benefits (such as a direct improvement in health outcomes), or whether it should also include indirect costs and benefits (such as opportunity costs, lost wages associated with poor health, and other externalities) (Brock 2003). As Bloom, Canning, and Weston (2005) argue, some CEA calculations are limited, particularly for vaccination, as they do not include the associated externalities and long-term consequences of vaccination, such as improved productivity and higher wages in the future.

⁹¹ Recently, extended cost-effectiveness analysis (ECEA) has been proposed to remedy some of the critiques of CEA by incorporating financial risk protection (Verguet and Jamison 2015; Verguet, Olson, and Babigumira 2015); while in the Netherlands, proportional shortfall is applied to incorporate equity weights (van de Wetering et al. 2013).

Do we want a fair chance or the best outcome? In most cases, there is a tradeoff between equity and efficiency in CEA. An outcome can be argued to be both equitable and efficient if the person that benefits the most from the problem is the one worst off. With CEA, however, we would choose to prioritize treatment for person A because it is more cost-effective than treatment for person B. Given that health shocks are uncertain and in some cases random, person B would not receive a fair chance in the allocation of resources. As “luck egalitarians” would argue, person B would simply be penalized for pure chance (or misfortune) in this situation (Brock 2003).

The aggregation problem. A direct consequence of CEA can be that small individual benefits are given priority over a large benefit to a small number of people. As shown by the Oregon use of CEA in priority setting (Box 11), the provision of 150 tooth cappings would be chosen over a life-saving appendectomy (Hadorn 1991), which does not necessarily protect the opportunity set of an individual (Daniels 2008).

Ignoring quality-improving interventions in favor of life saving. In order to maximize aggregate health, priorities are given to interventions that avert death and restore individuals to perfect health. In other words, given equal effectiveness of an intervention in averting a loss of life years in all people, CEA that minimizes the DALY burden for a given budget will prescribe investing more in this intervention to people in perfect health than to people with disabilities. This is particularly troublesome for disabled individuals, as their health can never be restored to a perfect state.

17. Given the limitations of CEA, few countries use it as the sole determinant for priority setting (Sabik and Lie 2008). In a review of eight countries, Kenny and Joffres (2008) find that only New Zealand lists cost-effectiveness as a primary consideration. Other countries stress it but only as a second priority. In Norway, for example, severity of condition is used as the basis for prioritization, and cost-effectiveness a secondary principle.⁹² In Sweden, human dignity, need, and solidarity are the primary considerations, while cost-effectiveness is only used for treatments for the same condition (Sabik and Lie 2008). While Oregon in the United States initially attempted to rely on CEA to define the benefits for the Medicaid program, public dissatisfaction with the results led to it incorporating other considerations (Box 11).

⁹² Norway classifies interventions into the following five categories: emergency care for life-threatening diseases; treatment that prevents catastrophic or very serious long-term consequences such as cancer; treatment that prevents less serious long-term consequences like hypertension; treatment with some beneficial effects such as common cold; and treatment with no effects (Sabik and Lie 2008).

Box 11: Priority-setting in Oregon

The state of Oregon began incorporating value into its decision about health coverage in 1989 after an unsuccessful attempt to prioritize health interventions using only cost-effectiveness criteria. Based on the results of the CEA, tooth cappings were given higher priority than life-saving treatments, such as an appendectomy or surgery for ectopic pregnancy (Hadorn 1991). Due to public discontent with the results, the process was revised to include public opinion and value-based judgments.

Currently, the state provides a detailed list of prioritized condition-treatment pairs for the Medicaid program—the Oregon Health Plan. The Plan covers services that are necessary to determine a diagnosis, as well as ancillary services (e.g. prescription drugs and durable medical equipment) for conditions included in the Plan. Since 2006, the state has placed greater focus on preventive services and chronic disease management. The Oregon Health Services Commission, an independent body, considers five impact measures in prioritization—healthy life-years, suffering, population effects, vulnerability of population, and tertiary prevention—well as two factors of effectiveness and need for medical service under the current formula.

The Commission submits the prioritized list to the legislature, which determines the amount of funding to be allocated to Medicaid and the State Children’s Health Insurance Program (SCHIP). The legislature does not have the right to change the priorities or the ranking of services in the list. Instead, it “draws a line” on the list beyond which it cannot pay. In 2011, the line was drawn at condition-treatment pair 502 (of the 679 condition-treatment pairs—see the box table). The line is determined based on the cumulative actuarial estimates of the cost for each condition-treatment pair for the covered population. While the list is updated every six months to account for technical changes (such as medical coding), the ranking of services is revisited every two years. This allows the incorporation of new evidence and new treatment guidelines, which could influence the priority rankings.

Box table: Drawing the line

Line Number	Examples of Services	Coverage
1	Maternity care	Covered ↑
101	Medical treatment of acute lymphocytic leukemia	
201	Surgical treatment of brain hemorrhage	
301	Treatment for rheumatic heart disease	
401	Laser therapy to prevent retinal tear	
501	Treatment for noninflammatory vaginal disorders	Not Covered ↓
551	Treatment for back pain without neurologic impairment	
651	Treatment for calcium deposits	

Oregon has also identified a set of 20 “value-based” services that should be promoted at no or minimal cost-sharing under Medicaid. The inclusion criteria include:

- Ambulatory services, including medications, diagnostic tests, procedures, and some office visits
- Primarily offered in the medical home
- Primarily focused on chronic illness management, preventive care, and/or maternity care
- Of clear benefit, strongly supported by evidence
- Cost-effective
- Reduce hospitalizations or emergency department visits, reduce future exacerbations or illness progression, or improve quality of life
- Low cost up front
- High utilization desired
- Low risk of inappropriate utilization

Source: IOM 2012.

Ethical considerations

18. Defining a BBP involves tradeoffs and thus requires a strong ethical justification for prioritizing one intervention over another. Most HTA processes or other priority-setting exercises establish a way to

incorporate ethical considerations. Box 12 presents some that should be discussed and made explicit in the design of a benefits package.

Box 12: Ethical considerations

There are six main concepts of equity from ethical theories (Rawls 1971; Roberts and Reich 2002; Hauck, Smith, and Goddard 2005):

- *Egalitarianism*, which suggest that everyone should have identical opportunities for health;
- *Allocation according to need*, which requires a definition of ‘need’;
- The concept of *rule of rescue*, which establishes an ethical duty to save those with life-threatening conditions;
- The notion of providing a *decent minimum*—one that provides individuals with a basic level of health required to participate in the society;
- *Rawl’s maximin principle*, which suggests that the worst-off must be given priority; and
- *Libertarianism*, which favors a distribution of resources according to entitlement.

Ultimately, priorities must be set based on some concept of “need” (or “deservingness”) and equity considerations related to access to services. How should we measure need or deservingness? Should need be defined by the individual’s capacity to benefit from health care or should we focus on the worst off and follow Rawl’s maximin principle? This would imply weighing the benefits differently for each population group considered. If we agree with Rawl’s maximin principle, then an equity-weighted formulation of benefits will increase the measured benefits for interventions targeted at disadvantaged populations, largely ignoring interventions used by “less needy” individuals. Further, equity of access justifies favoring disadvantaged populations that currently have limited access to health care. This will require additional resources—not only for building facilities in remote areas, but also to address cultural practices aimed at increasing acceptability of the services. If we are to solely rely on a CEA, such interventions might not be chosen due to their relatively high costs.

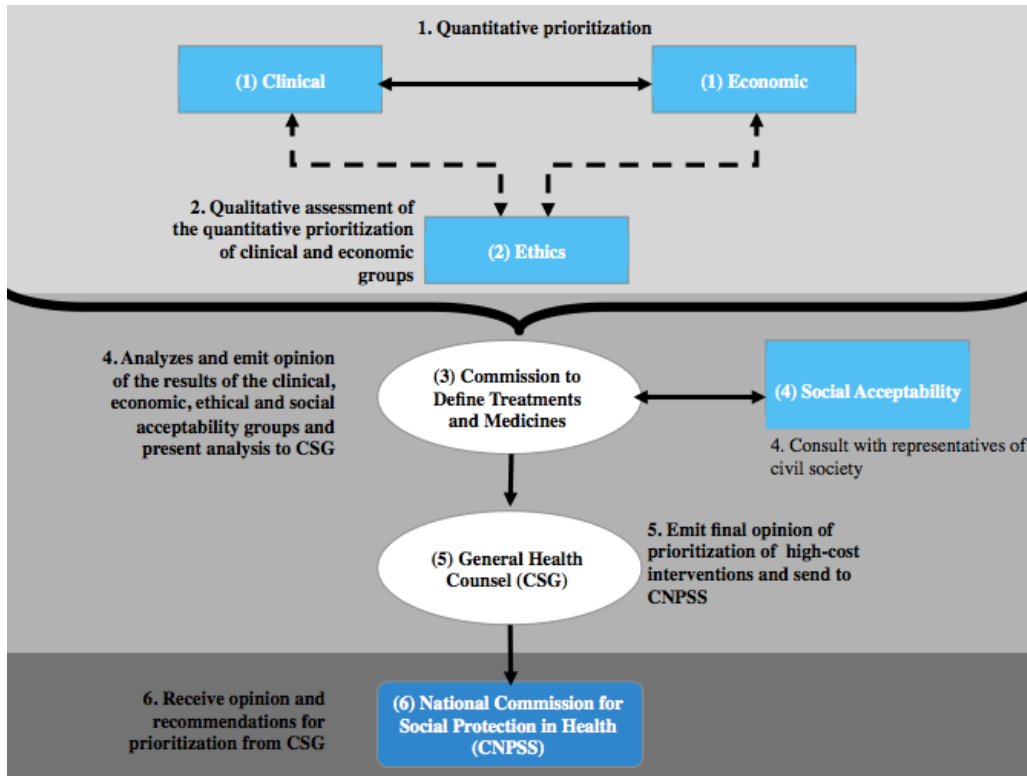
6.1.3 Other issues to consider in applying a BBP

Ensuring a fair process

19. Determining a “fair” allocation of resources and benefits, and justifying the decision by using an ethical framework, are likely to be controversial. Any notion of fairness is ultimately personal and no concept is in any sense more legitimate than another. As Daniels (2008) points out, reasonable people will disagree on fundamental ethical principles, but by virtue of using a fair, transparent, and deliberative process, results are more likely to be ethically justifiable and accepted as fair. In his accountability for reasonableness framework, Daniels (2008) proposes four criteria to ensure the legitimacy and fairness of the process: publicity (the conclusions and their rationale should be publicly available); relevance (reasonable people should agree that the conclusions reached relevantly address the issue at hand); revisability (mechanisms to challenge and dispute resolutions in light of new evidence, appeals, and arguments must be in place); and enforceability (accountability mechanisms for assuring the first three conditions are met need to be implemented).

20. While more advanced economies, most notably the United Kingdom, use a similar process to ensure that decisions are socially acceptable, few middle-income countries have adopted such procedures. Mexico was one of the first of them to attempt to apply a version of accountability for reasonableness to determine the benefits for the Catastrophic Health Expenditure Fund (FPGC), which covers a small list of diseases with lower incidence but high costs. Figure 64 presents a schematic of the process and the various groups involved, while Box 13 provides more detail on Mexico’s priority-setting processes.

Figure 64: Method for Prioritizing High Cost Interventions in Mexico



Source: Lakin and Daniels 2007.

Box 13: Defining the basic benefits package in Mexico

In 2003, the government of Mexico created the Social Protection System in Health (SPSS). The SPSS guarantees three defined packages of health services free of cost at the point of provision. The Popular Health Insurance (PHI) covers 284 primary and secondary care interventions and 522 pharmaceutical products (Universal Health Services Catalogue—CAUSES), the Catastrophic Health Expenditure Fund (FPGC) covers 57 interventions related to catastrophic spending, and the Health Insurance for a New Generation (SMNG) covers any other services not covered under the other two programs for children under 5 years old.

Separate bodies are responsible for determining each benefits package. The National Commission for the Social Protection in Health (CNPSS) is responsible for CAUSES. For FPGC, there are two steps in the process. First, the General Health Council identifies which diseases are catastrophic. Subsequently, the CNPSS recommends their inclusion in the benefits package, and the Technical Committee of the Fund decides which services and costs will be covered for these diseases. Prior to the reform, there was evidence of high levels of OOP spending, particularly catastrophic and impoverishing health spending among the poor and uninsured populations. Those in the lowest wealth quintiles spent 75 percent of OOP payments on ambulatory care and drugs, compared with only 34 percent in the highest wealth quintile. As a result, the design of the PHI benefits package was not only based on principles of cost-effectiveness, but also with the aim to reduce OOP payments for health services.

The criteria to include an intervention in the package are cost-effectiveness, affordability, financial protection, opinion of the scientific community, demand and supply, and social acceptance.

The priority-setting process consists of two main components. The first includes analytical criteria amenable to quantification, as in the case of CEA, budget availability, and implementation constraints. The second includes non-quantitative concerns that must be addressed through a deliberative process to reach consensus (when possible) among stakeholders. These concerns include an ethical assessment addressing equity implications in population groups and a discussion of social acceptability, including concerns for responsiveness to patients' expectations (Gonzalez-Pier et al. 2006).

For the FPGC, separate working groups were established for each domain: clinical effectiveness, economics, ethics, and social acceptability. The first three evaluate the interventions for their respective benefits, costs, or merits, sharing the rankings with the social acceptability group, which can appeal the rankings given proper reasoning (see Figure 64).

Due to the country's burden of disease, some interventions that were found cost-effective in other countries were not cost-effective in Mexico. For example, based on the epidemiology of influenza-related morbidity and mortality, the cost-effectiveness of annual vaccination for infants and young children appears to be less attractive than elsewhere, while early detection of breast cancer was found highly cost-effective (with a cost-effectiveness ratio one to three times GDP per capita). Breast cancer screening, however, was not initially included in the benefits package due to implementation constraints: it would have been hard at the time to guarantee access to this service to the whole population given a lack of supplies and training for the procedure.

Sources: Gonzalez-Pier et al. 2006; IADB 2014.

21. Establishing such a process requires a substantial amount of time and political will. It also typically requires new legislation to outline the objectives, procedures, and participants, and to establish how the findings or recommendations from such processes will be translated into service delivery and benefits coverage.

Establishing effective governance

22. In most OECD countries, a separate independent agency is established to determine the benefits package. Such specialized agencies are better equipped to make decisions using appropriate expertise and can also help to make such decisions apolitical if proper safeguards for accountability are introduced (Landwehr and Bohm 2011). Perhaps the best-known agency is the National Institute for Health and Care

Excellence (NICE) in the United Kingdom, which has established an explicit and public priority-setting process (Box 14).

Box 14: NICE, United Kingdom

NICE is an Executive Non-Departmental Public Body in the United Kingdom. It undertakes appraisals of the health benefits and costs of new established technologies, including medicinal products, medical devices, diagnostic techniques, surgical procedures, therapeutic technologies other than medicinal products, and screening tools. It was initially established in 1999 to replace the so-called “postcode lottery” of health care in England and Wales, in which treatment availability largely depended on the National Health Service (NHS) Health Authority area in which the patient lived. It has since become one of the world’s leading health priority-setting bodies due to its explicit determination of interventions, to be provided by the NHS.

The Department of Health refers technologies for appraisal to NICE based on one or more of the following criteria:

- Is the technology likely to have a significant health benefit, taken across the NHS as a whole, if given to all patients for whom it is indicated?
- Is the technology likely to have a significant impact on other health-related government policies (for example, reduction in health inequalities)?
- Is the technology likely to have a significant impact on NHS resources (financial or other) if given to all patients for whom it is indicated?
- Is there significant inappropriate variation in the use of the technology across the country?
- Is the Institute likely to be able to add value by issuing national guidance? For example, in the absence of such guidance is there likely to be significant controversy over the interpretation or significance of the available evidence on clinical and cost effectiveness?

Until 2012, NICE used cost-utility analysis to determine the cost-effectiveness of public health interventions, but has since placed more emphasis on cost-consequence and cost-benefit analyses. This allows the Institute to take into account health, non-health, and community benefits in order to determine whether the intervention represents value for money.

NICE seeks evidence from independent academic groups, manufacturers and sponsors of technologies, national patient or carer groups, health care professional organizations, clinical specialists, commissioning experts, and patient experts commissioning bodies.

NICE’s threshold for incremental cost-effectiveness is £20,000 to £30,000 per QALY.

Source: NICE 2013.

23. Similar agencies exist in France (National Authority for Health, or HAS) and Germany (Institute for Quality and Efficiency in Healthcare, or IQWiG). Chalkidou et al. (2009) identify the core procedural principles for the HTA implementing agency (Box 15). In Bulgaria, it will be important to identify a body (agency or committee) responsible for this process and ensure that it has the adequate authority and independence to make decisions based on the criteria above.

Box 15: Core set of desirable procedural principles

- *Independence* from central government, insurance agencies, and industries. It is important to recognize any conflict of interest in policies and processes.
- *Transparency* in the selection of topics, assessment of evidence, and final decision making. Transparency can be instituted by opening meetings to the public, disseminating information and decisions, and minimizing the protection of information.
- *Inclusiveness*, through repeated consultations with all stakeholders.
- *Scientific rigor*, by establishing peer-review mechanisms and staying up to date with methodological advances in evidence generation and analysis.
- *Contestability*, by establishing an appeals process.
- *Timeliness*, by making decisions at the early stages of technology diffusion

Source: Chalkidou et al. 2009.

Ensuring effective coverage of established benefits

24. While defining the benefits package is an important and lengthy process, de jure benefits do not *automatically* translate into de facto services.⁹³ Effective availability of entitled benefits depends on the availability of providers, geographic access, crowding at facilities, availability of supplies and equipment, cultural issues, and the opportunity cost of accessing care. Thus some countries choose to take implementation barriers into consideration when finalizing the list of benefits. Other countries accompany the benefits package with changes in demand- and supply-related areas.

25. In order to ensure the effective provision of the BBP, it is also important that the benefits are aligned with the payment systems and legislation. In Vietnam, for example, although the benefit package is de jure uniform across all membership groups, the variation in capitation rates for certain subgroups results in underprovision of care for groups with lower capitation rates, hindering access to care, particularly of the poor (World Bank forthcoming).

Ensuring financial sustainability of the BBP

26. An important element in the design and implementation of the BBP is its sustainability, which is contingent on the cost of the services. A key step to ensure that the BBP is sustainable is to use actuarial and economic models to estimate the cost of provision over the medium to long term. Given the scarcity of resources, some countries, such as Denmark and the United Kingdom, also explicitly use budget or costs (or both) as the main criteria for including health interventions in the BBP.

27. Apart from using actuarial estimates in the design of the BBP, countries like Canada, France, England, and Germany have all relied on user charges—or patient cost-sharing—to reduce the public share of cost of benefits, most commonly for medicines. In most cases, the user charges are established to contain costs by limiting the use of services, but in the case of England and France, these policies were implemented to raise revenue, too. At the same time, however, these countries have taken measures to limit user charges. England, for example, announced in 2008 that user charges would not rise faster than

⁹³ In a review of country experiences as part of the World Bank's Universal Health Coverage Studies Series (UNICO), it was found that few countries that implemented an explicit benefits package conducted any actuarial study, systematic estimation of costs, formal cost-effectiveness study or health technology assessment (HTA). Instead, the benefits were determined based on the initial budget set forth by the government. In Peru, for example, this led to a significant discrepancy between what was promised and what was feasible (World Bank forthcoming).

inflation. Germany established a cap on OOP payments for health care, equal to 2 percent of household income for the general population and 1 percent for individuals with chronic conditions. Germany also eliminated user charges for hospice care (Stabile et al. 2013).

28. The processes of setting a BBP are iterative and do not end once the BBP has been established. Instead, additional processes are implemented to ensure that data are collected to help guide its revision. Evidence suggests, however, that some countries fail to perform an assessment of the fiscal impact and budget availability on that revision. In the absence of an explicit, regulated, and enforced process, this can lead to short-term decision-making horizons, often for choices that are politically attractive but not necessarily affordable or sustainable (World Bank forthcoming).

6.1.4. Implications for Bulgaria

29. The government of Bulgaria has decided that the focus of its basic package will be on prevention, diagnosis, and treatment of the major diseases and conditions leading to death and disability, especially among children and mothers. To decide further on the detailed content of the BBP, it is important to understand the disease burden and to identify upfront the key principles that will guide priority setting (see above).

30. Data are a critical input throughout the process, and thus information systems need to be updated to accommodate the process. In certain cases, data on the cost-effectiveness of certain interventions from other countries with similar disease burdens can be applied to the Bulgarian context, but delivery barriers and financial constraints need to be accounted for in order to ensure effective coverage of the population by the BBP. In the process of designing the BBP, one needs to cost the options and weigh them against the prospect of financial sustainability.

31. Bulgaria will need to strengthen its capacity for conducting economic evaluations in addition to its current focus on the clinical effectiveness of various services. Given the inherent tradeoffs in defining the BBP under resource constraints, it is important to ensure that the process by which the BBP is defined is transparent and allows participation from representatives of civil society.

6.2. Issues pertaining to the additional benefit package

32. With the creation of the additional package, the government of Bulgaria officially established waiting time as a major public policy issue,⁹⁴ while at the same time envisioning the use of voluntary health insurance (VHI) as a way to address the issue of waiting time. Further, although both the basic and additional packages are to be paid by the NHIF, the fact that individuals can obtain voluntary insurance from a “company of their choice” means that the market is open for private insurance, and the NHIF will likely not play a monopsony role in obtaining efficient “premium” prices for the additional package.

33. The following two subsections highlight key issues on waiting time and VHI, drawn mostly from a review of EU and OECD countries’ experience, which may be of use to the government to anticipate issues and adopt proactive measures to mitigate them.

6.2.1. Waiting time

34. Waiting time is typically framed as a deliberate policy to ration health services in response to resource constraints. As such, waiting time is generally found to be more of a problem in the countries where public health expenditure per capita is relatively low, but not always. Several OECD countries

⁹⁴ This is not to say that waiting time did not exist before. However, the policy explicitly and officially acknowledges the deliberate use of waiting time to ration health services.

spending above the OECD average also have an issue with waiting time, such as Norway, Denmark, Canada, and the United Kingdom. There is a lot of variation across countries, and waiting times are not exclusively an issue of supply (Siciliani, Borowitz, and Moran 2013).

Potential benefits and consequences of waiting time

35. Before a country embarks on using waiting time to ration health services, it should weight its benefits versus costs and be aware of the potential consequences subsequently. This is not a straightforward exercise as there has not been any systematic cost-benefit analysis of waiting time to guide the decision. Nevertheless, there are three issues to keep in mind:

- Long waiting times are politically unpopular. It can contribute to high patient dissatisfaction of the health system (Siciliani, Borowitz, and Moran 2013)
- Long waiting times may have negative impact on health outcomes. This has been found in studies looking at emergency and urgent procedures (e.g. Guttman et al. 2011; Sobolev and Fradet 2008). Waits may also increase the probability of preoperative death and unplanned emergency admission (Sobolev et al. 2006; 2012). However, the evidence is mixed for less urgent procedures (Hirvonen 2007). For example, a systematic review of 15 studies by Hoogeboom et al. (2009) found no evidence that pain worsened during a six-month wait for patients awaiting a hip and knee replacement. The case suggests that waiting times may work fairly well in rationing care based on clinical need.
- Waiting times may differentially impact people with lower socioeconomic status (Siciliani, Borowitz, and Moran 2013), perhaps because people with higher socioeconomic status may engage more actively with the system and exercise pressure when they experience long delays. They are also more likely to afford supplementary insurance, which allows them to jump the queue (see below). Thus waiting time can be seen as inequitable use of public funds, aggravating the political sensitivity of this issue.

How to measure waiting time

36. The ability to measure waiting times consistently and reliably is important to monitor their potential impact and to benchmark one country's performance against others. Currently, there is no common definition for such measuring across OECD countries. Increasing attention is being paid to measuring the waiting time of patients rather than the length of the waiting list, and moving beyond measuring only hospital waiting to measuring the total patient journey beginning in primary care.

37. According to Siciliani, Borowitz, and Moran (2013), there are four waits in the patient's journey to treatment:

- To see the GP
- After seeing the doctor, for all additional laboratory tests and other examinations
- For the GP to decide that treatment may be needed and to refer the patient to a specialist. It can be measured between the time the GP referral is written and the time the GP referral is received by the specialist. This is often referred to as the outpatient waiting time.
- The time from when the specialist adds the patient to the list for treatment to when the patient is treated (or admitted for treatment). This is often referred to as the inpatient waiting time.

38. The most common measures of waiting time are inpatient waiting time, outpatient waiting time, and the referral-to-treatment (from GP referral to treatment), which is trying to capture waiting time across the full patient journey from referral in primary care to when treatment is provided.

39. Waiting times are reported in most countries: for specific procedures (hip and knee replacement, cataract surgery, coronary bypass, etc.); by specialty (ophthalmology, orthopedics, etc.); and for all elective patients. Increasingly, waiting times are collected for urgent types of care (cancer care, etc.).

How to reduce waiting time

40. The policies tackling excessive waiting times can be broadly grouped according to whether they primarily address the supply or demand side of the service. Some policies also address both sides, and are generally formulated as waiting time guarantees.⁹⁵

41. Supply-side measures:

- *A separate fund linked to reduction of waiting time.* Countries may decide to make available some budget to fund additional supplies to meet the demand and shorten the waiting time. However, this method is not popular, and in fact it goes against the purpose of using waiting time to ration services. The additional funding is typically small compared to hospital budget, and in short this method is not effective and sustainable.
- *A provider-payment method that is activity-based, drawn on a good patient classification system.* One example of such method is the DRG approach. It is expected that activity-based payment will incentivize the providers to treat the patients to collect revenue, hence reduce the number of patients on the waiting list. However, as said, activity-based payment runs the risk of encouraging providers to over-accept patients. Empirically, it has also proved to have little effect on waiting time.

42. Demand-side measures:

- *Private health insurance instituted and encouraged.* Several countries provide subsidies for buying private insurance, so that patients will substitute public hospitals with private hospitals and thus lessen the burden on the public system. One example is Australia, which subsidized premiums for private health insurance. The policy appeared to have little effect: newly insured people who picked up incentives for private insurance did not reduce the use of public hospitals (Lu and Savage 2006; Fiebig, Savage, and Viney 2006). Denmark, which provided tax exemptions for private health insurance (PHI), experienced a decrease in utilization of public services but not waiting time. (More information on private health insurance is in the next subsection.)
- *Clinical thresholds define to manage the waiting list.* It is common for countries to define one or several clinical thresholds, below which the patients are put under various waiting list categories. In New Zealand, for example, a patient is entitled to elective surgery depending on his or her needs and ability to benefit from the medical intervention according to the specialist's assessment. Patients that have low severity are not put in the waiting list and are referred back to a GP for active monitoring.

43. Combined measures: maximum waiting time guarantee.

- *Maximum waiting time guarantee.* This policy states that no patient in need of care should wait more than a predetermined maximum time to receive treatment. It is by far the most

⁹⁵ More detail is in Siciliani, Borowitz, and Moran 2013.

common policy used across OECD countries to tackle waiting time. The problem of this method is that enforcement of the guarantee is often not in place, and so patients have no way to exercise their rights. Therefore, used alone, a maximum waiting time guarantee has not proved to be an effective method, and it is usually used in combination with other measures.

- *Maximum waiting time guarantee combined with allowing patients to choose a different provider if treatment is not provided within the guarantee.* This method has been applied in various OECD countries, most notably Denmark and Portugal (Box 16). When patients seek treatment from a different provider, payment can be covered by the home hospital. This method appears effective in shortening waiting time, but the effect is rather short lived.
- *Maximum waiting time guarantee combined with setting a target, and use of incentives and sanctions for target achievement.* A target can be set as, for example, “no more than 90 percent of patients have to wait for more than three months to receive treatment.” In England and Finland, breach of target results in a reduction of up to 5 percent in revenue. The sanctions can be financial or nonfinancial. For example, in England, senior health administrators are at risk of losing their job if hospital targets are not met, a method known as “targets and terror.” The sanctions appear to have an effect as well, but are very unpopular with health professionals and therefore may not be sustainable over time.

Box 16: The importance of information in managing waiting time, Portugal

In Portugal, an integrated information system systematically collects information on waiting times from all hospitals, measuring actual waiting times of patients rather than just the waiting list. When the patients in the waiting list reach 75 percent of the maximum guaranteed waiting time, the system automatically flags and the patients are given a choice to seek treatment from other providers, facilitated by a voucher as a means of payment

Source: Barros et al. 2013.

44. When applying a maximum wait time guarantee, the potential negative effects must be kept in mind. Misprioritization and gaming by the providers are a possibility. Dimakou et al. (2009), for example, found that the probability of patients being treated jumped when patients are near the threshold of waiting time, but once patients passed it, the probability fell, which could result in neglect of more needy patients who have passed the threshold.

45. The popularity among OECD countries and effectiveness of different measures to limit waiting time are summarized in Table 27.

Table 27: Frequency of use and potential effect of policies to address waiting times, OECD countries

Policies		Commonly used	Potential effect on waiting time
Supply-side	Increased production in the public sector by funding extra activity	6/13 countries	Weak
	Contracting with private sector	6/13 countries	Weak
	Sending patients abroad	3/13 countries	Weak
	Increased productivity by introducing activity-based financing (DRGs)	3/13 countries	Medium
	Increased choice of providers	5/13 countries	Medium
Demand-side	Explicit guidelines to prioritize patients	7/13 countries	Medium
	Subsidize private insurance	5/13 countries	Weak
Combined	Waiting time guarantees	13/13 countries	Weak
	With sanctions	3/13 countries	Strong
	With choice and competition	6/13 countries	Strong

Source: Reproduced from Siciliani, Borowitz, and Moran 2013.

Implications for Bulgaria

46. With the decision made to adopt waiting time officially as a means to ration health services, Bulgaria needs to be aware of what to expect. Waiting time can be politically unpopular and can heighten existing dissatisfaction with less-than-optimal responsiveness and equity in the health sector. It might result in undesirable health impacts, although evidence is not ubiquitous. It might also affect the disadvantaged population disproportionately.

47. Right before embarking on the initiative, it is advisable to design appropriate methods to measure and manage waiting time, anchored on a well-functioning health information system. The government should communicate well and make sure that the explicit waiting time policy will bring about real (and positive) changes to the status quo, where access to care is already perceived as limited for people who either follow the referral rules or decide to pay privately for uninsured and faster services. It is also important to recognize that, once in place, waiting time is not easy to get rid of. Although countries have tried many instruments to tackle the issues of waiting time, none appears to be optimal, including VHI, now discussed in detail.

6.2.2. Voluntary health insurance

48. This subsection reviews international experience with VHI, the most common type of which is private health insurance (PHI).⁹⁶ It draws mostly on experience in EU member states. PHI is defined as insurance provided through the direct payment of premiums to insurers, as distinct from public insurance, which is funded through taxes, either general or social security taxes (Sekhri and Savedoff 2006). PHI can be mandatory, but is usually voluntary, and can be managed by a for-profit or not-for-profit entity.

49. Various factors contribute to the recent development of PHI in countries that do not have a traditional PHI market. These include growing dissatisfaction with public health care, liberalization of markets, and increased international trade in the insurance industry, as well as overall economic growth, which stimulates higher and more-diversified consumer demand. In the Republic of Korea, for example, even though the national health insurance system has universal coverage, more than 80 percent of people aged 20-64 have supplementary PHI. Demand for PHI was fueled by high OOP payments and limited financial protection from the national health insurance, as well as the attractiveness of the PHI diverse

⁹⁶ For this reason, VHI and PHI will be used interchangeably in this section.

benefit packages and customized plan choice (Jeon and Kwon 2013). Some countries rely on PHI to lessen the waiting time problem (as just discussed).

Types of PHI market—substitutive, complementary, and supplementary

50. The functions of PHI are frequently shaped mainly by the characteristics of the statutory system. Three major functional roles played by PHI are (Table 28): *substitutive* (PHI covers the groups of population either excluded from or allowed to opt out of statutory coverage); *complementary* (PHI covers services excluded from statutory coverage or user charges/copayments); and *supplementary* (PHI covers the same services already included in the statutory system but grants faster access and better choice).

Table 28: Different types of PHI

Market driver	PHI role	PHI covers	Examples
Coverage breadth	Substitutive	Groups excluded or opting out	Chile, Germany (Box 17), Netherlands (pre-2006—Box 18)
Coverage scope	Complementary (services)	Excluded services	Canada, Hungary, Netherlands
Coverage depth	Complementary (user charges)	Statutory user charges	Croatia, France, Latvia, Slovenia
Consumer satisfaction	Supplementary	Faster access and consumer choice	Ireland, Poland, United Kingdom

Source: Thomson 2011.

51. The most common PHI market is supplementary. Globally, as of 2009, there were 15 countries in which PHI accounted for more than 10 percent of total health spending. PHI markets among the OECD members are heterogeneous: a decade or so ago some countries had very small or nonexistent PHI, such as the Czech Republic, Hungary, Iceland, and Norway, while some countries spent more than 10 percent of total health expenditure in the form of PHI, such as Canada, France, Germany, the Netherlands, Switzerland, and the United States (Colombo and Tapay 2004). Among the countries in Central Europe, Eastern Europe, the Caucasus, and Central Asia (CE/EECCA), although the levels of private spending on health are relatively high, the contribution of PHI to health spending is minimal, rarely accounting for more than 1 percent. PHI covers a very small proportion of the population, often below 1 percent (Thomson 2010). In this region, most markets for PHI play a supplementary role, covering health care for people travelling abroad and/or in private sector facilities. Similar observation on the size of PHI is observed for markets outside OECD and CE/EECCA (Preker, Zweifel, and Schellekens 2010).

52. In many countries, a typical PHI subscriber is middle aged, male, relatively well off, better educated, a white-collar worker, in a larger company or self-employed, and living in an urban area. In countries that have a relatively large formal sector, group coverage accounts for a significant share of the market (Thomson and Mossialos 2009).

Impact of PHI on key health system outcomes

53. Given the rising attention paid to PHI, an assessment of its impact on key health system outcomes and its interactions with the public system is essential. Unfortunately, such assessment is handicapped by the lack of rigorous empirical evidence. For example, Preker, Zweifel, and Schellekens (2010) argued that “private health insurance *can* contribute in a positive way” to providing financial protection against the cost of illness; expanding coverage and including a wide range of client groups; increasing disposable income and smoothing household consumption; increasing access to affordable health care; and improving labor market participation. However, these positive statements are more hypothetical than

empirically grounded: cited studies supporting these arguments appeared to suffer from methodological problems, notably failure to control for adverse selection and moral hazard in health insurance.

54. *Access to care versus market segmentation.* Precisely due to its function as an insurance mechanism, PHI provides enhanced access to services and financial protection to its policyholders, through cutting down on waiting time and copayments, for example. Supplementary health insurance can have a positive effect on use of specialists (Jones, Koolman, and van Doorslaer 2006).

55. The distribution of PHI policy holders is, however, typically skewed toward the better off. Jones, Koolman, and van Doorslaer (2006), for instance, while looking at the supplementary PHI markets in Ireland, Italy, Portugal, and the United Kingdom, found evidence suggesting that the probability of having PHI increases with income and, to some extent, with better health. From the society perspective, PHI has created two-tiered accessibility to services in some countries. Moreover, the ability to choose PHI over public coverage may diminish the risk pooling within public insurance, leaving public insurance with people having lower ability to pay and poorer health status (Colombo and Tapay 2004). PHI may draw resources away from publicly financed health care by creating risk segmentation and skewing the distribution of public resources.

Box 17: Substitutive PHI in Germany

Germany has a significant market for substitutive PHI, while the market for supplementary PHI is restricted to improved amenities for hospital care. Substitutive health insurance is mandated for all self-employed and high-income employees, and is voluntary for the rest of the population.

People who opted out from the public system are better off than those who stayed: they are more likely to be male, have fewer dependents, have higher income and education, and are less likely to report chronic conditions or bad health status. The fact that healthier and wealthier people are allowed to opt out has created a strong pressure on the financial sustainability in the public system.

Source: Based on Greß 2011.

56. *Quality of care.* PHI has been found to improve members' choice over health providers, treatments, and timing of care, depending on the standards for insurer practices and strategies. PHI markets also typically offer an array of diverse coverage plans, with different benefits and cost-sharing features. The downside is that insurers have incentives to use product variation to improve risk profiles, leading to risk segmentation (Colombo and Tapay 2004).

57. Except for the United States, PHI has not been found to promote delivery of high-quality care, probably because it does not play the driving role in the market in most countries.

58. *Efficiency and cost cutting.* PHI has not contributed much to health system efficiency or to total or public cost-containment efforts. Insurance plans typically incur higher transaction and administrative costs to attract and retain members. Competition does not work through cost efficiency; rather it is based more on cost-shifting and selection of risks. Further, the assumptions about superior efficiency (in administration and purchasing) of private insurers do not hold. Finally, PHI performance is complex and dependent on the national context (Thomson 2012).

Box 18: Health insurance reform in the Netherlands, 2006

The Netherlands implemented health insurance reform in 2006. Before 2006 for medicine, public (social) insurance was mandatory for about 63 percent of the population and was run through region-based “sick funds.” Voluntary PHI run by private insurers covered 37 percent of population and was mostly substitutive. Premiums were income related in the social health insurance and risk-rated in the PHI.

The reform in 2006 integrated sick funds and PHI into a single program, which provides basic health insurance on a mandatory basis and complementary health insurance on a voluntary basis, with the latter employing “community rating” with adjustments. There are several packages of complementary health insurance (standard, silver, and gold) which vary by breadth of services covered.

Source: Based on Maarse 2012.

59. One of the typical reasons for countries to adopt PHI is to lessen the financial burden on public funding and reduce OOP payments. Using the OECD 1980–2007 health data, Shin 2012 empirically tested the impacts of PHI payments on different funding sources: government spending on health care, social security contributions, and OOP payments. He found that PHI financing is unlikely to reduce government spending on health care and social security contributions, while OOP payments may be offset by PHI financing to a limited degree. He also found that PHI financing has a statistically significant positive association with total spending on health care.

Key issues in the design and implementation of PHI

60. Once a country decides to open the market to PHI, it faces a number of decisions in the design and implementation stage. Based on experience from more mature markets, the following reviews some key issues.

61. *Subsidizing PHI with tax credit.* Some countries, most notably the United States, allow employers and employees to deduct insurance premiums from taxable income to encourage the purchase of PHI. This policy has been criticized on efficiency and equity grounds (Pauly and Goodman 1995). On efficiency grounds, the system may distort the labor market, because the subsidy is available only to persons who work for employers that arrange such coverage and not to the self-employed, the non-employed, or people who work for firms that do not provide health insurance, distorting an individual’s choice over which firm to work for and whether to work as an employee or as a self-employed person. On the equity front, because the value of the exclusion rises with a person’s marginal tax rate, the value of the tax subsidy is greater for higher- than lower-income workers, while the self- and non-employed do not receive this benefit.

62. *Community-rated versus risk-rated premium.* Under “community rating,” an insurer charges all people covered by the same type of health insurance policy the same premium without regard to age, gender, health status, occupation, or other factors. In contrast, risk-rated premiums are those which health insurance companies tailor to each buyer’s risk category, or expected expenses, based on health status, age, gender, and preexisting conditions. Risk-rated premiums are rarely popular among policy makers as they regard payment of higher premiums by higher risks as unfair and can result in the very sick being unable to afford coverage.

63. *Risk equalization.* When insurers are required to accept all applicants while not varying premiums according to individual health risk, some plans may end up having disproportionately large shares of higher-risk patients. Risk equalization adjustment of revenues is put in place to limit risk selection by the insurance companies, in which revenues are shifted among insurers based on underlying health risks (Box 19). Risk equalization is the response to potentially higher cost claims as a consequence of community rating that seeks to ensure that the industry shares the cost of high-cost groups and individuals. In the

case of the Australian PHI market,⁹⁷ risk equalization is an essential element of community rating. Risk equalization, however, is typically more relevant in large insurance markets.

Box 19: Chile: risk selection

In Chile, the private insurance market was unregulated for the first 10 years. During this period, private insurers could reject or drop “high-risk” beneficiaries who were old or were likely to have expensive health conditions. Regulation of the PHI has since strengthened. However, private insurance companies continue to target their marketing toward high-income, low-risk members.

Source: Based on Bitran and Urcullo 2008.

The importance of regulation

64. Regulation’s importance in the PHI market cannot be stressed enough. One reason is that market failures are particularly prominent with PHI. Information asymmetry between insurers and buyers of insurance is serious—the buyers may not be capable of having the exact interpretation of the insurance contract and hence not know what exactly is covered. The insurers, on the other hand, do not have the information on health status of the buyers. To make profit or stay solvent, insurers have a strong motivation to select good health risk, and they may do so explicitly or implicitly. Finally, moral hazard can incur on both the provider and patient side—the former will provide more services than without the insurance; the latter will consume more services than without the insurance, leading the insurers to increase premiums for covering excessive services (Brunner et al. 2012).

65. Regulation can also provide a framework to enable the development of the PHI market (Brunner et al. 2012). However, Sekhri and Savedoff (2006) also warned that public intervention is no panacea for market failures. It has its own associated costs that need to be evaluated against its benefits, and regulations introduced to address one problem may exacerbate another. Policy makers must balance the sometimes-competing policy goals. Sekhri and Savedoff (2006) proposed a useful framework to design instruments that adhere to these goals, including protecting consumers, promoting equity, and containing cost. Policy objectives include ensuring financial solvency of insurers, promoting manageable competition, minimizing adverse selection, and broadening risk pooling. The corresponding instruments could be to set sufficient minimum capital and reserve requirements, to establish reserve requirements that allow different types of insurers to enter the market, to require insurance to be mandatory, at least for certain categories of households, and to create incentives for low-risk individuals to join the pool.

66. Thomson (2012) recommended the following policy approaches to health financing reform involving VHI/PHI (Box 20).

⁹⁷ In Australia, community rating is a cornerstone of the PHI market. Legislation prohibits private health insurers from discriminating against persons seeking PHI coverage, both directly through risk rating of premiums or indirectly by refusing coverage. The PHI Act 2007 (specifically section 55-5(2)) lists the prescribed factors, including age, sex, preexisting conditions such as chronic diseases, and others (Fainstein 2014).

Box 20: Some approaches to VHI/PHI health financing reform

- Enhance financial protection rather than expanding coverage
- Identify gaps in public coverage and financial protection and other barriers to access
- Focus on efforts to enhance financial protection for those who need it most, rather than expanding coverage for groups that are better off, such as civil servants and other formal sector employees
- Ensure complementarity between public and private sources of health care financing
- Identify gaps in public coverage before deciding on the role of VHI
- Attempt to shape the VHI market from the outset to avoid the pitfalls of ad hoc development, which tends to result in poorly regulated and purely supplementary markets
- Ensure that VHI supports rather than skews national priorities for the health sector
- Consider how to protect public sources of financing if VHI is intended to complement rather than substitute for public funding
- Enforce boundaries between the compulsory and voluntary coverage that may be offered by the same entity/agency/company
- Consider the equity and efficiency consequences of subsidizing VHI from tax revenues
- Design VHI as an integral part of the wider health financing system.
- Strengthen the regulatory framework to ensure financial and consumer protection
- Establish a framework with clear objectives and lines of responsibility, preferably with Ministry of Health involvement and focusing on the specific characteristics of health insurance
- Consider the role of specialist and non-profit-making insurers; the former to ensure financial viability, the latter to keep premiums low and fairly priced. However, differential treatment of insurers, if applied, should be based on insurer behaviors rather than profit status
- Bear in mind potential tension between competition, equity, and user choice
- Consider the role of centralized sources of comparable information for consumers in facilitating price competition
- Consider the importance of centralized data collection to encourage transparency
- Be aware of the European Union's legal framework for non-statutory health insurance and the potential for legal challenges to national regulation.
- Be prepared to adapt the regulatory framework in response to market development.

Source: Reproduced from Thomson 2012, p. 320.

Implications for Bulgaria

67. The type of VHI market envisaged in Bulgaria will be complementary and supplementary. The potential negative impact of these types of VHI on market segmentation is expected to be less than would be the substitutive market. The above review shows that the development of PHI presents both opportunities and threats to the health care system. If such insurance is carefully managed and adapted to local needs and preferences, it can be a meaningful complement to existing health financing options. However, opening up markets for PHI without an appropriate regulatory framework might increase inequalities in access to health care, cost escalation, deterioration of public services, reduction of the provision of preventive health care, and a widening of the rich–poor divide. Given these risks, the challenge for Bulgarian policy makers is to develop a regulatory framework adapted to the country's institutional capacities in which private voluntary health insurance can operate efficiently.

6.3. Conclusions

68. Decomposition of the NHIF's BBP into basic and additional packages recognizes the need to prioritize scarce resources and to obtain the maximum health outcomes and financial protection impacts

for the amounts spent. With such a decision, the country explicitly exposes itself to the business of setting priorities, rationing health services, and opening the market for competition in health insurance. This daring endeavor could yield benefits in optimizing value for public money and curb government health spending. However, such a double-edged sword could hurt the Bulgarian public if the reform processes are not managed properly. All these require a strong regulatory body with the necessary authority that can foresee the problems that will arise and design policies proactively to handle them.

Chapter 7. Toward a more comprehensive health financing agenda to address key performance gaps

1. This chapter reviews two issues which, in view of the health financing diagnostic presented in Part I, help explain some of the performance gaps in the Bulgarian health system. The “Concept Note: Health 2020 Goals” (MOH 2015a), while taking note of them, does not formulate plans for bridging them. The first of these two issues revolves around provider-payment mechanisms. The diagnostic highlighted the incentives faced by multiple providers that ultimately contribute to treating patients on an inpatient basis when, from a strict clinical perspective, this may not be required. The Concept Note proposes to undertake some organizational reforms to strengthen primary care and streamline the hospital sector, but experience suggests that a better alignment of financing across providers is also needed.
2. The second issue centers on the severe limitations in financial protection seemingly afforded by the Bulgarian health system. Financial protection is one of the three main goals of health systems. The Bulgarian health system intends to provide coverage to all and spends an amount of public resources in the health sector commensurate to its income level, yet the population’s OOP expenditure is unusually high, which is bound to have implications in terms of access to care and health outcomes, while directly contributing to generating poverty and vulnerability.
3. This chapter suggests a number of possible strategies to address these issues. Choosing between them would require policy debate within the MOH and with stakeholders. Their technical feasibility would then need to be assessed and concrete action plans—such as the one developed to support the introduction of DRG-based payments in hospitals—would need to be developed and evaluated.

7.1. Aligning incentives in the provider-payment system

7.1.1. Introduction and general principles

4. The purpose of this section is to provide policy advice based on the evidence and experiences of many OECD and other neighboring countries that have reformed the processes and management approaches to purchasing and providing health care. The section discusses the internationally implemented financial reforms and system changes that can be used to get a better alignment of payment for services and provide more appropriate incentives, particularly in the areas of quality, efficiency, and coordination of care.
5. All the countries discussed faced similar pressures with their existing models of care delivery, and attempted to tackle some if not all of the issues highlighted as of concern to Bulgaria in the Concept Note. These can be summarized as the need to develop and deliver changes that will support the efficient functioning of the system by focusing on quality and results. Alongside this is the clear and compelling need to drive and deliver technical efficiencies to release much-needed funds to facilitate these changes.
6. Other sections of this report have analyzed and explained in detail the issues faced by Bulgaria and identified policy or behavioral inconsistencies for which there are potential financial levers to improve effective access and delivery. To provide a clear framework for the options developed in this section, these findings that influence, or should be influenced by, the payment system are summarized in Table 29. There is no specific mention of issues on purchasing or assuring for quality and outcomes, rather than inputs, but these omissions are common to all three sectors (general practitioners, outpatients/specialists, and inpatients) and need to be addressed. Similarly there are consistent overriding issues about data quality

and the ability of the NHIF to provide adequate and timely information for appropriate financial and performance management.

Table 29: Summary of payment and efficiency issues in the current system

Issue	Comment
GPs/Primary care	
1. Blend payment of capitation and FFS	1. Gives protection to population for access to benefits package BUT some elements of payment rules encourage further referral for treatments that could be provided by GPs.
2. Promotion and Prevention	2. Possibly unnecessary fragmentation of delivery given the responsibilities of the MOH for promotion and emergency care and NHIF for the purchasing of other services. Such a division requires an overlay of planning and communications that may be less efficient than if one body was responsible for planning and delivery of an integrated approach, especially for promotion and primary care.
3. Referral to diagnostic tests	3.1. Some of these could probably and competently be provided by GPs and at their premises. 3.2. Activity caps probably lead to underprovision and underutilization by and of GPs. 3.3. May give an incentive to refer to (uncapped) hospital referrals and/or self-referral to emergency or private care.
4. Referral to specialists	As for diagnostic tests.
5. Referral to hospital	5. Absence of activity cap or application of financial caps on hospitals give a very strong incentive to refer and for hospitals to accept.
6. Chronic and long term conditions	6. Requirement to see patient at fixed intervals may cause unnecessary contacts and reduced capacity and access for other patients.
Outpatients/Specialists	
1. Fee-for-service payments	1. Incentives to accept and treat maximum number of patients unless activity or total reimbursement caps are applied. 1.2. It may lead to some efficiencies if GPs and specialists are allowed some form of bonus if their budget cap is not fully used, but this would in turn need a layer of performance management to ensure that patients are not being denied access to further care just so physicians can increase their income.
2. Activity cap on FFS services	2.1. Imposes a barrier on volume of care, which is necessary for financial control but imposes an in-period rigidity that may penalize more needy cases who present late in the time period of the cap. Some period-to-period flexibility may be appropriate, provided that the annual cap is not exceeded. 2.2. If 2.1 applies may lead to unnecessary self-referral to emergency or private services.
3. Patient reappointment cap within 30 days	3.1. May be inappropriate for some patients and may set expectation of reappointment for others. 3.2. Transaction costs to specialists, GPs, and patient causes unnecessary inefficiency.
Hospitals	
1. Overcapacity in sector	1. Requirement of the NHIF to contract with any MOH-accredited hospital leads to overprovision, underutilization, and inefficiency.
2. Bundled payment based on CCPs	2. Activity-based payment is good in principal BUT 2.1 CCPs are not based on an objective or transparent case-mix methodology. 2.2 CCPs are assigned at physician discretion and so there is an incentive to "upcode." 2.3 CCP relative weights are not based on relative, real-resource costs.
3. CCPs require defined line-item inputs	3. All may not be necessary for every patient, increasing costs.
4. Minimum length of stay (LOS) defined for each CCP	4. May not be required for every patient, increasing costs.
5. Contract limits (activity and payment)	5. It is understood that if exceeded these penalties are rarely enforced, giving no real disincentive to providers to control costs and volumes.
6. Integrated and appropriate setting for care	6. No incentive for hospitals to develop ambulatory or other services; similarly, no incentive for other providers to develop out-of-hospital services.

7. Provider payments should be used to provide positive incentives aligned with government health policies. Most countries use a multifaceted approach, knowing that no single model is appropriate to all sectors. Equally, system design must take account of the potential perverse incentives or disincentives that any one payment model, when applied to any single sector, can lead to. To consider the most appropriate model for each sector, the overriding policy objectives of the health system and the underpinning structural organization of provision have to be balanced against a practical way to make improvements for all, and satisfy health policy goals.

8. Providers of care can be reimbursed in a multitude of ways. Each provides a certain incentive to moderate the behavior of the payer and the provider. There is also the ever present issue of ensuring that the system does not provide incentives to the institutional players (providers) to limit access or care such that a further burden increases OOP payments for patients to gain access to the care they are entitled to. A key question in all systems is thus who bears the risks and to what degree—payer, provider, or consumer?

9. Appleby et al. (2014) summarize the main payment types and options as follows:

- **Capitation.** Lump sum paid per patient/population covered in return for provision of a particular set of services. This is a significant element of reimbursement for GPs in many countries. It is based on registered patient numbers, generally weighted to allow for local demographic and/or epidemiological factors.
- **Fee for service.** Unit-based payment determined by the number of individual activities performed. It is very common as an element of GP remuneration and often for the payment of specialist diagnostic services. It gives an incentive to deliver a specific program or intervention as every patient seen or treated attracts an individual fee, making it a strong policy tool.
- **Per diem.** A payment per patient per day treated or under the care of the institution. The payment is made irrespective of the cost of actual care provided. It can be used to limit payment when a patient is deemed to no longer require the full range of services that the provider has, the most common example being when an inpatient is awaiting discharge but this is delayed because of social factors. Essentially the patient may now need minimal clinical intervention and consumes “hotel” services only.
- **Block payments.** A lump sum paid often for an undefined service package with few if any activity constraints to a provider for either a particular time period or episode of treatment. In effect it is a fixed/capped amount imposed on the provider. In general such payments are appropriate where access to facilities is the principal policy objective (e.g. emergency services). Can be used where insufficient data are available to set more sophisticated and policy-responsive payment.
- **Bundled case payments.** Where a single payment is made to cover all the costs of a defined series of treatments or interventions. This will mean that the several separate interventions provided to the patient such as physician fees, drugs, diagnostic tests, and so forth, which could be separately paid on a fee-for-service basis, are aggregated into a single payment. The payment is usually based on the average treatment costs of the specific patient category. These categories are usually based on some form of generic clinical grouping similar in their clinical interventions and their resource consumption. They are used in most OECD countries and are often based on some local derivative of the DRG methodology.
- **Pathway/episode of care.** A single payment to cover all of the costs of a defined series of treatments or interventions. By implication and application it requires and/or allows

providers to follow clear clinical guidelines and best practices throughout the episode of care. As such it can begin to assure a standard level of inputs and, possibly, quality. It could be argued that CCPs are a pathway model (but with some limitations).

- **Pay for performance.** Payment linked to the achievement of specified and measured activities, targets, or outcomes. Used in primary and secondary care settings.

10. Each approach has strengths and weaknesses and the ability to introduce perverse as well as positive and desirable incentives. Any overall approach must therefore attempt to take account of this and design and manage the process accordingly. As Oliver (2015) notes, a mix of well-designed financial and nonfinancial incentives are likely to be most effective. The simple summary provided by Schneider (2007) is pertinent (Table 30). However, no single process is appropriate to all of the system and most countries have a mixed model of payments.

Table 30: Overview of provider-payment methods

Facility	Payment method	Incentive to provider
Primary care	Input-based line item budget	- Use full budget and seek to increase volume of inputs
	Fee for service	- Increase volumes of services per patient
	Capitation	- Treat within budget, but risk of substandard care and/or exclusion of high risk patients - Refer to hospitals or specialist
	Capitation/FFS mix	- Treat within budget but increase number of FFS activities
	Pay for performance—P4P	- Increase number of activities that affect relevant (paid) performance indicators, possibly to detriment of non-P4P services
Hospitals	Input-based line item	- Increase number of paid for inputs (staff, beds, etc.) - Keep occupancy rate low and prolong LOS - Refer high risk patients to other hospitals
	Per diem	- Increase admissions and prolong LOS
	Case mix (DRG)	- Increase number of admissions - Reduce LOS - Risk select patients to avoid potential high-cost individuals

Source: Adapted from Schneider 2007.

7.1.2. International experience with different models

Primary care

11. In primary care a mix of capitation and fee for service is the generally used model in Europe. The blend of each element varies depending on the policy priorities between coverage, access, and costs for the population and the desire to achieve specific target-driven access policies. The latter are best incentivized by using a fee-for-service approach. The main issue here is how to balance the financial limit of an affordability cap on the overall payments to primary care and the incentive to increase activity under the fee-for-service elements of the program. In order to ensure that access and quality of capitation-funded services are not sacrificed at the expense of the fee-for-service element, managerial oversight and quality assurance are necessary.

12. In addition, there have been initiatives and developments to encourage the provision of some services traditionally provided in hospital or specialist/outpatient facilities by the GP. These include less intense patient testing and screening services, near-patient pathology and simpler diagnostic tests, that

is, low-intensity tests that can adequately be performed by and in primary care or specialist locations but traditionally have been undertaken in the next step of the care model. Examples are simple blood analyses and some imaging and screening. These are usually cost effective (subject to capital-funding access). There would be a need to assure that standards of clinical services are maintained and that this approach does not lead to inappropriate overdiagnosis of patients who clearly gain in terms of the time taken to receive such tests and the convenience of direct access to services at a more local facility.

13. A focus on fee for service allows the doctor to determine the appropriate type and mix of services. Where it has been newly introduced the evidence shows that the volume of activity rises, and a consequential increase in the pressure on finance is felt. Where there has been a reversal from fee for service to capitation, volumes have fallen, for example by 20 percent in Ireland (Figueras, Robinson, and Jakubowski 2005).

14. Where GPs are public sector–salaried staff they face no financial incentive to improve either the quality or volume of activities they provide. A capitation approach places an ethical responsibility on the GP to provide appropriate care to all, within the financial constraints set by the capitated allocation. However, some form of assurance and audit are desirable to ensure that these standards are being maintained. There are risks of adverse patient selection and possibly underprovision of treatment to some patients. Capitation approaches require a robust and current set of data on the population entitled to services, and the GP who will receive the appropriate fee.

Specialist/outpatient services

15. Fee for service is not uncommon for specialist/outpatient services. However, a few countries (Denmark, the Netherlands, and Norway, for example) have developed case-mix measures for these. Others such as Sweden still rely on block payments.

16. In Denmark and Norway, activity-based models have been developed that put specialist/outpatient services into groups with similar care characteristics and resource costs. They are similar in methodology to the inpatient DRG systems and similar in concept to the ambulatory care groups developed in the United States. A variant of this approach has also been introduced in the State of Victoria, Australia, using a bundled outpatient episode approach that pays a set fee for the consultation plus all ancillary services (pathology, radiology, and pharmacy) provided within 30 days of the consultation.

17. In England, specialized outpatient services are paid for on a fee-per-visit basis, with the fee set for each clinical specialty based on the average cost for that specialty. A lower fee is paid for any follow-up consultation on the basis that this provides a disincentive to require patients to return more often than is necessary (and also free some capacity to allow quicker access for first attenders). Diagnostic services may be accessed by direct referral to a hospital, with no intermediate step.

Hospital services

18. The model of choice in most OECD and EU countries for paying for inpatient hospital services is an activity-based approach, generally some form of case mix using the methodology—if not the actual name—of DRGs.

19. A full description of this approach and how it could be introduced in Bulgaria is given in the report “Final Action Plan for the Implementation of DRGs-based Payments.”

20. There are some significant differences in how the DRG approach has been adopted. These include the scale and scope of services included in the payment system, the way cost information is collected and prices set, and the way that payments are made for services not covered by the DRG fee.

21. In terms of collecting a cost base on which to establish the DRG price, most countries use the average of actual costs collected from a representative sample of providers. Few—England an exception—have cost collection that includes all providers, and there are now proposals to move to a sample base there. These prices are then usually adjusted to allow for any timing gap between the period of data collection and of application. In some cases this could be two years, and so increases for inflation and new drugs and technologies are common.
22. Few countries rely on paying hospitals entirely on the basis of their activity. Invariably there are additional payment requirements to allow for cost items such as teaching, research, exceptional high-cost/low-volume patients, and some specific drugs or devices. Commonly there is an adjustment or weighting factor to compensate for geographically dependent cost differences such as variations in labor rates or to compensate for costs associated with scarcity or the provision of services to rural areas. Some (including Denmark, Germany, and Ireland) exclude the cost of capital.
23. DRG-based funding can be used at different levels of the hospital resource-allocation process. At one extreme a full fee-for-service approach, based on per-case payment, is used; in others an assessment of the cost of planned activities based on each DRG can be aggregated into an annual budget. Examples of the former are England, Estonia, France, Germany, and the Netherlands, and of the latter Australia, Denmark, Finland, and Sweden (Appleby et al. 2014).
24. In order to maintain financial control at a macro level, all countries using DRG systems (other than most U.S.-system payers), impose some element of an activity limit on the total volume of patients that will be paid for in a given period. In some cases, risk sharing is defined at hospital level for any additional costs above the cap, with the additional cost shared on a preagreed basis. In others, a payment based on a marginal percentage of the full costs of each DRG is paid if activity exceeds a preagreed cap. In some cases the cap is based on the prior year's activity, in others on preagreed increases in activity. Both approaches limit the financial risk on the payer, and depending on the marginal rate, influence the providers' overall financial sustainability. In England, a marginal rate of 30 percent is paid and providers have argued strongly that this does not cover the variable and/or marginal cost of additional patients, claiming it should be nearly 60 percent. It is now proposed to move the rate to 50 percent.
25. A recent paper (de Lagasnerie et al. 2015) has also described similar policy responses in other OECD countries. There is no consensus on the appropriate reduction and this seems to be reached on the basis of some cost analysis and some negotiation between the payers and providers. In Germany any activity above the agreed level is paid at 75 percent of the full tariff; in the State of Maryland, United States, it is 50 percent, as it is in the Czech Republic. Israel has a more granular approach with a payment of 70 percent of the full price for activity in the range of +/-2 percent of the agreed annual level. This falls to 33 percent in the range of 2–13 percent overactivity and rises to 65 percent for anything beyond this.
26. Any payment based only on a fixed price for activity or volume has an inherent risk that the provider will be incentivized to deliver care at lowest possible cost. The main areas of concern are that the hospital will exclude the more severe and costly patients and focus on less-intensive ones. Most responses to ensuring that quality is maintained are to introduce an inspection and accreditation regime that oversees all providers. However, some specific initiatives have been embedded in DRG systems to give a clear impetus to maintaining quality. In England for example, the concept of a "Best Practice Tariff" is in place. Under this approach, hospitals are paid extra sums if they ensure that certain elements of a clinically determined pathway are followed. There are 18 such pathways in use for services such as renal dialysis, endoscopies, cataract surgery, hip and knee surgery, and strokes. While apparently similar to the CCPs in Bulgaria, they are quite clearly specific activities in addition to an expected model of usual care. All of these are linked to specific code-driven and auditable activities. (Other payment-for-performance methods are discussed in the following section.)

27. Few countries have developed or implemented activity-based funding for sub-acute or mental health services. Some (Canada, England, the Netherlands, and the United States) have attempted to develop classification systems but they have recognized shortcomings (Grabowski et al. 2012), and many applications have been modified by some element of input line item standards or per diem elements of payment (or both), compromising many of the advantages of an activity-based approach.

Promoting efficiency

28. In outpatient care beyond the payment of providers themselves, a range of tools are used to promote efficiency, focusing on making providers accountable for the further treatment costs (or volumes of care) that their patients “generate” in the system (in terms of referrals to other providers, prescriptions of medicines, or diagnostics). These mechanisms vary along several dimensions, in particular: risk-sharing arrangements or impact on remuneration can be set in various ways: providers can be held accountable virtually or for hard budgets, and the mechanisms can include sanctions, rewards, or both; the scope can vary and include referrals, tests, pharmaceuticals, or even hospitals; and providers can be held individually accountable or as groups.

29. Such tools exist in many systems, including Bulgaria, and while they can generate efficiencies they also have some basic, inherent weaknesses and can introduce counteractive behaviors. They also require a robust data and information set on which budgets can be determined and behavior monitored.

30. Budgets set on historical referral patterns have the merit of maintaining a degree of stability in the system but may be building in inherent inefficiencies or perpetuating bad practices, penalizing more conscientious or efficient practitioners. Capitation-based budgets are the best approach for assuring efficiency but they need a level of epidemiological and demographic data that may not be easily available if “fair share” budgets are to be set. A concern is the size of the patient population risk pool. Budgets set at the level of individual practitioners are inherently volatile and subject to significant in-year volatility because of the impact a few highly dependent patients can have on it. The size of the risk pool also depends on the bundle of services to be included in the budget. Recent experience in England, when the move to Clinical Commissioning Groups was being developed, led to a discussion on this (Box 21). In this case the whole purchasing budget, not just diagnostics and testing, was being devolved and the initial suggestion was that any practitioner could apply for a budget. However, concerns over risk pool size led to decisions and a view that a population of perhaps 30,000 was the smallest, and 50,000 a better size, to even out the risk pool issue. Ultimately, the smallest population pool has been settled at nearer 100,000.

Box 21: From Fundholding to Clinical Commissioning Groups, England

One of the earliest “budget holding” models was that of Fundholding in the United Kingdom. In this arrangement individual GPs or groups of them who volunteered for the model held real budgets and acted as the purchaser of services. In so doing they were effectively the agent of the funding body. The main aim was to give GPs a real financial incentive to manage costs and apply pressure on other parts of the system where they believed service or efficiency issues could be improved.

GPs were generally entitled to share in any savings made from the budget. Fundholding in England ran from 1992 to 1997, but the influence of GPs was retained through various iterations and expansions of the model and now they form the key input into organizations known as Clinical Commissioning Groups. These are groups of GPs and other primary care practitioners who hold the majority of the purchasing budget (around 66 percent of all NHS allocations). They are funded on a weighted-capitation basis for their registered populations and purchase most secondary and non-primary-care services, including the primary care drugs budget, which is part of their overall cash-limited annual allocation. If there are overspends on drugs, other savings have to be made to compensate for this (and vice versa— if the drugs budget underspends the savings can be reapplied).

Source: Authors.

31. The mechanics of setting and managing the budget need careful consideration, as do the flexibilities and incentives in the system. At the most basic a budget will set an activity and financial limit on the practitioner and therefore give the system an element of overall financial control. The more rigid the control period (monthly, say, as opposed to annually) the more apparent the control. However, the more rigid the period the less likely it is to achieve anything other than control. Budgets can be much more powerful tools than this and can be used to give real positive incentives for better patient care.

32. If the practitioner is given an element of freedom on where the referral can be made—the treatment and cost are independent of setting—there is an incentive to develop new or alternative service delivery patterns. GPs and specialists can develop in-house services rather than refer to other bodies. These may be less costly, and also less burdensome to the patient.

33. A review of the evidence (Le Grand, Mays, and Mulligan 1998) suggests that there is no clear view on the success or otherwise of the policy. They found that fundholding created high transaction costs and a two-tier system in access to care—for patients of fundholders and of non-fundholders. The rise in prescribing costs was initially lower in fundholding than non-fundholding practices. They report evidence that fundholding GPs achieved quicker admissions for their patients, who therefore experienced reduced waiting times. The impact of their successors is equally unclear, though some were able to alter their patients' emergency use of hospital services by providing alternative forms of care.

34. Curry et al. 2008 examined the apparent barriers to effective commissioning in general practice. They suggested that one key element was the short-term nature of the new models, and the impact of successive administrative reforms on the structure of the system. These did not allow the new organizations to mature and develop fully. Other factors were the relative sizes of the purchasing organizations, where a balance was needed between being local enough to understand and be sensitive to local patient and epidemiological needs, and being big enough to have the capacity and management infrastructure to competently perform the complex task of purchasing health care.

35. For hospitals, the most significant and common reform to incentivize efficiency has probably been the introduction of an activity-based (DRG) payment system. Because hospital services always account for the largest element of health care spending, any gains in this area are proportionately more valuable (in money terms) than in other services.

36. The evidence collected from many countries that have implemented DRG systems suggests that the desired gains have outweighed any counter and unintended responses. Productivity and efficiency increases have been realized. In Sweden for a time, some counties paid on a DRG system while some retained a global budget system. The efficiency and productivity gains in the DRG counties were some 10 percent higher, over six years, than in the other counties. A similar comparison between the applications of these two payment methods is available from England, where for a time the two systems operated. This showed that length of stay fell, and the proportion of cases undertaken on a same day basis increased more quickly, in hospitals paid under a DRG system than those on traditional funding. Further, there was no evidence of a detrimental impact on the quality of care associated with these efficiency gains (Farrar et al. 2009). This conclusion on the maintenance of quality concurs with the findings of previous research into this area in many other countries.

37. Evaluations in Europe have shown that activity-based funding led to increases in activity and reductions in length of stay, increased technical productivity, reduced unit costs, and/or reduced waiting times (Busse et al. 2011). Specific evidence of the impact on waiting lists and times is available from the English reforms of the early 2000s. Where a DRG-type payment system was implemented and supported by other contributing reforms, waiting lists fell from nearly 1 million people in 2003 to 659,000 in 2007.

Further, while 51 percent of patients were treated within three months of referral in 2000, this had risen to 92 percent by 2008. Average length of stay (ALOS) fell by 27 percent in the hospitals using the activity-based payment system,⁹⁸ while in neighboring Scotland where no system changes were made ALOS fell by 3.2 percent.

38. As discussed in the “Final Action Plan for the Implementation of DRGs-based Payments,” case-mix based payments can also be used to incentivize the delivery of care in the most appropriate setting, when they are applied independently of the location in which care is delivered. This means that minor surgical and clinical interventions and diagnostic investigations such as imaging do not need to be provided in a hospital setting. Rather, specific ambulatory settings can be utilized to deliver the service, and the payment is made on the same basis and for the same level of care paid for the case, whether or not it is delivered in the hospital. The British Association of Day Surgery has developed and implemented a list of clinical activities that can and should be delivered as day care. This gives a very clear initiative to deliver the care in the most cost and clinically appropriate setting and to pay for the service, delinked from the facility in which it is provided.

39. The introduction of a DRG or other activity-based payment system brings with it, as noted, some risks of adverse and unintended behaviors. These are now well understood and policy responses have been developed and implemented to mitigate them (summarized in Table 31).

Table 31: Policy response to unintended consequences

Unintended response	Policy response
Increased admissions	<ul style="list-style-type: none"> - Activity and/or financial budget caps - Risk-sharing arrangements - Marginal payments beyond preagreed levels - Use only for elective and not emergency cases - Referral management in primary care - Treatment protocols/thresholds
Undertreatment	<ul style="list-style-type: none"> - Additional payment for outliers - Pay for appropriate high cost inputs in addition to base price - Penalties for readmissions
Cost shifting	<ul style="list-style-type: none"> - Use activity-based payments in ambulatory care and rehabilitation - Make principal provider responsible for paying for whole pathway - Penalties for readmissions
Risk-based selection	<ul style="list-style-type: none"> - Payment for outliers - Payment for high cost technologies linked to predetermined DRGs or pathways - Institutional designation for certain high intensity cases - Recognize comorbidities in DRG assignment
“Up-coding” and misreporting	<ul style="list-style-type: none"> - Data audit backed by penalties if appropriate

40. While these risks are real, the experience from systems introduced is that the risks are manageable and that the overall benefits outweigh them.

Promoting quality through payment systems

41. Pay for performance (P4P) is often identified as a way to improve value for money in health systems, even though the evidence that it improves health outcomes, or even the quality of processes of care, is limited at best. Yet P4P has rapidly grown since the 1980s and is now reported to exist in 15 OECD

⁹⁸ There were some other parallel and complementary incentives and processes to increase efficiency.

countries in the following categories: primary care physicians (15), specialists (8), and hospitals (8). Many were reviewed in a recent publication that confirmed the findings that these tools may have a role to play in improving performance and strategic purchasing (Cashin et al. 2014).

42. In primary or outpatient care, there are few evaluated examples of initiatives to ensure quality of service. However one that has been in place for some time and has been scrutinized is that of the Quality and Outcomes Framework (QUOF) in place in England since 2004.⁹⁹ It is an annual reward and incentives program that pays for elements of enhanced quality. It is nonmandatory and GPs chose to participate. It makes additional payments above the established Capitation and Fee for Service elements of their regular remuneration, based on their achieving absolute performance in a number of areas. These cover:

- **Clinical**—indicators across 20 clinical areas such as chronic kidney disease, heart failure, and hypertension, and account for around 67 percent of the possible payment.
- **Public Health (1)**—indicators covering blood pressure, cardiovascular disease, obesity, and smoking, and worth around 13 percent of the total.
- **Public Health (2)**—other services—cervical screening, child health screening, pregnancy advice, and contraceptive advice, for 5 percent of the total.
- **Quality and productivity and patient experience**—a set of process-type indicators, such as how long the doctor should spend with each patient and patient survey data, along with trends in avoiding admissions to hospital, worth up to 15 percent of the total.

43. In very simple terms the higher the score a GP achieves over these measures the greater their financial payment. Final payment is adjusted to take account of surgery workload, local demographics, and prevalence of chronic conditions in the practice's area.

44. Research that evaluated this policy (Martin et al. 2010) concluded that “it is possible that there have been significant population benefits in terms of reduced morbidity incidence or improved quality of life, and that longer-term mortality reductions will ultimately accrue.” Specifically they established a correlation between GPs achieving the QUOF indicators and a reduction in hospital costs and lives saved, particularly for stroke care. They also found that improvements in primary care practices, as a result of the incentives in this system, may have led to significant reductions in hospital admissions and costs.

45. Other countries in Europe have introduced some form of performance payment for outpatient providers, for instance Estonia in 2006 and France in 2009. Estonia's bonus is granted on the achievement of targets focused on the prevention and management of chronic diseases. However, it is not considered very successful in Estonia, partly due to its design—the bonus represents a small proportion of the remuneration and targets may be too achievable (World Bank 2015a; Habicht et al. 2014). The French program awards bonuses for achieving targets on 29 indicators organized around four topics: prevention; chronic disease management (diabetes and hypertension); cost-effective prescription; and practice organization (Bousquet, Bisiaux, and Chi 2014). Initially covering GPs, it has been expanded to some specialists. Again, some modest improvements were found but not on all indicators, particularly for prevention, and a recent assessment from the General Auditor (Cour des Comptes 2014) found that the program, which only includes positive incentives, is complex and costly, and could be strengthened.

46. In hospitals, P4P programs can include bonuses or penalties, mostly for processes of care, but also some for clinical outcomes and patient satisfaction. At a very basic level it could be argued that activity-based programs such as a DRG system pay for the delivery of activity—a type of performance gain when set against the lack of such an incentive in global-budget or line-item funding systems. However, P4P is

⁹⁹ For the most recent iteration see www.nhsemployers.org/.../quality-and-outcomes-framework

usually associated with gains above mere activity and is used to incentivize policy goals, and discriminates between providers who achieve the preset gains, goals, or activities and are rewarded financially—and those who do not. The financial incentives need therefore to be tied to delivery of clear and measurable activities and outcomes.

47. Hence the need for performance-measurement indicators that are clear and specific, which requires good evidence of the association between structures, processes, and outcomes, and the potential impact of incentivized actions by providers. While it is certainly desirable to have robust clinical input, and to take account of local conditions, an evaluation of the program suggested that many of the locally agreed indicators concerned structures and processes, and were based on, at best, weak evidence of effectiveness (McDonald et al. 2013). Their evaluation also found that many of the indicators had weak baseline data against which to properly judge any gains, suggesting that an element of nationally imposed and technically sound indicators is desirable.

48. The level of the bonus payment has been shown to be linked to the degree of achievement of the policy goal, as in the case of two more or less similar programs in U.K. and U.S. regional pilot sites. In the United Kingdom, a reduction in mortality for three incentivized conditions evaluated was estimated to be equivalent to 890 fewer deaths over 18 months (Sutton et al. 2012). This was only statistically significant for one of the conditions, however, and the differential impact illustrates the importance of selection of performance targets with room for, and feasibility of, improvement, so as to maximize value for money. This program improvement contrasts with that of the U.S. program on which it was based, where no improvement was seen. This could be because the U.K. program introduced wider quality improvement measures in parallel with a larger financial incentive, and a greater proportion of hospitals were able to earn bonuses.

49. The experience of the English Best Practice Tariff also gives an insight into the potential for P4P to deliver gains, and some lessons on how to increase chances of implementation. A Best Practice Tariff was introduced for the day-case treatment for cholecystectomy whereby the price paid was increased by 24 percent leading, to an increase of 7 percent in the proportion of patients treated as day cases (McDonald et al. 2012). In the case of strokes, the Best Practice Tariff accounted for just over half of episodes. There was no evidence of an impact on quality or outcomes above improvements achieved nationally through additional activities to improve quality of stroke care (McDonald et al. 2012). This would seem to imply that P4P will not give major gains where other types of quality improvement initiatives have already been implemented successfully.

50. P4P approaches in hospital care in England have not translated into incentives for individual staff, only for hospitals as institutions. There has been variation in whether hospitals have transmitted bonuses achieved or penalties incurred to teams or areas of work through their internal budget allocations. In the United States, however, it is suggested that bonus payments to staff on the achievement of P4P gains are in the range of 5–20 percent.

51. To sum up, many countries continue to develop and implement P4P programs. While they may not systematically produce significant results, they appear to help shift the dialogue between providers and payers toward results. Still, design is critical and P4P programs can quickly become complex and burdensome to administer.

Promoting the integration of care

52. The most recent generation of payment reforms essentially aims to jointly promote efficiency across providers of care alongside quality, based on the increasing recognition that their pursuit at the system level is compatible. The challenges of an aging population and emerging medical problems associated with developed economies is giving rise to many people presenting with multiple and often

interrelated conditions, prompting many countries to consider if the traditional way of funding segmented parts of the system as individual elements is the most effective, or even able to ensure quality. Models of integrated care are being developed and implemented in which the patient is the focus of the funding decision (not the institution), and they focus on jointly improving outcomes, efficiency, and the patient experience. Payment systems are also used to encourage integration. Integrated care models have been reviewed by Langenbrunner and Sotomayor (2014).

53. Experience in Germany is drawn from a relatively small project in *Gesundes-Kinzigtal*, which covered a population of 69,000 and held funds for the full coordination of care from prevention to post-acute care. Payers have set up a kind of “virtual” fundholding arrangement through insurers. Savings have been shared between purchasers and providers. There are individual treatment plans and treatment goals, and reported high levels of patient satisfaction.

54. The Netherlands has had several years’ experience with such models for outpatient services. Disease categories include diabetes, cardiovascular, and chronic obstructive pulmonary disease. “Care groups” (owned by GPs primarily) negotiate rates for modules of specified care. Results have suggested that cooperation was more intensive and tasks were better structured across these care groups. Delegation of tasks (e.g. from GPs to nurses; from ophthalmologists to optometrists) improved. However, the results were mixed in terms of higher administrative burden and higher costs.

55. England had 16 integrated care pilots from 2009 to 2014, with \$127,000–289,000 in startup grants to GPs or groups of them. Interventions were generally proposed by providers, and interventions varied. Providers took on new roles and developed care plans. Results there, too, were mixed, with patients showing little change in knowledge, participation, or satisfaction (see Figure 65).

Figure 65: Highlights of evaluation results of integrated care interventions, three European countries

Intervention	Patient				Provider experience	Costs per patient per year
	Intermediate clinical outcomes and mortality	Use of hospital care	Process indicators	Patient experience		
Germany						
Gesundes Kinzigtal (GK)	Decreased: mortality (2.5 years after enrollment)*	Increased: admissions; decreased: length-of-stay		Improved: fewer changes in insurers	Improved: cooperation	~€203
The Netherlands						
Bundled payment system	Improved: control of blood pressure and cholesterol; increased: HbA1c; decreased: BMI	Decreased: specialist care	Increased: four checkups, foot/kidney exams; decreased: eye testing	Cooperation and coordination: >90% good or excellent	Improved: perceived quality, patient-centeredness	~€388
England						
16 integrated care pilots (ICPs)		Increased: emergency admissions; decreased: elective admissions and outpatient admissions		Improved: care plans/follow-up; decreased: listening to and involving patients, preferences taken into account	Improved: teamwork, communication, job depth and breadth	~€358*
						~€93*
North West London ICP	Improved: control of cholesterol improved; unchanged: HbA1c	No significant change in first year	Improved: care plans, diabetes testing	"Good idea," but "actual effect minimal"	Improved: interprofessional learning and collaboration, but deemed "time-consuming"	No significant change in first year

Source: Busse and Stahl 2014.

Note: Green-shaded boxes suggest positive results, yellow-shaded boxes are mixed, and red-shaded boxes indicate negative results.

56. The programs in these countries were consistent in at least one way—each used more sophisticated information systems—often electronic—to better manage care and benchmark across providers and patients. Clinical and cost information was important, as were patient surveys, both annual and post-intervention.

7.1.3. Options for Bulgaria

57. The details above reveal opportunities for Bulgaria to use well-tested financial processes to improve the overall performance of the system and switch some of the adverse incentives in the system. These gains are needed to satisfy the desire to achieve the objectives of the Concept 2020 Health Reform Goals for efficiency, effectiveness, and quality. These could also add to the possibility of developing and delivering much-needed closer integration of delivery models. Other issues that can be greatly influenced by these financial policy reforms are the apparent need to consider improvements in the purchasing of care, as current policy appears focused on provision, overlooking potential gains that better purchasing could contribute.

58. In the area of primary and outpatient care, measures could be explored to:

- Reassess, with the help of scientific societies, the mandatory referral requirements for chronic patients and the limitations put on GPs' capacity to deliver some care to their patients.

- Reorganize and refine the accountability of primary and outpatient care providers through referral budgets, particularly:
 - a. Reassess the current in-period referral caps, so that some in-period flexibility is permitted within a (probably expanded individual GP) annual activity cap that assesses a more efficient workload per GP;
 - b. Implement some element of referral caps on outpatient providers to hospital referral, so as to reduce the current incentive to refer and possibly undertreat in outpatient settings;
 - c. Consider introducing indicative prescription budgets or monitoring prescriptions.
 - Consider how diagnostic tests could be provided in appropriate out-of-hospital facilities.
 - Consider some element of bonus or performance-based payment (or both). These could also refer to savings made on current activity caps and financial budgets, provided that there is no detrimental impact on the patient’s access to care or quality.
59. For hospital payment and contracting, steps might be useful to:
- Reconsider the requirement for the NHIF to contract with all qualified providers (as determined by the MOH).
 - Impose financial control by applying more effectively the contract activity and finance caps.
 - Consider decreasing marginal payments for volumes that exceed targets.
 - Significantly reform hospital payments to improve the correlation between intensity of care and payment; increase transparency in price setting and negotiations; and reassess independently the safety and clinical requirements built into the system. An alternative to a profound and through revision of the CCPs would be to move to a DRG-based payment system. Although DRGs are also case-based payments and need to be monitored and managed for perverse incentives—just like any provider-payment method—a move to DRG would have the distinct advantage of “resetting the base” and levelling the playing field, a result which so far has not been achieved by successive revisions of the CCPs.
 - At a later stage, it would be advisable to introduce some element of integrated payment to allow for appropriate diagnostic and outpatient developments in hospitals, such that there is no incentive for a hospital to repeat a test already undertaken by another provider.
60. If actions are taken to address these issues, the evidence of other countries’ health reforms suggests that they will contribute significantly to achieving the country’s health goals and policies. In particular efficiency, effectiveness, and (potentially) quality improvements will be achieved. Further, such a reform gives opportunities to align financial incentives to move care to the most appropriate setting.
61. The most pressing area for reform seems to be in the most resource-intensive hospitals. An activity-based approach is already in place and so the underlying methodologies and processes are understood. However, the CCP approach is not robust enough to encourage the full benefits that such a system can bring. Serious consideration should be given to implementing the DRG Action Plan (provided in a separate document).
62. In other sectors of the system, incremental changes could be made as part of the annual National Framework Contract process. There is, though, a risk that the direct link to clinician remuneration inherent in this process will dilute the focus on reform and realignment.
63. The Concept Note envisages important and much-needed reforms in service delivery, which all aim at promoting primary care and reversing the trend for ever-increasing hospitalizations, including

selective contracting and hospital restructuring. The overarching recommendation of this section is that provider-payment reforms should be included in this agenda as they would both remove some of the incentives that contribute to the problem and promote the objective to deliver higher quality, sustainably.

64. In practical terms, mainstreaming the provider-payment agenda in the reform program would first require the options discussed to be prioritized and phased in. This exercise should be managed by the group that leads the reform process and has an understanding of its intended phasing and intermediary objectives. Further elaboration of specific payment reforms would require an in-depth feasibility and acceptability study for the main selected option, which would entitle consultations with key stakeholders, targeted collection of implementation lessons from other countries, assessment of the technical feasibility (particularly information systems), a costing of reforms, and simulating their impact on providers' incomes and expenditures (possibly building on the actuarial model built for this study). In a sense, when it comes to hospital payments, the DRG action plan developed in the context of this Reimbursable Advisory Services can be seen as the first milestone. As highlighted in the DRG road map though, when the policy decision is taken to implement it, additional consultations and simulations will need to be undertaken. Still, other payment reforms for each segment could follow a similar pathway.

65. To conclude and reiterate, payment reforms should not be seen as separate components that are disconnected from the "service delivery" agenda. The "reform group" should monitor the implementation of all components and their results across all segments of service delivery, and ensure that they jointly contribute to achieving the policy goals.

7.2. Enhancing financial protection

66. Financial protection is one of the three main goals of health systems. This section discusses potential areas of reform consonant with Bulgaria's current system and reform program to improve the health financing system's performance in promoting effective financial protection to the entire population. First the basic approach and resulting performance embodied in the current system and proposed reform program are summarized, drawing on the extensive analysis above. Second, based on this baseline situation and international experience, specific reform areas are highlighted.

7.2.1. Bulgaria's current approach and proposed reforms

67. The government explicitly recognized the importance of financial protection by implementing universal mandatory health insurance coverage through the NHIF in 1999. Moreover, through the NHIF, the government enrolls and finances the care of disadvantaged groups such as children, the poor, disabled, pensioners, etc. through its general revenue contributions. In addition, all Bulgarian citizens have free access to emergency services.

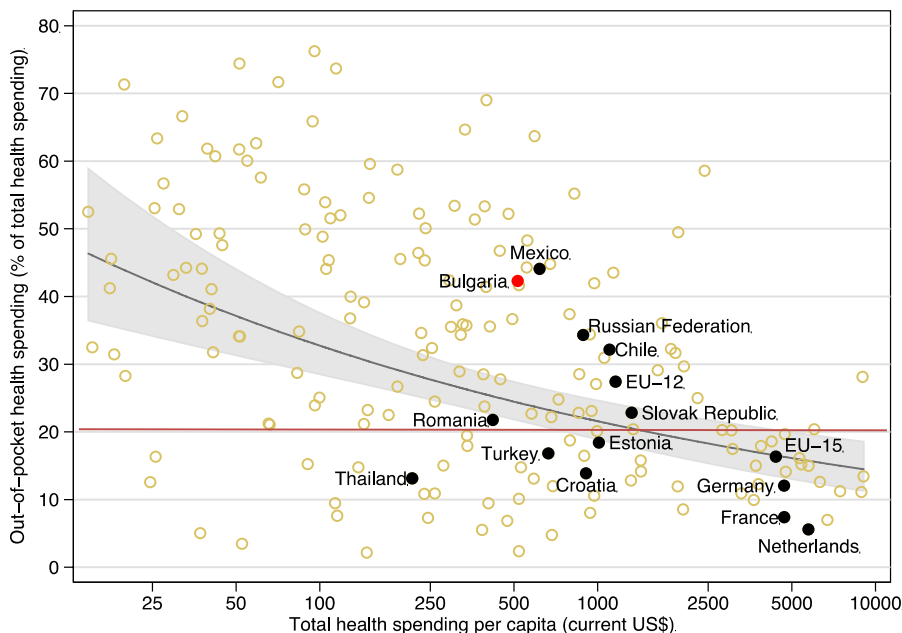
68. While the government's proposed health reform program appears heavily focused on health outcomes, it also emphasizes poverty alleviation, inequalities, access for socially disadvantaged groups, and the social determinants of health. The Concept Note (MOH 2015a) states:

- "... opinion polls on the budget of households in Bulgaria indicate that the high level of OOP payments considerably limits financial protection for all" (p. 24); and
- "These types of pressure are further aggravated by the considerable and growing part of the population that is either poor or highly vulnerable and at risk of going below the poverty threshold who therefore cannot readily afford to pay out of pocket for vital services" (p. 25).

69. International comparisons and micro data-based household analyses presented in Part I highlighted Bulgarian underperformance on financial protection. As an example, Figure 66 highlights how

unusually high its OOP share is relative to other comparable income countries, EU averages, and WHO's 20 percent threshold.

Figure 66: OOP spending share of total health spending relative to total health spending per capita



70. While the policy commitment to financial protection is embodied in the underpinnings of the NHIF and the government's proposed reform program, the proposed policy directions about how to improve it lack specificity and appear fragmented.

7.2.2. Lessons from international experience

71. Assuring effective financial protection and equity requires reducing reliance on OOP payments (including informal payments, which may not be fully captured by the data) and increasing reliance on risk pooling and prepayment mechanisms. Other key mechanisms include cross-subsidization, exemptions, subsidies, and effective targeting (Maeda et al. 2014, pp. 38-39).

72. Moreover, as the WHO World Health Report 2010 states, the sources of the prepayments are less important than the specific policies developed to administer such prepayment systems. International experience highlights three broad lessons for developing such policies: those deemed too poor to contribute need to be supported; contributions need to be compulsory; and pools need to spread risks over large numbers of people (or they are not financially viable). In addition, all countries face financial tradeoffs among the number of people covered (*breadth* of coverage); the *scope* of services covered; and the overall proportion of costs borne by prepayment programs (*depth* of coverage) (WHO 2010, pp. xiv-xv). Other factors, too, besides affordability can preclude people from getting access to services and effective financial protection (transport costs, provider behavior toward certain segments of the population, etc.).

73. The policies undertaken need to address those particular factors that result in large OOPs including lack of insurance coverage; BBP limitations (including cost sharing) and imbalances which force beneficiaries to seek care for uncovered services and in uncovered settings; incentives embedded in the

provider-payment system (e.g. extra-billing, informal payments) resulting in OOP and use of uncovered providers; and quality of care problems in participating facilities as well as other weaknesses in the service delivery system (World Bank 2015b).

74. One also needs to understand the composition and distribution of catastrophic payments. How are they distributed over income groups, among the insured and noninsured, services types, provider types, etc.? Do most catastrophic expenditures result from single large shocks (e.g. an expensive hospital episode from a road accident) or many smaller payments that cumulatively become catastrophic (e.g. expensive drugs to treat NCDs like cancer). It is also important to have information on people who spend little or nothing OOP because they are too poor to purchase services or face physical and cultural access barriers,¹⁰⁰ as that allows policy makers to attack root causes.

75. The global evidence base concerning key factors that improve financial protection based on rigorous evaluations is very weak (Mareno-Serra et al. 2013 pp. 20–22), and the reasons for failure or success are not clear (Cotlear et al. forthcoming).

76. These results are unsurprising as policy impacts are very country specific, current measures are not readily traceable to the underlying financial risk factors, and it is very difficult to determine causality due to the multidimensional nature of and the complexity of the interactions—as a result there have been few rigorous evaluations.

7.2.3. Options for Bulgaria

77. While preparing the diagnostic for Bulgaria (Part I), it became clear that there are severe limitations in the data to measure and understand OOP payments and their impact. No dataset provides simultaneously information on insurance status, health status, and utilization of care. The only information about OOP comes from Household Budget Surveys (2010 and 2013). This needs to be remedied to effectively design policies to improve financial protection.

78. Although information is incomplete, to improve financial protection Bulgaria will need to focus on explicit interrelated policy areas related to the breadth, scope, and depth of NHIF coverage, including eligibility and enrollment criteria for NHIF coverage; scope and content of the NHIF's BBP, including requisite cost sharing and provider-payment procedures for these services; and the level and overall efficiency of health spending.

79. In other words, assuring financial protection means addressing the basic weaknesses in both the health insurance system (eligibility, benefits, purchasing) and the health delivery system (configuration, quality, etc.). The focus below is on the health insurance system and health financing reforms, but includes the delivery system context.

Eligibility and enrollment

80. As pointed out by Kutzin, Cashin, and Jakab (2010): “Many of the countries that introduced compulsory health insurance also changed the nature of entitlement from citizenship to contribution. In doing so, they faced the problem of creating explicitly uncovered population groups for the first time (remembering that prior to 1990 they had universal coverage).” Bulgaria is no exception to this. The problem generally exists in countries where health insurance is mainly linked to occupation. A recent survey of OECD countries (Paris, forthcoming) showed that Austria aside, all OECD countries in which

¹⁰⁰ For an extensive discussion of financial protection methodological, measurement, and policy issues with an EU focus see Mareno-Serra et al. 2013.

entitlement was not universal provided means-tested support to ensure access to the low-income or economically disadvantaged groups (Table 32).

Table 32: Sample of public interventions to ensure basic health coverage or services for the poor

Country	Interventions
Czech Republic	The state pays social health insurance contributions for economically inactive persons.
Estonia	People are entitled to health care coverage through dedicated public programs that subsidize public or private provision (50.3% of the population).
France	Residents not covered through health insurance related to employment, pensions, unemployment, or social benefits are entitled to means-tested subsidies to purchase basic health insurance (<i>Couverture Maladie Universelle</i>), which insured 2.2 million people in 2011 (3.3% of the population), 98% of whom with a subsidy.
Germany	Municipalities pay (flat) health insurance contributions for low-income, long-term unemployed.
Hungary	The state pays social health insurance contributions for “socially needy” people.
Poland	Means-tested public subsidies are granted for purchase of basic health insurance.
Slovenia	Means-tested public subsidies are granted for purchase of basic health insurance, to which 6.2% of the population are entitled

Source: Paris (forthcoming).

81. Although NHIF is mandatory, some 7–12 percent of the population is not enrolled. This deprives the government of needed revenues; limits financial protection for those not enrolled; and may increase overall costs as uninsured individuals postpone care, which becomes even more costly to provide at a later date in free emergency care settings.

82. As shown in Part I, the majority of uninsured are poor or near-poor, which is especially troubling. The law intends for some of the socially vulnerable groups to be covered, but there are gaps. The Open Society Institute (OSI) report (2009), based on a survey of the uninsured, highlighted some of the reasons why this is not happening, including a lack of understanding of the necessity to be insured and mistrust in the very governmental institutions that are meant to help socially vulnerable groups access insurance. Various analyses point to the need for a combination of administrative reforms to improve accessibility as well as more proactive outreach policies. It is also likely that the targeting criteria for eligibility are too stringent and end up excluding significant numbers of the poor.

83. Different issues pertain to those who know they are required to enroll but choose not to do so even though they can afford the premiums (some 13 percent of the uninsured according to the NRA 2013), because they are in good health and do not want to subsidize a system they are unlikely to benefit from. Such behavior destabilizes insurance funds and may be encouraged by the NHIF’s late-enrollment policies, whereby people who don’t enroll can be enrolled immediately if they pay the previous 36 months of premiums (i.e. potentially causing adverse selection against the NHIF). While arguably such policies assure financial protection when someone gets sick, they undermine the risk-sharing and financial viability of the NHIF and diminish equity, because costs are shifted from higher-income individuals who can pay to the government, employers, and individuals who pay their premiums.

84. More detailed analyses of both the eligibility determination process and the administrative procedures for enrollment are called for. In particular one needs to assess the specific targeting criteria used for eligibility determinations for the poor and other disadvantaged groups like the unemployed. This process should be informed by the actual experience of the targeted people (e.g. though focus groups). In the longer term, consideration could be given to changing the basis of entitlement: for instance in France since 2000 all legal residents have been entitled to coverage. Similarly the administrative

mechanisms used for determining and enforcing mandatory enrollment for non-disadvantaged groups should be reviewed to assure timely enrollment of those with the ability to pay—although the issue of tax and contribution evasion is probably handled for the most part by the National Revenue Agency. In the same light, current outreach activities should be extended to inform all citizens of their rights and obligations. Based on these assessments specific administrative changes and policy options need to be developed to assure timely enrollment and premium payment of the entire population.

Scope and content of the BBP and purchasing procedures

85. As one of the three pillars of universal coverage, the BBP is one of the most critical determinants of the level of financial protection. The services covered (including any “medical necessity” criteria,¹⁰¹ and expenditure or numerical utilization limitations) and cost-sharing requirements are all key policy parameters that directly affect that level, the consumers’ direct payments, and the expenditures of the public system. The key here is choosing a BBP that is affordable and maximizes health outcomes, financial protection, and consumer responsiveness. In addition, one needs to examine those situations in which extra-billing and informal payments occur,¹⁰² and the conditions under which dual practice physicians can refer patients to a private pay setting.

86. Formally defined cost sharing is a feature of most health financing systems. Cost sharing is intended to limit unnecessary utilization and is often as a key policy lever to ensure that entitlements are commensurate with public resources. Many countries complement their cost-sharing regime by policies to insure that cost sharing does not unduly limit access to care. These broadly fall into two categories, setting caps limiting copayments or exempting some groups from paying them (or some part of them). Exemptions can be based on health status (chronic patients), target specific demographic groups (the elderly, pregnant women, children), or groups considered more vulnerable or worthy of protection (based on income or other socioeconomic characteristic).¹⁰³ Table 33 presents some countries with caps on OOP spending. A third way to extend additional financial protection is private insurance. In France, for instance, while the poor are virtually exempted from copayments (and balance billing), the near-poor are eligible for a subsidy to purchase complementary health insurance.

¹⁰¹ The extent to which such criteria are based on appropriate health technology assessment and practice guidelines is critical.

¹⁰² A new study on informal payments may well be warranted as the last extensive study was the Open Society Study published in 2008, which found that 47 percent of overall OOP resulted from informal payments. See Dimova et al. 2012, p. 64.

¹⁰³ Copayments can also be covered by private insurance and access to such insurance can be subsidized.

Table 33: Selected countries with annual cost-sharing caps

Country	Annual cap for cost sharing
Austria	Maximum threshold of 2% of the annual income.
Belgium	Annual cap on cost sharing.
Czech Republic	Annual cap on all cost sharing.
Denmark	Annual cap of DKK 3,710 (\$472 for pharmaceuticals. Other services of medical diagnostic and curative care are virtually free of charge.
Finland	Annual copayment cap of €636 (\$677) in 2012 on cost sharing for health services provided by municipalities.
Germany	Copayments are capped at 2% of gross household income, reduced to 1% for the chronically ill.
Hungary	Entitlement to free pharmaceuticals for those whose medical expense exceeds 10% of the minimum pension (for households with income per capita < minimum pension = €100 in 2010).
Iceland	Cap on cost sharing for outpatient primary care, outpatient specialist contacts, clinical laboratory tests and diagnostic imaging.
Ireland	Annual cap on inpatient care, primary care and pharmaceuticals.
Israel	Annual cap on inpatient and outpatient primary care.
Norway	Annual cap for the combination of expenses on pharmaceuticals, consultations with physician in the primary health care sector, psychologists and psychiatrists, outpatient services in hospitals, laboratory tests, x-rays set at NOK 2040 (\$344) in 2013.
Portugal	Annual cap on copayments for low-income elderly people for dental prosthesis and eyeglasses.
Sweden	Annual cap for all cost-sharing requirements. Annual cap on copayments for pharmaceuticals, set at SEK 1,800 (\$203).

Source: Paris (forthcoming).

87. As discussed, the government’s reform program focuses on the current NHIF and Emergency Medical Services BBPs with the intent of breaking them up into three packages—emergency, basic, and additional. Key to improving financial protection will be the criteria used to determine which services are covered in the BBPs, including their levels of cost sharing and the extent to which individuals feel compelled to buy private supplementary insurance to obtain better access to the additional (and possibly even basic) package. Since resources are limited, it will be important to assess the cost implications of the proposed BBP changes on the financial viability of the NHIF as well as the government’s overall health budget. These implications also need to be considered in the context of increased enrollments. The equity implications/redistributional consequences must also be addressed. For example, will only the rich purchase supplementary insurance for the additional package or will the poor do so as well because waiting times are too long otherwise?

88. A related area concerns the benefits covered through the Emergency Medical Services and MOH, and their integration with NHIF-covered services. (Chapter 9 discusses some of these issues.) Similarly, coordination of basic public health and other curative services covered by the MOH with those provided through the NHIF-equivalent is an issue in almost all countries in terms of health outcomes as well as financial protection. There has been a continuous migration of curative services (e.g. cancer drugs) from the MOH to the NHIF. What is critical is not which public entity covers such services, but the criteria used for choosing those services and drugs, devices etc. that are covered, their impacts on health outcomes

and financial protection, their costs and who pays them, and assuring seamless integration on both policy and implementation grounds across the multiple agencies.

89. Likewise, limits on individual service coverage and levels of cost sharing will also affect both public and private service use and OOP spending. Some 75 percent of OOP is for pharmaceuticals. Unfortunately, the data do not provide enough specificity to understand what individuals pay for. Yet for drugs covered by the NHIF, as discussed in the report “Analysis and Recommendations for Reforming Bulgaria’s Pharmaceutical Sector” and highlighted in Part I, one key issue is understanding how much the patient will have to pay for a specific drug and to make informed choices at the pharmacy. It is hard for a patient to know where the benchmark is. Pharmacies could, however, be required to display a list of benchmark prices for medicines in high-volume clusters, as a guide for patients or to inform them about the lowest-cost alternative for their prescription (this would require allowing substitution). A policy that requires pharmacies to dispense a benchmark product on request could be put in place but it would need to ensure that such products are available to them. Further improvements in affordability could be achieved by educating prescribers in cost-effective prescribing, by ensuring stocks of benchmark-priced products at the pharmacy, and by raising awareness among consumers of the safety, quality, and availability of generic medicines.

90. The rationalization and simplification of patient copayments through the introduction of a flat copayment structure could also be considered to improve equity and individual affordability. Coinsurance is regressive and creates uncertainty for patients—uncertainty in cost has been shown to reduce treatment adherence. This need not involve increased expenditure, as it should be possible to model a tiered copayment system that is revenue neutral. In sum, pharmaceuticals are probably one of the most critical areas for reforms to improve financial protection for all Bulgarians.

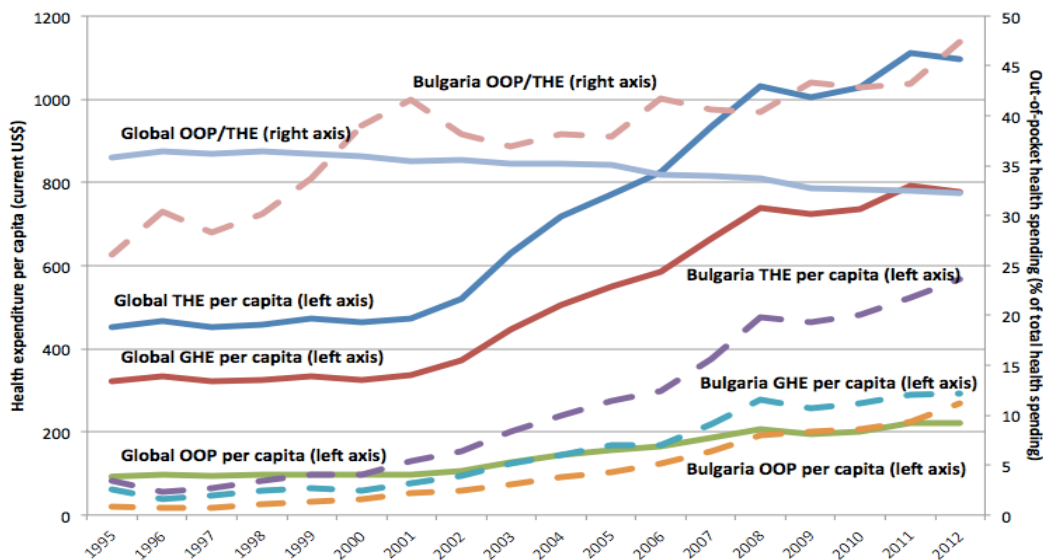
91. Given the high impoverishing impact of OOP payments, consideration should be given to introducing caps on OOP, and to avoid generating too large a financial burden, targeting low-income households. The administration of such a system would be contingent on having better information systems at the NHIF, particularly for capturing socioeconomic characteristics of the insured, which are nonexistent today.

92. Purchasing policies are another critical area affecting OOP as they affect access to publicly covered services. Effective access to services has both demand and supply aspects. NHIF and MOH policies concerning extra-billing, informal payments, and referral to private facilities for services not covered by the NHIF all have important impacts on OOP, as does the configuration and quality of the service delivery system. Unfortunately due to lack of data on the levels of OOP engendered by specific NHIF and MOH policies, it is difficult to assess the magnitude of these OOP impacts. It would be useful to examine current policies based on empirical data to see how much current policies contribute to the financial protection problem. (And as seen below, delivery system influences are another interactive factor.)

Level and composition of health spending and financial protection

93. While globally there is a positive relationship between higher levels of health spending and better levels of financial protection, there is also a great deal of variability among countries. Bulgaria, despite above-average total and average public health spending levels, does much worse than similar income and health-spending comparators on financial protection. Moreover, while both GDP and health spending have increased over time in Bulgaria and globally, financial protection and equity have gotten significantly worse in Bulgaria—against the global trend (Figure 67).

Figure 67: Bulgaria bucks the global trend toward better financial protection



Source: Based on Victoria Fan and Amanda Glassman, "Going Local," *Finance and Development*, December 2014, p. 12.

94. Thus improving financial protection is not solely a matter of spending more money, but spending it more smartly though increased and equitable prepayment though NHIF. In order to improve financial protection, Bulgaria needs to shift significant amounts of its OOP into prepaid, pooled, and relatively equitable NHIF spending. In particular, the government needs to develop policy options and administrative changes designed to:

- improve risk pooling by enrolling all the uninsured through fundamental reforms of the NHIF's eligibility and enrollment processes and carefully assessing the risk-pooling, equity, and cost implications of encouraging private supplementary insurance for services in the additional package
- change the composition of spending by restructuring the BBP, including its cost-sharing structures based on explicit financial protection criteria
- examine current provider-payment policies including those on extra-billing, informal payments, CCP add-ons, and referrals to uncovered private services by dual practitioners
- reform pharmaceutical policies on cost sharing, coverage, procurement, and pricing
- better integrate services of the NHIF, Emergency Medical Services, and MOH.

95. Beyond these health financing changes, delivery-system reforms in key areas such as quality, composition of infrastructure, and integration must be addressed. Globally, poor quality in public facilities is often one of the key factors in inducing OOP. Thus health system strengthening is an important component for improving financial protection.

96. Given the global positive relationship between financial protection and income and health spending, one option is for the government to increase health spending, but to do that it would first have to resolve base inefficiencies in the system. Past increases in public and total health spending in Bulgaria have resulted in a lower public and higher OOP shares and diminished financial protection and equity. Increasing spending on an inefficient base is not a rational policy choice.

Chapter 8. E-health

1. This assessment of HMIS in Bulgaria is based on discussions with Bulgarian colleagues in health-related institutions using HMIS and e-health to automate some or all of its business processes, documents provided based on e-health, MOH and NHIF reform plans, and visits to NHIF and some health facilities.
2. Bulgaria has a long tradition of supporting and encouraging development and advancement of its health information systems. Its health technology sector is itself healthy, providing the country good capacity¹⁰⁴ to continue that long-standing tradition of HMIS progress into the future.
3. However, despite its rich technology resources, it appears that the country is now falling behind other countries of similar economic standing and that, especially since the global economic crisis, there has been a diminution of attention given to the mission-critical systems that serve the health sector. This is understandable in light of other conflicting and demanding national priorities, but now is the time to attend to putting the train back on the track, and to more fully deploying twenty-first century technologies in the country's health sector. Compared with other countries in the EU and elsewhere,¹⁰⁵ some overall deficits and challenges stand out.

8.1. Electronic medical records

4. Much of the world is racing to complete comprehensive electronic medical records (EMRs), as with this move it is hoped that greater access, equity, efficiency, and quality will result. It still, frankly, too early to know the lasting effects that the move to EMRs will engender. Some larger countries are focusing on regional EMRs (China, for example) while others (mostly countries with a small population) are attempting to create true national EMRs (Bahrain, Costa Rica), which ultimately aim to amass important health data for each citizen and resident.
5. The latter, more aggressive, efforts have been met with spotty success thus far given that they require a huge amount of coordination between sometimes competing stakeholders. Gaining an acceptable level of participation in the design and implementation of an EMR is not easy to accomplish and is a challenge being faced worldwide. Bulgaria still seems not to have reached consensus on how the country should best move forward in this area, or how the leadership for such a grand project might coalesce. Although HMIS is referenced in Bulgaria's Five-Year Health Plan as well as in the Minister's proposed health reforms, the concerted work needed to actualize these Plans is not yet evident. Indeed, a critical system at the NHIF has experienced serious operational disintegration, which has reached a point that a true crisis could result (see below). This is not a hopeful sign that HMIS system integrity is being given the attention needed.
6. EMRs, especially as they approach "national" status, require the utmost care in designing methods of access to the precious health data without potentially abrogating the citizen's right to privacy and confidentiality. The thorny problem of where the fine line between giving access to providers of patients' health information vs protecting patients' privacy is one with which the world continues to grapple. There are no easy answers. No privacy protection method is fool-proof. Whether Bulgaria, despite being an EU member and thus being subject to EU-Health regulations on patient confidentiality,

¹⁰⁴ Bulgaria has a "brain drain," however, in its technology sector. Many excellent technicians have chosen to live in other countries of the EU and elsewhere. Despite this effect, a seemingly healthy supply of good quality capacity remains in the country. Assuring that this capacity does remain in the country is an important priority for any country, as native talent is a key ingredient to long-term sustainability of its HMIS efforts.

¹⁰⁵ In this chapter, we discuss international experience in countries including Australia, Bahrain, Canada, Mongolia, New Zealand, Saudi Arabia, Turkey, the United Kingdom, and the United States.

has adopted adequate safeguards was not independently verified during this study, but should be a focus of continued effort.

8.2. Systems at the MOH

7. The MOH appears to have less computerization than one would expect of an advancing, EU-member country. Usually MOHs have a plethora of systems aimed at assisting them in health policy planning including:

- “What-if” systems that model different policy parameters and attempt to compare results
- Simulation systems that similarly provide guidance on policy decisions based on the simulation of random epidemiological or environmental or macroeconomic events
- Geographic Information Systems that can create a full “health map” of the country (including layers showing facilities, density of providers, and epidemiological data)
- Systems aimed at monitoring and enforcing quality standards across the health sector (often these systems send “report cards” to providers comparing their quality measures with others)
- Budgeting systems, National Health Accounts analytic systems, and accounting systems (to aid the MOH with its financial responsibilities)

8. Most of these applications are now readily available in the market. Such systems tap into both data collected directly by the MOH as well as that collected by the health payer. The resulting data analytics provide guidance on financial matters (and for assessing possible impacts of possible health reform agendas), on quality of care, and assessments of medical practice patterns.

8.3. Leader of e-health implementation and the road map

9. The MOH is well-placed and empowered to play a very significant role in leading e-health efforts across the sector. Its leadership is key in the role of facilitating, overseeing, updating, disseminating and, most importantly, *enforcing* national health information standards.

10. An important role relates to activities leading to the creation and maintenance of the Bulgarian National Health Data Dictionary (HDD). Its development and adoption are absolutely necessary to foster and encourage interoperability among all health stakeholders—among providers, between providers and the payer (NHIF), between providers/payers and the MOH, and between providers/payers and the Public Health Institute. This interlinking causes a new synergy between stakeholders—all members collecting data yet actively sharing it, as appropriate, with others in the sector. Barriers to this sharing are always a key challenge, yet it is MOH’s leadership that has the most dramatic effect in facilitating this exchange.

11. The MOH has recently made progress here with the release of its E-health Road Map. It is a giant step in potentially coalescing support for the activities needed to further e-health in the country—at the Ministry, at other health-related institutions, and with Parliament. Some of the basic issues in finalizing and implementing this plan are now discussed.

8.4. Systems to run the NHIF “factory”

12. Running a modern health payer is analogous to running an (industrial) factory. A brief list of system functions needed to run a “health insurance factory” include the following:

- Provider contracts have to be let.

- Beneficiaries have to be tracked.
- Claims have to arrive and be processed in a timely manner.
- Accurate, transparent payments must be made.
- Health insurance fund accounting must assure sustainability and liquidity.
- Utilization of services must be tracked.
- Quality of health care services must be deduced and compared to acceptable measures.
- There must be protection against fraud and abuse
- Protection against theft and cyber-attack should be in place

13. In some countries these systems run like clockwork (Australia and Canada are considered international good-practice countries for churning away with little friction and few issues—Box 22) while others seem to get mired in technical as well as political quarrels that sap the system’s usefulness.

Box 22: Keeping the health insurance factory ticking over nicely

Countries like Australia and Canada have achieved a high degree of efficiency in running their insurance “factory” by:

- Monitoring closely the operational parameters such as days-in receivables, percentage claims rejected, claims-appeals rate, retrospective take-back-rates.
- Empowering the health insurance fund with the ability to question claims submissions from providers to help identify possible fraud and abuse.
- Employing good actuarial and forecasting systems so the status of the fund is known at all times, thus avoiding most “surprises.”

14. In Bulgaria, the current NHIF system is highly problematic. The NHIF systems are in crisis, caused by the decline and rapid disintegration of its current information systems, primarily a system called IIS (Integrated Information System) as well as a number of regional information systems apparently created as stop-gap measures to keep the claims flowing but were not well conceived and have, instead, caused serious fragmentation of the business process and serious opportunities for aberrant behaviors, both from providers as well as the NHIF itself. The problem can no longer be ignored.

8.5. NHIF information systems

15. In assessing the serious information systems-related situation at the NHIF, ascertaining the true situation was difficult. Documentation is poor and outdated or was not forthcoming, and while the NHIF staff were generous with the limited time they had, some of the key technical people on staff appeared to have little time to spend discussing matters. They did seem keenly aware of the potentially calamitous situation that the NHIF faces, but seemed powerless to either gain the attention of management or of the Board, or to technically remedy the situation. As for the situation at the regional offices, the Bank team did not have the opportunity to visit a NHIF regional site to see firsthand what was happening there, as an attempt to organize a visit to a typical region proved unsuccessful. Yet despite this limited vantage point, the following impressions are clear.

16. The information processes at the NHIF are highly fragmented (with each business line being processed completely independently of others). Thus pharmacy claims follow their own path, as do hospital claims, as do lab/imaging claims ... etc. (These independent paths can potentially lead to some

very bizarre results—a hospital stay being denied because of an error while the accompanying diagnostic imaging claim is approved).

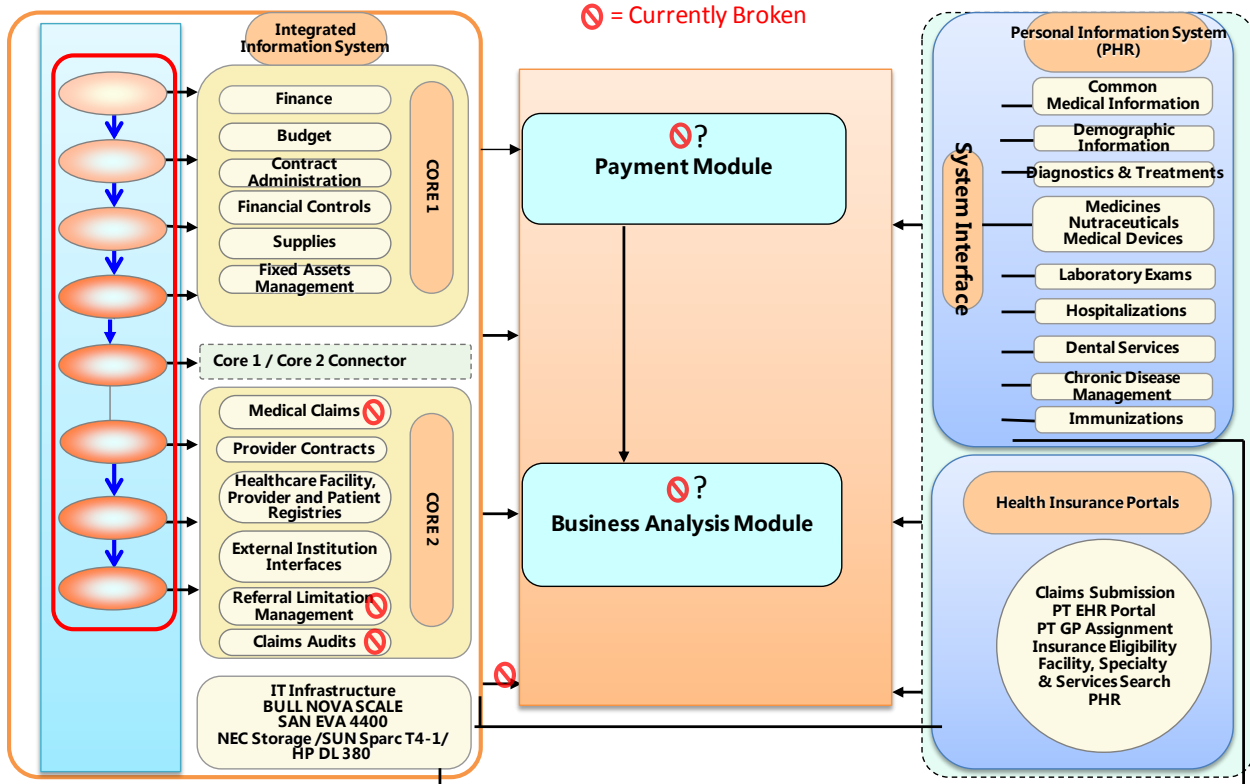
17. The processing of some types of claims in each of Bulgaria’s 28 regional offices could also result in wide variations in decisions and adjudication. It is also not unthinkable that a claim might be paid in two different regions (hospital located in one region, patient resident in another) since the financial results would not be evident until much later when the payment results are finally combined in Sofia. At that point, undoing such duplicate payments would no doubt be difficult at best.

18. The “main” processing system at NHIF, IIS, the Bull-Siveko system has two “cores,” an Enterprise Resource Planning (ERP) core (Core 1) for managing the financials, and Core 2, which provides the centralized claims-processing step at the central site in Sofia. Large parts of Core 2 have been abandoned because they no longer conform to new regulatory agreements promulgated in the past few years because it has been impossible to encode those changes into the core’s tables. Hospital claims, the claims of largest per-unit cost, now must bypass the claims adjudication system altogether and proceed to the payment module with seemingly little scrutiny. This is necessary apparently because the adjudication rules for hospital claims are simply so far out of date that it is simply easier to perform these tasks manually.¹⁰⁶

19. This main processing system continues to disintegrate (Figure 68), and could collapse outright. (See White Paper on this topic). It needs attention, and urgently.

¹⁰⁶ Manual processing of insurance claims inevitably leads to inconsistency and variation in how the rules are applied and thus how payments are determined. It also potentially leads to situations where “leakages” can occur for “favors” done. Because of this risk, the manual processing of claims has become rare in recent years in most advanced and many emerging market countries.

Figure 68: Key subsystems of NHIF architecture

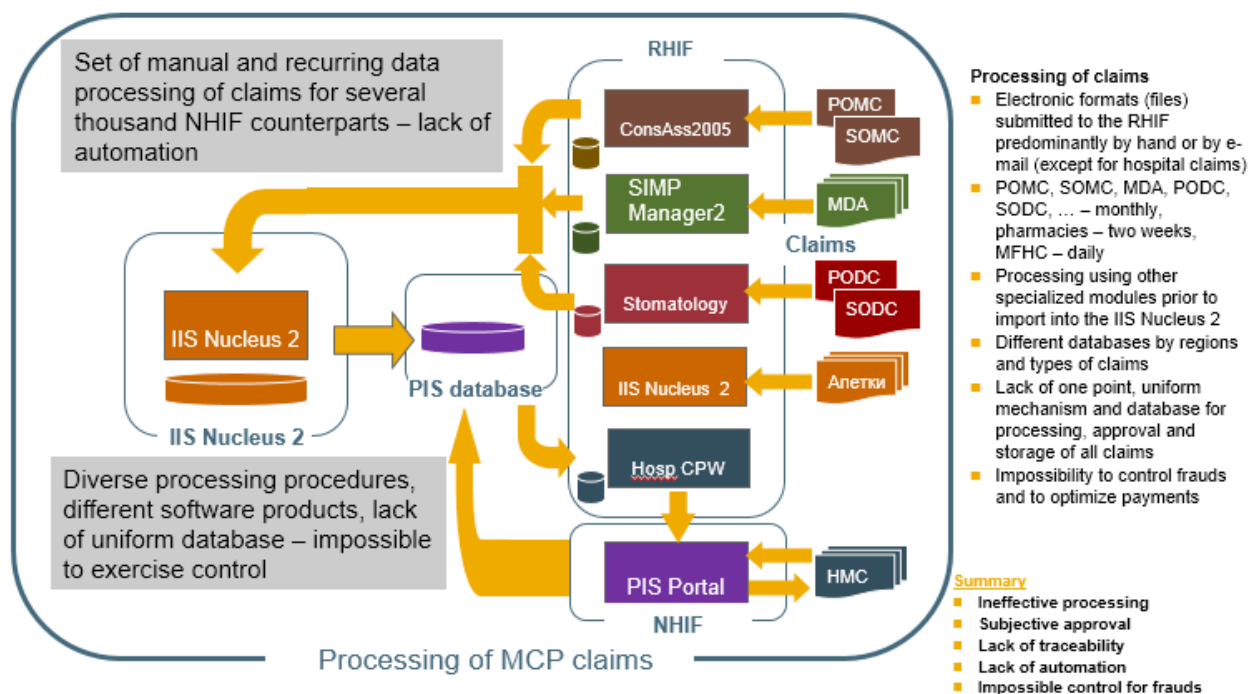


20. To perform the regional processing, a set of systems are used with names such as ConsAss2005, SIMP Manager 2, Hospital CPW, etc. It was not possible to ascertain who developed these modules, or how they are maintained. It would appear that all regions use the same modules, although this has not been independently verified.

21. Some of the regional modules used in processing claims are in Figure 69. From this diagram it is evident that an entire ecosystem of applications attempts to mitigate, at regional level, the inadequacies of the Bull-Siveko system in Sofia.

Figure 69: Processing of claims of medical care providers

REAL PROCESS AND SOFTWARE SYSTEMS USED



22. Security (especially cybersecurity) is a concern. It is not clear that the Sofia or regional data center or application modules are resistant to tampering, cyberattacks, malware, cybertheft and other threats. It is not clear who is in charge of instituting and tracking antimalware and antihacking attacks. Such attacks are increasing and becoming frightfully common around the world.¹⁰⁷

23. There are reports of claims from some significant providers being sent to the regional offices on USB sticks, and even by email. Both methods are extremely dangerous. At the very least a secure FTP¹⁰⁸ site should be the receiver of these “batches.” Transmission to the receiving site should be encrypted and monitored closely. Most countries have a kind of “Network Control Center” which oversees the traffic.¹⁰⁹ Given the number of transaction types involved, the traffic must be carefully controlled in order to avoid misrouted and lost claims, as well as misrouted and lost payments.

24. In the application design of the NHIF’s systems there appear to be two significant omissions—a preauthorization function and providers’ ability to have a reasonable chance to correct and resubmit rejected claims. Preauthorization allows some feedback from the payer BEFORE a (major and costly) procedure is performed. A “resubmit” function would give the provider the chance to fix some inadvertent errors and electronically resubmit an errant claim. Currently, without a long and usually unsuccessful

¹⁰⁷ Recently in the United States, 80 million beneficiary records were compromised during a hack attack at one health insurer. <http://www.darkreading.com/attacks-breaches/how-we-can-prevent-another-anthem-breach-/a/d-id/1319123>

¹⁰⁸ FTP = file transfer protocol. This is a common Internet service which allows for the secure uploading and downloading of files to a central point.

¹⁰⁹ The sending of claims, of admissions/discharge lists every day, of invoices, of rejected claims lists, the resubmission of claims, and finally an electronic payment advice to the provider when a bank deposit is made.

appeal process, a provider at times can lose a considerable amount of money over the simplest of clerical errors. Unfortunately we humans do make errors. Providers now spend inordinate amounts of time double-checking, triple-checking, quadruple-checking every element of the claim in the hopes of avoiding this loss, but alas some errors still do get through.

25. It is not clear whether there is an effective retrospective audit procedure in place that would sample claims to protect against (medically) unnecessary procedures, “ghost” patients, etc.

8.5.1. The current crisis with systems at NHIF

26. Since 2011, the current Health Insurance Information System at NHIF has been without vendor support (the vendor is Bull-Siveko, a French-Romanian-Bulgarian partnership). During the financial crisis, support payments to the vendor were suspended, and were never restarted when economic conditions improved. The vendor continues to request the support payments in arrears, even though no/little support services have been provided since the last payment, and thus the arrears continue to grow each year.

27. The vendor apparently claims to retain legal rights to the system and thus has not shared the “source code” (the basis upon which programmers modify a program). Purportedly there is an early version of the source code in escrow but it is likely now too old (and presumably outdated) to be of much utility now. Without access to a current version of the source code, and without adequate training on understanding the source code, the information technology staff at NHIF is unable to perform any maintenance on the system on its own. Systems can, and do, fail. Without maintenance support, the NHIF is at risk of a complete collapse of the computer assistance to its collections, claims processing and payment systems.

28. To complicate the issues of legal standing, the MOH is the owner-of-record of the license to the Bull-Siveko IIS system, not the NHIF. This has hampered conversations about possible remedies because of the stakeholder triangle—vendor, NHIF, MOH. This has been cited as a stumbling block in deciding how negotiations should begin, and who should launch them, because neither the MOH (as owner) or NHIF (as user) can negotiate effectively for both parties.

29. During the period without regular maintenance, a number of software “bugs” have surfaced, which continue to cause problems. Systems performance has also become slower over time, due the natural growth of its database and because normal maintenance of the database has not been done.

30. Given the elapsed time since maintenance was suspended, normal defenses of the HIIIS against computer-viruses are also now weak, and it is doubtful the system could withstand a relatively sophisticated security threat. Security of data becomes an ever greater concern as the world’s defenses against internal and external threats continue to become more important. The type of incidents that could cause severe damage to the NHIF data or applications include cybersecurity attacks, natural disasters, software faults, dataset corruption, etc., which then could not be repaired.¹¹⁰

31. Additionally, given changes in ordinances and other regulatory decrees, the NHIF has been unable to update its software to comply with the new regulations. Its only choice has been to slowly replace the NHIF automated functions with manual (paper-based or simple “spreadsheet”) functions. At some point, on this current trajectory, the entire system might have to be abandoned since it will no longer reflect the current regulatory situation. The consequences would be dire, forcing the NHIF to revert to strictly manual

¹¹⁰ In today’s world the most common form of “attack” is called a “denial of service” attack which crashes the system being attacked by flooding it with millions (even billions) of simultaneous requests. Unable to decide what to do, most systems simply “lock up” and become unavailable to all users thus effectively ending all online services.

methods of processing provider claims and performing its other duties under the law. Such a reversion to manual methods would surely cause long delays in payments, an increase in human errors, a greater opportunity for provider “games,” and a jumbled financial ledger. This eventuality would have serious financial and administrative consequences, leading to a deterioration of provider relations and a possible impact on the ability of hospitals to operate at a high standard of care.

8.5.2. Options for dealing with the crisis

32. There are three main options which do exist and reasonable steps which could be taken to address this problem. The ownership tangle between NHIF and MOH regarding the rights to the license of NHIF’s information system needs to be resolved. It would seem the easiest resolution is a transfer of rights from MOH to NHIF, since MOH gains no utility from having this asset on its books. A straightforward transfer of ownership would solve this obstacle. NHIF would then become “owner” of the license and could more effectively negotiate with the vendor.

33. The preferred option would be to hold a quiet, low-profile negotiation with the vendor to come to a resolution of this matter. The aim should be to have the vendor provide the current source code, current training to NHIF staff, and some direct programmatic assistance.

34. The government holds some bargaining power, including publicly calling out the company for its lack of responsiveness if the negotiations were to flounder. Since the company would not want to preclude doing other business in Bulgaria, the government could call out this vendor if it were to become unreasonable in its demands. This subtle bargaining chip might persuade the vendor to reach a reasonable settlement.¹¹¹

35. However the vendor has been demanding a high price because the NHIF has been demanding that there be *local* support rather allowing the vendor to use mostly remote support facilities in Bucharest. We advise, with proper security precautions, that the NHIF drop this precondition as it is just not affordable or necessary in this age of, say, Skype and FaceTime.

36. If negotiations with the vendor were to fail altogether, a fallback option called “reverse engineering” could be considered. It would essentially consist of rebuilding the system after having deconstructed the old system. It is also costly, and takes some time and special expertise to do well. The likely cost of this effort would be in the Lev 30 million–50 million range. The advantage of this approach is that the resulting source code would become the property of the government. However, it would be important to examine the intellectual property laws of Bulgaria and the EU to understand under what circumstances “reverse engineering” is legally allowed.

37. A third option is to plan for the abandonment of the existing system now and begin the requirements study for a new system better suited for the requirements of a modern health financing system and embedded in a reasonably paced, phased, and budgeted e-health strategy. As these policies are currently being developed, this option could be a bit premature but may become more viable relatively quickly as the reform program comes into focus. New systems development is always risky, as

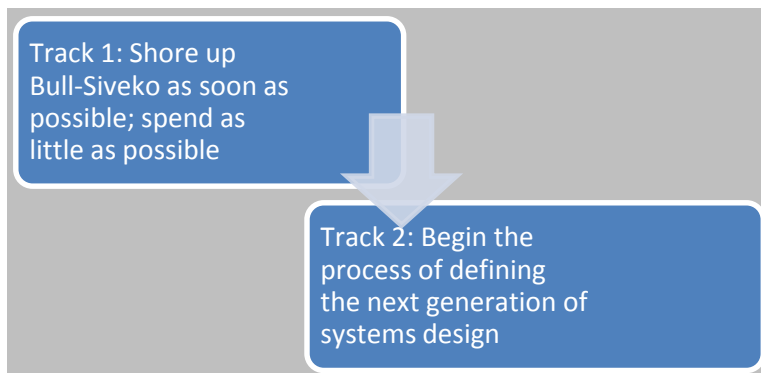
¹¹¹ The vendor is asking for a sum of Lev 50 million to resume support which is a high price, and one which could likely be negotiated to far more favorable levels. A fair settlement would likely be in the Lev 10-20 million range, and then to resume normal maintenance payments per the existing contract. The Lev 10 million amount is based on comparing maintenance costs in other sectors for systems of similar size.

cost- and time-overruns are all too common. One would expect the total system development cost to be in the €50 million–€90 million range over three years.¹¹²

8.5.3. A two-track approach to solving the problems at NHIF

38. A suggested comprehensive approach to addressing the systems problems at NHIF follows two tracks, which overlap (Figure 70).

Figure 70: Two tracks



39. There is no simple solution. Enough time has passed and serious disintegration of the system has already occurred. One viable approach is to proceed with the minimum necessary to shore up the Siveko application as quickly as possible. The risks to the NHIF have been amply described if this action is not taken. However, it is also wise not to invest any monies not absolutely necessary at this point since the system will soon in perhaps two or three years be replaced by the next generation system. After all, the core design of the existing system (IIS) dates back to 2004—so one can say that it is now obsolete in any case.

Track 1: Shoring up the existing system

40. To accomplish the minimum required involves these steps:

- Negotiate and reestablish the previous support mechanism with Siveko which appears to be the only vendor that can accomplish this work. It is the holder of the existing source code and it has the expertise needed. The lack of source code and an overall lack of transferable documentation makes the chances of another vendor being able to do this work extremely remote. The NHIF staff has experience working with Siveko, so one would believe that a reasonable working relationship could be reestablished.
- If successful negotiations can be held, then, besides providing ongoing support for the usual systems issues, the new regulatory requirements could also be implemented to the extent possible. *The current system is not in compliance with current law.* This is unacceptable and

¹¹² A more exact cost estimate could only be generated at the conclusion of a Requirements Study for the new system. It would depend largely on the role of the regions in any new system. The range offered here is consistent with what other countries have paid for their health insurance information system in recent years. (This ballpark estimate includes software development and implementation costs, but does not include hardware, networking or data center construction costs.)

opens the NHIF to legal scrutiny. This must be fixed. Beyond compliance issues, the system is also badly in need of a “tuning” to restore some degree of efficiency and smooth operation.¹¹³

- There are also some hardware expenditures that will be needed, as the current capacity is rapidly becoming insufficient. A specification of these hardware requirements should be created and procurement commenced. Of course the minimum should be spent to assure smooth operations for two years—one must be careful not to overbuy. It may be possible to use this new hardware in the configuration of the next generation system (track 2) but this cannot be assumed.

41. The above actions could normalize operations sufficiently for a period of time, while track 2 proceeds.

Track 2: The next generation of systems

42. The next generation of systems for NHIF is due, some might say overdue. The first step in this process is to start work on a requirements study, which should begin immediately. Following its completion and validation, some (high-level) prototypes should be prepared to further engage stakeholders in the discussion about design. Once that input has been analyzed, some preliminary design activities could begin.

43. Bulgaria however would probably want to delay actually building¹¹⁴ the new system until there is a clearer plan (or not) for health finance reform in the country. What might change? And, since the new system will likely serve the country for 10 or more years (if the longevity of the current system is any indication) the new design must include any major shifts likely in the future. While of course one would want to build the next system to be as “flexible” as possible, it is better to wait until one knows the following before finalizing the plan for procurement:

- What will be the role of the **regional offices** under the new processing regime?
- What **provider-payment methods** are likely to be used? CCPs? DRGs? Capitation? Global capitation?
- What **incentive methods** might be used? Pay for performance? Fee-for-service carve-outs? Measuring quality is never an easy task, but quality measures from the United States (“HEDIS” measures) as well as those from the United Kingdom (NICE) might provide useful starting points for discussion.

44. These are the most important strategic questions to be addressed. It will likely take some time to see what health finance reforms might impact systems design. Despite this uncertainty some concrete progress can be made now in anticipation of further design activities after there is greater clarity.

45. Besides these strategic questions about the new system, another activity is critical to the overall success of any new system. The world is far more connected than it ever has been, meaning that governments now require systems to readily “interoperate” and “cooperate” with one another. The days of stand-alone computers and stand-alone systems are rapidly drawing to a close.

¹¹³ Computer systems need “tuning” to clean and reorganize its databases, to address any database corruption which might exist. Computer applications also tend to accumulate small “bugs” which grow if not regularly fixed. Finally small cosmetic changes also helps to “modernize” the human-computer interface so that clerical persons can use the system more productively.

¹¹⁴ There is no presumption of a “build” vs “buy” decision here. Of course the procurement options would be examined much later in the process.

46. A key prerequisite to the development of any new, interoperable systems is to agree on a common language for the new systems. This activity is surely on the critical path of the system's development! Countries usually take between six months and one year to finish the first edition of their HDDs. There are many useful examples of HDDs around the world, and perhaps the best known is Australia's, which in 2012 was in version 16. Also well respected is the HDD in New Zealand. Turkey's HDD was completed more than five years ago and has been a major contributor to that country's progress in improving interoperability of its health information systems.

47. Other technological changes in the e-health infrastructure will also be needed. In recent years, more focused use of the Internet—including the addition of “cloud computing”—has changed the nature of many online systems. An examination of how networks are managed, the possible design of a Network Control Center, a health intranet, establishment of a Bulgarian Health Cloud, and the articulation of improved cybersecurity precautions are also possible areas of early progress.

8.6. Comments on the new E-health Road Map

48. Recently a new articulation of the E-health Road Map has been crafted and circulated, and is in early phases of review by stakeholders, including members of Parliament. This is an interesting development, and of course a necessary one to create a consensus on actions over the next five years. The following presents some suggestions about the possible continued development of the Road Map.

8.6.1. Setting strategic objectives

49. Because e-health development is expensive and resource-intensive, the country needs to be clear about why it would like to proceed with significant investments in e-health. The short answer should be “in order to improve the health of all Bulgarians.” However, as we all know, measuring health outcomes is difficult. So, instead, the e-health world has settled on four goals considered proxies for the overarching (but hard to measure) primary goal.

Figure 71: Four proxies for the overarching primary goal



50. These goals can be contradictory, e.g. an improvement in efficiency can lead to a decrease in access, so balancing them properly is important.

8.6.2. Sequencing and prioritization of activities

51. The staging and sequencing of these activities will be important. For example, task 2.7 in the Road Map (Information Standards) needs to be a very early activity in defining the HDD. Since this effort usually requires six months to one year to accomplish the first draft, the sooner it could start the better. It would be wise (as the Road Map mentions) to adapt international standards wherever necessary with close attention to EU-Health recommendations. Since interoperability comes up early in the discussion of Phase 1 in the Road Map, these standards-setting discussions can be the foundation for interoperability. Many other of the tasks in the Road Map will depend on successful conclusion of the HDD activity, such as task 1.3 (Analysis: Register and Glossary) since the “glossary” is effectively part of the HDD. By doing the sequencing (perhaps in the form of a high-level Gantt chart) one can more easily see the interdependencies and the timeframes involved, and by prioritizing the tasks one can align the e-health strategy more completely with the overall health strategy.

8.6.3. Cost-benefits analysis

52. Given the relatively high costs of developing e-health applications, once there is agreement on the overall shape of the e-health platforms a cost-benefits analysis study¹¹⁵ (CBA) for the e-health activities should be conducted. It is likely that Parliament can more easily be able to justify the quite heavy expenditures if the benefits are enumerated.

53. CBAs in health are not easily done, however, and many soft numbers are part of the model as many of the accrued benefits involve quality-of-life changes and other intangibles that are hard to quantify. Nonetheless performing a CBA analysis on the systems mentioned in the Road Map would provide insight for decision makers about the trade-offs they will no doubt face. (One should not avoid the subject of CBA altogether.)

54. Costing can also be problematic, as technology prices change rapidly, usually down rather than up. Often estimations of costs include only those items shown highlighted in blue (Table 34), which often leads to significant underestimation. It is important to include all the costs in the estimate.

Table 34: Components of cost estimations

“Hard” components	“Soft” components
• Hardware	• User training and retraining
• Software	• Maintenance and support
• Middleware (integration)	• Business process redesign
• Telecommunications Equipment	• Data center modifications
• Supplies	• Technical capacity building

8.6.4. Prototyping the e-health solution

55. Many stakeholders may have difficulty envisioning the proposed e-health environment, so it is often useful to create prototypes for different interest groups. Some new prototyping languages can be

¹¹⁵ The cost of contracting a consulting firm to perform a CBA Study for an e-health project of the magnitude outlined in the Road Map would likely cost about €300,000 to €600,000. Prototyping would likely cost another €400,000 if done by the same vendor.

used to quickly “mock up” some parts of a system for demonstration rather easily and quickly, and to change the prototype based on feedback.¹¹⁶

8.6.5. Governance and execution

56. Identifying a champion for e-health development is essential. This champion needs to be respected by the full gamut of stakeholders as impartial and able to look at the big picture without favoring the interests of any one group or ignoring the interests of anyone. Developing this leadership role is crucial for a successful project.

57. A steering or advisory committee needs to be formed to provide frequent input into the project. It will be invited frequently to critique the project as it progresses—for example, is the project staying true to its objectives? Possible collaborators with the MOH and NHIF might be the Bulgarian Medical Association, Public Health Institute, and medical universities in Bulgaria.

58. As for project execution, there are now more and more ways to execute such projects. The field of outsourcing (nationally and internationally) has grown enormously in recent years as more work can be done remotely. Much e-health development work in Bahrain, for example, is done in Spain. In Mongolia, some e-health components are done in the Republic of Korea. With a well-written design blueprint, it is now possible to have a product built wherever the talent resides. For example in the EU, looking to a country like Estonia (known by some as E-stonia given its high interest in e-health and e-government applications) for assistance in building new e-health applications for Bulgaria might make perfect sense, when teamed with one or more capable Bulgarian software development companies.

59. Another interesting model is a public–private partnership in technology. In Turkey for instance, it is not unusual for a firm to “own” an application for a number of years, after which ownership passes to the government. In this way, some development costs can be reduced. The Health Insurance Project in Saudi Arabia is being built at very low cost by a firm that will collect fees for transactions in the system for a number of years, after which the system will revert to government ownership.

60. The government needs to consider these ways to spread costs and risks given the high costs of e-health applications. A full suite of e-health services might cost Bulgaria in the neighborhood of €500 million over eight years (Table 35).

¹¹⁶ A language called Ruby-on-Rails (or simply Ruby) is an example of this new class of prototyping tool.

Table 35: Rough estimates for e-health services over eight years

Application	Cost (very preliminary estimates)	Comments
Hospital Information Systems	€100 million	Implemented in the 50 leading hospitals across the country
National Electronic Medical Record	€100 million	Connecting primary, secondary, and tertiary care together in institutions with the new systems
Clinic Information Systems	€100 million	Implemented in 400 clinics and polyclinics across the country
Systems at MOH	€50 million	
NHIF System	€100 million	(See discussion in text on the outline of the next generation system)
Public Health Institute systems, including chronic disease registries, and public portals	€50 million	

8.7. Conclusions

61. In presenting a review of the problems with the information systems at NHIF and outlining a future course for eHealth in Bulgaria, including the new Road Map, this chapter finds that on the first point, urgently, remedial steps must be taken to try and get all parties talking together. These discussions should be held alongside track 1 of a two-track solution—stabilizing and rehabilitating the existing system; track 2 is to begin preparatory work on the next generation of systems for NHIF.

62. The Road Map is a welcome step for what it represents and what it contains. However, we would urge the government to ensure that activities are sequenced strongly from the start (defining the HDD, for example) and to create prototypes to help generate buy-in from interest groups. For execution, it should also identify a champion who would work through an advisory committee. The costs all these activities are huge. But getting things wrong—financially or health-wise—would be far higher.

Chapter 9. Emergency services package and reforms: Analysis of the proposed reform concept

9.1. Background

1. A review of the “Concept for the Development of the Emergency Medical Care System in the Republic of Bulgaria 2014–2020” (MOH 2014; referred to as the “EMC Concept document” in this chapter) and subsequent analysis were undertaken in the context of the Advisory Program on Health Financing in Bulgaria, following a request of the government to review the proposed emergency care concept as one of its priorities for improving health financing. Information was provided by various parts of the MOH, including the Emergency Care and Special Medical Activities Branch, the National Center of Public Health and Analysis, and the Budget Directorate. Information was also obtained from the National Statistical Institute (National Statistics Office 2014).

2. An important recent development was the decision by the Council of Ministers to accept the approach of three “packages” of services: a basic package, an additional package, and an emergency care package. The approval of this approach has implications for implementing the concept, as now outlined.

3. This report looks at three key aspects of the Emergency Medical Care (EMC) system in Bulgaria—activity, financing, and productivity—using international comparisons where possible. Also where possible the analysis focuses on all the parts of the EMC system, including the pre-hospital emergency part (mobile teams, also referred to as the “ambulance” system in this report), the treatment and observation units contained in the subsidiary centers for emergency medical care (SEMCs), and the hospital-based emergency departments or emergency rooms (ERs).

4. The observations and conclusions are organized into five areas—organization and management; human resources and training; financing the emergency package; communications and information systems; and public–private partnerships (PPPs)—in which issues are highlighted. The chapter rounds off by offering some conclusions and recommendations.

9.2. The EMC system

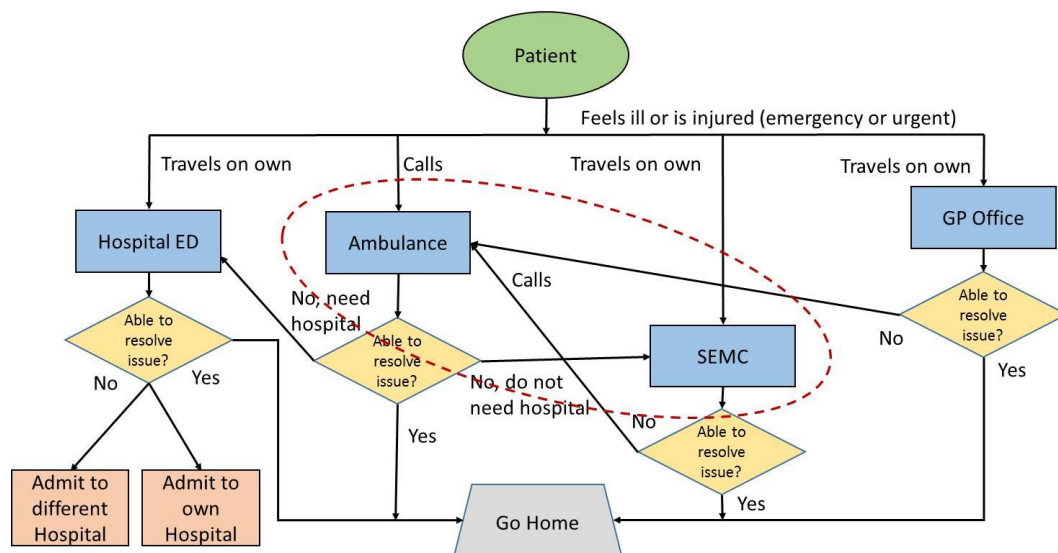
5. The package of EMC in Bulgaria falls under the auspices of the MOH (see Part I). The main providers of EMC are: 28 regional centers for emergency medical care (CEMCs)¹¹⁷ and their 198 subsidiaries (SEMCs) operated by the MOH; and ERs in 37 multiprofile hospitals. GPs are supposed to provide 24-hour urgent care,¹¹⁸ and hospitals that do not have an ER are also supposed to provide reception of emergency patients 24 hours a day.¹¹⁹ Figure 72 shows the emergency care system in its totality and as an integral part of the health system. This report looks at all aspects except GPs, as data are unavailable for that element.

¹¹⁷ The CEMCs are the administrative structures that encompass the ambulance system plus the SEMCs. They do not provide care.

¹¹⁸ According to the NHIF payment system, about 2.5 percent–4.5 percent of the total GP capitation payment was for “24 hour monitoring” of patients.

¹¹⁹ Article 19, paragraph 3 of the Medical Establishment Act.

Figure 72: Paths to using Emergency Medical Services



Source: Authors, based on MOH 2014.

9.3. Summary of the reform concept¹²⁰

6. The strategic objective of the EMC concept is “Providing equal access of citizens to emergency medical care in accordance with the best European practices and requirements for timeliness, adequacy, quality and safety.” This will be pursued by developing an integrated model for treatment of emergency patients in CEMCs (SEMC and ambulance) and in hospitals. SEMCs will continue to provide short-term observation and treatment of emergency patients. At the MOH level a medical coordination center is envisaged for the integrated EMC system, including coordination for disasters involving more than one CEMC. The EMC Concept document presents six priorities.

7. **Improving the structure and the material and technical coverage** of the elements of the integrated system for emergency medical care, including: (i) setting standards for the distribution of EMC structures and resources to meet population needs; (ii) improving the infrastructure of an integrated system for emergency medical care, including facilities and equipment that are up to European standards; (iii) pursuing the co-location of health and social services as a “functional union ‘under one roof’ of activities of various entities for the provision of health and social services—subsidiaries for emergency medical care, general practitioners, other health establishments and structures for provision of social services”; (iv) pursuing the establishment of aeromedical evacuation capacity along with the necessary infrastructure (e.g. helipads); (v) improving capacity at the hospital level for the triage of emergency patients as well as timely diagnosis and treatment in well-equipped structures, which combined are expected to improve the quality of the inpatient emergency care leading to better health outcomes, shortened hospital stays and a concomitant reduction in the need for hospital beds; (vi) developing a modern communications and information system with GPRS and IP telephone connection, including connectivity between the information systems of EMC and NECSSN 112 through transmission of voice and data, thereby shortening the time for call processing and assigning the calls to the nearest located emergency team by sending an information message; (vii) introducing the TETRA system to link CEMCs, hospitals, and other emergency services, implementing computer-aided dispatch systems with connections between the control centers and hospitals to facilitate referrals; and (viii) integrating the EMC

¹²⁰ This section is based on and summarizes MOH 2014.

information system within the general health information system that allows the exchange of patient data.

8. **Ensuring sustainable development of human resources** in the system of emergency medical care, including: (i) the formation and sustainable implementation of a policy for the preservation and development of human resources in the system of emergency medical care, including procedures for the selection, admission and training of personnel within the emergency medical care system; (ii) development of compulsory continued medical education programs; establishing clear financial incentives for staff working within the emergency medical care system; and facilitating public understanding and recognition of the importance of the emergency medical care system; (iii) preparing and updating the educational requirements for paramedics, beginning the training of paramedics and carrying out continuous monitoring of professional training centers that train them; (iv) development of a national center for continuing training with simulator rooms for practical training and assessment of knowledge, developing distance learning approaches and maintaining an electronic system to monitor this training; and (v) introducing a system for periodic assessment of the qualifications and professional skills.

9. **Ensuring efficient organization, coordination and management** of the integrated emergency medical care system, including: (i) the development of appropriate regulatory frameworks for an integrated system for emergency medical care, including clearly defining the scope, type, and method of providing emergency medical care and the responsibilities of the separate units of the integrated system for emergency medical care and broadening the organizational links and coordination between the emergency medical care centers at a national level; (ii) establishment of a national coordination center at the MOH, to provide overall control of the system; (iii) introducing a system and standards for triage of the patients at all levels and introducing standards of conduct for all medical and other activities carried out in outpatient and inpatient emergency care; and (iv) improving the regulations for operating the dispatch centers (regional coordination centers) performing the reception, processing and transmission of emergency calls to the medical teams and their coordination. Approaches will include: (i) establishing unified standards for "phone triage" of the patient in the dispatch center, providing quick response, advice, and assessment of the need to mobilize resources and their type for each emergency situation; (ii) building an automated system for processing calls for medical emergencies, including a systematic questioning of the caller, team selection and sending instructions to the team prior to arrival on site; and (iii) developing continuous real time connections between the doctor in the dispatch center and the mobile team as well as between the hospital information systems and the dispatch center.

10. **Ensuring financial sustainability** of the emergency medical care system, including: (i) an appropriate level of funding for operational expenditure for the activities of the emergency medical care system; (ii) fair remuneration of the employees corresponding to the volume and quality of the activities and the specific risks; (iii) ongoing funds for maintenance, renovation and modernization of the facilities and equipment; specific funds for maintaining preparedness for actions in the event of disasters and health threats; and (iv) appropriate allocations for training and maintaining the qualification of the staff.

11. **Ensuring readiness of the integrated system** for emergency medical care for response in the event of disasters and developing European coordination and cross-border cooperation.

12. **Ensuring transparency and public consensus** and participation of citizens and medical professionals in the development process of the emergency medical care system.

9.4. Data analysis

9.4.1. EMC activity

13. This review of EMC activity looks at the distribution of EMC interventions over time and across the country, including potential interactions between the three types of EMC activity. The annual health report published by the Bulgarian National Statistical Institute includes a fair amount of historical data on ambulance services, but nothing on SEMCs. The SEMC data are taken from the information provided by the Emergency Care and Special Medical Activities Branch. The 2014 ambulance data are also taken from this source. (These are the sources for all of the tables and figures where other sources are not mentioned.)

14. Looking first at ambulance services, Figure 73 and Figure 74 show the trend in the absolute number of calls by type and the number of calls per 1,000 population. The year 1995 has been included because the last major reform of the EMC system was just after that date. The impact of this reform is clear, with a sharp drop in the number of urgent and transport calls, and an increase in emergency calls. Transport calls continued to decline since 2000, while urgent calls declined initially and have recently increased. Emergency calls have remained fairly stable over the last 10 years or so. The overall volume of calls is close to the level of 100 per 1,000 population seen in many middle- and even upper-income countries. For example, the Nordic countries have rates of between 77 and 101 calls per 1,000 population (Langhelle et al. 2004), while Australia averages 90 emergency calls (categorized as “urgent” in their parlance), and 47 “non-urgent” calls per 1,000 population (Toloo et al. 2011). While the rate of emergency calls in Bulgaria is very close to the Australian average (86 vs 90), the rate for the lower level of call is considerably less (12 vs 47).

Figure 73: Total completed ambulance calls by type (1995–2014, selected years)

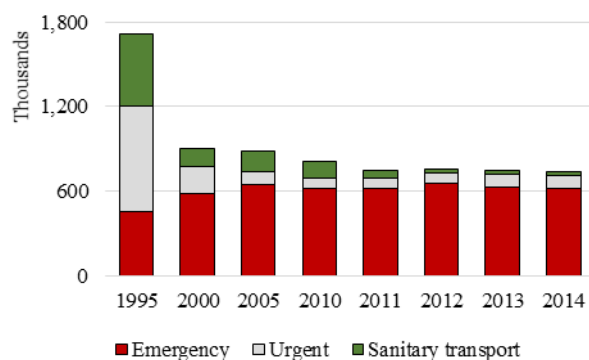
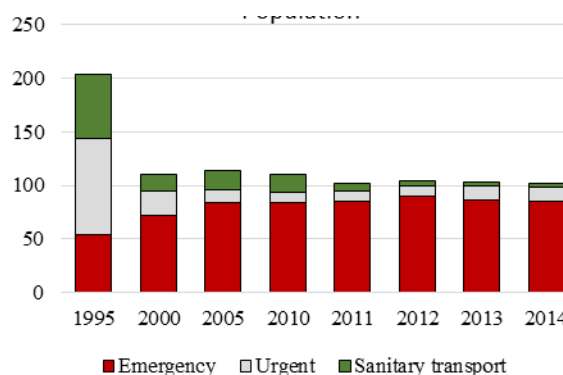
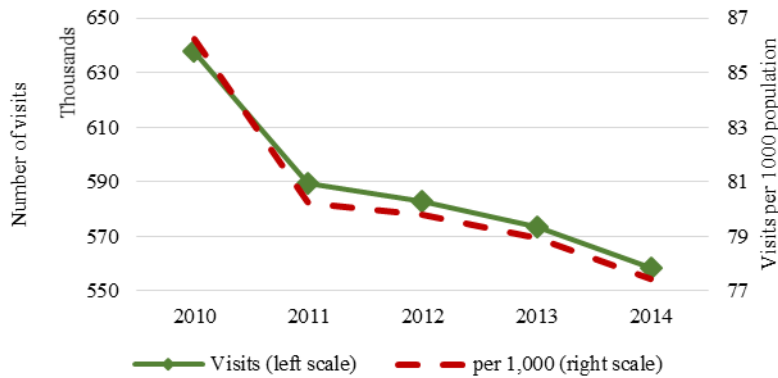


Figure 74: Ambulance calls per 1,000 population (1995–2014, selected years)



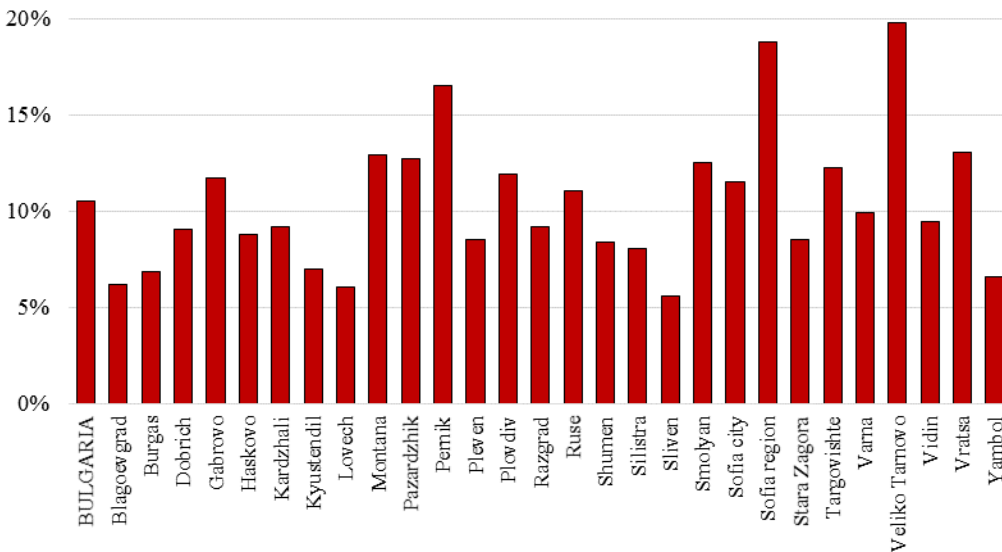
15. The SEMC data show a general decline in the number of visits over the last five years, in absolute terms and per capita (Figure 75). Because of the declining population, the per capita decline is slightly less than the reduction in absolute numbers (10.2 versus 12.5 percent respectively).

Figure 75: SEMC visits, 2010–2014



16. In terms of the reasons prompting an ambulance response, 86.4 percent of the total calls are medical, 10.4 percent are related to trauma, 1.4 percent to poisonings, 0.8 percent to childbirth, and 1.1 percent are missing a type of call. There is considerable variation between regions for trauma (Figure 76). This figure shows that trauma calls represent between 15 and 20 percent of the total costs in Pernik, Sofia region and Veliko Tarnovo, while they are just over 5 percent in Blagoevgrad, Burgas, Lovech, Sliven and Yambol.

Figure 76: Trauma calls as share of total (%), 2013



Note: Relates only to where a type of call is given.

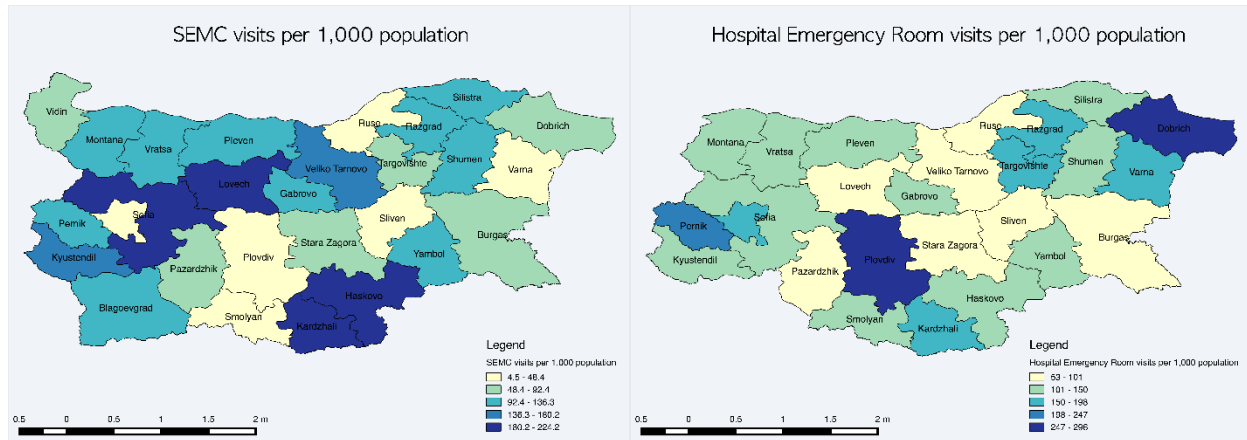
17. Conceptually, the SEMC and ER activities could be seen as either complementing or in competition to each other depending on how they are used in a particular region. In more rural areas where a hospital-based ER is not available, the SEMC fills a gap not otherwise covered. However, many urban areas have an ER and an SEMC, suggesting that there should be some complementarity between the two. A higher number of SEMC visits should take some of the pressure off hospital ERs, and vice versa. However, the data show that this is only partially the case.

18. Table 36 shows that the overall combined total of SEMC and ER visits ranges from a low of 116 per 1,000 population in Rousse to a high of 387 in Kardgali, a factor of 3.3:1. However, as shown in the table as well as the maps in Figure 77, the ranges for the individual components of the total are significantly greater: 5.6:1 for hospital ER visits and 50:1 for SEMC, suggesting that there is some complementarity. This is reinforced by the correlation coefficient, which shows a mild negative correlation (-0.205). Adding ambulance calls to the mix decreases the overall level of variation (the range goes down to 2.5:1), but there seems to be little in the way of substitution between the types of emergency care. There is even a slight positive correlation between ambulance calls and either SEMC or ER utilization.

Table 36: Utilization of SEMC and ER per 1,000 population, 2013

	SEMC	Hospital	Total
BULGARIA	79.9	146.8	226.7
Blagoevgrad	132.3	52.5	184.8
Bourgas	71.2	97.9	169.1
Dobrich	87.9	249.3	337.2
Gabrovo	111.2	122.3	233.5
Haskovo	224.2	115.0	339.1
Kardgali	204.5	183.0	387.4
Kjustendil	142.5	105.1	247.6
Lovetch	193.4	73.5	266.9
Montana	119.3	126.2	245.5
Pazardgik	85.3	88.1	173.5
Pernik	95.6	240.1	335.7
Pleven	100.0	125.2	225.1
Plovdiv	26.5	252.0	278.5
Razgrad	102.1	158.1	260.3
Rousse	41.2	74.9	116.1
Shoumen	109.9	140.1	250.0
Silistra	133.9	134.7	268.6
Sliven	37.0	90.2	127.1
Smolyan	14.3	102.1	116.4
Sofia City	4.5	181.7	186.2
Sofia region	212.2	121.0	333.2
Stara Zagora	88.0	77.0	165.0
Targovishte	78.0	152.6	230.7
Varna	35.5	171.9	207.4
Veliko Tarnovo	148.6	90.7	239.3
Vidin	89.0	295.6	384.6
Vratsa	95.9	133.9	229.8
Yambol	95.2	143.8	238.9

Figure 77: SEMC and ER utilization, 2013



Source: National Center for Public Health and Analysis 2013, CEMC admissions data from CEMC database 2014.

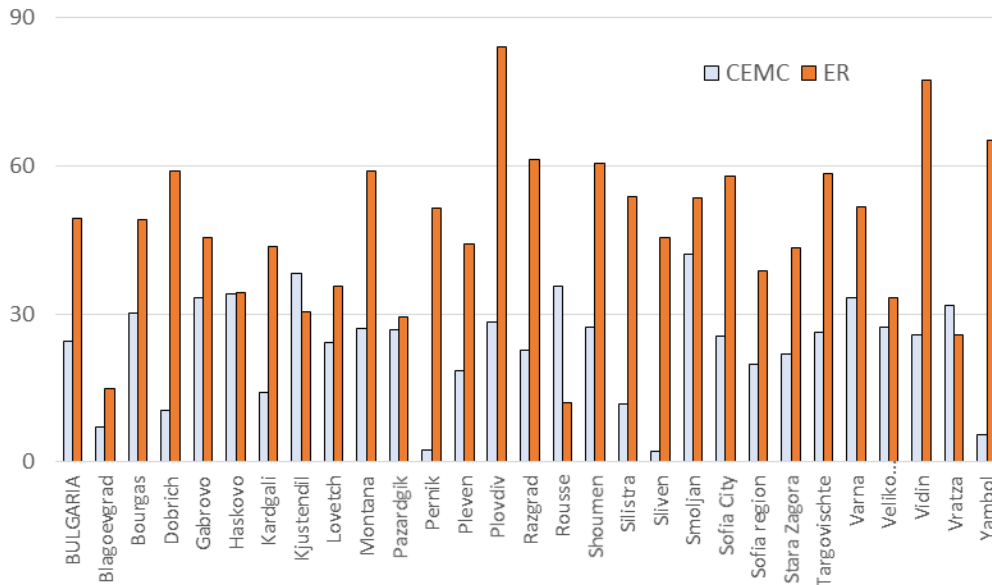
19. The figure shows similar data for emergency hospital admissions coming from the CEMC and through the ER in each region. Because of data availability, the CEMC data are for 2014 while the ER data are for 2013, but it is not expected that this will change the overall conclusions. Since the decision by a physician to admit a patient should be based on more rigorous and standardized clinical criteria than the decision by the patient to show up in the SEMC or ER, it would be expected that there would be less variation in the proportion of patients who are admitted on an emergency basis. This is not the case.

20. As shown in Table 37, there is a more than fivefold difference in the number of emergency admissions per 1,000 population between the region with the highest rate of admission (112 in Plovdiv) and the lowest (22 in Blagoevgrad). On the other hand, both the table and Figure 78 show the variation between the two routes of emergency admission is much higher for CEMC/SEMC (19:1, comparing Smolyan and Sliven), than for ERs (7:1, comparing Plovdiv and Rousse), and the correlation is even weaker in terms of substitution (-0.112). This means that there is little evidence that at the regional level higher levels of hospital admissions through the ER are leading to lower levels of hospital admissions through the CEMC, and vice versa.

Table 37: Hospital admissions through CEMC and ER per 1,000 population, 2013

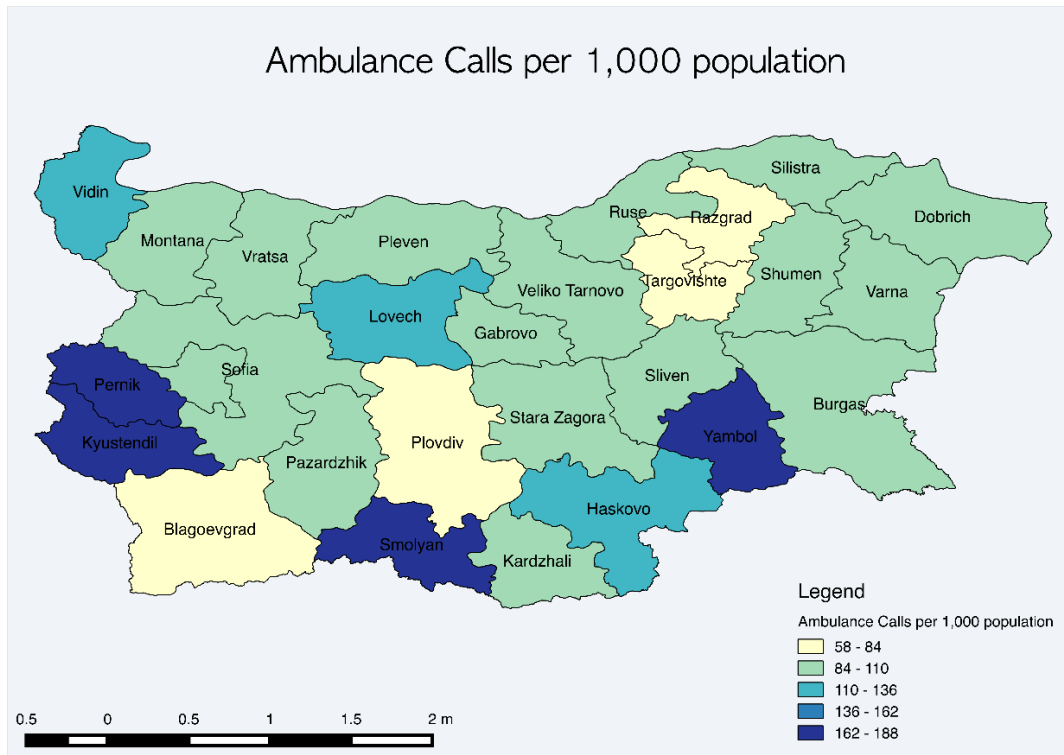
	CEMC	ER	Total
BULGARIA	24.4	49.3	73.7
Blagoevgrad	7.0	14.8	21.8
Burgas	30.1	48.9	79.0
Dobrich	10.5	58.8	69.4
Gabrovo	33.3	45.5	78.8
Haskovo	34.1	34.3	68.4
Kardgali	14.0	43.7	57.7
Kjustendil	38.2	30.3	68.5
Lovetch	24.3	35.6	59.9
Montana	27.1	58.9	86.1
Pazardgik	26.7	29.2	56.0
Pernik	2.5	51.4	53.9
Pleven	18.4	44.0	62.4
Plovdiv	28.2	83.9	112.1
Razgrad	22.7	61.2	84.0
Rousse	35.4	12.1	47.6
Shoumen	27.2	60.5	87.7
Silistra	11.7	53.7	65.4
Sliven	2.2	45.5	47.7
Smolyan	42.1	53.5	95.6
Sofia City	25.6	57.9	83.5
Sofia region	19.8	38.6	58.4
Stara Zagora	21.8	43.4	65.2
Targovishte	26.3	58.3	84.6
Varna	33.2	51.6	84.8
Veliko Tarnovo	27.3	33.3	60.6
Vidin	25.7	77.3	103.0
Vratsa	31.8	25.8	57.6
Yambol	5.5	65.1	70.6

Figure 78: Emergency admissions by route, 2013



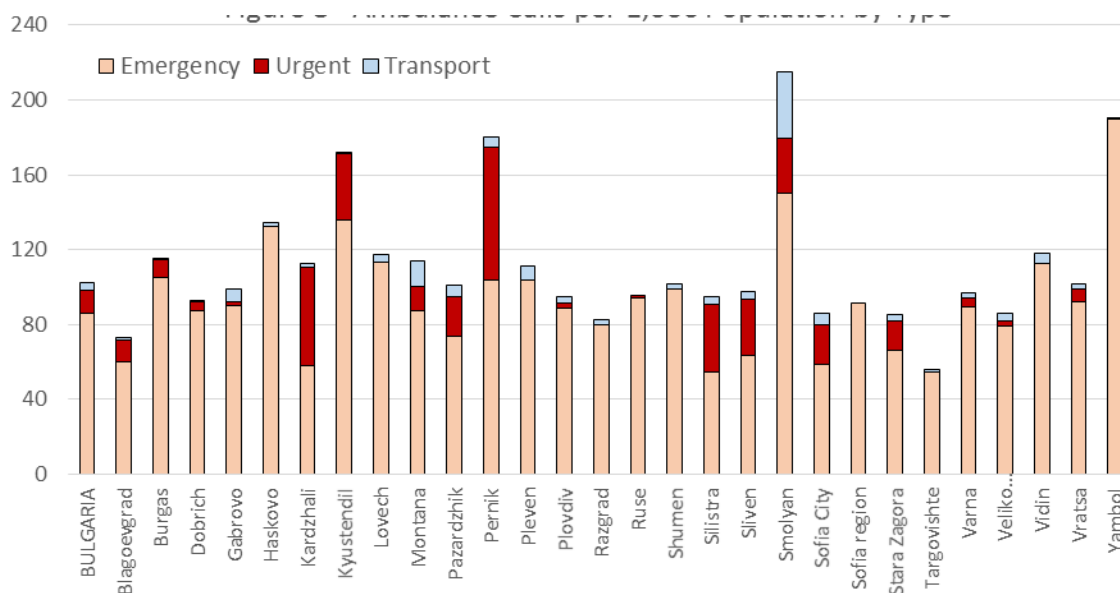
21. Looking specifically at the use of ambulance services (Figure 79), the range of per capita usage is similar to that for facility-based emergency services (about 3.3:1) with the highest regions being Pernik and Kjustendil on the western border (181 and 170 per 1,000 population respectively), as well as Yambol and Smolyan in the south on Turkish and Greek border (188 and 180 respectively).

Figure 79: Ambulance calls per 1,000 population, 2013



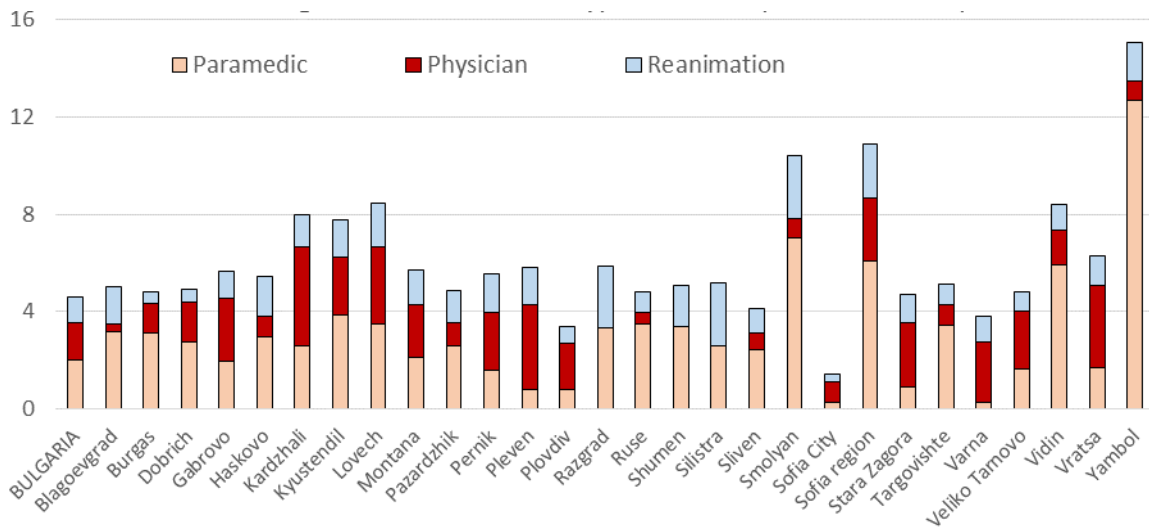
22. At the lower end of the scale are Targovishte, Blagoevgrad, and Plovdiv (with 58, 73, and 73 respectively). Figure 80 shows the calls per 1,000 population by type of call and region: emergency, urgent, and transport. While some of the variation in the total number of calls in regions such as Kyustendil, Pernik, and Smolyan is accounted for by higher volumes of urgent and transport calls, some other regions that have total call volumes at or below the nation average, such as Kardzhali, Silistra, Sliven, and Sofia City, are also characterized by proportionally high levels of urgent calls. The variation in the total volume of calls per capita could thus be partly explained by a great variations in certain types of calls. However this is not entirely the case and variations exist across regions for all types of calls. In fact the coefficient of variation (C.V.) for emergency calls (the standard deviation divided by the average) is slightly higher for emergency calls than for total calls (33.2 percent versus 31.1 percent). Another explanation of the high variance in number of calls per capita could include differences in the availability of teams and the way in which the teams are used, as now explored.

Figure 80: Ambulance calls per 1,000 population by type, 2014



23. Figure 81 shows the number of teams by region and type, expressed per 100,000 population. There are three types of teams within the Bulgarian system: (i) reanimation teams which consist of a physician, a second medical professional, and a driver; (ii) medical mobile teams which include a physician and a driver; and (iii) paramedical mobile teams which consist of either a nurse or other medical professional (paramedic) and a driver. There is great deal of variation in both the number and composition of teams across regions, with the variability in the number of teams actually being greater than that in services with a C.V. of 41.9 percent compared with 31.1 percent for calls. Even excluding Sofia City, which is clearly an outlier, the C.V. is still 38.4 percent. Moreover, while there seems to be some substitution of medical for paramedical teams (although the correlation is only -0.288), this does not appear to be the case for reanimation versus medical/paramedical teams, with a higher number of one type of team being positively correlated with a higher number of the other (correlation coefficient = 0.304).

Figure 81: Number and type of teams per 100,000 population, 2014



24. Part of the variation may be due to the different criteria for the required number of crews as laid out in Ordinance No. 45 of August 26, 2010 (amended November 23, 2010, and April 8, 2014) on Endorsing the Medical Standard on Emergency Medicine. This ordinance specifies that where the population density in the region exceeds 76.6 persons per sq. km., there should be one medical crew per 35,000 population, and one reanimation crew per 150,000 population; and where the density is below 76.6 persons per sq. km., the standard requires one medical crew per 700 sq. km. and one reanimation crew per 2,000 sq. km. Using these criteria, the expected number of each type of crew was estimated, and this was compared with the actual number of crews reported in the CEMC statistics.

25. The results are shown in Table 38. It shows that in general there are considerably more teams than required by the standard, with 18 percent more reanimation teams, 27 percent more medical/paramedical teams, and 25 percent more teams overall. There are several exceptions to this general trend. Sofia City is the most significant, with 27 fewer teams than called for by the standards, including 4 fewer reanimation teams and 23 fewer medical/paramedical teams. The data suggest that the lower number of teams in Sofia may be posing operational challenges. For example, Sofia City has 58 percent of the delayed calls in the country, while accounting for only 18 percent of the population. Further, about 8.1 percent of the ambulance calls were not completed (address not found, person not found, or person refused care), compared with a national average of just 2.9 percent. It is clear that the situation in Sofia requires further review and attention.

26. Plovdiv also has fewer teams than the standards indicate, but the difference is less than one team. There are also several regions, such as Burgas, Dobrich, Targovishte, Vidin, and Veliko Tarnovo, that have fewer reanimation teams than the standard, but this is more than compensated for by additional medical/paramedical teams. It may be that a shortage of qualified staff for reanimation teams is leading to this substitution. Based on team costing (see next section), it is estimated that if Sofia City is excluded, the excess number of teams relative to the standard is resulting in additional staff cost of Lev 3.1 million, or 3.7 percent of current payroll cost. Providing the additional 27 teams for Sofia City would cost and estimated Lev 862,000 per year, for a net potential savings of Lev 2.25 million. These are only the staffing costs, and do not include other operating costs estimated at around 58 percent of the staffing cost on average. However, it is likely that even with fewer teams (or more in the case of Sofia City, Plovdiv, and Dobrich), as least some of the operational costs would have been incurred anyway, because some of the calls would still have been done.

27. In any case, the data show a moderate positive correlation (0.324) between an excess number of teams relative to the standard and a higher number of calls per capita, and a stronger correlation (0.406) between excess teams and emergency calls. In other words, in places where there are more teams than the norm, there tend to slightly more calls per capita, particularly emergency calls. It is not possible, based on these data, to draw firm conclusions regarding a causal relationship, if any between these two variables. It may be that the higher number of teams relative to the standard are a legitimate reflection of the higher demands in some regions, or it may be that the increased availability of teams leads the population to be less hesitant in calling the ambulance. The stronger correlation on emergency calls (which in theory should be more uniformly utilized across regions if they respond to well-defined acute and severe problems) suggests that the former may be a definite possibility, although this would need to be examined further.

Table 38: Comparison of standard versus actual mobile teams, 2014

	Reanimation			Medical/Paramedical			Total		
	Standard	Actual	Diff.	Standard	Actual	Diff.	Standard	Actual	Diff.
BULGARIA	66.42	78.63	12.21	215.34	272.64	57.30	281.76	351.27	69.51
Blagoevgrad	3.22	5.00	1.78	9.21	11.00	1.79	12.44	16.00	3.56
Burgas	3.87	1.85	-2.02	11.07	18.00	6.93	14.94	19.85	4.91
Dobrich	2.36	1.01	-1.35	6.74	8.01	1.27	9.10	9.02	-0.09
Gabrovo	1.01	1.32	0.31	2.89	5.30	2.41	3.90	6.62	2.72
Haskovo	2.77	4.00	1.23	7.90	9.00	1.10	10.67	13.00	2.33
Kardzhali	1.60	2.00	0.40	4.58	10.00	5.42	6.19	12.00	5.81
Kyustendil	1.53	2.00	0.47	4.36	8.00	3.64	5.89	10.00	4.11
Lovech	2.06	2.41	0.34	5.90	8.92	3.02	7.96	11.33	3.36
Montana	1.82	2.00	0.18	5.19	6.00	0.81	7.01	8.00	0.99
Pazardzhik	2.23	3.52	1.29	6.37	9.48	3.11	8.60	13.00	4.40
Pernik	1.20	2.00	0.80	3.42	5.07	1.65	4.62	7.07	2.45
Pleven	2.33	4.00	1.67	6.65	11.00	4.35	8.97	15.00	6.03
Plovdiv	4.50	4.58	0.08	19.30	18.33	-0.96	23.80	22.92	-0.88
Razgrad	1.32	3.00	1.68	3.77	4.00	0.23	5.09	7.00	1.91
Ruse	1.52	2.00	0.48	6.51	9.00	2.49	8.03	11.00	2.97
Shumen	1.69	3.00	1.31	4.84	6.00	1.16	6.54	9.00	2.46
Silistra	1.42	3.00	1.58	4.07	3.00	-1.07	5.49	6.00	0.51
Sliven	1.77	1.96	0.19	5.06	6.04	0.98	6.83	8.00	1.17
Smolyan	1.60	3.00	1.40	4.56	9.03	4.46	6.16	12.03	5.87
Sofia City	8.72	4.72	-4.00	37.36	14.28	-23.08	46.08	19.00	-27.08
Sofia region	3.53	5.35	1.81	10.09	20.70	10.61	13.62	26.04	12.42
Stara Zagora	2.58	3.83	1.26	7.36	11.55	4.19	9.93	15.38	5.45
Targovishte	1.28	1.00	-0.28	3.66	5.00	1.34	4.93	6.00	1.07
Varna	3.15	5.00	1.85	13.51	13.03	-0.49	16.66	18.03	1.36
Veliko Tarnovo	2.33	2.00	-0.33	6.66	10.00	3.34	8.99	12.00	3.01
Vidin	1.52	1.00	-0.52	4.33	6.91	2.58	5.85	7.91	2.06
Vratsa	1.81	2.08	0.27	5.17	9.00	3.83	6.98	11.08	4.10
Yambol	1.68	2.00	0.32	4.79	17.00	12.21	6.47	19.00	12.53

28. A final area to examine with respect to the activities of different regions is the types of services that are provided within the ambulance and/or SEMC. The purpose of this analysis is to highlight potential differences in patterns of practice between regions. One would expect that with similar training and practice guidelines, similar cases should be treated in a similar manner. Large variations in the way cases are handled (for example whether patients are admitted to hospital or kept for observation) may point to the need to refine either the training or reinforce the guidelines. Without detailed information on the type of cases, this analysis can simply point to large variations in overall practice patterns. Figure 82 and Figure 83 show the percentages of ambulance patients admitted to hospital and of SEMC patients admitted for observation. These figures show that some regions such as Yambol and Sliven have a lower proportion of ambulance patients hospitalized and a higher proportion admitted for observation, but this is not a consistent pattern: regions such as Pernik are low on both, and those such as Ruse are higher on both.

Figure 82: Ambulance patients hospitalized, 2014 (%)

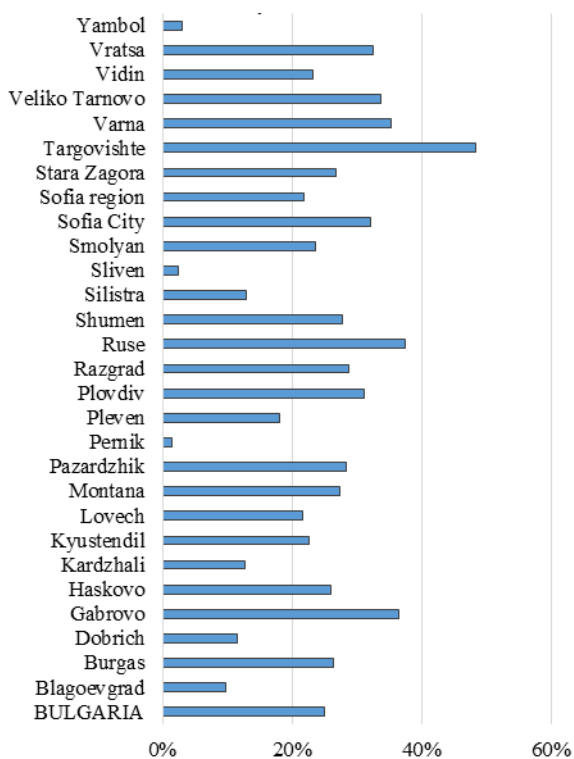
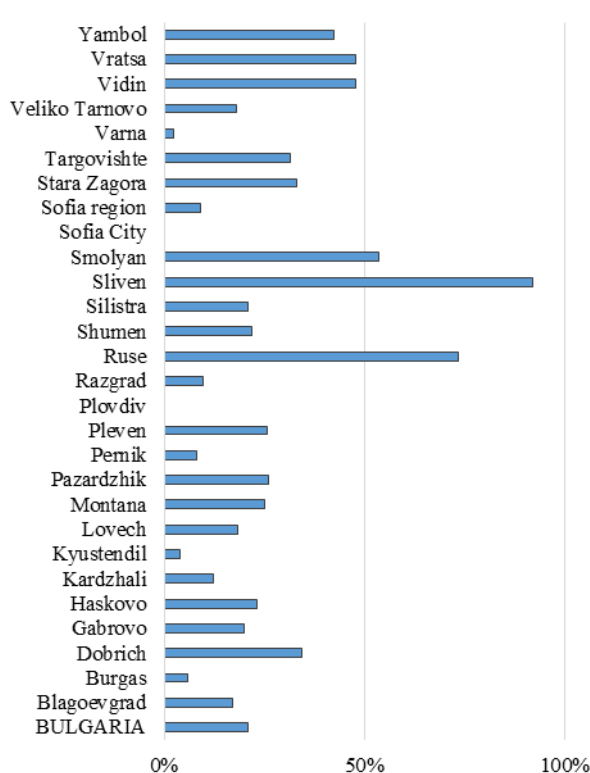


Figure 83: SEMC patients admitted for observation, 2014 (%)



29. Figure 84 and Figure 85 highlight the average number of resuscitations per reanimation unit and the percent of patients who received an ECG. With regard to Figure 84, the variation was so great that a logarithmic scale needed to be used to display the data. The number of resuscitations per team ranged from a low of less than five over the course of the year in Kjustendil, Pernik, Vidin, and Razgrad, to more than 100 in Ruse, Stara Zagora, and Veliko Tanovo, and a high of 295 resuscitations per team in Pleven. The low number of resuscitations in many regions raises questions regarding the extent to which the resuscitation units are able to maintain their skills. The needs to be addressed as part of the overall program of continuing medical education envisioned in the EMC Concept document, although the viability of maintaining effective resuscitation teams in the face of such low call volumes needs to be considered as well.

30. While the range in the use of ECGs is not as great (Figure 85), there is still more than a 12-fold difference between the lowest (Targovishte) and highest (Vratsa) use regions. While some of the differences may be due to the types of calls received, it is unlikely that this explains all the variation. Either regional patterns of practice have developed, there are significant differences in the types of patients being seen in different regions (e.g. large numbers of less urgent patients who do not need these services, and/or there are major quality control issues that have developed in terms of monthly reporting. Each of these issues need to be examined further.

Figure 84: Resuscitations per team, 2014

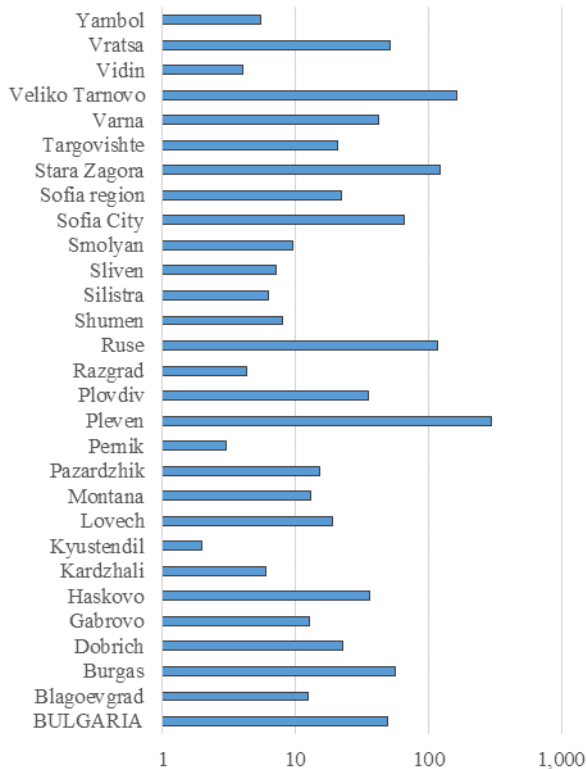
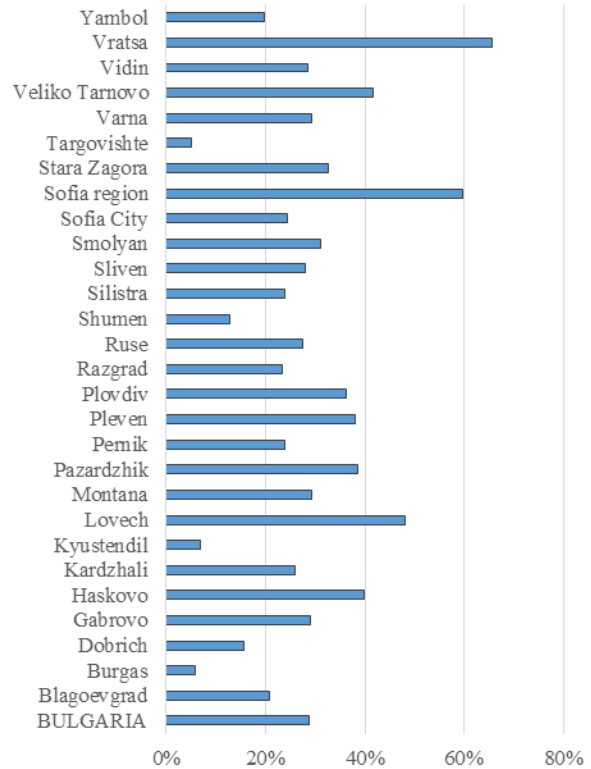
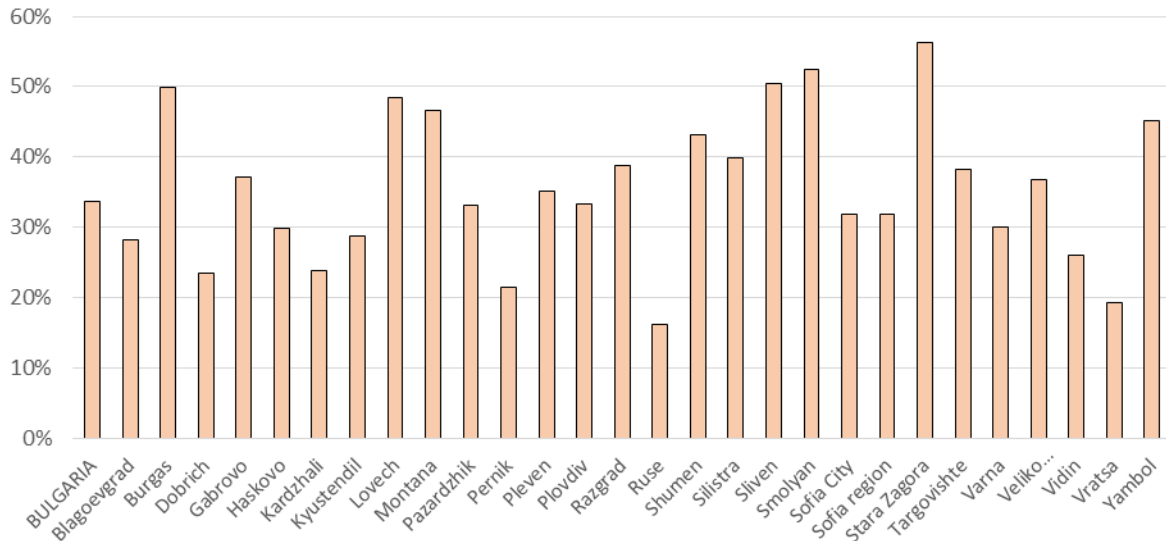


Figure 85: Patients with ECG, 2014 (%)



31. A final area to be examined in terms of patterns of practice is the percentage of patients visiting the hospital ER that are admitted to the hospital. In Bulgaria, about one-third of ER patients are admitted to hospitals (Figure 86), which is a much higher rate than in other countries—27 percent in England, 17.5 percent in the United States, and 10 percent in Canada, for example.

Figure 86: Share of ER patients hospitalized, 2013 (%)

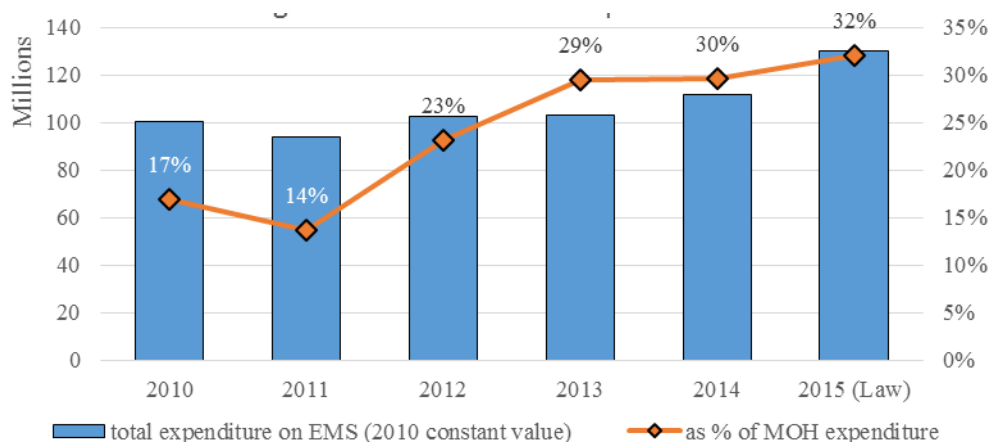


32. Within the total is a considerable amount of regional variation. Bourgas, Silistra, Smoylan, and Stara Zagora all have admission rates of 50 percent or more, while Lovech, Montana, Shumen, Silistra, and Yambol have rates of 40 percent or more. Only two regions have a rate under 20 percent. This is an area where further review is needed to determine the reasons for the high rates and options for reducing them (see, for example, Purdy 2011). As the overall rate of hospital admissions in Bulgaria is quite high, the rate of admissions through the EMC system may simply be a manifestation of this broader trend. It may also be that the organization of the EMC system itself, with multiple points of entry, is a contributing factor. And of course, the role of financial incentives (or disincentives) should not be ruled out. In terms of potential options, the use of severity scoring systems (below) as well as clearly defined, objective, and auditable admission criteria (such as InterQual and Milliman) would appear to have a great deal of promise.

9.4.2. Analysis of EMC financing and cost structure

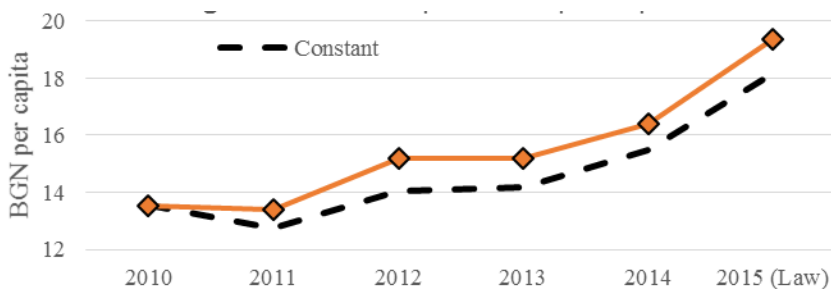
33. All the financing for both the CEMCs and non-admitted hospital ER patients rests with the MOH. Before 2012, the hospital funding was included in a separate program, but was combined from 2012. Figure 87 shows the combined total to ensure comparability over time. It shows that in constant value terms (relative to a base year of 2010), total EMC expenditure has increased from around Lev 100 million in 2010 to Lev 130 million in the 2015 budget law. The current value in 2015 is around Lev 138 million. With the exception of 2011, the EMC budget has increased as a share of MOH expenditure, from 17 percent in 2010 to 32 percent in 2015. To some extent this reflects the narrowing focus of MOH-financed activities, but it also shows increasing priority for EMC relative to other activities.

Figure 87: Trend in EMC expenditure, 2010–2015 (under the Law)



34. **Error! Reference source not found.** shows the amount per capita in constant and current value erms. It shows EMC expenditure per capita increasing from just under Lev 14 in 2010 to almost Lev 20 in nominal terms and Lev 18 in real terms, for increases of 43 percent and 34 percent respectively.

Figure 88: EMC expenditure per capita, 2010–2015 (under the Law)



Analysis of the overall CEMC cost structure

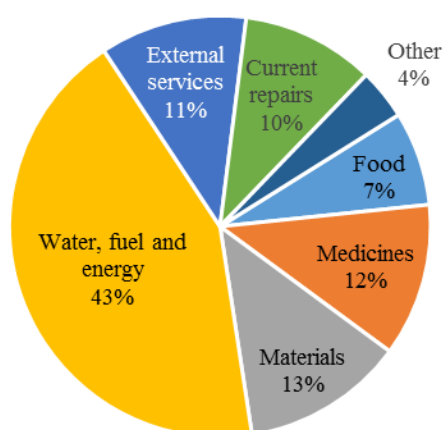
35. The operation of the CEMCs (also known as “departmental costs”) has consumed 82–88 percent of the total EMC budget between 2010 and 2014, with a fair bit of variation from year to year. Salaries and employee benefits have consistently consumed around 80 percent of total departmental costs, with this range showing a steady increase over the last four years, from 77 percent in 2011 to 81.4 percent in 2014. In most years the balance consisted of operational expenditures (fuel, drugs and medical supplies, food, etc.), but in 2014 there was a sizable amount (3.6 percent) devoted to capital items, compared with none or negligible amounts in previous years.

36. Detailed data on actual expenditures are available for 2014. These data show that within the category of salaries and employee benefits, 79.9 percent went to actual salaries, 5.4 percent to other payments, and 14.7 percent to mandatory social contributions. Comparison with other EMC providers is somewhat difficult because most do not operate observation and treatment centers similar to the SEMCs. However, annual reports from the New South Wales (NSW) Ambulance Service in Australia show that salaries and benefits account for about 60 percent of their total expenditure, while the West Midlands Ambulance Service (WMAS) in the United Kingdom spends about 70 percent on salaries and benefits. Aside from the availability of the information, these two ambulance services were chosen because they had some similarities to Bulgaria. WMAS serves a population of about 5.6 million over an area of around 13,000 square kilometers, while the NSW Ambulance Service serves 7.25 million people across 800,000

square kilometers. By contrast, Bulgaria has 7.2 million people and 111,000 square kilometers. Given that average wages in Bulgaria are lower than in the United Kingdom and Australia—despite the fact that neither of these countries uses physicians on the ambulance and Bulgaria does, but physicians in Bulgaria are still paid much less than paramedics in these two countries, and that all three countries likely pay world prices for key inputs such as fuel, drugs and medical supplies—the significantly higher share of salary costs in Bulgaria suggests that further review is necessary. This difference is likely attributable to the higher number of teams relative to the standard and to these other countries. For example, the NSW Ambulance Service has just over 4,000 staff serving a similar population and WMAS has just under 4,000 for fewer people, while the CEMC employs 7,111 staff, including 6,380 medical professionals.

37. Figure 89 shows that within the category of operational expenditures, the largest components are water, fuel, and energy; followed by materials, medicines, external services, and current repairs.

Figure 89: Composition of operational expenditures, 2014



38. Again while not completely comparable, the annual reports from the New South Wales Ambulance Service in Australia show that they spend a similar percentage of their total operating costs on current repairs (8 percent) and materials (14 percent), but considerably more on drugs and medical supplies and external services (33 percent each) and substantially less on water, fuel and energy (6 percent), and food (2 percent). Of all of these, the water, fuel and energy category probably deserves the most attention, as it appears unusually high: the NSW Ambulance Service provided over 1.2 million responses in 2013/14, including over 900,000 emergency responses, and covered an area about seven times the size of Bulgaria.

Unit costs

39. In order to develop some indication of the cost per ambulance call and per ambulance visit, a two-step process was used to separate the total costs into these two components. First, the staff cost for the ambulance portion was estimated using the average number of teams included in the CEMC data provided by the Emergency Care and Special Medical Activities Branch, the staffing per type of team from Ordinance 45, and the average cost per type of staff from the Budget Directorate. The dispatch center was also costed based on the required staffing levels in the ordinance and these costs were also included as part of the “ambulance” operation. The remaining staffing costs were considered as part of SEMC, with the overall proportion nationally coming out to 66.9 percent ambulance and 33.1 percent SEMC. However, due to the number of SEMCs as well as ambulance teams of various types, there was considerable variation in these percentages. Other costs were allocated as indicated in Table 39.

Table 39: Allocation bases by expenditure category, 2014

Section	Expenditure category	Ambulance (%)	SEMC (%)
10-11	Food	0	100
10-12	Medicines	Proportion of calls + visits	
10-13	Bed linen and clothing	80	20
10-14	Educational, training and research costs	0	100
10-15	Materials	80	20
10-16	Water, fuel and energy	80	20
10-20	Costs for external services	Proportion of calls + visits	
10-30	Current repairs	80	20
10-51	Business trips in the country	0	100
10-62	Insurance costs	80	20
10-69	Other financial services	0	100
10-91	Other	0	100
10-92	Spending for contractual sanctions	0	100
19-00	Paid taxes, fees and administrative sanctions	0	100
51-00	Capital repairs of long-term tangible assets	80	20
52-00	Acquisition of fixed assets		
52-01	Acquisition of long-term tangible assets	0	100
52-03	Acquisition of other equipment, machines and devices	Proportion of calls + visits	
52-04	Acquisition of transport vehicles	100	0
52-05	Acquisition of farming equipment	0	100
52-19	Acquisition of other long-term tangible assets	0	100
53-00	Acquisition of long-term non-material assets	0	100

40. This approach results in 68.7 percent of total costs, or Lev 71.6 million, being allocated to the ambulance operation and the remaining 31.3 percent (Lev 32.6 million) to the SEMC. This in turn leads to an average cost per ambulance call of Lev 97.05 and a total cost per SEMC visit of Lev 58.55, or a ratio of 1.66:1. Of course there is considerable variation between regions.

41. Figure 90 shows the average cost per service by region for ambulance calls and SEMC visits. The maximum value in the horizontal scale is set at Lev 240 per service so that the magnitude of the variation is apparent. The actual values for Smolyan and Sofia City are shown on the chart. Here the data show that despite the lower per capita figures shown in Figure 91, Plovdiv is fairly close to the national average on cost per service. On the other hand, both Smolyan and Sofia City show very high costs per service for SEMC despite vastly different costs per capita. The C.V. for the cost per ambulance call is 32 while that for SEMC is 159.

Figure 90: Cost per service (Lev), 2014

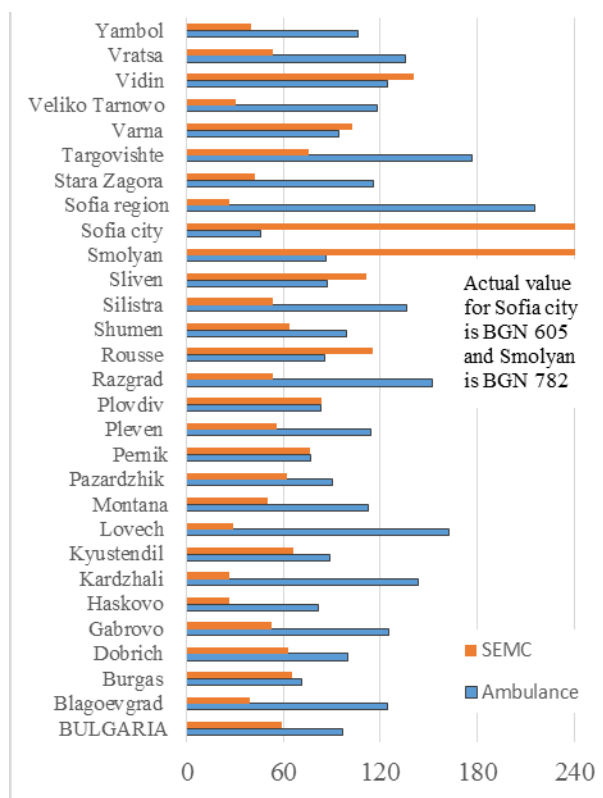
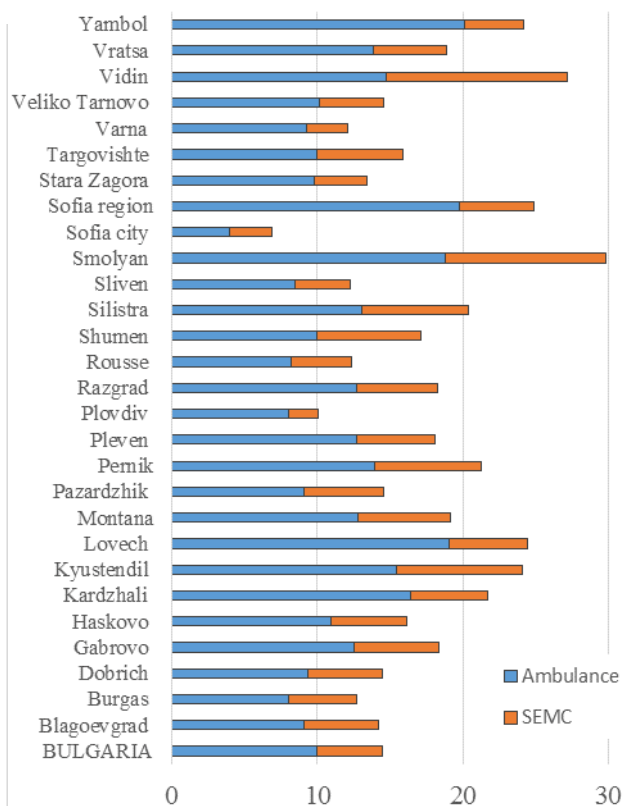


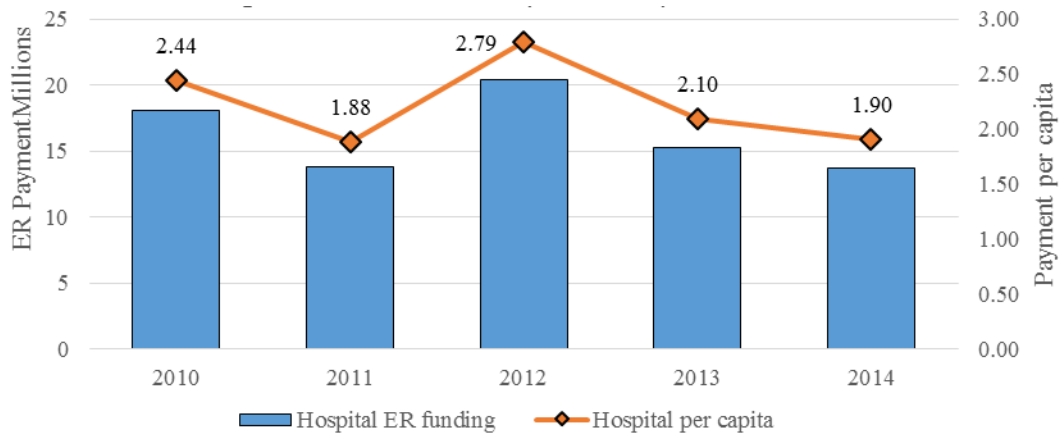
Figure 91: Cost per capita (Lev), 2014



42. Figure 91 shows the average cost per capita, broken down by the costs allocated to the SEMC and ambulance operation in each region. While the average per capita is around Lev 14.50 with Lev 10.00 for ambulance services and Lev 4.50 per capita for SEMC, the overall figure ranges from a low of Lev 6.8 in Sofia City to a high of Lev 30 in Smolyan. Sofia City also shows the lowest level for ambulance services and the second lowest for SEMC, followed by Plovdiv, the lowest for SEMC and the second lowest for ambulance services. The C.V. for ambulance services is 33 while that for SEMC is 40. The overall C.V. is 31. While a certain amount of this difference may be due to economies of scale, the data on services and teams (Figure 80 and Figure 81) show that the services per capita are also below average in these two regions. Some of the variation may also be due to the allocation methodology that is used, but it is clear that there are significant issues in the allocation of resources between regions and in the efficiency in the use of these resources.

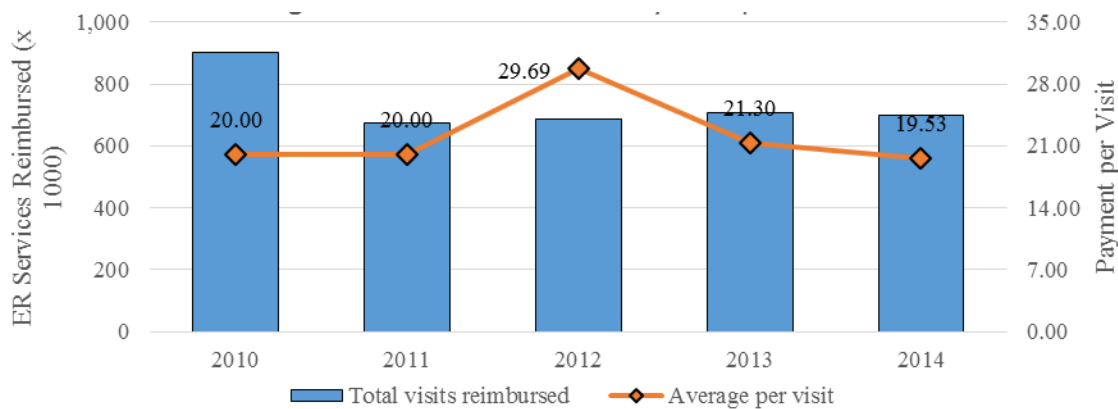
43. A final area to examine is the reimbursement per hospital ER visits, where the EMC program also provides funding for visits where the patient is not admitted to the hospital. Where the patient is admitted, the emergency department costs need to be covered by NHIF reimbursement. The amount allocated for non-admitted patients in 2014 was Lev 13.7 million, which accounts for about 12 percent of EMC program spending that year, and represents a decrease of Lev 2.5 million from 2013 (Figure 92).

Figure 92: Trend in hospital ER expenditure, 2010–2014



44. According to MOH procedures, the total funding for each medical treatment facility is determined on the basis of the summed evaluation of three parameters for relative share: for population served, the volume of activities carried out, and the amount paid the previous year. For the regions in which there is more than one medical treatment facility, the funding is allocated proportionally to the volume of activities carried out in the respective facility. Further, a coefficient for level of competence is applied to the amount determined based on the three parameters depending on the level of care of the treatment facility: Level III—1.3; Level II—1.0; Level I—0.7. The level of funding cannot be less than 90 percent and more than 115 percent of the amount paid the previous year. In 2014, the total amount paid was equivalent to 19.53 Lev per patient, down about 8 percent from the average payment per service in 2013 (Figure 93).

Figure 93: ER services and payment per visit, 2010–2014



45. The difference in 2014 between the average cost per SEMC visit, Lev 58.55, and the average reimbursement per non-admitted ER visit, Lev 19.53, was exactly three times. Even if the acuity level of the average SEMC patient is the same as that of the average non-admitted ER patient (which is unlikely), this difference appears to present several issues. If it was the same, the MOH is paying three times as much for the same service in SEMC as it does in the hospital ER department, raising serious issues about the efficiency of public spending.

46. Further, to the extent that the SEMC cost per visit represents the true cost of service, this implies a huge implicit subsidy from hospitals to the MOH, because the remainder of the service cost (around

Lev 25 million) would have to be borne by the hospital. It could be argued that hospitals have significant opportunities for economies of scale and for amortizing their fixed costs (including staffing) over both ER and other services. True, but on the other hand it would be expected that the average acuity level in hospitals would be greater than that in the SEMC and that the capital requirements for diagnostic equipment, as well as the operating costs of that equipment, would likewise be higher.

47. The fact that about two-thirds of the total ER visits do *not* result in admission means that the MOH reimbursement should cover the majority of the ER costs unless there is a deliberate policy to have admitted patients cross-subsidize those not admitted. The problem with this is that the hospital receives the same reimbursement for a patient with a particular CCP, whether or not the patient received treatment in the ER before admission, so the potential for cross-subsidization may actually be limited. All of this places the hospital in the position of either losing money on non-admitted patients or possibly admitting some of those patients in the hope of recouping some of these costs through the NHIF. This needs to be addressed as part of the overall reform of the EMC system and the further development of a self-sustaining emergency care package.

9.4.3. EMC productivity

48. The final area is the productivity of the EMC system. Because no data are available on the staffing of ER departments, this analysis focuses only on the SEMC and ambulance operations. The standard unit of measurement for the productivity of emergency medical services (EMS) systems is the “unit hour utilization” (UHU) (J.R. Henry Consulting 2011), which divides the total volume of activity over a given period by the number of hours that crews were available for during that period. For example, if the period in question is a day, the number of calls during the day would be the numerator, and each 24-hour team would count as 24 in the denominator, each 12 hour team as 12 and so on. This analysis can be done for the service as a whole, as well as for specific types of teams. The 2014 data reported that there were an average of 360 24-hour teams operating throughout the year, with 76 reanimation teams, 113 physician teams, 144 paramedic teams, and 27 transport teams. Activity data were reported for reanimation, medical/paramedical, and transport calls. This analysis will focus on the total number of calls and teams with a further breakdown for reanimation and medical/paramedical services. There is a separate analysis for SEMC.

49. With a total of 713,550 non-transport calls and 333 teams, the overall UHU for the ambulance operations is 0.24 $[713,550 / (333 \times 24 \times 365)]$. This means that teams on average make roughly one call for each four hours they are on duty. According to international standards, target UHU rates are in the 0.50 to 0.55 range, so the UHU in Bulgaria is about half this optimal rate. Table 40 shows UHU rates by region, including both reanimation and medical/paramedical teams and the total of the two. The legend at the bottom shows the color coding in reference to each UHU band. In addition to the actual figures, the UHU was recalculated based on the number of teams indicated by the standard in Table 38.

Table 40: Actual UHU and UHU per standard, 2014

	Actual			Standard		
	Reanim.	Med/Para.	Total	Reanim.	Med/Para.	Total
BULGARIA	0.28	0.23	0.24	0.32	0.28	0.29
Blagoevgrad	0.16	0.17	0.17	0.25	0.20	0.22
Burgas	0.35	0.26	0.27	0.17	0.43	0.36
Dobrich	0.35	0.20	0.21	0.15	0.23	0.21
Gabrovo	0.29	0.16	0.19	0.37	0.29	0.32
Haskovo	0.26	0.28	0.28	0.38	0.32	0.34
Kardzhali	0.21	0.15	0.16	0.26	0.32	0.31
Kyustendil	0.29	0.25	0.26	0.39	0.45	0.44
Lovech	0.22	0.14	0.15	0.26	0.20	0.22
Montana	0.18	0.21	0.20	0.20	0.24	0.23
Pazardzhik	0.24	0.22	0.22	0.38	0.32	0.34
Pernik	0.51	0.32	0.37	0.85	0.47	0.57
Pleven	0.29	0.19	0.22	0.50	0.31	0.36
Plovdiv	0.35	0.30	0.31	0.36	0.28	0.30
Razgrad	0.17	0.15	0.16	0.38	0.15	0.21
Ruse	0.25	0.22	0.23	0.33	0.31	0.31
Shumen	0.23	0.22	0.23	0.41	0.28	0.31
Silistra	0.20	0.20	0.20	0.42	0.15	0.22
Sliven	0.31	0.25	0.26	0.34	0.30	0.31
Smolyan	0.20	0.20	0.20	0.37	0.39	0.38
Sofia City	0.76	0.59	0.63	0.41	0.22	0.26
Sofia region	0.08	0.10	0.10	0.13	0.20	0.18
Stara Zagora	0.22	0.19	0.20	0.32	0.30	0.31
Targovishte	0.15	0.12	0.12	0.11	0.16	0.15
Varna	0.24	0.31	0.29	0.38	0.30	0.31
Veliko Tarnovo	0.20	0.19	0.19	0.17	0.29	0.26
Vidin	0.25	0.14	0.15	0.17	0.22	0.21
Vratsa	0.20	0.18	0.18	0.22	0.31	0.29
Yambol	0.30	0.13	0.14	0.36	0.44	0.42

.55 - .45—Optimal Utilization
.45 - .35—Above Average Utilization
.35 - .25—Average Utilization
.25 - .15—Below Average Utilization
.15 - .01—Poor Utilization

50. The table shows that the majority of the regions in Bulgaria have poor or below average utilization. The picture looks somewhat better for the reanimation teams, with several regions (Dobrich and Plovdiv) showing as above average, and two (Sofia City and Pernik) showing as optimal. In fact, the calculation shows Sofia City as being above the top of the optimal range, which may mean that

inefficiencies are showing up in the system due to an excess number of calls given the number of teams. One potential measure of this is the data on “delayed calls” (Table 41).

51. Not all regions show delayed calls and just five regions accounted for 96 percent of the total delayed calls. The problem appears to be most acute in Sofia City and Varna, where 18.0 percent and 19.6 percent of all calls respectively are delayed. Both these regions are on the low side of teams per 100,000 population, with Sofia City particularly low, as discussed. They are also both below average on calls per capita. On the other hand, the UHU in Sofia City is far above the average while Varna is just slightly above it. In Sofia region and Lovech, the issue appears to be more the distances involved in each call, since the number of teams in each region is more than double the national average and the UHU is very low. In Pleven, distance also appears to be a factor, although the number of calls per capita is also higher than average.

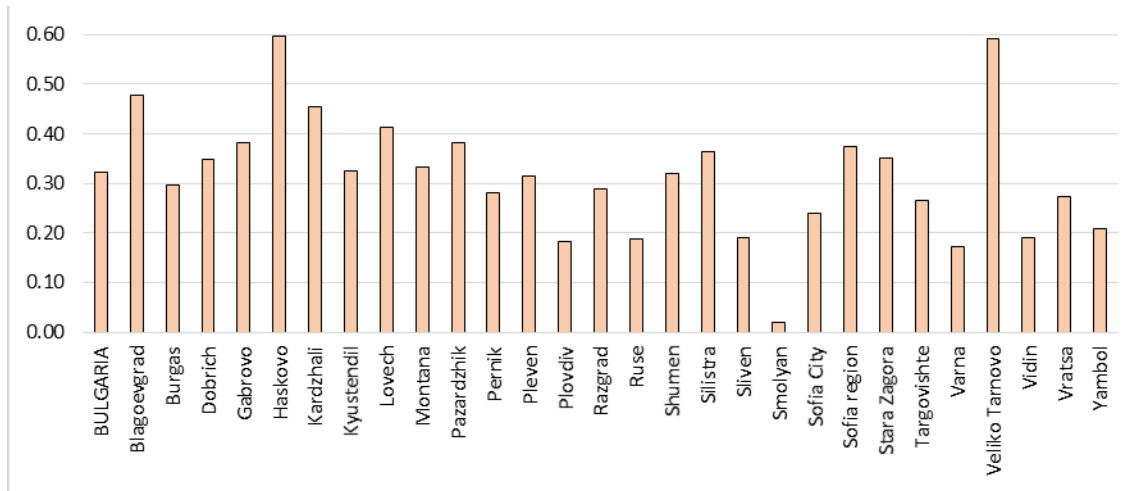
Table 41: Regions with delayed calls, 2014

	Delayed calls	Share of calls delayed (%)	Teams per 100,000	Calls per 1,000	km per call	UHU
TOTAL	35,155	4.8	4.99	102.31	21.45	0.24
Sofia City	20,258	18.0	1.54	85.89	13.23	0.63
Varna	8,950	19.6	4.23	96.80	22.64	0.29
Sofia region	1,745	8.0	10.90	91.46	43.34	0.10
Pleven	1,412	4.9	6.23	111.40	25.10	0.22
Lovech	1,299	8.3	10.79	117.16	27.69	0.15
All other	1,491	0.3				

52. The second set of columns in Table 40 shows what the UHU would be if the number of calls were the same but the number of teams met the standard in Ordinance 45 (in other words if the number of teams were reduced in regions where they are over the standard and increased in regions where they are below it). This shows that the overall level of utilization would be improved by more than 20 percent if these standards were implemented, with only nine regions remaining in the poor and below average range, compared with 22 with the current number and distribution of teams. The potential improvements are particularly noticeable for the reanimation teams. The potential additional resources for Sofia City would actually drop their UHU to below the national average. This suggests that it may not be necessary to add all of the teams suggested by the standard in order to achieve significant improvements.

53. A similar UHU calculation was done for SEMC, based on the assumption that each SEMC center represented a 24-hour “team” (Figure 94). While there is still a great deal of variation between regions, the results are generally better than for the mobile teams, with just eight regions showing as poor or below average and three in the optimum range. There is also a slight negative correlation between the UHU scores for SEMC and for the mobile teams in each region, suggesting that there be some substitution between ambulance and SEMC services, leading to greater efficiency in one or the other. These issues need to be reviewed and addressed both within the regions and at national level so that the overall level of efficiency can be maximized.

Figure 94: UHU for SEMCs, 2014



54. Looking at the relationships between productivity and other factors, Figure 95 and Figure 96 show plots of cost versus productivity, showing a clear negative relationship between the two, while Figure 97 and Figure 98 show a strong positive relationship between productivity and volume. For SEMC cost, Sofia City and Smolyan are excluded because they are such outliers.

Figure 95: Ambulance cost vs productivity, 2014

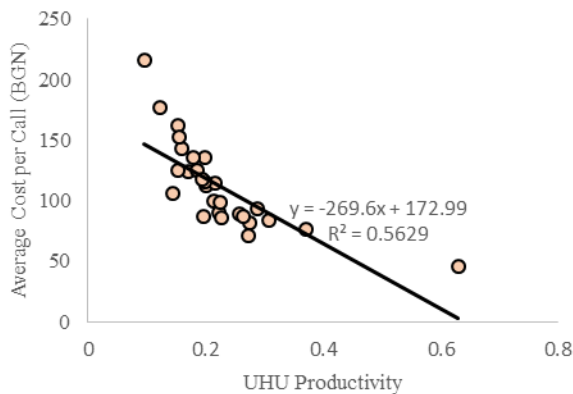


Figure 96: SEMC cost vs productivity, 2014

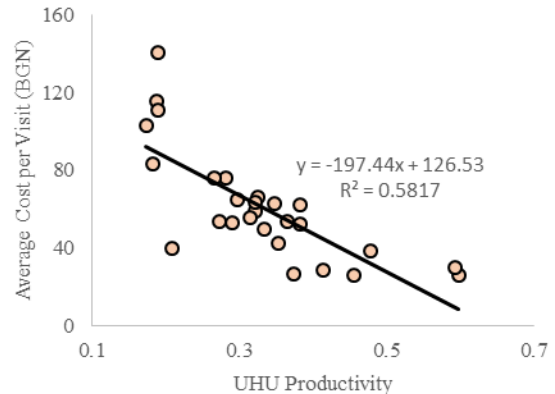


Figure 97: Ambulance call volume vs productivity, 2014

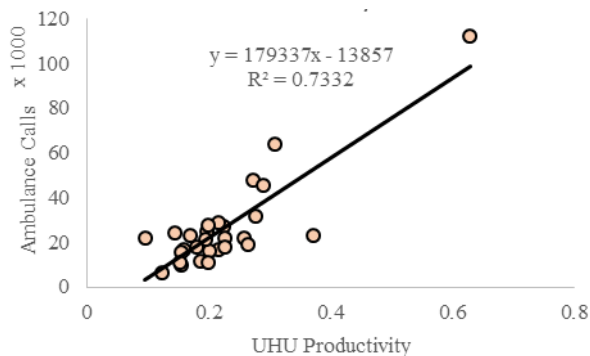
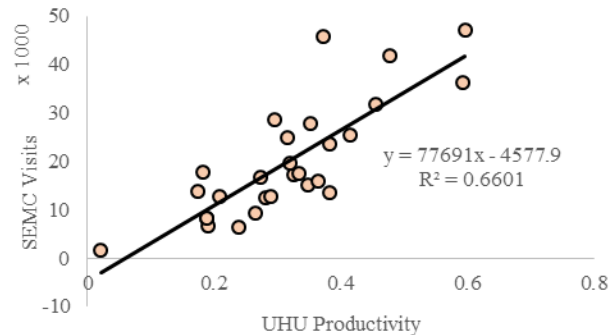


Figure 98: SEMC volume vs productivity, 2014



55. Finally, Figure 99 and Figure 100 show a moderate negative correlation between the volume of services and the cost per service, although the relationship appears to be stronger for SEMCs than for ambulances. These relationships are all to be expected although the plots do show a considerable amount of variation from region to region.

Figure 99: Ambulance call volume vs cost, 2014

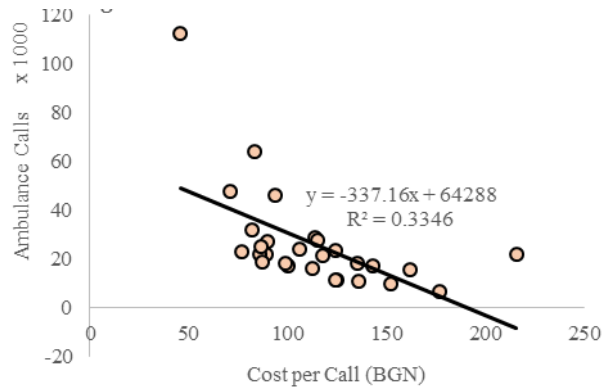
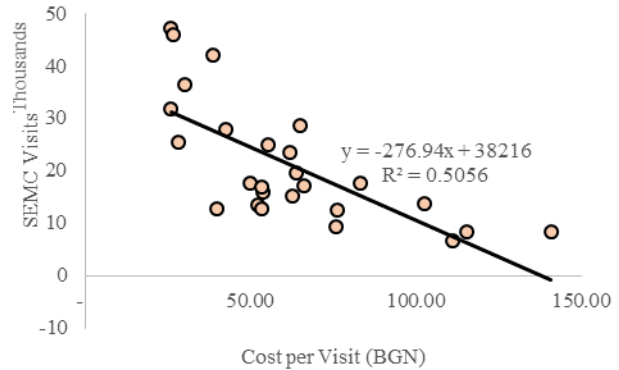
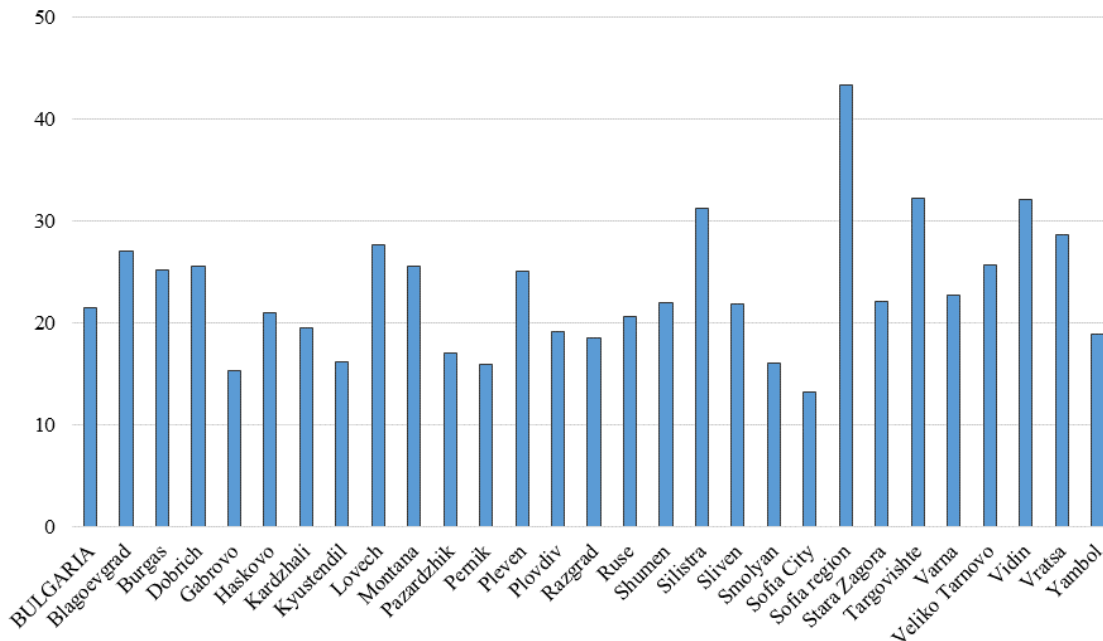


Figure 100: SEMC volume vs cost, 2014



56. The last area of productivity to examine is the average number of kilometers traveled per ambulance call. As seen from Figure 101, there is considerable variation between regions in this statistic, with Sofia region being by far the highest at 43 kilometers per call, on average, and Silistra, Targovishte, and Vidin all averaging above 30 kilometers per call. As expected, Sofia City has the lowest average number of kilometers per call, although the other regions with large cities, such as Plovdiv, Varna, Burgas, Ruse, Stara Zagora, and Plevan, all have more than 20 kilometers per call on average.

Figure 101: Average kilometers per completed call, 2014



57. Looking at the potential determinants of the distance travelled, both the size of the region (greater area to cover) and the population density (longer distance between residents) appear to have

some influence with area being positively correlated and density negatively, although neither of these factors explain very much of the overall variation, as shown in Figure 102 and Figure 103, with the population density shown as a natural logarithm because of the high density in Sofia City.

Figure 102: Regional area vs call distance, 2014

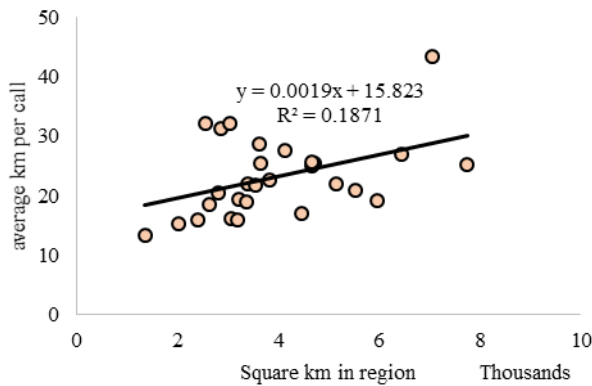
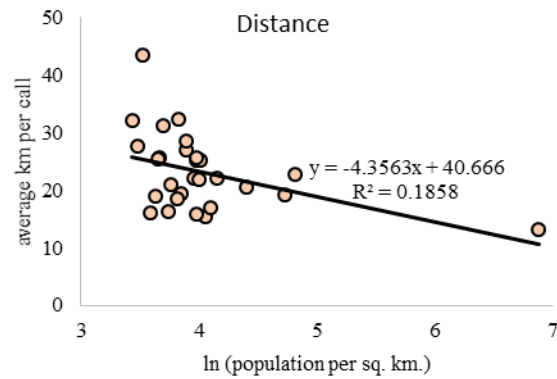
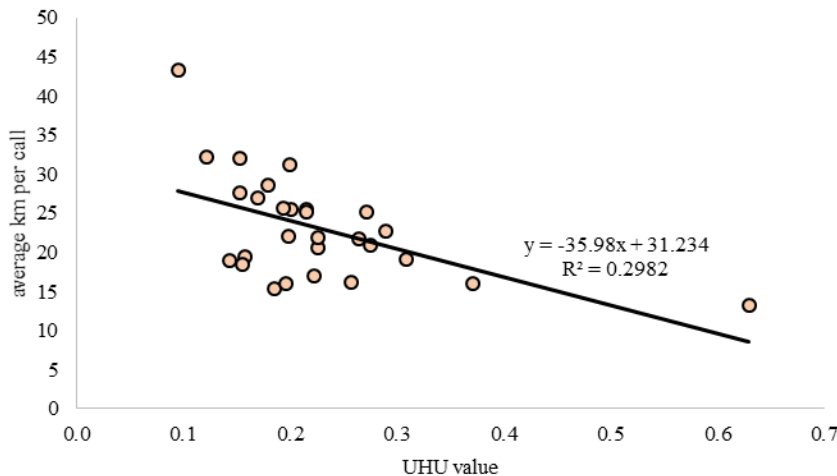


Figure 103: Population density vs call distance, 2014



58. A final factor that appears to be associated with longer call distance is the calculated UHU (Figure 104), although the direction of the relationship is not clear. Having longer calls in terms of distance also affects the duration of time that a team is away from the base station, but the fact that on average there is on call every four hours suggests that the impact of the call distance needs to be more closely examined. To fully explore this, data on response times would be needed. It is not clear whether the Global Positioning System/Automated Vehicle Location (GPS/AVL) system installed in vehicles purchased under the World Bank’s Health Sector Restructuring Project has been retained and upgraded. If not, it may be useful to explore the acquisition and use of such a system since the evaluation of that project indicated that the increased monitoring reduced the overall kilometers traveled by roughly 25 percent, including a reduction of 10,000 kilometers per month in the Sofia region.

Figure 104: UHU value vs call distance, 2014



59. Based on this analysis, as well as the discussions during the mission and the review of the available documentation, the next section focuses on the overall observations and conclusions regarding the further development of the EMC system in Bulgaria.

9.5. Observations

9.5.1. Organization and management

60. The analysis above makes it clear that there is a great deal of variation in the utilization of EMC across Bulgaria, both at the prehospital and in-hospital level, as well as significant variation in the deployment of teams, the available financial resources and overall levels of productivity. While some of the reasons for this variation may be known to the MOH, the level and magnitude of the variation nevertheless suggests that the allocation and utilization of resources is suboptimal in some parts of the system. Reducing inefficiencies could free resources to improve the service provided to the population. An important finding is that percent of emergency patients (both ER and CEMC) admitted to hospital is considerably higher than other countries.

61. Further attention is needed to the extent to which the Emergency Care Directorate in the MOH exercises effective control over the regional CEMCs. Although the data on CEMC and SEMC operations are available in a spreadsheet, more formal management information systems appear to be needed (see also the section on information systems below). The EMC Concept document includes the proposal to create a national coordinating center, and this is fully supported. In this respect, the MOH may wish to look at the approach used in Croatia, where a national Croatian Institute for Emergency Medical Services (CIEMS), as well as County Institutes were created, all with clearly defined responsibilities and reporting mechanisms.

62. An important aspect of the function of the CIEMS in Croatia is the development and monitoring of appropriate policies and standards. Based on the documentation reviewed for this report, it appears that further work on these policies and standards is needed in Bulgaria. Ordinance 45 is poorly organized and difficult to interpret. Perhaps more importantly, if the staffing standards are any indication, is also not being followed in the implementation of EMC. The existing standards need to be reviewed and updated where appropriate. For example, the discussion on the implication on productivity of using the standard for Sofia City (page 19, paragraph 45) suggests that additional criteria may need to be added to the determination of the standard number of teams. These standards, especially in terms of the numbers of teams and other staff (e.g. dispatch), will be critical in further developing EMC.

63. It is understood from the EMC Concept document that treatment and observation capacity at the SEMC level will only be (re)-developed in those centers where there is not a hospital with ER capability (hereafter referred to as essential SEMCs). Provided this is confirmed, it would be an appropriate approach for providing services to areas that do not have immediate access to hospital-based ER services. However, such an approach would have an impact on the redevelopment of SEMC in those urban centers that have hospitals with ER capacity, since the redeveloped SEMC would not need treatment and observation capability and the size and layout of the SEMC could be revised accordingly, to become simply a facility to house the ambulance crews, equipment, and vehicles.

64. It was clear from site visits and the review of the EMC Concept document that heavy investments in vehicles and equipment are needed, since even the newest ambulances are six to eight years old and have more than 100,000 km on the clock. While there are no hard and fast standards for ambulance replacement, the rule of thumb is that vehicles should be replaced after around 150,000–200,000 km. With 15 million km driven each per year, this implies the need to replace 75–100 ambulances each year on average, equivalent to 11–15 percent of the current stock.

65. Similar investments are needed in essential SEMCs and hospital emergency departments to ensure that all of them are up to a minimum standard. Further, during the site visits, it was noted that none of the SEMC had garage facilities for their ambulances. This may be considered during the

redevelopment process, since it offers a number of potential improvements in operational readiness of the ambulance, especially in areas where heavy snowfall is common.

66. The EMC Concept document envisages a significant redevelopment of the physical CEMC structures and also proposes the option of a “functional union ‘under one roof’ [for] ... health and social services ...,” including GPs (on the site of some of the essential SEMCs). In addition to supporting the better integration of services, this proposed measure may also facilitate some of the funding changes described below and more broadly improve service delivery for patients. For example, if a number of GPs can use the (newly redeveloped) SEMC structures as their “after hours surgery,” this could solve a number of issues such as the need to staff those structures on a 24/7 basis with MOH staff. However, this will likely require a change in location for many SEMC since their current configuration and locations may not lend themselves to such a multi-functional set-up. In turn, this would have a concomitant impact on the renovation/construction and subsequent operating costs, as many existing facilities appear to be leased from hospitals or municipalities at nominal rents. On the other hand, having other tenants on the premises could help to defray such additional costs. The costs and potential revenues from this approach clearly need to be fully explored and built into the resulting action plan and budget. Still, further investigation is needed.

67. The proposal to incorporate the use of aeromedical evacuation and transport needs to be approached cautiously and with a full appreciation of the costs, since this can quickly become a significant cost item. Various contracting approaches could be pursued to maintain cost control and minimize the prices charged, by removing some of the risk from the contracted aircraft providers. This could include reimbursing on the basis of both fixed and variable cost components (which would assure the operators that their fixed costs will be covered thereby allowing them to reduce their “risk premium”), and providing guarantees in terms of the number of flights to be reimbursed. If the guaranteed number of flights is less than the expected number, there would be minimal downside risk on the part of the MOH and this would again help to reduce the risk premium.

68. Appropriate operating parameters for both fixed-wing aircraft and helicopters also need to be developed, based on both the relative cost and timing/effectiveness considerations. It is recommended that expert advice be retained in the further analysis of this and the development of the detailed action plan and budget. An analysis developed by the Bank some time ago for Saudi Arabia indicated that given its population of 25.9 million at the time, between 14 and 22 air ambulances would be needed, depending on the criteria used for the dispatch of these ambulances. This would translate into four to six units for Bulgaria.

9.5.2. Human resources and training

69. The analysis of the distribution of human resources shows that there is considerable regional variation in the distribution of teams across the country, and that this is not well explained by the volume of services provided. Further, there are significant regional differences in the productivity of the available teams, and the overall level of productivity is on the low side, especially for the ambulance operations. More closely aligning the distribution of teams with the stated standards would help to increase the overall level of productivity, although as noted this needs to be done with some caution. For example, increasing the number of teams for Sofia City to the level suggested by the standard may lead to a decline in the level of productivity to below average levels. This suggests that the standards themselves may need updating.

70. Currently there are 6,380 medical professionals, including 1,457 physicians, 2,652 paramedical staff (including nurses) and 2,271 drivers. The EMC Concept document indicates that one quarter of these people are over 55 years of age, while only 8 percent are under 35 years of age. This clearly represents a

major challenge to the future staffing of the EMC system. While the EMC Concept document is not completely clear on this, the team was informed that it is expected that over the medium to long term, most prehospital care will be delivered by specially trained paramedics, with physicians being used for overall medical direction as well as for staffing stationary and “reanimation” units.

71. A key issue to consider in moving forward with this is the length of training that will be provided for this “paramedic” cadre, with a range of one to three years discussed, reflecting international norms for paramedics with different qualifications. Considering the immediate need and cost-effectiveness of using such personnel (the salaries of physicians are up to two-thirds higher than those for paramedics, it would appear to be appropriate for the “working level” paramedic have about one year of training, equivalent to the Intermediate level Emergency Medical Technician (EMT-I) in the United States.

72. Over time, a proportion of these paramedics could be upgraded to a higher level (Advanced Life Support) paramedic, which would allow them to undertake much of the reanimation work that is now done by physicians. This training would take a further one or two years and would draw on the current mid-level paramedic cadre. In this way, the higher level paramedics would already have valuable field experience and would be able to benefit even more from the additional training. This approach recognizes both the rapid aging of the existing physician cadre, the limited attractiveness of field-based work to physicians, and the growing cost differential between physicians and paramedic staff. As the number of paramedics grows, the remaining physicians would continue to provide valuable service in the SEMC dispatch centers, the SEMC treatment and observation units, and the reanimation vehicles.

73. The focus on training as an investment, the need for continuing medical education—including the development of the necessary curriculum and monitoring systems—and the ongoing assessment of qualifications and skills, are all important elements of a modern EMC and are fully supported.

9.5.3. Financing the emergency package

74. The analysis above suggests that there is a critical need to address the funding system for both the CEMC and the provision of hospital based emergency care in a comprehensive way, so that the scope and funding for the “emergency package of service” is clearly defined. In particular, attention should be paid to reducing the existing incentives individual categories of providers have to transfer the care of certain patients to others (e.g. GPs to emergency care, emergency care to hospitals).

75. For example, the current funding system for pre-hospital and outpatient care within the CEMC structures does not allocate sufficient resources to maintaining and upgrading capital assets. A case in point is that many ambulances from a World Bank project that closed in December 2001 are still in service. Some of the medical equipment purchased under that project are also still being used. The exception in the recent historical data was 2014, where around Lev 3.6 million (3.4 percent of the budget) was allocated to capital purchases.

76. The analysis also suggests that the proportion of the total CEMC budget allocated to personnel costs is quite high relative to international comparisons, especially since the average wage in Bulgaria is quite low against the comparison countries, and many nonwage items (such as drugs, medical supplies and fuel) are purchased at international prices. It would be prudent to do a “zero-base” analysis of costs and budgets to ensure that the reformed EMC system has an appropriate level of financing.

77. At hospital level, the current financial arrangements lead to inefficiencies and inappropriate incentives. For example, the financial analysis above suggest that there is an implicit subsidy by hospitals to the MOH of Lev 25 million or more in respect of non-admitted ER patients. This in turn places pressure on hospitals to admit patients and seek reimbursement from the NHIF as a way of defraying some of these expenses. Accordingly, there is a need to include all visits to ERs in the ECP, regardless of whether the

patient was hospitalized or not following their ER visit. All ERs should adopt some type of severity scoring system (there are a number of systems available), and reimbursement by the MOH should be graduated based on the severity of the case, rather than simply set at a flat rate for all cases. The scoring would need to be independently audited to prevent gaming.

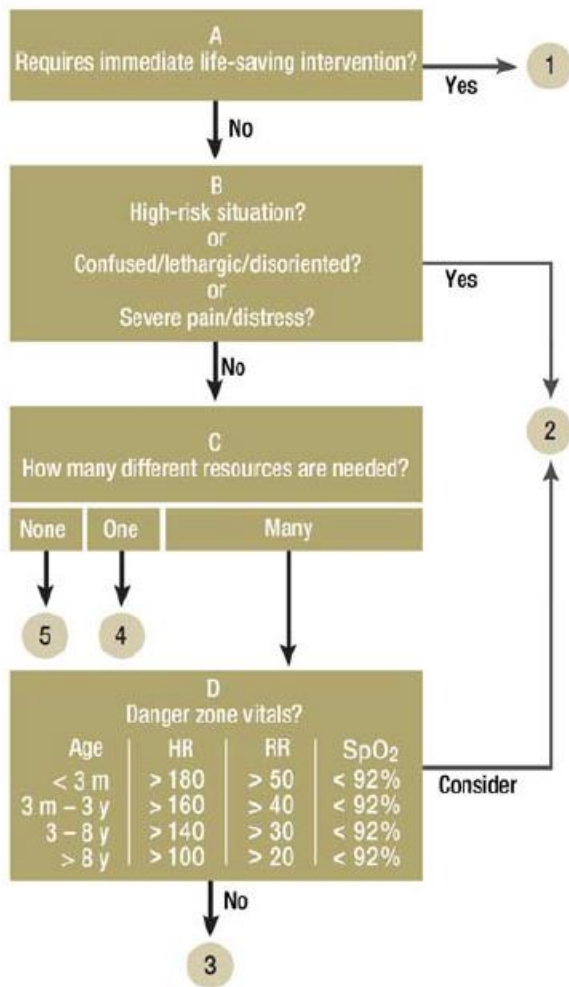
78. Right now, even though the cost of a patient admitted through the ER for a given CCP may be much higher than one admitted electively for the same condition, the funding from the NHIF is the same, with no recognition given to the additional costs incurred in the ER, and no possibility of claiming these costs from the MOH (since the patient is admitted). Separating ER from inpatient costs and funding should help to level the playing field in terms of not having to recover the cost for patients admitted through the ER for a given clinical pathway from the NHIF reimbursement. Implicit in this is the need to develop a more realistic costing and reimbursement level for ER services as part of the overall ECP.

79. One important aspect will be the development (or customization) and use of a clear, audited severity scoring system to ensure that those who simply use the ER to get admitted more quickly (rather than requiring emergency services) do not benefit as a result, increasing the incentive for ERs to explore alternatives for admitting patients. This approach may result in the adjustment of the cost weights for some CCPs to reflect the fact that the emergency care costs are no longer covered by the NHIF reimbursement. This seems to be entirely consistent with the new policy for the packages. If the government moves toward a hospital financing method that incorporates DRGs, further consideration will have to be given on how to resolve the issue.

80. Given the NHIF requirement that GPs provide out-of-hours urgent care, such a severity scoring system should in fact be considered for use in both the hospital ERs and in the treatment and observation units of the SEMC to determine whether the cost of services provided to non-emergency patients should properly be borne by the capitation budgets of the relevant GP for insured patients. Unfortunately, the options for uninsured patients would be to either charge them a fee for non-emergency use of the EMC system or simply absorb the cost. The latter is more likely to be politically acceptable.

81. Most of the common triage scales contain five levels with 1 being the most acute and 5 being the least. Figure 105 shows the Emergency Severity Index (ESI) (Christ et al. 2010), which was developed in the United States but has been used in Germany and adapted for use in France. Other five-point scales are available, including the Manchester Triage Scale and similar ones from Australia and Canada. Using such a scale, it may be concluded that the lowest level of resource requirement ("None" in the ESI), and perhaps even the second lowest, should really have been cared for in a primary care setting and should be funded from the source responsible for such care (i.e., the capitation budgets of GPs from the NHIF). Of course, this will require further discussions with both the NHIF and the BMA, but this would be necessary to demarcate the boundaries (clinical and financial) of the ECP.

Figure 105: Emergency Severity Index



9.5.4. Communications and information systems

82. Following the switch from the “150” emergency number to the European standard “112,” the communication and information system of CEMC lost much of its functionality due to lack of information connectivity between the two systems. There is also an analogue type radio connection system (from Sagem of France), which is technologically outdated and in poor physical shape, which could well endanger crews and patients if equipment failed. A big problem for implementing the new model of the integrated system for emergency medical care is also the lack of communication and information connectivity between outpatient and inpatient parts of the system. There is a need for the integration of the communications systems for the emergency care system. The utilization of TETRA should be pursued as it is the current European standard. It is essential to have effective and dependable radio communication, as the reliance on mobile phones is not acceptable in terms of security and coverage. It is also essential to ensure connectivity between the EMC systems, TETRA and the 112 systems, including connection with receiving hospitals.

83. In the CEMC/SEMC visit before the preparation of this report, it was noted that critical information such as the name and address were entered multiple times for each call. The current 112 system does not

interface properly with the dispatch system (which is extremely limited in its capabilities) and the dispatch system does not interact with the statistical system. The current electronic national statistical system does not appear to lend itself to management decision making, although it is used for crew scheduling and other operational functions. Moreover, the operative legislation and regulations require manual recording of the particulars for all calls, whether or not there is an operational statistical system. This means that a significant amount of the time in dispatch and regional administration is wasted, and critical information for effective management of the system is not available in real time (current reporting and scheduling is done monthly).

84. The EMC Concept document correctly highlights the need for better integration of information between the CEMC and other parts of the emergency care and health system generally. There is also the need of automate the capture of patient information within the CEMC system (e.g. tablet-based crew reports), since this provides both an important input to subsequent clinical and facilitates management oversight of the services provided, in both the ambulance system and within SEMCs.

85. While the EMC Concept document touches on a number of these issues (specifically the interface between the 112 system and the dispatch system and between the hospital systems and the CEMC systems), other critical issues are not mentioned and need to be addressed in order to make the overall EMS system more cost effective. This includes the need for a functional dispatch system across Bulgaria—including “priority dispatch” approaches where callers are questioned in a systematic manner to better determine the type of response that is needed—that feeds into an effective management information system that can be accessed on a real-time basis to make critical deployment and other management decisions. While this may be addressed in part through the recently adopted “Concept Note: Health 2020 Goals” (MOH 2015a) which includes a focus on e-health, effective integration of these systems needs to be built into the overall system design.

86. An important element of the move toward improved automation, both within the EMC or more broadly within the health sector, is the need to adopt policies on the acceptability of electronic records, as well as regulations to safeguard patient confidentiality and privacy. It is not clear whether this needs to be addressed at the level of the EMC regulations, the broader ministry, or government policy—but must be so, and has implications far beyond the EMC system.

87. While there appears to be a great deal of data on ambulance calls per se, the amount of data on the “outpatient” services provided in the SEMC is fairly minimal.

9.5.5. Public–private partnerships

88. PPPs are used extensively for the delivery of emergency medical care including both in prehospital and in-hospital settings. For example, in Pakistan, a PPP is used to monitor quality in this EMS program. In Denmark, while regions are responsible for ambulance services, they contract these out to the operation of these services to private providers (most notably the private company Falck).¹²¹ Similar arrangements are in place in other Nordic countries, as well as Poland, Slovakia, and Spain (Lethbridge 2007), while in Australia, the Northern Territory and Western Australian contract St John Ambulance to provide ambulance services. PPPs have also been used to provide ambulance services in India (Gupta and Basu 2014). The United States makes extensive use of privately operated ambulance services, both for-profit and as part of a PPP approach where the private sector (usually municipalities) contracts private providers for these services using clearly defined standards.¹²² PPPs have also been used extensively in facility construction, especially in hospital setting. In the Philippines, PPPs are being used for the upgrading of

¹²¹ <https://www.falck.com/en/services/emergency-medical-services/>

¹²² See for example: Kern County EMS Department, *Ambulance Service Performance Standards*, 2007.

hospitals and other health facilities which require significant investments (the total required is estimated to be \$866 million. The PPP projects included modernization of the Philippine Orthopedic Center, and the upgrading and modernization of 24 government owned and operated hospitals (ADB, UNECE, and WHO 2012). Of course, the benefits of such approaches, in terms of accessing required expertise and funding, need to be weighed against the potential costs. Robust analysis of these costs and benefits as well as well-defined contracts and effective contract management are critical elements.

89. Most PPPs are divided into six types:

- **Hospitals and health networks**—Detailed design, building construction or refurbishment, medical equipment.
- **Non-clinical services**—IT equipment & services, maintenance, food, laundry, cleaning, buildings and equipment, management.
- **Operations management**—Management of entire facility or network of hospitals and/or clinics.
- **Primary care**—Primary care, public health, vaccinations, maternal and child care.
- **Clinical support services**—Lab analysis, diagnostic tests, medical equipment maintenance, and other support services
- **Specialized clinical services**—Dialysis, radiotherapy, day surgery, other specialist services.

90. The EMC Concept document calls for the physical upgrading of a significant number of SEMC and CEMC facilities, including the development of alternative structural models such as colocation of various health and social services. This is a significant logistical and financial endeavor that could potentially divert the attention of EMS management away from the overall management of the system. The MOH may wish to explore the potential of using a PPP in managing this upgrading process and the subsequent facility-management needs. Given the findings regarding the age and condition of the vehicle fleet, the MOH may wish to also explore using the PPP approach for its fleet-management needs as well. The type of PPP that could be explored would fall into the first and/or second type above with a focus on construction and facilities/fleet management and no involvement in the clinical operation of the CEMC, as the MOH has indicated that it wishes to maintain direct involvement in these clinical services.

9.6. Conclusions and recommendations

91. Many of the following conclusions and recommendations are related to the need to ensure that the system is working at maximum efficiency and effectiveness before the government embarks on the reforms envisioned in the EMC Concept document.

92. The recent announcement of the ECP will require a more careful analysis and integration of the various types of emergency services to ensure that the correct service is available, and used when clinically appropriate. This implies removing any structural, organizational and financial impediments to the appropriate use of the system by either patients or service providers.

93. The use of ambulance services has been relatively stable over the last five years, although they have focused more on emergency calls and less on urgent and transport calls. These trends are appropriate. On the other hand, SEMC services have been declining, both in absolute terms and per capita.

94. Data show considerable regional variation across all of the variables examined. For example, the ratio of the per capita utilization of ER and SEMC visits combined is 3.3:1 between the highest volume and the lowest volume region, although there is some evidence of substitution between the two as would be expected. The underlying reasons for many of the differences are not clear from the data, and while more

analysis is needed, it is fairly clear that there are opportunities for improved efficiencies and that it is important to address these prior to implementing the reform concept.

95. The number and rate of emergency admissions to hospitals is of particular concern, both in terms of the absolute number and the rates per 1,000 population, and further analysis of the factors behind this should be undertaken.

96. In terms of the distribution of resources by region, there is again a significant variation in the number of teams per capita as well as differences in the actual number of teams against the numbers indicated by the standards in Ordinance 45. The reasons for this are not clear, but there are implications for cost and productivity. This needs to be examined further and, if necessary, the standards should be revised. Again, this should take place before detailed implementation.

97. Data show significant variations in patterns of practice that cannot reasonably be attributed to differences in the types of patients served. This suggests that there is a need to more clearly define clinical practice guidelines and to more aggressively monitor actual patterns of practice.

98. The review of financial data suggests that spending on salaries and benefits is very high relative to other operating expenses, especially considering the relatively low level of average wages in Bulgaria and the fact that many other inputs such as fuel, drugs, and medical supplies need to be purchased at world prices. Based on this, it is recommended that a “zero-base” analysis of costs and budgets be undertaken to ensure that the reformed EMC system has an appropriate level and structure of financing. This would of course need to be done after any adjustments to the distribution of teams and/or SEMCs.

99. Levels of productivity are low in Bulgaria, in the country as a whole and in most regions. Applying the standards in Ordinance 45 (based on the same call volume) would increase the overall level of productivity to “average,” which is still far below “optimal.” These results need to be considered in making any changes to the standards and/or distribution of teams.

100. The staffing challenges inherent in attempting to maintain a physician-based approach to ambulance staffing, together with upcoming demographic concerns with respect to impending staff retirements, suggest that the approach to moving toward a paramedic-based model needs to be prioritized. Further, it is likely cost-effective to focus initially on an intermediate level paramedic training approach of around one year, expanding over time to a more limited number of advance life support paramedics.

101. A financing strategy is needed for the entire ECP, which addresses the issues noted above in terms of the composition of costs and also deals with the funding of emergency services in hospitals. The analysis above suggests that currently hospitals are “subsidizing” the ECP by at least Lev 25 million for patients who are not admitted to hospital, while the NHIF is further subsidizing the ECP for patients who are admitted. A level playing field is needed with clear financing parameters to ensure that the financial incentives support the proper use of both the emergency care system and the other parts of the health care system. An important element of this will be the development and effective implementation of a severity scoring system. In addition, the role of GPs in the process needs to be defined, so that non-emergency out-of-hours services are appropriately charged back to the GP receiving the capitation payment.

102. An important element of any effective emergency medical care system is a fully functional information system that supports both clinical and management decision-making, as well as essential communications between parts of the system. While some of these elements are addressed in the EMC Concept document, further work is needed to ensure that support is provided where needed and that the system can be well managed.

103. Given the heavy investments needed, the extensive network of facilities that must be rehabilitated and maintained, and the large fleet of vehicles that much be replaced and managed, it may be useful to consider a PPP that will tap into the expertise necessary for these specialized non-clinical functions.

104. These recommendations should help to ensure that the appropriate structures, systems, standards, and financing are in place such that the reforms of the emergency medical care system will have the maximum impact on the overall health of Bulgarians.

Chapter 10. Conclusions

1. Pulling various elements of this report together ultimately suggests an assumption regarding the overall dynamic underlying the Bulgarian's health system's financing. The cost drivers—particularly hospital and medicines—are strong and remain by and large under-managed. Bulgaria appears to have been able to maintain some downward pressure on public health expenditure but it may well be that the cost is abnormally fast-growing private OOP expenditure and decreasing financial protection. Reestablishing the balance and ultimately putting the health financing system on a better path would require vigorously tackling the underlying cost factors. This is all the more important as the sustainability of financing for the health system is intricately tied to the perspective of Bulgarian economy and its public sector priorities. The IMF Article IV reports, the World Bank's aging report, the fiscal space analysis, and the actuarial model developed in the context of this work, all highlight Bulgaria's challenging fiscal position in the medium and long term (IMF forthcoming).

2. The government's proposed health reform program as outlined in the "Concept Note: Health 2020 Goals" (MOH 2015a, pp. 30-31) highlights sustainability as one its four priorities. It proposes a number of measures on the revenue side:

- Sustainable increase of public funding for health care as a percentage of GDP;
- Adoption of standards for financing of health activities that are a commitment of the state, guaranteeing efficient and results-oriented spending of the funds of the state budget;
- Improvement of the revenue part of health insurance by increasing collectability of health insurance contributions and staged increase of payment of the amount of health insurance contributions for persons insured by the state;
- Adoption of incentives for voluntary health insurance;
- Use of EU and other international funds for financing activities related to the development of the health system;
- Use of public-private partnerships in financing the health system on the basis of projects in which the principle is public interest.

3. In addition, the "Concept Note" proposes to control spending through numerous demand- and supply-side measures. On the demand side, the main focus is the redefinition of the benefits package. On the supply side, the focus is a better integration between and substitution of outpatient for inpatient care, hospital rationalization, and enforcement of hospital global budgets. It further recognizes that the most feasible approach for assuring sustainability is increasing cost efficiency in health (MOH 2015a pp. 30-31). At this point however, the proposed individual reforms are yet to be fully specified and costed. Further, as argued in Chapter 7, they do not yet reflect a fully formed health financing agenda. It is thus difficult to assess the impact the reform may have on sustainability.

4. Sustainability encompasses all aspects of the health system and the starting point for any sustainability analysis is the current level of spending. The government needs to decide how much it can afford to spend on health care in the context of all other competing priorities. Obviously the efficiency of current spending (i.e. value for money) is an important element of this calculation. Broadly, spending depends on the number of people covered, the benefits they receive, and how much is paid for these benefits. As recognized in the government's health reform plan, sustainability will be affected by the numerous micro policy reforms that it is considering. Each of these reforms and their interactions need

to be analyzed in terms of their impacts on health outcomes, financial protection, and costs. The final reform proposals will need to be reconciled against the available overall current and future funding envelopes for health contained in the government's macro fiscal program.

5. A key sustainability determinant for Bulgarian policy makers is the overall funding level. The public funding level is a political decision, and there is no right answer. The critical question is how the reform proposal highlighted above for a "sustainable increase of funds for health care as a percentage of the GDP" comports with their future fiscal and prioritization realities. Decisions will also need to be made on the proposed size of the increase. Once this is done, reformers can then tweak the specifications of the numerous micro policies or establish binding expenditure caps to assure fiscal compliance (no doubt blending both approaches).

6. Three necessary concomitants in assuring achievement of the government's sustainability objective are to analyze the cost and performance impacts of each of the policies; assemble a final package of policies that results in an integrated and holistic reform program; and develop the health management information systems to implement, manage, monitor, and evaluate the reforms. Critical to this effort will be epidemiological, actuarial, and economic costing models and the use of micro data from surveys and NHIF claims information. Having in place the HMIS systems to implement, evaluate, and allow mid-course corrections is essential.

7. It is hoped that this report's health financing policy baseline as well as the potential EMS, pharmaceutical, payment, HMIS, and overall health-financing choices highlighted will provide useful information for the reform process. However, to assure holistic treatment of all these complex and interrelated issues, it will be important for the government to have a well-structured reform process.

10.1. Next steps to develop specific reform options

8. The government has presented an overall health reform agenda and is working out the details. Thus far detailed proposals to deal with many of the key health financing issues raised here have not been fully developed, particularly in financial protection, efficient purchasing, and assuring financial sustainability.

9. The underlying concern is for the government to develop a reform process that considers all the key, interactive health system issues comprehensively and that allows policy makers to choose options for reform based on costs, evidence, and lessons learned from global practices. For example, it is relatively straightforward to control the NHIF's costs simply by controlling eligibility, benefits provided, and how providers are paid. But the devil is in the detail, and the government will have to live with the consequences of such choices. Thus if hard budgets are strictly enforced, NHIF costs may be controlled, but beneficiaries may be denied access to services, or providers may skimp on quality. In the longer term, costs may be even higher as individuals' medical conditions are not treated and become worse. Financial protection will also be further compromised.

10. Many governments pursuing an active and comprehensive health reform agenda take their reform blueprint and then set up a health reform task force that reports to top government officials (as in the United States, Indonesia, and Kosovo). The task force develops, analyzes, and costs the reform options in the interactive reform arenas; develops the transition steps; and then the top decision makers (prime minister, Council of Ministers, etc.) make the key policy decisions based on this structured and evidence-based process.

11. Bulgaria has tasked a very small group of cadres housed primarily within the MOH to coordinate the reform process. One suggested approach is to expand the group to represent all key stakeholders and

with diverse qualifications chaired jointly by the Minister of Health and NHIF Director, to report to the Council of Ministers and/or the prime minister. The task force could constitute separate work groups on, for instance, revenue raising and sustainability issues, NHIF administrative and operational reform, the definition and costing of the redefined benefit package, provider-payment reforms, public health programs, emergency care, pharmaceutical policies, information systems, and delivery-system rationalization. It should have a dedicated staff and budget. Given that health reform is a long-term undertaking that may go through multiple iterations—and several governments—it is crucial that the task force be shielded from political upheaval. It would be particularly important for these various task forces to mainstream economic analyses in their proceedings. Consideration could be given to requesting support from the EU to fund this process.

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