

CASE STUDY

The impact of the financial crisis on the health system and health in Greece

Charalampos Economou

Daphne Kaitelidou

Alexander Kentikelenis

Aris Sissouras

Anna Maresso

The impact of the financial crisis on the health system and health in Greece



The European Observatory on Health Systems and Policies supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of health systems in Europe. It brings together a wide range of policy-makers, academics and practitioners to analyse trends in health reform, drawing on experience from across Europe to illuminate policy issues.

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

The impact of the financial crisis on the health system and health in Greece

**Charalampos Economou
Daphne Kaitelidou
Alexander Kentikelenis
Aris Sissouras
Anna Maresso**

Keywords:

DELIVERY OF HEALTHCARE

HEALTH POLICY

HEALTHCARE FINANCING

HEALTHCARE SYSTEMS

GREECE

© World Health Organization 2014 (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies)

Address requests about publications to: Publications, WHO Regional Office for Europe, UN City, Marmorvej 51, DK-2100 Copenhagen Ø, Denmark.

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

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

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the European Observatory on Health Systems and Policies concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

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

All reasonable precautions have been taken by the European Observatory on Health Systems and Policies to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the European Observatory on Health Systems and Policies be liable for damages arising from its use. The views expressed by authors, editors, or expert groups do not necessarily represent the decisions or the stated policy of the European Observatory on Health Systems and Policies or any of its partners.

Contents

List of tables and figures	vi
Abbreviations	vii
Foreword	viii
Acknowledgements	ix
Introduction	1
1.The nature and magnitude of the financial and economic crisis	3
1.1 The origins and immediate effects of the crisis	3
1.2 Government responses to the crisis	5
1.3 Broader consequences	6
2. Health system pressures prior to the crisis	7
3. Health system responses to the crisis	12
3.1 Changes to public funding for the health system	12
3.2 Changes to coverage	15
3.3 Changes to health service planning, purchasing and delivery	18
4. Implications for health system performance and health	26
4.1 Equity in financing and financial protection	26
4.2 Access to services	27
4.3 Impact on hospital sector efficiency	28
4.4 Quality of care	29
4.5 Transparency and accountability	29
4.6 Impact on health	30
5. Discussion	33
5.1 Drivers of change	33
5.2 Content and process of change	34
5.3 Implementation challenges	37
5.4 Resilience in response to the crisis	37
Conclusions	39
Appendix1: Major crisis-related events and changes in the Greek health system, 2009–2013	41
References	43
About the authors	48

List of tables and figures

Tables

GR Table 1	Demographic and economic indicators, in Greece, 2000–2012	4
GR Table 2	Health care expenditure trends in Greece, 2003–2012	9
GR Table 3	Health care expenditure by sector in Greece, 2009–2012	13
GR Table 4	Increases in medicine co-payments for specific diseases in Greece, 2011	17

Figures

GR Fig. 1	Health expenditure as a percentage of GDP in Greece, 2003–2012	9
GR Fig. 2	Government spending on health by sector in Greece, 2009–2012	15
GR Fig. 3	Incidence of new HIV infections by transmission category in Greece, 2008–2012	32

Abbreviations

CHESME	University of Athens Centre for Health Services Management and Evaluation
ELSTAT	Hellenic Statistical Authority
EOPYY	National Health Services Organization
EU	European Union
GDP	Gross domestic product
GP	General practitioner
IMF	International Monetary Fund
KEN-DRG	Greek diagnostic-related groups system
MoU	Memorandum of Understanding
OECD	Organisation for Economic Co-operation and Development
SHI	Social health insurance
VAT	Value added tax
WHO	World Health Organization

Foreword

This report was produced as part of a series of six country case studies and forms part of a larger study on the impact of the financial crisis since 2008–2009 on health systems in the European Region. The countries studied in depth are Estonia, Greece, Ireland, Latvia, Lithuania and Portugal, which represent a selection of countries hit relatively hard by the global financial and economic crisis. In-depth analysis of individual countries, led by authors from the country concerned, adds to understanding of both the impact of a deteriorating fiscal position and the policy measures put in place as a result. These case studies complement a broader analysis which summarizes official data sources and the results of a survey of key informants in countries of the WHO European Region; they will also be published as part of a two volume study conducted jointly by the European Observatory on Health Systems and Policies and the WHO Regional Office for Europe.

Acknowledgements

The authors and the study editors gratefully acknowledge the comments received on the first draft of this case study by Professor Lycurgus L. Liaropoulos, Professor Emeritus of Health Economics and Health Care Management, University of Athens. They also extend their sincere thanks to Professor Liaropoulos, Professor Anastas Philalithis (Professor of Social Medicine, Faculty of Medicine, University of Crete) and Professor John Yfantopoulos (Health Economics University of Athens) for their extensive reviews and constructive comments on the second draft of the chapter. Any errors remain the authors' own.

Daphne Kaitelidou would like to thank Dr Olga Siskou (Research Fellow at the Centre for Health Services Management and Evaluation, Department of Nursing, University of Athens) for her valuable contribution, particularly for the analysis of the Greek economic data according to the System of Health Accounts.

Alexander Kentikelenis gratefully acknowledges financial support from the Greek State Scholarships Foundation and the Onassis Foundation.

Thanks are due to the Ministry of Health for information and comments, and also to participants at the author workshop held in Barcelona in January 2013, as well as those commenting via the web-based consultation following the World Health Organization (WHO) meeting “Health systems in times of global economic crisis: an update of the situation in the WHO European Region” held in Oslo on 17–18 April 2013.

Financial support

The WHO is grateful to the United Kingdom Department for International Development for providing financial support for the preparation of the series of six country case studies. Thanks are also extended to the Norwegian government for supporting the broader study on the impact of the economic crisis on health systems in the European Region.

Introduction

Greece has been profoundly affected by the global financial and economic crisis, with wide-ranging economic, social and political consequences. In 2013, the country entered its fifth year of recession and was operating within severely constricted fiscal limits. Greece is still undergoing a massive and unprecedented process of change and structural reform, in large part driven by the terms of its loan agreement with the European Commission, European Central Bank and the International Monetary Fund (IMF) (the Troika) and its Economic Adjustment Programme. This process contrasts starkly with previous attempts to reform the public sector, including the health sector, which were impeded by strong stakeholder opposition and weak administrative capacity (Economou, 2010).

Before the crisis, the Greek health system suffered from a wide range of problems. As a result, it was vulnerable to economic fluctuation and not well prepared to meet the changing needs of the population. While most of the reforms introduced since 2010 have been determined by the Troika, some of them had been proposed in the past. Current reforms have tended to focus on operational, financial and managerial dimensions, and cost-containment measures have generally taken the form of cuts across the board. In addition, reforms have often been implemented rapidly, without sufficiently considering potential side-effects. Nevertheless, important positive steps include the standardization of the health benefits package for all citizens, new monitoring tools for hospital management, a prospective payment system for hospital care, implementation of the System of Health Accounts of the Organisation for Economic Co-operation and Development (OECD), a stronger and more transparent procurement system and the development of e-health governance tools.

What is needed now is a clearer, more integrated and better-designed health reform plan that accounts more fully for population health needs and adopts a more sophisticated and strategic approach, particularly regarding resource allocation. Important barriers to effective structural reform include resistance by key stakeholders, low administrative capacities and the difficulty of getting the public health system bureaucracy to introduce managerial reforms and successfully complete complex tasks.

The nature and magnitude of the financial and economic crisis

1.1 The origins and immediate effects of the crisis

The global financial and economic crisis manifested itself in Greece in the form of a sovereign debt crisis that culminated in the largest international bailout ever agreed. Even in 2008, the Greek economy was already exhibiting a number of underlying economic problems; however, the revelation of inaccuracies in statistical indicators reported to Eurostat turned the spotlight of international financial markets on the country (Strupczewski, 2010). Within a matter of months, the budget deficit for 2009 was revised from the original 6% projection to the final 15.7% of gross domestic product (GDP) (GR Table 1). As the country's economy started to come under closer scrutiny, credit rating agencies repeatedly downgraded Greece's rating, and borrowing costs from markets started rising: the Greek Government's 10-year bond yield shot up from a maximum of 5.8% in May 2009 to a maximum of 12.1% a year later. By early 2010, it was clear that Greece would need international financial assistance to cover its budgetary needs for the year, and bailout negotiations started.

At the same time, households' preparedness to deal with the severe economic shock of the crisis was, at best, limited. The state of the economy steadily deteriorated in late 2009, prompting the first wave of comparatively mild austerity measures to be implemented. After years of steady decrease, unemployment started to rise rapidly from 2009 onwards; public sector salaries and pensions were sharply reduced, and household savings also began to decline, from €185 billion at the end of 2009 to €138 billion at the end of 2011 (Bank of Greece, 2013).

GR Table 1 Demographic and economic indicators, in Greece, 2000–2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total population (in thousands) ^a	10,917	10,950	10,983	11,016	11,062	11,093	11,131	11,163	11,186	11,185	11,153	11,124	11,090
People aged 65 and over (% total population) ^a	16.6	17.0	17.4	17.7	18.0	18.3	18.5	18.6	18.7	18.8	19.2	19.1	19.9
Dependency ratio ^{b,c}	24.2	24.7	25.3	25.8	26.4	26.8	27.6	27.6	27.8	28.1	28.4	29.2	30.0
GDP per capita (US\$ PPP, current prices) ^a	18,249	19,744	21,402	22,497	23,861	24,349	26,803	27,709	29,569	29,384	28,444	26,934	25,475
Real GDP growth (%) ^a	4.5	4.2	3.4	5.9	4.4	2.3	5.5	3.5	-0.2	-3.1	-4.9	-7.1	-7.0
Government deficit (% GDP) ^b	-3.7	-4.5	-4.8	-5.6	-7.5	-5.2	-5.7	-6.5	-9.8	-15.7	-10.9	-9.6	-8.9
Government consolidated gross debt (% GDP) ^b	103.4	103.7	101.7	97.4	98.6	100.0	106.1	107.4	112.9	129.7	148.3	170.3	157.2
Total unemployment (% total labour force) ^b	11.2	10.7	10.3	9.8	10.5	9.9	8.9	8.3	7.7	9.5	12.6	17.7	24.3
Unemployment, men (%) ^b	7.4	7.1	6.8	6.2	6.6	6.1	5.6	5.2	5.1	6.9	9.9	15.0	21.4
Unemployment, women (%) ^b	17.1	16.1	15.6	15.1	16.2	15.3	13.6	12.8	11.5	13.1	16.2	21.4	28.1
Long-term unemployment (% of all unemployed) ^a	56.4	52.8	51.3	54.9	53.1	52.1	54.3	50.0	47.5	40.8	45.0	49.6	59.3
Long-term unemployment (% of active population) ^b	6.2	5.5	5.3	5.3	5.6	5.1	4.8	4.1	3.6	3.9	5.7	8.8	14.4

Note: ^cThe dependency ratio is the ratio between the total number of people aged 65 and over and the number of persons of working age (from 15 to 64).
Sources: a OECD, 2013; b Eurostat, 2013.

1.2 Government responses to the crisis

The first bailout agreement was signed in May 2010: the funds available to the country were of the order of €110 billion, with €80 billion contributed by Eurozone governments and the rest by the IMF. This agreement in many respects resembled common IMF agreements: loan disbursement was phased over the three-year duration of the programme and was conditional on implementing specific reforms according to a predetermined timeline.

Greece's adjustment programmes failed to deliver the expected results in terms of achieving a primary surplus, reducing the debt burden and enhancing growth, and the projections for the country's economic indicators were continuously revised to worse levels. In this context, the government's revenue-generating ability was constrained by the deteriorating economic situation, as well as rapidly rising unemployment, which placed additional fiscal demands on the public budget. Direct tax rates, value added tax (VAT) and a host of indirect taxes increased, but often they failed to meet the Economic Adjustment Programme's targets. The Troika required compensatory measures to be implemented in order to meet the fiscal targets, while the recession was deepening. Consequently, from 2010, Greece found itself having to implement extensive austerity measures aimed at drastically reducing public expenditure across the board, while cumulatively experiencing a 17.4% decline of its GDP in real terms between 2008 and 2012 (Matsaganis, 2012). The main economic indicators for the period 2000–2012 (or latest available year) are summarized in GR Table 1.

Two further Memoranda of Understanding (MoUs) were signed in 2012, revising and consolidating details of the country's Economic Adjustment Programme. Indicatively, in February 2012, when the country was negotiating its second financial bailout agreement in the face of imminent bankruptcy, the government's 10-year bond yield reached an unprecedented 29.4%, levelling off eventually once new MoUs were signed in the course of 2012 (in March and November) and elections established greater political certainty.¹ In January 2013, the 10-year bond yield was still a very high 11.1%, (European Central Bank, 2013) highlighting the severely constricted fiscal space in which the country was still operating. The government's gross debt reached 170% of GDP in 2011 and the IMF projections were for 171% in 2012, 182% in 2013 and 180% in 2014 (International Monetary Fund, 2013).

¹ The political situation was particularly volatile between November 2011 and June 2012. In late 2011, Prime Minister George Papandreou, of the Socialist Party (PASOK), resigned in the face of significant political opposition and popular unrest over austerity measures and the terms of the second MoU that was being negotiated. A technocratic government of "national unity" took over until May 2012 when elections were held. Large gains by anti-austerity parties significantly changed the party-political landscape and no viable coalition partnerships were able to form a government. New elections in June resulted in a new unity government led by Antonis Samaras as Prime Minister.

1.3 Broader consequences

At the time of writing (early 2014), economically, the Greek context is one of sustained economic recession, with the highest unemployment level in the Eurozone and large-scale retrenchment of public sector spending. Moreover, as a result of the conditionalities imposed by its international bailout agreement, austerity budgets will be the norm for the foreseeable future.

Health system pressures prior to the crisis

When the global financial and economic crisis started, the health system in Greece functioned within an outmoded organizational structure dominated by clinical medicine and hospital services, without the support of an adequate planning unit or sufficient accessible information on health status, utilization of health services or health costs, and without being progressive and proactive in addressing the health needs of the population through actions in public health and primary health care.

As a result, the Greek health care system was suffering from several inefficiencies (Davaki & Mossialos, 2005; Economou, 2010), which can be summarized as follows:

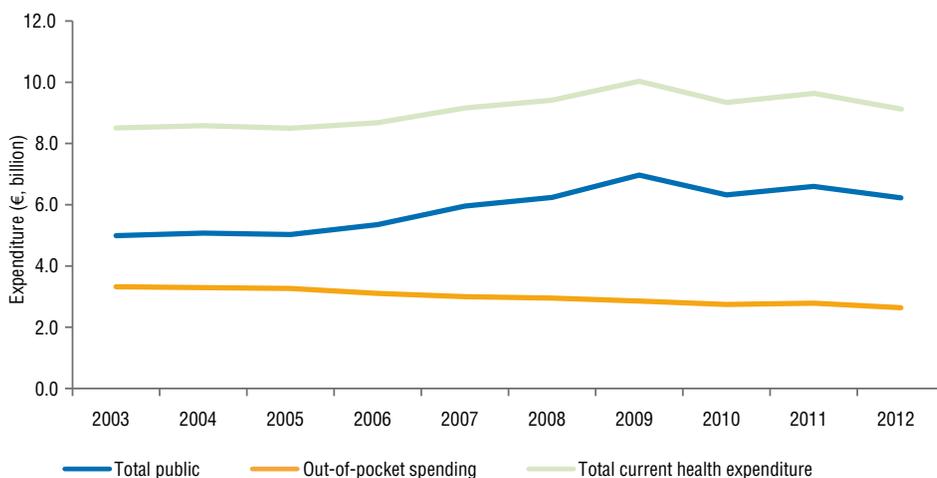
- a high degree of centralization in decision-making and administrative processes;
- suboptimal managerial structures that lacked adequate information management systems and were often staffed by personnel without adequate managerial skills;
- lack of planning and coordination, and limited managerial and administrative capacity;
- unequal and inefficient allocation of human and economic resources;
- fragmented population coverage;
- an absence of a referral system and effective gatekeeping mechanisms;
- inequalities in access to services;
- high out-of-pocket payments;
- uneven regional distribution of human resources and health infrastructure;

- underdevelopment of needs' assessment and priority-setting mechanisms;
- regressive funding mechanisms;
- an anachronistic retrospective reimbursement system; and
- an absence of a health technology assessment system.

The old social health insurance (SHI) system suffered from a large number of funds and providers with varying organizational and administrative structures offering services that were not coordinated. This resulted in different population coverage and contribution rates, different benefit packages and inefficient operation; all led to large accumulated debts.

In the context of the wider economic situation, the Greek health system came under pressure and reforming it was clearly a priority imposed by the Troika. It should be noted, however, that financial pressures predated the crisis, and structural problems had been accumulating for a decade (Economou, 2010). A failure to contain costs is evident from recent years' expenditure trends (GR Fig. 1). Over the 2000s, both public and private health expenditures steadily increased. Total expenditure on health rose from 8.6% of GDP in 2003 to 9.9% in 2009, despite the fact that total health expenditure (as a percentage of GDP) in Greece was already above the mean for the European Union (EU) (8.06% in 2003 and 8.92% in 2009) (Eurostat, 2013). General government spending rose from 59.5% to 70.3% of total health spending in the same period. High levels of private spending on health, primarily in the form of out-of-pocket payments, have always been a feature of the Greek health care system and continued to be high (GR Table 2). Pharmaceutical expenditure also shot up by 80% during the period, from €293 per capita in 2003 to €528 in 2010 (OECD, 2013), with more than 77% of spending covered by public money (OECD, 2013).² At the same time, the increase in pharmaceutical expenditure in other European countries was considerably less (29%) with the average per capita spending estimated at €326 in 2003 and €420 in 2010 (OECD, 2013). GR Table 2 presents the evolution of key expenditure indicators from 2003 to 2012. The failure to control expenditure growth can be attributed to a number of reasons, including the lack of control over investment and resource allocation as well as constant subsidies from the government budget to cover hospital deficits. It also contributed significantly to the growing deficits of some SHI funds (Economou, 2010).

² Results derived by the Centre for Health Services Management and Evaluation (CHESME), University of Athens. Reports on System of Health Accounts are subject to final approval by the Hellenic Statistical Authority (ELSTAT) before forwarding to the OECD.

GR Fig. 1 Health expenditure as a percentage of GDP in Greece, 2003–2012

Source: OECD, 2013.

GR Table 2 Health care expenditure trends in Greece, 2003–2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
THE per capita (US\$ PPP)	2,029	2,090	2,352	2,606	2,722	2,998	2,977	2,624	2,614	2,380
THE (€ billions)	14.7	15.9	16.4	18.1	20.4	22.0	23.2	20.8	20.2	17.7
THE (% GDP)	8.6	8.3	8.2	8.3	8.8	9.1	9.9	9.3	8.9	9.2
Total public expenditure on health (€ billions)	8.6	9.4	9.7	11.2	13.3	14.6	16.1	14.0	13.8	12.0
Public expenditure on health (% THE)	59.5	58.8	58.8	61.5	64.9	66.1	70.3	68.5	66.7	68.0
Total public expenditure on health (% all government spending)	11.7	11.1	12.8	13.2	12.3	13	12.9	12.4	11.4	11.4
Voluntary health insurance (% THE)	2.3	2.5	2.5	2.4	2.4	2.5	1.9	2.6	2.9	2.9
Out-of-pocket expenditure (% THE)	38.2	38.7	38.8	36.1	32.8	31.4	27.6	28.5	30.2	28.8

Note: THE: Total health expenditure; PPP: Purchasing power parity.

Source: OECD, 2013.

Fragmentation of financing mechanisms between SHIs and private sector physicians created incentives for supplier-induced demand, since physicians could be contracted by many insurance funds and be reimbursed on a fee-for-service basis. Oversupply of services was further fuelled by the country's high number of physicians (Greece has the highest concentration of physicians among EU Member States) and a lack of control over private doctors, who were not required to implement any form of gatekeeping for hospital care or for referral to diagnostic or other specialized services. Furthermore, the pharmaceutical industry created incentives for supplier-induced demand by influencing physicians to prescribe more pharmaceuticals than needed. Indeed, studies suggest that the oversupply of services by private physicians had contributed to a higher annual per capita rate for medical visits compared with those in most western European countries, and to a relatively high number of pharmaceutical prescriptions (Kaitelidou et al., 2012b).

In general, rising health expenditure is an issue of constant concern in developed countries, and controlling its growth, as well as getting better value out of available resources, is an important objective of health policies. However, as mentioned above, Greece failed to control health spending: between 2000 and 2009, and the country's health budget deficit reached €50 billion (Liaropoulos, 2012). Consequently, at the onset of the crisis, the health sector was cited as “a major factor” in the country's economic derailment and as such came under intense scrutiny from the Troika.

Despite the highly centralized manner in which resources were allocated, the health system required more effective planning and coordination, managerial capacity and adequate mechanisms to undertake needs assessment (Economou, 2010). Historically, hospitals operated by the national health service (known as ESY in Greek) had not enforced transparent and accurate tracking of their expenditures and the state has had to step in regularly to cover accumulated deficits. In addition, an oversupply of specialist physicians coexisted with an undersupply of general practitioners (GPs) and nurses. The lack of a functioning referral system between primary and higher level care, and problematic pricing and provider-reimbursement mechanisms, resulted in poor coordination of care, large out-of-pocket payments and a sizable black economy, impeding the system's ability to deliver equitable financing and access to services (Liaropoulos et al., 2008). At the same time, the age structure of the country has been changing. The percentage of the population over 65 rose from 16.6% in 2000 to 18.8% at the end of the decade (GR Table 1). The implications of this population ageing, together with the low birth rates, will need to be factored in when considering the country's economy and health care system.

By the time that the crisis hit, and despite the warning signs, both the Greek economy and the Greek health care system had amassed a number of structural problems. Past reform attempts in areas such as primary care, the organization and provision of health services by hospitals and the enhanced cooperation of social insurance funds failed to deliver the expected results or were not fully implemented (Davaki & Mossialos, 2005; Mossialos & Allin, 2005). Consequently, the need for reforms in the health care system is clear and has dominated the agenda of policy responses instigated by the crisis, particularly the attempt at large-scale cost-containment.

Health system responses to the crisis

The health policy responses to the crisis and their effects should be seen from two perspectives. The first perspective relates to implementing much-needed operational and structural reforms, designed to address the weaknesses in the health care system as discussed in the previous section. The second perspective, which is particularly important when considering the effects of changes, relates to the measures stipulated in the MoUs, which, by and large, are fiscal consolidation measures.

3.1 Changes to public funding for the health system

Data reveal that public health expenditure, as a share of general government expenditure, reached its high point of 13.2% in 2006 (Health expenditure series; OECD, 2013; WHO Regional Office for Europe, 2014). However, after the introduction of extensive austerity measures, Greece had one of the lowest ratios in the EU by 2012, not exceeding 11.5% compared with the EU mean of 15%. Bailout conditions requiring a reduction in overall health expenditure to 9% of GDP, and to less than 6% for public expenditure in 2012, had not yet been met but were close to the set target (GR Table 2). Between 2009 and 2012, total current health expenditure decreased by €5.4 billion (23.7%). Notably, in the same four-year period, public current health expenditure fell by a greater proportion, 25.2% or €4 billion (GR Table 2).

In particular, the MoUs required major cuts to hospital and pharmaceutical expenditure. Total public hospital sector expenditure (inpatient only, no outpatient services) decreased by 8%, from €7 billion in 2009 to €6.4 billion in 2012 (ELSTAT, 2014), through major savings in hospital supplies (medical supplies, orthopaedics, pharmaceuticals, etc.) and through MoU conditions stipulating cuts to health personnel salaries and benefits (see section 3.3). Expenditure trends for inpatient hospital stays are shown in GR Table 3.

GR Table 3 Health care expenditure by sector in Greece, 2009–2012

	2009			2010			2011			2012		
	€ billion	THE %	GDP %	€ billion	THE %	GDP %	€ billion	THE %	GDP %	€ billion	THE %	GDP %
Inpatient health expenditure	8.45	36.44	3.66	7.62	36.72	3.43	7.99	39.64	3.83	8.2	46.31	4.24
of which public expenditure	6.97	30.06	2.89	6.00	28.91	2.7	6.29	31.21	3.02	6.43	36.31	3.33
Outpatient health expenditure ^a	6.51	28.08	2.82	5.63	27.13	2.53	5.24	26	2.51	3.88	21.91	2.01
of which public expenditure	2.60	11.21	1.13	2.24	11.76	1.01	2.24	11.11	1.07	1.74	9.83	0.90
Pharmaceutical and other medical non-durables (outpatient) expenditure	6.56	28.29	2.84	5.95	28.67	2.68	5.48	27.19	2.63	4.46	25.19	2.31
of which public expenditure	5.20	22.43	2.25	4.55	21.93	2.05	4.00	19.85	1.92	2.95	16.66	1.53

Notes: THE: Total health expenditure. ^a Includes diagnostic imaging and clinical laboratories.
Source: OECD, 2013.

An estimated fall of 32% (€2.1 billion) in total (outpatient) pharmaceutical expenditure also occurred, to the benefit of the SHI funds, which largely fund this expenditure. Public pharmaceutical expenditure (and other nonmedical durables) experienced the largest reduction, at 43.2%, from €5.2 billion (roughly 2.25% of GDP) in 2009 to €2.95 billion (or 1.53% of GDP) in 2012 (GR Table 3). Pharmaceuticals are an area that received special attention in the MoUs and a hard ceiling was set for 2012 and subsequent years. According to the MoUs, pharmaceutical expenditure should not exceed €2.44 billion in 2013 and €2 billion in 2014, thus setting a tight upper limit. If the limits were exceeded, clawbacks from producers (pharmaceutical companies) would be used to balance the budget.

The SHI funds also have seen reductions in revenue and government transfers. Because of rising unemployment and part-time employment, as well as a decrease in the working-age population, social insurance revenues decreased from €30.7 billion in 2008 to €24.4 billion in 2013 (ELSTAT, 2014). Moreover, MoU conditions aimed to curb the state's contribution to the civil servants' SHI fund. In the past, civil servants' contributions were 2.55% of their gross income and any spending that exceeded total contribution revenues was subsidized through the state budget. From 1 January 2011, the employers' contribution rate (i.e. the state's contribution rate) to the the civil servants' SHI fund was set at 5.1% of civil servants' salaries, while the contribution of the fund's retired pensioners was gradually increased from 2.55% to 4% in 2013.

Out-of-pocket payments increased as a percentage of total health expenditure from 27.6% in 2009 to 28.8% in 2012 (see GR Table 2). Greece has always been characterized as quite a “privatized” system, particularly because of public underfinancing (Siskou et al., 2008). The black economy, including informal payments, represents a significant part of out-of-pocket payments (approximately 30%) and is indicative of the corruption in the health sector. Although these payments are very common in order to support insufficient health care budgets, they represent the worst option for financing the health sector as they cause inequalities affecting mostly the poor and vulnerable groups (Liaropoulos et al., 2008; Kaitelidou et al., 2013).

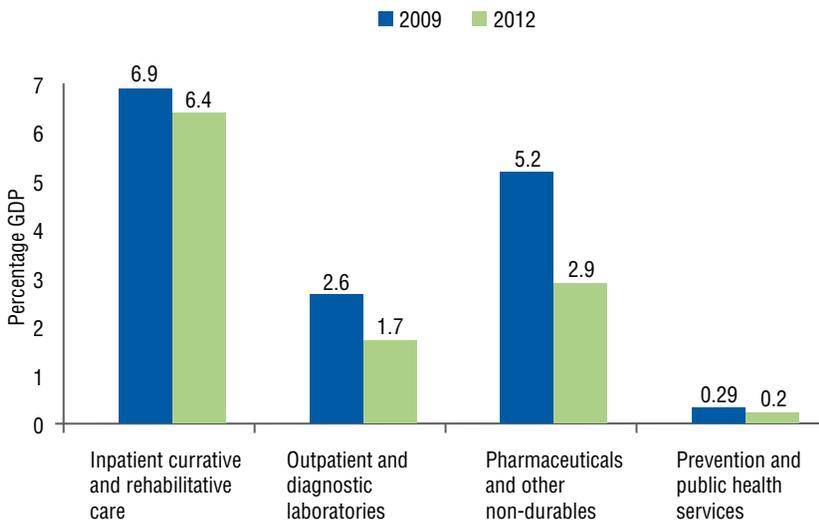
An increase in private (voluntary) health insurance between 2003 and 2012 has been observed (GR Table 2), although this still remains low compared with other EU Member States (Siskou et al., 2009). A number of factors explain people's reluctance to pay for additional insurance, including economic recession, social and cultural factors (e.g. low average household income), high unemployment and obligatory and full coverage by social insurance.

Government spending on prevention and public health services also was cut by around 13% even though this sector was already underfinanced in Greece.

While the mean per capita expenditure on such services in EU Member States was €75.8 in 2009, the amount for Greece was estimated at €26.2, with further cuts reducing it to €23.1 in 2012 (OECD, 2013). Similarly, the expenditure for outpatient public curative services in Greece is 2.7 times lower than the EU mean for these services (OECD, 2013).

Summing up, GR Table 2 highlights the overall reductions in health care spending between 2009 and 2012 (the latest year for which data are currently available). There have been consistent reductions not only in total current health expenditure but also in the public share of that expenditure (including spending by SHI funds, which decreased by 29.3% between 2009 and 2012). The changes in government spending on health by each subsector during the same period is shown in GR Fig. 2. It is clear that reductions have occurred across the board in hospital inpatient (curative and rehabilitative) care (7%), outpatient care (34.6%) and pharmaceuticals and other medical non-durable products (44.2%).

GR Fig. 2 Government spending on health by sector in Greece, 2009–2012



Source: OECD, 2013.

3.2 Changes to coverage

Population entitlement

Until 2011, the Greek SHI system provided coverage for almost 100% of the population through a network of several funds. The system was, and still is, linked to employment status and type of employment. The merger of almost all SHI funds and the creation of a unified fund had been proposed in several

reforms since 1968 but had never been implemented. This situation changed in 2011 with the creation of the new National Health Services Organization (EOPYY) (see section 3.3).

EOPYY was intended to cover the vast majority of the population (workforce, dependants and pensioners), assuming the presence of only short-term unemployment. The basis for entitlement is insurance status. However, in the context of the deep crisis, unemployment rose rapidly to reach 27.3% in 2013. Under pre-existing legislation, EOPYY only effectively covers the unemployed for a maximum of two years, thus leading to a rise in the percentage of the uninsured population.³ The Ministry of Labour currently estimates that approximately 2 million uninsured people do not have official access to health care. In order to address the high number of uninsured people, the Ministry of Health established in September 2013 a “Health Voucher” programme targeting people who have lost their insurance coverage and their dependant family members, which provides them with access to primary health care services (visits to contracted physicians, national health service facilities and services provided by contracted diagnostic centres). Health vouchers have a duration of four months and cannot be renewed. The programme was estimated to cover approximately 230 000 uninsured citizens until the end of 2014.⁴

The benefits package

In June 2011, the benefit packages of the various SHI funds were standardized to provide the same reimbursable services across all funds, creating a new, common benefits package under EOPYY.⁵ This process coincided with what is, in effect, the gradual administrative merger of the health divisions of the major social security funds (IKA, OGA, OAEE, OPAD, Oikos Naftou and TAYTEKO, covering salaried employees, agricultural workers, the self-employed, civil servants, sailors and merchant seamen, and banking and utilities employees, respectively) under EOPYY.⁶ A basic characteristic of the common package is the reduction in benefits to which the insured are entitled. For example, some expensive examinations, including polymerase chain reaction tests and tests for thrombophilia, that used to be covered, even partially, on an outpatient basis were removed from the EOPYY benefit package. In addition, entitlement restrictions were introduced in relation to childbirth, air therapy, balneotherapy, thalassaemia treatment, logotherapy and nephropathy treatment.

3 According to Laws 2434/1996, 2639/1998 and 2768/1999 and related ministerial circulars, unemployed people are covered for health insurance for two years.

4 However, at March 2014, only approximately 23 000 health vouchers had been issued (out of 80 000 applications).

5 The common benefits package is very similar to that which previously existed for the largest social health insurance fund, IKA.

6 While the administration of the funds and their benefits packages have been brought into EOPYY, in some respects they are still operating as separate entities during the current transitional period.

Moreover, the introduction of a negative list for medicines in 2012 resulted in the withdrawal of reimbursement status of various drugs that had previously been reimbursed (see also section 3.3).

User charges

From 2011, an increase in user charges from €3 to €5 was imposed in outpatient departments of public hospitals and health centres. In addition, Law 4093/2012 introduced a €25 patient fee for admission to a state hospital from 2014 onward and an extra €1 for each prescription issued under the national health service (both in primary care and inpatient settings). However, the hospital admission fee was soon revoked because of the strong reaction of health care professionals and various other stakeholders; instead there are plans to replace it with an extra tax on cigarettes. User charges in all public facilities were removed for certain vulnerable groups (diabetics and transplant recipients have been added to the list). Increases in co-payments for medicines for specific diseases are outlined in GR Table 4. It is noteworthy that average monthly pharmaceutical expenditure increased between 2012 and 2013 despite price reductions in pharmaceuticals. This may be mainly attributed to increases in cost-sharing levels from October 2012. In general, average cost-sharing for pharmaceuticals rose from 13.3% in 2012 to 18% in 2013. Interestingly, only 8% of prescribed drugs (packets) were provided with 0% co-payment in 2013 compared with 13% in 2012 (Siskou et al., 2013).

GR Table 4 *Increases in medicine co-payments for specific diseases in Greece, 2011*

Diseases	Co-payment increase
Alzheimer's disease, dementia, epilepsy, angiopathy, Buerger's disease, diabetes type 2, Charcot's disease	From 0% to 10%
Coronary heart disease, hyperlipidemia, rheumatoid arthritis, psoriatic arthritis, lupus, vasculitis, spondyloarthritis, scleroderma, chronic obstructive pulmonary disease, pituitary adenomas, osteoporosis, Paget's disease, Crohn's disease, cirrhosis	From 10% to 25%
Pulmonary hypertension	From 0% to 25%
Haemodialysis	No co-payment for medicines specifically treating the disease; previously, patients were exempt from co-payments on all drugs

Under Law 2883/2012, user charges for diagnostic tests in public hospitals have been abolished across the board even for the SHI funds that previously used to charge 25%.

3.3 Changes to health service planning, purchasing and delivery

A number of measures have been introduced in an attempt to enhance efficiency through structural reforms, while others target shorter-term cost-cutting.

Health system structural reforms

Structural reforms, particularly those targeting the fragmented and inequitable SHI system, had been identified as necessary long before the crisis occurred (Economou, 2010). Based on the provisions of the first MoU, Law 3863/2010 established a new framework for the functioning of the SHI system, which stipulated:

- the separation of the health branches of the wider social security funds from the administration of pensions;
- the merger of these health funds in order to simplify the overly fragmented SHI system;
- bringing all health-related activities under the Ministry of Health and Social Solidarity;⁷ and
- the establishment of the Health Benefit Coordination Council.

The aim of the Council, whose actual existence was short lived, was to simplify the overly fragmented system with the establishment of criteria and terms for contracts between the social security funds and all health care providers in order to achieve reductions in spending.

By far the most significant structural reform has been the subsequent establishment of EOPYY and the administrative merging of the health care branches of the main SHI funds into a single health care insurance fund. EOPYY formally began operation in June 2011 and will act as the sole purchaser of medicines and all health care services for all those insured, thus acquiring higher bargaining power with suppliers (see below). EOPYY is also the country's main new body tasked with managing primary care. Its role is to coordinate primary care, regulate contracting with all health care providers and set quality and efficiency standards, with the broader goal of alleviating pressure on ambulatory and emergency care in public hospitals.

Another significant development has been the effort to achieve greater decentralization of health care authorities. In June 2010, the new government enacted a law to establish a new architecture for municipalities and regions (known as the Kallikratis Plan). The Kallikratis Plan created 13 regions to

⁷ Apart from the Ministry of Health, a number of other ministries previously had health-related responsibilities. For example, the Ministry of Labour was responsible for the health branches of the insurance funds while the Ministry of Development was responsible for the pricing of medical products.

replace 76 prefectures and 1034 municipalities were reduced to fewer than 370. Under the reorganization, regional health authorities were expected to play a much greater role in managing and organizing human resources in the national health service and in the provision of primary care services. However, to date, efforts to create these more empowered decentralized regional authorities either have not been implemented or have been substantially weakened. The existing regional health authorities have weak co-coordinating functions and the health care system is still characterized by strong centralization. A possible explanation is limited administrative capacity, limited available economic resources and (currently) the absence of a clear plan for reforming primary care (see also section 5.2).

More recently, (in February 2014) the Greek Parliament passed new legislation on primary health care, establishing the National Primary Health Care Network, coordinated by the regional health authorities. All primary health care facilities under EOPYY, rural health centres and their surgeries as well as the few urban health centres, are now under the jurisdiction of the regional health authorities. The aim is for these facilities to function 24 hours a day, seven days a week. In addition, the law provides for the establishment of a referral system based on GPs. The effectiveness of this new measure will rely heavily on robust implementation.

Purchasing and procurement

Under EOPYY, procurement of health supplies will be planned at the regional level via the development of regional programmes for goods and services. These programmes have to be adopted by the Co-ordination Committee for Procurement, which is responsible for assigning a contracting authority and the tender mechanism for each type of procurement. The Committee is able to select either a company or a private agency as a contracting authority, in line with its objective of achieving economies of scale and overall efficiency.

Hospital sector efficiency

Several measures have been introduced or are being attempted in the hospital sector, involving structural reforms, changes to the hospital payment system and reductions in the cost of hospital supplies.

Major restructuring of the public hospital sector has been targeted as part of efficiency-enhancing efforts, with the Minister of Health announcing in July 2011 a plan to cut the current number of public hospital beds from 35 000 to 33 000 and reduce the number of clinics and specialist units from 2000 to fewer than 1700, with 330 merging and another 40 being moved. In addition, instead of the 133 national health service hospitals having their own management boards, there

will be a total of 83 councils responsible for administrating all public hospitals, and the number of directors and deputy directors will be reduced from 175 to 145 (Ministry of Health and Social Solidarity, 2011). It is estimated that these changes will lead to a reduction in spending by €75 million by 2014 and €150 million by 2015. The actual impact of these measures and their expected cost savings remain to be verified in 2015. Furthermore, as a revenue-raising measure, 500 public hospital beds will be set aside for priority use by private insurance companies for their clients. In addition, no new doctors will be hired in state-owned institutions, but private doctors contracted with EOPYY may work in public hospitals one day a week. So far, progress in implementing this major restructuring of the sector has been limited. On the one hand, the planned mergers between hospitals owned by IKA, the main SHI fund prior to the introduction of EOPPY, and those owned by the national health service have been implemented, putting them all under state ownership. On the other hand, to date, implementation of the other major elements outlined above has been limited to the administrative merging of adjacent hospitals and the consolidation of similar departments within the same hospital.

In terms of rationalizing the hospital payment system, the former reimbursement method based on a fixed per diem charge was abandoned since it did not reflect the real hospitalization cost, excluding among others, the cost of personnel salaries. In 2012 a new payment system (called KEN-DRG), based on the German version of diagnosis-related groups, was developed. The new system was implemented in January 2013 but has encountered a number of problems. A recent KEN-DRG data analysis showed that 8–21% of overall hospital revenue, depending on the health region considered, resulted from outlier payments, mostly covering per diem fees (i.e. cases in which inpatient treatment exceeded the average length of stay for the specific KEN-DRG). This implies that the current system requires corrective amendments and indeed, so far, four revisions have been made (Polyzos et al., 2013). Another problem is that the MoU impelled Greece to implement a diagnosis-related-group system in a very short time period (one year). As a result, the pricing of KEN-DRGs is based not on actual costs and clinical protocols but was achieved via a combination of activity-based costing with data from selected public hospitals, and “imported” cost weights. Furthermore, the salary cost of those employed in hospitals is not included.⁸

Reducing input costs, including the overall cost of hospital supplies (pharmaceuticals, medical supplies, orthopaedics and chemical reagents) has been a major objective. Hospital supplies represent 68% of total hospital operating expenses (i.e. hospital expenditure excluding salaries and wages)

⁸ Those employed in public hospitals are civil servants paid directly through the state budget.

and these costs were cut by approximately 38.2% between 2009 and 2011 by streamlined procurement procedures, implementing pharmaceutical policy reforms and through horizontal cuts decided by the Ministry of Health and Social Solidarity. Expenditure for orthopaedics and prosthetic devices was reduced by more than 67% during this period, followed by medical supplies, pharmaceuticals and chemical reagents, which fell by 38.5%, 29% and 30.5%, respectively (Ministry of Health and Social Solidarity, 2012b).

Counterbalancing these gains however, operating expenditures (e.g. consumables, overheads, security) showed a considerable increase in many hospitals and the immediate causes are not known. For example, in a sample of 40 general hospitals (out of 90) for which all expenditure data were available for 2009–2011, expenditure on various contracted-out services (e.g. legal services, counselling services) recorded an increase of 40% in 2010 (compared with 2009) and a further increase of 27% in 2011, while for the same periods the same hospitals managed to achieve decreases for pharmaceuticals equalling 12% (in 2010) and 28% (in 2011) and for medical supplies equalling 25% (in 2010) and 18% (2011). The results for other overheads or outsourcing services are similar. Examples include catering (an increase of 22% in 2010 and 12% in 2011 for the 19 hospitals for which data were available for the three-year period); cleaning (16% increase in 2010 and 24% increase in 2011 for 50 hospitals); and security services (23% increase in 2010 and a further 27% increase in 2011 for 34 hospitals). Considering the fact that overheads are among the first expenditures to be cut during cost-containment efforts, such results highlight that this is an area that should be examined more thoroughly in terms of identifying impediments to the efficient allocation of resources (Kaitelidou et al., 2012a).

In the private hospital sector it is difficult to obtain a clear picture as yet since the available data seem to be controversial. Anecdotal evidence is accumulating that the demand for private hospital services has decreased. According to ICAP (2011), private hospital revenues decreased by 14.1% between 2009 and 2010, which may reflect, among other things, delayed reimbursements by EOPYY. Despite this negative trend, the number of private hospital beds only slightly decreased (by 0.3%) between 2009 and 2010 and the number of staff fell by 5.3% (ICAP 2010, 2011). However, according to OECD data (OECD, 2013) private hospital expenditure (on a cash basis) slightly increased, from approximately €1.98 billion in 2009 to €2.53 billion in 2011. The main funding source was households since households contributed €921.6 million to total private hospital expenditure in 2011, compared with €771 million derived from general government and €360.6 million from private insurance. The corresponding figures in 2009 were similar: €852.4 million (households), €824.4 million (general government) and €298.3 million (private insurance).

Reductions in health sector salaries and changes to working conditions

Enhancing efficiency without the appropriate staffing levels and staff mix is – at best – a difficult endeavour. Even before the crisis, staffing levels for nurses and other health sector workers (excluding physicians) were already very low in Greece. According to OECD data, Greece has the lowest number of nurses per 1000 population in Europe (OECD, 2013). Exacerbating this problem, after the MoU, many health care professionals decided to retire in order to ensure better pensions; consequently, staffing levels have worsened.

The salaries of health care personnel in Greece were among the lowest in the EU even before the crisis. However, in the drive to reduce health system input costs, salary cuts were applied in 2010 to all public health care staff, including administrative personnel, doctors, nurses, pharmacists and paramedical staff (12% in January 2010 and a further 8% in June 2010). Additionally, almost all subsidies to health care staff were abolished.⁹ In practice, three types of salary cut actually took place: horizontal cuts from tax increases and a special solidarity levy, cuts through the introduction of a new unified salary system for all public sector employees and cuts through reductions in the “special salary system” for doctors. Moreover, planned performance-based productivity bonuses were not implemented as no targets were set, nor did any staff evaluations take place.

Other workforce measures aimed at reducing costs include the non-renewal of contracts for temporary staff employed under fixed-term contracts and a reduction in the replacement levels of retiring staff (for every five people retiring only one will be appointed).

Enhanced monitoring and accounting procedures

Additional measures adopted concern the governance, monitoring and financing of the health system, as well as for hospitals and pharmaceuticals. More precisely, measures include:

- greater budgetary and operational oversight of health care spending by the Finance Minister and publication of audited accounts;
- data on expenditure pending payment (arrears) of the state and hospitals monthly, 30 days after the end of each month, to be provided by the Ministry of Finance;
- arrears to be reported to parliament as they develop (currently they are revealed only about every three or four years, when governments tend to turn over, and no aggressive policy response is discernible);

⁹ Indicatively, a registered nurse with 16 years of professional experience receives a gross monthly salary of €1509.

- the compulsory use (since July 2012) of e-prescribing for all medical activities (medicines, referrals, diagnostics, surgery) in all national health service facilities;
- the establishment by the Ministry of Health and Social Solidarity of two web-based platforms, one for gathering and assessing monthly data from national health service hospitals (ESYnet; Ministry of Health and Social Solidarity, 2012a) and one for monitoring regional health resource allocation and regional health status (Health Atlas; Ministry of Labour, Social Insurance and Welfare, 2014); and
- the development of the Price Monitoring Tool for the collection and analysis of tenders and technical specifications published by hospitals.

In addition, a collaboration between the Ministry of Health and Social Solidarity, the Hellenic Statistical Authority (ELSTAT) and the University of Athens Centre for Health Services Management and Evaluation (CHESME) has resulted in the implementation (in 2013) of the OECD System of Health Accounts in Greece, providing for the first time, health economic data harmonized with the methodology used by Eurostat and the OECD.

In hospitals, a number of specific monitoring and accounting reforms have been introduced or are under consideration. For example, double-entry accrual accounting was introduced in all public hospitals in January 2012 and the cost accounting system was expected to be introduced during 2013. A uniform coding system was introduced in 2012 along with the establishment of a common registry for medical supplies for procurement purposes (by the Co-ordination Committee for Procurement). However, computerization, integration and consolidation of information technology systems, and centralization of information has not yet been achieved and hospitals use their own individual local information systems.

Pharmaceutical sector reforms

The pharmaceutical sector has seen a number of measures aimed at containing costs and enhancing efficiency.

1. Responsibility for the pricing of medicines has been transferred to the National Drug Organization (EOF) and all other aspects of pharmaceutical policy to the Ministry of Health and Social Solidarity. Previously, prices were set by the General Secretariat of Commerce.¹⁰ This change was designed to stimulate more efficient decision-making and administration.

¹⁰ The General Secretariat of Commerce is situated within the Ministry of Development, Competitiveness, Infrastructure, Transport and Networks.

2. A positive list for medicines was reintroduced in 2011 (it had been abolished in 2006 on the grounds of enhancing access to medicines). Initially, the positive list, in and of itself, had little impact since all drugs that were reimbursed at the time were included in the positive list. Rather, the reintroduction was motivated by revenue raising as there was a requirement that a special fee be paid by pharmaceutical companies whenever a new drug was added to the positive list. In 2012, a new negative list of non-reimbursable medicines was introduced, containing many pharmaceuticals that previously were eligible for reimbursement. Under the terms of the MoU, this negative list should be updated twice a year. In parallel, an over-the-counter drug list has been in place since 2012, comprising many medicines that until then had been reimbursed (e.g. some pain relief medicines) but which now must be paid for out of pocket.
3. Since November 2012, the prices of all medicines have been targeted through a new reference pricing system for the reimbursable drugs on the positive list, which has reduced the reimbursable price of drugs by up to 70% in some cases. This strategy followed the reduction in VAT for medicines (from 11% to 6.5%), implemented in 2011, which also reduced medicine prices. In parallel, a mechanism of quarterly rebates (automatic clawback) to be paid by the pharmaceutical industry has been implemented should pharmaceutical expenditure exceed pre-agreed ceilings.
4. The government has promoted the greater use of generic medicines and prescribing by active substance. A policy is now in place stipulating that the maximum price of generics cannot be set at more than 60% of branded drugs. Another important measure has increased the use of generics in public facilities, under a policy that 50% of medicines prescribed/used in public hospitals should be generics. Consequently, an increase in the use of generics was reported by almost all hospitals, representing 26% of the total pharmaceutical expenditure in public hospitals (as a value) in 2011 (Ministry of Health and Social Solidarity, 2012b).
5. Pharmaceutical expenditure has been tackled via more efficient purchasing strategies by national health service hospitals, including the reduction of drug procurement prices by 20% through the implementation of price caps for approved drugs; the establishment of tenders for the supply of pharmaceutical products based on the active substance; and the development of an (extended) list of hospital drug substances¹¹ for which the Co-ordination Committee for Procurement (see below) will issue unified tenders for supply contracts.

¹¹ The hospitals drugs list is an extended version of the general positive list, containing more drugs and substances.

6. In a demand-side measure, prescription guidelines for physicians have been developed and issued on the basis of international prescription guidelines (Economou, 2012).
7. The implementation of a nationwide e-prescribing system is expected to limit the growth of pharmaceutical expenditure, particularly costs related to overprescribing since the system monitors the prescribing pattern of physicians and the dispensing patterns of pharmacies. Use of e-prescribing is also expected to serve as a tool to promote alignment with prescribing guidelines, document the medication profile of the population, support the process of applying clawbacks and enhance transparency by facilitating the prescription claims procedure.

Overall, reductions in pharmaceutical expenditure are being pursued mainly by price reductions, increased rebates (clawbacks imposed on private pharmacies and pharmaceutical companies for both inpatient and outpatient drugs) and, to some extent, control of the volume of consumption (e.g. via prescription control mechanisms and e-prescribing). The reductions in outpatient pharmaceutical expenses are being pursued not only through price reductions but also through the introduction of innovative and more efficient ways of distributing expensive drugs to chronically ill outpatients through public pharmacies, where prices are lower than in private pharmacies. In this respect, the percentage of SHI funds' pharmaceutical expenditure for drugs dispensed through public pharmacies increased from 6.5% in 2009 to about 13% in 2011.

Reforms for pharmacies

Measures have also been introduced to liberalize the pharmacy market to increase access and enhance efficiency: more than one pharmacist can now work at the same pharmacy; new pharmacists can form partnerships with incumbents; pharmacies can be established in closer proximity to each other; hours of business have been extended; a decrease in the population threshold for setting up a pharmacy has been implemented; and rebates can be imposed on pharmacies, effectively reducing their profit margins.

Implications for health system performance and health

4.1 Equity in financing and financial protection

Research conducted before the current economic crisis has documented amply that the financing of the Greek health care system is significantly inequitable. Public funding of the health sector is highly regressive, disproportionately burdening the lower socioeconomic groups of society, for a number of reasons: the high level of official and unofficial (hidden economy) private spending on health, widespread tax evasion and the high proportion of indirect taxation and social security contribution evasion (Liaropoulos et al., 2008; Siskou et al., 2008; Economou & Giorno, 2009; Economou, 2010). The crisis exacerbated existing problems, and many of the policy measures introduced under pressure from bailout conditions have made health sector financing more inequitable. The imposition of public health spending restrictions (to no more than 6% of GDP) and the simultaneous decline in GDP (since 2009, with further decreases in the years that followed) means that the public health sector is called upon to meet the increasing needs of the population with decreasing financial resources. This has negative effects, particularly for the middle and the low income households that do not have the disposable income to buy private health services. Moreover, rising unemployment, part-time working, flexible employment and austerity measures (e.g. public sector salary cuts) have led to falls in household income and SHI funds' revenues. This situation has led to additional strains on the already overloaded public health system. Combined, these factors could lead to a de facto two-tier health system where those who can afford to pay for private health services will be able to meet their health needs, while those without sufficient resources must attempt to access services from a severely strained public system.

Other burdens on the population, particularly the poorer strata of society, include the increase in user charges, particularly for outpatient health care;

private physician consultations in the afternoon surgeries of public hospitals on a fee-for-service basis; patient fees for admission to public hospitals; increases in co-payments for medicines; and the removal of certain laboratory and other tests from EOPYY reimbursement.

4.2 Access to services

Access to care, is an essential element in achieving quality of life and growth, a main objective in the *Europe 2020* strategic plan (European Commission, 2014). In times of crisis, reduced resources have a negative impact on access to health care services mainly through increased demand, increased waiting times and increased co-payments, but even through decreased ability to make informal payments (Morgan & Astolfi, 2013).

Although there are no official data, anecdotal evidence from health care personnel suggest that waiting times to receive public health services have increased. In addition, according to data published by a market research company (which, however, are limited in scope, with small samples and, in some cases, unknown methods), 19% of survey respondents reported major problems in accessing public hospitals because of waiting list issues and 28% of the sample stated that they could not buy their medicines because of continuing pharmacists' strikes during 2011 (Tripsa et al., 2012).

In terms of actual utilization rates, the results are mixed. First, it appears that the use of public services, as opposed to private ones, has risen. For example, a 24% increase in patient admissions to public hospitals (with an average length of stay of 4.25 days) was recorded in 2010 compared with 2009, and a 6% increase in patient admissions (with an average length of stay of 4.13 days) was recorded in 2011 compared with 2010. Additionally, the hospital bed occupancy rate rose from 64% in 2009 to 69% in 2010 and to 73% in 2011. There were also 6% and 18% increases in surgical interventions and laboratory examinations, respectively, from 2010 to 2011 (Ministry of Health and Social Solidarity, 2012a,b).

Moreover, visits to public hospital dental services and obstetricians also increased (these are two areas that, historically, have been mainly privately funded by the Greek population). Consequently, utilization has increased at a time when inputs and/or input prices have fallen. However, without adequate data on such factors as the quality of services, it is not possible to discern whether meeting these increased levels of utilization translates into actual increased efficiency in the delivery of the services mentioned. Nor can we tell whether or not adequate and appropriate levels of care are being provided and meet patients' needs.

At the same time, visits to outpatient departments of public hospitals decreased by 8.9% in 2010 compared with 2009 (from 12 497 294 in 2009 to 11 383 788 in 2010) and remained relatively stable in 2011 compared with 2010 (from 11 383 788 in 2010 to 11 367 493 in 2011). In addition, visits to afternoon surgeries of public hospitals (compulsory afternoon shifts)¹² decreased by 6% in 2010 compared with 2009 and by 19% in 2011 compared with 2010 (from 559 358 in 2009 to 527 602 in 2010 and 429 903 in 2011) (Ministry of Health and Social Solidarity, 2012a,b).

Law 3868/2010 introduced the mandatory all-day functioning of all public hospitals in order to increase access to health services and to cope with extra demand, as well as to increase revenues.¹³ While the second objective was met (the target revenues of over €100 million was achieved), the decline in the number of visits to public hospitals is difficult to interpret; it may suggest that the policy did not achieve the first objective, which was to increase access.

Since the onset of the crisis, a number of nongovernmental organizations, such as Médecins du Monde and Médecins sans Frontières, which used to cater primarily for immigrant populations, have scaled-up their provision of a limited number of health services to a much broader constellation of groups, including the poor, the unemployed, the uninsured and undocumented migrants. Moreover, a number of “social surgeries”, medical practices staffed by volunteer doctors providing health services and drugs, have been established in large urban centres to cater to those in need.

4.3 Impact on hospital sector efficiency

A recent university research study examining the performance of public hospitals in terms of their efficiency during the recession found that despite serious cost-containment efforts, only 28% of the 90 hospitals analysed were found to be efficient (Kaitelidou et al., 2012a). However using bootstrapping methodology, none of the hospitals appeared to be efficient while the utilization of the available inputs did not exceed 80%. Nevertheless, among the best practices used were effective procurement policies, e-auctions, tendering and renegotiation of contracts with a number of suppliers. In 2011, general hospitals focused only on cost-containment efforts, which, in fact, did not have the expected results. Expenditures were indeed cut by approximately €680 million (from 2009 to 2011) but this was mostly the result of cuts in “easily

12 The afternoon surgeries provide medical interventions beyond diagnostic and therapeutic medical actions; that is, they now also undertake invasive operations.

13 All-day functioning of hospitals had been introduced in 2001 but only applied to hospitals with the necessary infrastructure to support all-day clinics. The 2010 measure is obligatory for all public hospitals.

identified supplies” such as pharmaceutical, orthopaedic or medical supplies. Two more studies presented similar findings, highlighting that public hospitals have succeeded in reducing their budgets but at the same time not increasing substantially, their efficiency scores (Katharakis et al., 2013; Tsavalias, 2013).

4.4 Quality of care

Several initiatives have been implemented in attempts to improve quality of care. According to Law 3868/2010, all hospitals are now obliged to set up quality assurance departments and quality assurance committees. Their roles are to monitor and evaluate whether procedures on patient safety (e.g. incidence of hospital infections and control of antibiotic-resistant bacteria) and laboratory accreditation are being met. They report to the Ministry of Health and Social Solidarity on a quarterly basis. Additionally, patient satisfaction surveys are being conducted in hospitals on a compulsory basis. The Ministry of Health and Social Solidarity also organizes conferences on various aspects of health care quality which are compulsory for hospital employees, with the aim of promoting continuous education in the field. Lastly, a new agency, the National Evaluation Centre of Quality & Technology in Health (EKAPTY, <http://www.ekapty.gr/>) was established in 2010 for the certification of quality management systems, evolving from the Research Centre for Biomaterials (EKEVYL).

Although these measures are expected to have a positive impact, some other aspects of the functioning of the health system raise questions about the quality of services. For example, shortages in nursing personnel are a permanent characteristic of the public hospital sector, and staffing level problems have worsened since the application of the MoU as many health care professionals chose retirement in order to ensure better pensions,. The impact on staff reductions on both efficiency and quality of services is not known but it is expected that both will decline.

4.5 Transparency and accountability

Before the economic crisis, a number of institutions were tasked with combating corruption and ensuring transparency and accountability in public administration and the health care sector. These include the General Inspector of Public Administration, the Body of Inspectors for Health and Welfare Services (SEYYYP) and the Ombudsman of Health and Welfare as well as YPEDYFKA, the agency that monitors SHI funds' expenditure. Although these institutions have seriously tried to achieve their mandates, their effectiveness has been limited,

mainly because of the incentives for unethical behaviours and opacity promoted by the health system's structural deficiencies. These deficiencies include

- a lack of information for health service users;
- long waiting lists because of unequal and inefficient allocation of human and economic resources and of facilities;
- ineffective managerial structures, lacking adequate information management systems and in many cases staffed by personnel who do not have the right managerial skills;
- limited administrative capacity;
- lack of coordination among the large number of payers;
- absence of adequate financial management and accounting systems;
- lack of monitoring processes and supervision mechanisms;
- irrational pricing and remuneration policy; and
- low health professionals' salaries that are not related to their performance.

Some of the reforms introduced after 2010 are expected to have a direct effect on transparency and accountability. Under Law 3892/2010, all physicians associated with the social security institutions, doctors working in public health service units as well as pharmacists, were required to register with the e-prescription system and enter the required prescription electronically. Later, the use of e-prescribing for all other medical acts (referrals, diagnostics, surgery) was expanded to all national health service facilities. Moreover, a comprehensive range of positive measures have been implemented to increase monitoring and make financial transactions within the health system more transparent (see section 3.3).

Last, but not least, the Clarity Programme (Diavgeia, <https://www.diavgeia.gov.gr>) promotes transparency and openness of the Greek Government and its policies. Since October 2010, all ministries, public institutions, regulatory authorities and local governments have been obliged to upload their decisions onto the Internet, and, henceforth, these decisions, including those in the health sector, cannot be implemented if they are not uploaded on the Diavgeia web site.

These measures may have positive long-term effects provided that additional attention is given to their full implementation.

4.6 Impact on health

Economic crises can negatively affect health status, not least through declines in public spending and household income (Musgrove, 1995; Stuckler et al., 2009). Both have sharply declined in Greece, and the effects of the crisis and austerity

on health have already been marked, particularly for vulnerable groups. Since the onset of the crisis, several studies have been published investigating the effects on public health, and the latest available information is reviewed here.

While it will take several years for the full effects of the crisis on population health to be fully assessed, key indicators have already significantly deteriorated. In relation to population health, the first effects of the crisis have been noted in self-reported health, mental health and infectious diseases. Studies of self-rated health using a pre-crisis benchmark found an increase in the prevalence of people reporting their health as bad, and who linked this development to the economic crisis (Kentikelenis et al., 2011; Zavras et al., 2012; Vandonos et al., 2013). In addition, a significant increase in people reporting unmet medical and dental need was noted (Kentikelenis et al., 2011).

Mental health is particularly vulnerable to rapid economic fluctuations (Durkheim, 2006), and the first available data reveal worrisome trends. There was a 45% rise in suicides between 2007 and 2011 (ELSTAT, 2013), and this increase was particularly pronounced for men of working age (Kondilis et al., 2013). Psychiatric surveys also reveal a worsening of mental health status. The one-month prevalence of major depression was found to be 8.2% in 2011; a nearly 5% rise since 2008. This rise was significantly associated with economic hardship, thus linking the development to the crisis (Economou et al., 2012). In addition, a recent survey found a 36% increase between 2009 and 2011 in the number of people reporting an attempted suicide in the month before the survey, with a higher likelihood for those experiencing high economic distress (Economou et al., 2011).

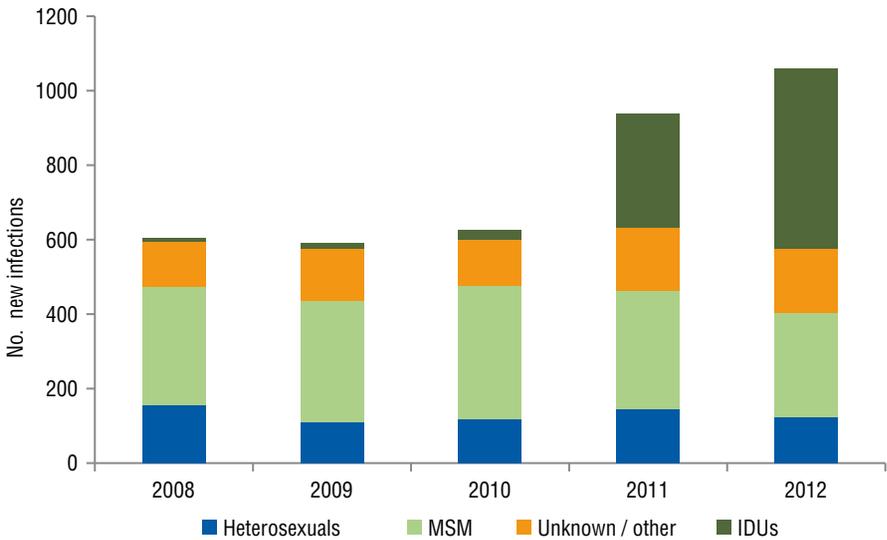
Child health has also been affected. The latest available data indicate a rise in low-birth-weight babies by 19% between 2008 and 2010 (OECD, 2013), which can have long-term implications for a child's health and development (UNICEF, 2013). The long-term decline in infant mortality has reversed, with an increase of 43% over the same period (Eurostat, 2013). In addition, obstetricians have reported a 32% rise in stillbirths during the same period, while fewer pregnant women have access to prenatal care services (Vlachadis & Kornarou, 2013). While these indicators cannot be directly attributed to the effects of the economic crisis, the reversal in previously improving trends is a worrying factor.

Infectious diseases have been shown to spread in periods of economic turmoil (Stuckler, King & Basu, 2008) and according to researchers at the Greek Centre for Disease Control and Prevention, Greece “has been suffering a disproportionately high morbidity and mortality burden of different large-scale epidemics since the beginning of the economic crisis” (Bonovas & Nikolopoulos, 2012). For example, Greece ranked 4th out of 30 countries in deaths from the

outbreak of the A(H1N1) influenza virus, and additional outbreaks of malaria and the Western Nile virus were noted over the period 2009–2012.

The crisis and associated adjustment policies have affected the health of vulnerable groups in particular (cf. Rechel et al., 2011). The most striking finding relates to the increase in incidence of HIV infections, with injecting drug users being the main driver for the increase (GR Fig. 3). The increase among this subpopulation of carriers was 12.3-fold from 2010 to 2011, and 1.6-fold from 2011 to 2012. This increase is directly linked to the crisis as funding available for HIV prevention and treatment services became limited. The distribution of both syringes and condoms fell between 2009 and 2010. However, in response to the outbreak, the number of syringes distributed rose from 7 per injecting drug user per year in 2010 to an expected 45 in 2012. While this is a welcome increase, it is still well below the minimum of 200 recommended by the European Centre for Disease Prevention and Control (2012).

GR Fig. 3 Incidence of new HIV infections by transmission category in Greece, 2008–2012



Notes: IDU: Injecting drug users; MSM: Men who have sex with men.

Source: European Centre for Disease Prevention and Control, 2012; KEELPNO, 2013.

On a more positive level, road accidents and related injuries and deaths are in steep decline, as people switch to alternative, more economical ways of travel or use cars less. Between 2008 and 2010, road traffic injuries fell by 23.5% and deaths by 37% (Michas & Micha, 2013).

Discussion

5.1 Drivers of change

Most of the reform measures introduced after 2010 in the Greek health care sector have been determined by external agents and are specified as targets in the MoUs. This might be considered as a paradox given that quite a few of the measures were proposed in the past and are not new. Priority areas and necessary reform measures focusing on restructuring of primary health care, pooling of financial resources, changing the provider-payment system, introducing new managerial and administrative methods, adopting cost-effectiveness and monitoring mechanisms, and developing policies for better allocation of resources have been repeatedly analysed and developed by the scientific community (Economou, 2010). The paradox lies in the fact that, although the structural problems of the health system had been recognized, the absence of political will to promote changes made reform proposals only exercises on paper.

Explaining the drivers of health system reform in Greece is not simply a story of the government responding to external shocks, although this is a central factor. In a recently published study on England and Italy, Doetter and Gotze (2011) concluded that economic shocks, while creating windows of opportunity for significant policy change, do not play as significant a role as “system-specific deficits” in driving reforms. However, system-specific deficits do not suffice in explaining changes in regulation. Rather the content, timing and successful passage of reforms also depends largely on the acceptance and diffusion of policy ideas by political actors, who, driven by political ideology, push certain policy solutions through. We also see value in the thesis of Tsoukas and Papoulias (2005), which argued that a successful change process must first disrupt the self-referentiality typical of state-political organizations, and that such disruption

happens mainly through externally generated behaviour-shaping information. Based on these insights, we conclude that in Greece's case the existence of system-specific deficiencies have provided the breeding ground for reform but in the absence of political will to drive the domestic reform agenda the role of economic shocks is crucial in promoting changes, particularly since political actors, decision-makers and stakeholders appear to disagree fundamentally over the values and the direction of health reforms (Economou, 2012).

However, a note of caution must be sounded. Although the current economic crisis may be seen as an external trigger that helped to create momentum for change, this does not imply an acceptance of the direction of all the reforms or of their impact on the effective and efficient functioning of the health system, or on equitable access to services.

5.2 Content and process of change

The reforms currently taking place in the Greek health care system have focused mainly on operational, financial and managerial dimensions. This might be considered reasonable as the reforms attempt to tackle serious long-term problems. However, this perspective seems to ignore the citizen/patient side of the equation in that the formulation of a patient-centred health system seems to be out of the scope of the current reform package. In order for the Greek health care system to achieve its stated objectives – to provide comprehensive and high-quality services equitably, universally and free at the point of delivery – it should be geared towards citizens and facilitate patients' orientation within the system. However, the Greek health care system is still chaotic for patients, given that a referral system based on general practice or primary health care groups has only just been mandated (in 2014) and we have yet to see whether its implementation will be successful. Since the creation of the National Health Service in 1983, Greece has lacked a GP-based comprehensive, integrated primary health care system, with gatekeeping functions, particularly in urban areas. Other areas that have not been included in the health reform agenda are measures to ensure continuity of care, establishing palliative care services and the integration of health and social care services. Consequently, up to now, the content and the process of change have been reduced to a strictly technocratic/managerial exercise without adequate consideration of the real health needs of the population.

Another important factor is that the general approach of cost-containment measures has taken the form of horizontal cuts (see GR Fig. 2) rather than a more sophisticated and strategic approach targeting resource allocation. Tellingly, the breakdown of government spending by sector (inpatient services,

outpatient services, pharmaceuticals, etc.), is almost the same proportionally (except for pharmaceuticals) both at the start (2009) and during the crisis (2011), indicating that cuts were made across the board in order to achieve the targets set under the MoU and without an effort to support services that may prove more efficient in the long term (e.g. primary care services). This highlights the fact that, so far, cost-containment and greater efficiency have not been achieved via the introduction of necessary and major structural reforms. For example, a reorientation of the health system towards health promotion and primary care has not played a central role in the reform agenda. Furthermore, no significant progress has been made with regard to hospital mergers.

In this regard, the recommendations of a study commissioned by the Minister of Health from CHESME in January 2011 have not been adopted. The study recommended the creation of a national network of health services made up mainly of primary care units and the largest hospitals of the groups in each health region. A new pattern of organizing hospitals into groups was also proposed, based on the reform of emergency care and the management of five main chronic diseases (acute myocardial infarction, stroke, cancer, diabetes mellitus and chronic obstructive pulmonary disease). In the context of improving hospital sector efficiency, ways of collaborations between the private and public sector and expenditure containment measures were also presented (Liaropoulos et al., 2012).

The difficulties the government has faced in introducing structural changes in the health care system, combined with the pressure exerted by the MoU provisions to achieve immediate results in health expenditure cuts, have resulted in a situation where the emphasis is on measures targeting micro-level management. Such measures include computerization, integration and consolidation of hospitals' information technology systems and the implementation of double-entry accrual accounting systems. Although most of these measures are going in the right direction, given that they place emphasis on the efficient functioning of health care units as well as on the rationalization of hospital funding, they do not adequately confront the fundamental structural inefficiencies of the health system.

It is also the case that in the hospital sector, cost reductions in supplies with a significant therapeutic impact in health care (e.g. pharmaceuticals and orthopaedics) have not been accompanied by similar monitoring and containment of expenditure on overheads and other supportive services, which actually recorded an increase in most hospitals (e.g. more than 60% of public hospitals increased their expenditures for cleaning and 45% increased security expenditures; see section 3.3). Policies promoting better resource allocation

should also be targeting other aspects of hospital performance, such as the control of overheads and administrative services, rational distribution of human resources and hospital beds, undertaking medical audits, adherence to clinical guidelines and further fine-tuning of the KEN-DRG payment system.

A third important point is that the side-effects of certain measures have not been taken into account adequately. An example is the case of allowing private doctors to work in public hospitals, given that dual practice creates incentives for such doctors to maintain long waiting lists in the public sector order to syphon off public patients to their private practices. Moreover, cuts to the already low salaries of health professionals working in the public system, particularly doctors, may lead to an increase in demands for informal payments, thus fuelling the black economy (see also section 3.1). Added to this, the worsening of reimbursement rates as well as working conditions has resulted in the migration of many young and well-qualified physicians and other health care professionals to other countries. In the longer term, this “brain drain” may have a negative impact on the quality of health services and the number of highly skilled personnel, which commonly have been trained at a significant public cost.

Another example is the impact of repeated pharmaceutical price reductions in order to reduce pharmaceutical expenditure, which also has led to an increase in pharmaceutical parallel exports from Greece and shortages of medicines in the country (Karamanoli, 2012). An alternative policy that would achieve expenditure reductions would be to make stronger efforts to control the volume of consumption and to improve and extend the implementation of the e-prescribing system. Moreover, attention should be paid not only to price and volume but also to innovative ways of distributing pharmaceuticals. For example, public pharmacies could ensure lower distribution costs for specific expensive drugs compared with private pharmacies. Additionally, procurement reforms (e.g. e-procurement, the establishment of a Pricing Observatory for Medical Supplies (since 2009) and more tendering and negotiations with suppliers) have led to a significant reduction of hospital budgets and should be encouraged further.

All of these factors highlight that the current health reform plan needs to be more coherent, integrated and well designed. In this respect, it is indicative that although the Ministry of Health and Social Solidarity established a Task Force of Independent Health Experts (as was stipulated in the second MoU) to assess and propose structural changes, as opposed to the fiscal measures usually dictated by successive MoUs, the Task Force's proposals have not been implemented (Health Task Force on Structural Changes in the Greek Health Care System, 2012).

5.3 Implementation challenges

The current phase of health reform in Greece faces a number of challenges. The first is the requirement to implement numerous, rapid and complex changes. The international experience of implementing health care reforms suggests that a big-bang approach based on the top-down imposition of a grand plan is not the most appropriate way to introduce change (Figueras, Saltman & Mossialos, 1997). However, in the case of Greece this fact has not been taken into consideration since the required changes have been rapid and in some cases not appropriately designed. Based on the provisions of the MoUs, and under the extremely strict reform targets and timetables imposed by its international creditors, the government has introduced a number of health reforms that follow the “shock” doctrine rather than the incremental approach.

The second challenge lies in the lack of political will and the resistance of key stakeholders to the introduction of structural reforms. A prevailing characteristic of Greek health policy has been the practice of voting in reform legislation that is soon abandoned or not implemented. Therefore, there is a gap between intentions and actual measures that seems to be reproduced even in times of economic crisis. As Mossialos, Davaki and Allin (2005) point out, health policy and health reforms in Greece have been path dependent and influenced by clientelism, the absence of consensus and weak civil society. The inability to bring about change has always been a consequence of the prevailing political conditions, the unresolved conflict between political parties and economic interests, and the substantial resistance from medical stakeholders.

A third challenge stems from the low level of administrative capacity and the inability of the public health system bureaucracy to introduce managerial reforms and to successfully complete complex tasks. The lack of information regarding health sector processes and outcomes, and consequently of performance evaluation, the absence of relevant technical skills and gaps in the flow of information between various government departments create a “comfort zone” that is resistant to change. It also engenders an organizational culture that lacks experience of evidence-based health policy.

5.4 Resilience in response to the crisis

The Greek health care system was not well prepared to cope with the challenges imposed by the economic crisis, given that it was suffering from multidimensional structural problems (section 2). These structural weaknesses created a health system that was vulnerable to economic fluctuations and unprepared to meet the increasing needs of the population.

The impact that the recent economic crisis of OECD countries has had on health systems is well summarized in a report published by WHO (2009). The report relates how in countries that have required emergency assistance from the IMF, the spending restrictions imposed during the loan repayment period, negative GDP growth, substantial increases in unemployment and decreasing revenues all impact on household income, government spending and the capacity of other actors in the private and voluntary sectors to contribute to the health effort, despite the fact that all this is happening at a time of greater health need. Because of the fall in household incomes, patients turn from the private to the public sector, just at the point where governments feel the financial need to cut back and so fewer resources flow to public sector services; as a result, quality of care may deteriorate and access to services may be restricted. Reductions in total expenditure have an impact on the composition of health spending, resulting in reductions in salaries, infrastructure and equipment.

The broad picture presented in the WHO report on the negative effects of the crisis on the health sector is particularly pertinent to Greece. Additionally, there seems to be certain unintended consequences affecting health care system capacity. For example, health administrative and nursing personnel in public health units decreased by 4% between 2008 and 2011, mainly through retirement and migration. This has added to the existing shortages of nursing personnel, generating serious concerns regarding the quality of services that can be provided to patients. Another disquieting fact is the observed decline in relative biomedical research productivity in Greece, starting shortly after the initiation of the financial crisis; however, as yet, the precise consequences of this are unclear (Falagas et al., 2012). This raises serious concerns regarding the promotion of innovation, a key element for the development of the health sector, as well as the volume and the quality of information provided in order to monitor the impact of the current economic crisis.

However, one cannot ignore some of the positive steps that have been made in the last few years. These include mainly the monitoring tools introduced in hospital management with the aim of controlling resource utilization, the introduction of a prospective hospital payment system, the implementation of the OECD System of Health Accounts, the adoption of a better-designed and more transparent procurement system and the development of e-governance tools.

Conclusions

The economic crisis has highlighted the need for radical restructuring of the Greek health care system towards its stated aim of providing high-quality services equitably, universally and free at the point of delivery. So far, the process of reform has been somewhat fragmented and a number of strategies, procedures and methods for the optimization of the national health service still need to be put in place. Adopted reform measures have decreased public health expenditure across the board (leading to some curtailed services and longer waiting times), increased user charges and reduced health worker numbers by cutting salaries, without taking into account allocative efficiency during the resource allocation process.

The WHO Regional Committee for Europe adopted in 2009 a resolution urging its Member States to ensure that their health systems continue to protect the most vulnerable, to demonstrate effectiveness in delivering personal and population services and to behave as wise economic actors in terms of investment, expenditure and employment. In addition, the WHO Regional Committee invited Member States to step up the monitoring and analysis of ongoing changes in living conditions, to assess health system performance and to articulate realistic policy options aimed at responding to the negative impacts of the economic crisis on health and health systems (WHO Regional Office for Europe, 2009).

The analysis of the Greek case stresses the significance of this resolution, given that the health reform process in Greece could probably be implemented in a way that is more consistent with the resolution. While several reform measures instigated as responses to Greece's sovereign debt crisis are going in the right direction, more attention could be devoted to the public health effects of the crisis and the economic adjustment policies. Since 2010, the public health

system has had to cope with a decrease in available resources and an increase in demand. As the crisis deepens and public expenditure declines, access to care becomes an issue of concern, particularly for low income and vulnerable groups, with as yet unknown effects on the health outcomes of the population. As the data of our analysis indicate, private expenditure as a share of total health expenditure has been increasing during the crisis period (compared with a falling trend between 2005 and 2009).

In this context, five priorities should be reconsidered by health policy-makers:

- equitable access to services;
- greater empowerment of citizens in decision-making about the services they need and their treatment options;
- restructuring of the health system towards a patient-centred, primary care system;
- greater decentralization and regionalization of decision-making and provision; and
- increasing the accountability of the health sector.

There is also a need to rethink and to promote a public debate on the health budget not as a financial burden but as a developmental tool, with the need to address not only economic dimensions but also the welfare of citizens. In other words, resetting the social values underlying the health care system is a prerequisite for establishing a new paradigm for its sustainable development.

Appendix 1

Major crisis-related events and changes in the Greek health system, 2009–2013

Date	Event/action
2009	End of year. A series of actions on the international markets downgraded Greece's credit rating; borrowing costs from markets rose to unsustainable levels
2010	
January	It became clear that Greece needed international financial assistance to cover its budgetary needs for the year, and bailout negotiations began Salary cuts (12%) applied to all health care staff
May	Greece signs first Memorandum of Understanding with the European Commission, European Central Bank and International Monetary Fund (the Troika) setting out an Economic Adjustment Programme, which included a series of measures in the health sector, focusing especially on the reduction of public expenditure
June	Further salary cuts applied to health care staff (8%) The Kallikratis Plan, creating a more streamlined regional and municipal structure, is implemented. Under this reorganization, regional health authorities are expected to play a much greater role in managing and organizing human resources in the National Health Service (NHS)
2011	
January	Increased user charges introduced in outpatient departments of public hospitals and health centres and fees for prescriptions (with exemptions for specified vulnerable groups). An admission fee for state hospitals was introduced (taking effect from January 2014) Increased co-payments for medicines introduced (with exemptions for vulnerable groups) A positive list for medicines reintroduced, as well as a variety of policies to promote the use of generic medicines Mergers between hospitals owned by IKA, the largest social security agency and by the NHS, putting them all under NHS administration. A further process of planned hospital mergers and closures got underway, but with little discernible progress

2011

- June The newly established National Health Service Organization (EOPYY) began operation as the country's main body coordinating primary care and health care reimbursement
- The health divisions of the main social health insurance funds was integrated into the National Health Service Organization. As part of this process, health benefit packages and reimbursement of services by the various health insurance funds were streamlined. Some benefits were reduced
- November Negotiations with the Troika over the terms of a second bailout agreement precipitated a political crisis. George Papandreou resigned as Prime Minister and a temporary caretaker government of national unity was formed

2012

- January A hard budget ceiling for pharmaceutical expenditure was set for 2012, with a clawback from pharmaceutical companies introduced if this target is not met
- March The Second Memorandum of Understanding/Economic Adjustment Programme for Greece was signed. Health sector measures focus on further reductions in pharmaceutical and hospital expenditure and on public sector salaries and benefits
- May The results of a general election provided no winner and negotiations to form various coalition partnerships failed
- June A second general election resulted in a new unity government led by Antonis Samaras as Prime Minister
- July Compulsory e-prescription system began along with the application of physician prescription guidelines (with a focus on generics) to control volume and cost
- November Greece signed the 3rd Memorandum of Understanding/Economic Adjustment Programme
- A new price list for reimbursable drugs introduced, decreasing reimbursable prices

2013

- January A new pricing system based on diagnosis-related groups introduced in hospitals, which would be used for setting hospital budgets
- Unemployment rate reaches 26.8%
-

References

- Bank of Greece (2013). *Bank of Greece data*. Athens, Bank of Greece (<http://www.bankofgreece.gr/Pages/en/Statistics/accounts.aspx>, accessed 29 October 2014).
- Bonovas S, Nikolopoulos G (2012). High-burden epidemics in Greece in the era of economic crisis. Early signs of a public health tragedy. *Journal of Preventive Medicine and Hygiene*, 53: 169–171.
- Davaki K, Mossialos E (2005). Plus ça change: health sector reforms in Greece. *Journal of Health Politics, Policy and Law*, 30(1–2): 143–167.
- Doetter L-F, Gotze R (2011). Health care policy for better or for worse? Examining NHS reforms during times of economic crisis versus relative stability. *Social Policy & Administration*, 45(4): 488–505.
- Durkheim E (2006). *On suicide*. London, Penguin Classics (original publication 1897).
- Economou C (2010). Greece: health system review. *Health Systems in Transition*, 12(7): 1–180.
- Economou C (2012). The performance of the Greek healthcare system and the economic adjustment programme: “economic crisis” versus “system-specific deficits” driven reform. *Social Theory*, 2: 33–69.
- Economou C, Giorno C (2009). *Improving the performance of the public health care system in Greece*. Paris, Organisation for Co-operation and Development (Economics Department Working Paper 722).
- Economou M et al. (2011). Increased suicidality amid economic crisis in Greece. *Lancet*, 378(9801): 1459.
- Economou M et al. (2012). Major depression in the era of economic crisis: a replication of a cross-sectional study across Greece. *Journal of Affective Disorders*, 145(3): 308–14.
- ELSTAT (2013). *Suicide data*. Athens, Hellenic Statistical Service.
- ELSTAT (2014). *The Greek economy*. Athens, Hellenic Statistical Service.

European Central Bank (2013). *Long-term interest rate statistics for EU Member States*. Brussels, European Central Bank (<http://www.ecb.int/stats/money/long/html/index.en.html>, accessed 29 October 2014).

European Centre for Disease Prevention and Control (2012). *Risk assessment on HIV in Greece*. Stockholm, European Centre for Disease Prevention and Control.

European Commission (2014). *Europe 2020*. Brussels, European Commission (http://ec.europa.eu/europe2020/index_en.htm, accessed 29 October 2014).

Eurostat (2013). *Eurostat statistics database 2013*. Luxembourg, Eurostat (<http://epp.eurostat.ec.europa.eu>, accessed 29 October 2014).

Falagas M et al. (2012). Biomedical research productivity in Greece: effect of the financial crisis. *International Journal of Epidemiology*, 41: 1206–1207.

Figueras J, Saltman R, Mossialos E (1997). *Challenges in evaluating health sector reform: an overview*. London, London School of Economics and Political Sciences (Health Discussion Paper 8).

Health Task Force on Structural Changes in the Greek Health Care System (2012). *Report of the Task Force (chaired by E. Mossialos and A.S. Sissouras)*. Athens, Health Task Force on Structural Changes in the Greek Health Care System.

ICAP (2010). *Private health services in Greece*. Athens, ICAP Group.

ICAP (2011). *Private health services in Greece*. Athens, ICAP Group.

International Monetary Fund (2013). *World economic outlook database, October 2012*. Washington, DC, International Monetary Fund (<http://www.imf.org/external/pubs/ft/weo/2012/02/weodata/index.aspx>, accessed 29 October 2014).

Kaitelidou D et al. (2012a). Efficiency of Greek hospitals: best practices of three top-performing hospitals. In: *ISPOR 15th Annual European Congress*, 3–7 November 2012. Berlin:PHP95.

Kaitelidou D et al. (2012b). Understanding the oversupply of physicians in Greece: the role of human resources planning, financing policy, and physician power. *International Journal of Health Services*, 42(4): 719–738.

Kaitelidou D et al. (2013). Informal payments for maternity health services in public hospitals in Greece. *Health Policy*, 109: 23–30.

Karamanoli E (2012). Greece's financial crisis dries up drug supply. *Lancet*, 379: 302.

Katharakis G et al. (2013). Measuring hospital efficiency: comparing DEA and SFA methods. *Reviews in Clinical Pharmacology and Pharmacokinetics*, 1(27): 17–31.

KEELPNO (2013). *HIV/AIDS surveillance in Greece, 31-12-2012*. Athens, Centre for Disease Control and Prevention.

Kentikelenis A et al. (2011). Health effects of financial crisis: omens of a Greek tragedy. *Lancet*, 378(9801): 1457–1458.

Kondilis E et al. (2013). Suicide mortality and economic crisis in Greece: men's Achilles' heel. *Journal of Epidemiology & Community Health*, 67: e1.

Liaropoulos L (2012). Economic crisis and health in Greece, 2009–2012. *BMJ*, 345: e7988.

Liaropoulos L et al. (2008). Informal payments in public hospitals in Greece. *Health Policy*, 87(1): 72–81.

Liaropoulos L et al. (2012). Restructuring the hospital sector in Greece in order to improve effectiveness and efficiency. *Social Cohesion and Development*, 7(1): 53–68.

Matsaganis M (2012). *Reeling under pressure? The welfare state and the crisis in Greece*. Athens, Athens University of Economics and Business, Department of Economics (AUEB Working Paper 1231).

Michas G, Micha R (2013). Road traffic accidents in Greece: have we benefited from the financial crisis? *Journal of Epidemiology & Community Health*, 67(10):894.

Ministry of Health and Social Solidarity (2011). *Proposal for functioning rearrangements of the NHS health units*. Athens, Ministry of Health and Social Solidarity.

Ministry of Health and Social Solidarity (2012a). *ESYnet database*. Athens, Ministry of Health and Social Solidarity.

Ministry of Health and Social Solidarity (2012b). *Report on the outcomes of Ministry of Health and its health units, 2011*. Athens, Dionikos, March 2012 [in Greek].

Ministry of Labour Social Insurance and Welfare (2014). *National Insurance Registry "ATLAS"*. Athens, Ministry of Labour, Social Insurance and Welfare (www.idika.gr/files/atlas_final_V2.pdf, accessed 2 November 2014) [in Greek].

Morgan D, Astolfi R (2013). *Health spending growth at zero: which countries, which sectors are most affected?* Paris, Organisation for Co-operation and Development (OECD Working Paper N60).

Mossialos E, Allin S (2005). Interest groups and health system reform in Greece. *West European Politics*, 28(2): 420–444.

Mossialos E, Allin S, Davaki K (2005). Analysing the Greek health system: a tale of fragmentation and inertia. *Health Economics*, 14: 151–168.

Musgrove P (1995). The economic crisis and its impact on health and health care in Latin America and the Caribbean. *International Journal of Health Services*, 17(3): 411–441.

OECD (2013). *Health statistics*. Paris, Organisation for Co-operation and Development (<http://www.oecd.org/els/health-systems/health-data.htm>, accessed 5 November 2014).

Polyzos N et al. (2013). Reforming reimbursement of public hospitals in Greece during the economic crisis: implementation of a DRG system. *Health Policy*, 109: 14–22.

Rechel B et al. (2011). Economic crisis and communicable disease control in Europe: a scoping study among national experts. *Health Policy*, 103: 168–175.

Siskou O et al. (2008). Private health expenditure in the Greek health care system: where truth ends and the myth begins. *Health Policy*, 88: 282–293.

Siskou O, Kaitelidou D, Economou C (2009). Private expenditure and the role of private health insurance in Greece: status quo and future trends. *European Journal of Health Economics*, 10: 467–474.

Siskou O et al. (2013). Investigating the economic impacts of new public pharmaceuticals policies in Greece: focusing on price reductions and cost sharing rates. *Value in Health*, 16(7): A470.

Strupczewski J (2010). Greek 2009 deficit revised higher, euro falls. *Reuters*, 22 April (www.reuters.com/article/2010/04/22/us-eu-deficits-idUSTRE63L1G420100422, accessed 29 October 2014).

Stuckler D, King LP, Basu S (2008). International Monetary Fund programs and tuberculosis outcomes in post-communist countries. *PLoS Medicine*, 5(7): e143.

Stuckler, D et al. (2009). The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis. *Lancet*, 374(9686): 315–323.

Tripsa T et al. (2012). *Recording and evaluation of issues encountered in the use of public health services in Greece*. Athens, IPSOS (<http://www.ipsos.com/content/ipsos-greece>, accessed 29 October 2014).

Tsavalias K (2013). *Factors affecting the performance of the public hospital sector and proposals for restructuring hospitals* [PhD thesis]. Athens, National and Kapodestrian University of Athens.

Tsoukas H, Papoulias D (2005). Managing third-order change: the case of the Public Power Corporation in Greece. *Long Range Planning*, 38: 79–95.

UNICEF (2013). *Report on the situation of children in Greece*. Athens, Hellenic UNICEF Committee.

Vandoros S et al. (2013). Have health trends worsened in Greece as a result of the financial crisis? A quasi-experimental approach. *European Journal of Public Health*, 23(5): 727–731.

Vlachadis N, Kornarou E (2013). Increase in stillbirths in Greece is linked to the economic crisis. *BMJ*, 346: f1061.

WHO (2009). *The financial crisis and global health. Report of a high-level consultation*. Geneva, World Health Organization (http://www.who.int/mediacentre/events/meetings/2009_financial_crisis_report_en_.pdf, accessed 29 October 2014).

WHO Regional Office for Europe (2009). *Resolution EUR/RC59/R3: health in times of global economic crisis: implications for the WHO European Region*. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0006/66957/RC59_edoc07.pdf, accessed 29 October 2014).

WHO Regional Office for Europe (2014). *Health for All database* [online/offline database]. Copenhagen, WHO Regional Office For Europe (<http://data.euro.who.int/hfadb>, accessed 2 November 2014).

Zavras D et al. (2012). Impact of economic crisis and other demographic and socio-economic factors on self-rated health in Greece. *European Journal of Public Health*, 23(2): 206–210.

About the authors

Charalampos Economou is Associate Professor, Department of Sociology, Panteion University of Social and Political Sciences, Greece.

Daphne Kaitelidou is Assistant Professor, Department of Nursing, University of Athens, Greece.

Alexander Kentikelenis, Harvard University and University of Cambridge.

Aris Sissouras is Professor of Operational Research and Director, Health Policy and Operational Management and Planning Unit, University of Patras, Greece.

Anna Maresso is Research Fellow at the European Observatory on Health Systems and Policies, the London School of Economics & Political Science, United Kingdom.

Note on author contributions

Daphne Kaitelidou and Charalampos Economou wrote sections 3, 4 and 6. Alex Kentikelenis wrote sections 2 and 5. Aris Sissouras contributed to the general overview of the paper. Anna Maresso was the editor of the case study and contributed text to various sections.

