

# A call for radical reform: an analysis of the Bulgarian health care system and its management

## Introduction

The realities before the Bulgarian health care system lead to a serious discussion of its future and perspectives. A member state of the European Union, and a future member state of the Euro zone, Bulgaria is committed to follow strict budget requirements according to the Treaty of Maastricht. An indirect result of such a policy is the optimisation of public spending, which will lead to a flow of capital into private investment. These factors, as well as an aging Bulgarian population, have provoked public discussion about a radical restructuring of the health system in Bulgaria.

The existing system requires obligatory health insurance contributions from all working people to the value of 6% of their gross salary, of which 35% is paid by the employee and 65% by the employer. Health insurance contributions for pensioners, students and all those under 18 are funded by budget transfer payments. Permanently unemployed people are required to pay a health insurance tax in order to be included in the public health insurance system.

Obligatory health insurance in Bulgaria is realised through the National Health Insurance Fund (NHIF) – a state monopoly organisation financed by the health insurance payments as well as by the budget transfer payments. The NHIF subsidises primary health care in addition to secondary health care (state hospitals), while the Bulgarian Ministry of Health (BMH) finances emergency health care.

Transfer payments in primary and in secondary health care are mainly realised through a system of clinical paths which describe clinical states and diseases and which prescribe required examinations.

The sums of the clinical paths are negotiated every year between the NHIF and the Bulgarian Union of Physicians (BUP), and are recorded in a National Framework Contract (NFC). The BUP is another monopolistic structure, a state sectoral organisation of physicians in Bulgaria. Membership of the BUP is obligatory for all practising medical doctors and plays a role similar to that of licensing authority. At the same time, other sectoral organisations (i.e. non-state sectoral organisations) and individuals are not allowed to participate in the negotiation concerning the funding, which reduces the opportunities of cost minimisation at the micro level.

Another key important feature of the Bulgarian health care system is represented by reimbursed medicines, funded by the NHIF and the BMH. A serious concern in this field is caused by corrupt practices which are estimated to amount to one-sixth of the total spending on medicines. In cash terms, for 2006 that corresponds to 15m leva (€ 7.66m) spent by the BMH on public tenders and 47m leva (24 mill. €) on NHIF public tenders.<sup>1 2</sup>

1 The calculations are made in accordance with the fixed currency rate of the Bulgarian National Bank (see: <http://www.bnbg/bnb/home.nsf/fsWebIndexBul?OpenFrameset>).

## The management and condition of primary health care

Primary health care in Bulgaria is mainly concentrated on the role of general practitioners (GPs) and on medical diagnostic centres. GPs play the role of 'gatekeepers' to secondary health care through a system of the prescription of clinical paths. Through personal doctor-patient contact, some costs are saved connected with important examinations, previously-defined diagnoses, etc. Additionally, better and faster diagnostic process is achieved by the use of regularly updated personal medical records. Thus, much of the cost connected with imperfect information in the diagnostic process is greatly reduced.

A distinctive failure in primary health care is the lack of medical doctors within schools, or so-called 'school doctors'. According to the Bulgarian Law of Health (2004)<sup>3</sup> medical cabinets are obligatory for every Bulgarian state school, as is the appointment of school doctors. In spite of this regulation, the law is not enforced in practice due to the lack of finance and the lack of specialists in the field of paediatrics. As a direct result, diagnosis amongst young people and otherwise those of school age is greatly challenged. Moreover, the screening of some chronic diseases within that age group is inefficient, which has negative consequences in respect to the general health condition of people in this group.

An important issue from the socio-economic point of view is the proper and efficient health care of all age groups, but in particular that of the school-age group because of its unconditionally positive role in economic growth.<sup>4</sup> Furthermore, the early and 'on time' prevention of chronic and acute diseases saves public financial resources assigned for the pensions of people with disabilities. Another positive result with respect to human economic potential is the improvement of the human resource.

Another issue is connected to the role and the social importance of paediatricians. A result of the introduction of GPs has been that many paediatricians have left hospitals, encouraged by the greater financial incentives offered within general practice. In this manner, specialists in child diseases have re-trained as GPs and are examining adult patients, and *vice versa* – GPs are examining children. The result is that the effect of the specialisation of these physicians has been lost.

The regulatory framework does not offer sufficient incentives to the school-age contingent to choose a paediatrician as a GP. The NFC states that it is the right of every person in the 0-18 age group to choose a paediatrician as a GP. However, due to imperfect information and the unsatisfactory management and marketing skills of GPs, people in this age group are typically directed to family physicians. This ineffi-

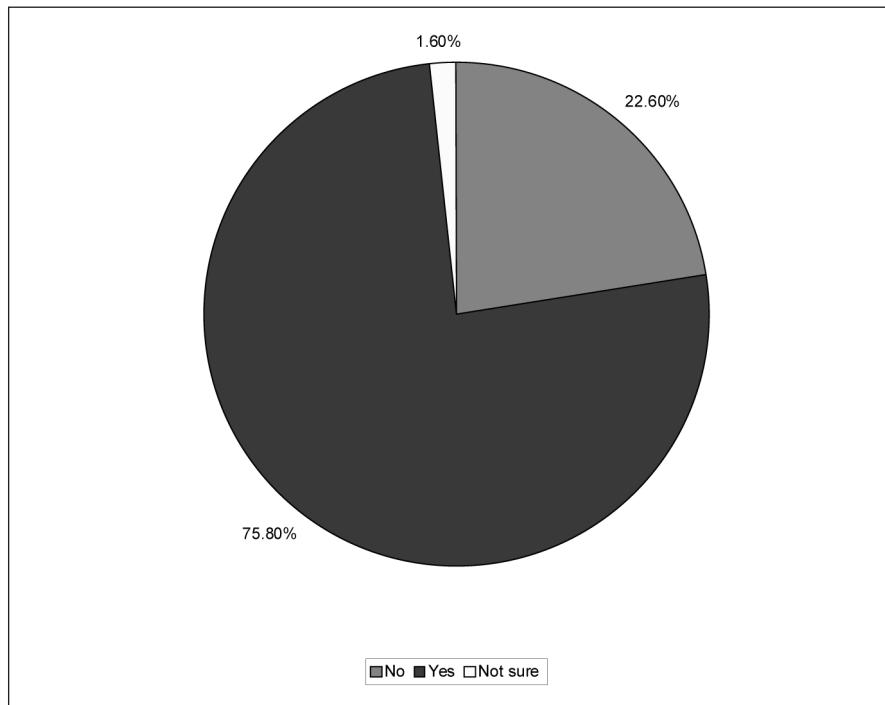
- 2 Centre for the Examination of Democracy (2006) *The anti-corruption reforms in Bulgaria in connection with membership of the EU* Sofia, p. 31 (in Bulgarian). The calculations are made on the presumption that the public tenders of the NHIF are identical to the public tenders of the BMH in which, in 2006, 90m leva (€ 46m) was spent on medicines and medical supplies by the BMH and 282.15m leva (€ 144.26m) by the NHIF.
- 3 Law of Health (2004) (in Bulgarian). See: <http://www.nauchi.parliament.bg/?page=ns&lng=bg&nsid=5&action=show&Type=cmS-teno&SType=show&gid=164&id=601>
- 4 Jiang, Y and J. E. Hesser (2006) 'Associations between health-related quality of life and demographics and health risks. Results from Rhode Island's 2002 behavioural risk factor survey' *Health Quality Life Outcomes* 4.

cient practice could be greatly reduced by a co-ordinated, widespread information system concerning the location and specialisms offered by GPs' practices.

If we suppose that 50% of the 0-18 age group really need diagnostic examinations by a specialist paediatrician instead of a GP in each six-month period, the result of the re-training of GPs is a potential financial loss resulting from the GP not being a paediatrician amounting to 4 112 550 leva (€ 2.1m) for patients<sup>5</sup> and to 13.5m leva (€ 6.9m) for the NHIF.<sup>6</sup>

Nevertheless, the statistical data suggest that over 75% of health-insured persons are satisfied with their GPs. This data suggests that the way reform has been implemented is flawed, indicated by the lack of proper incentives in the place of the qualities of the physicians.

**Figure 1 – Are you satisfied with your GDP?**



Source: Zlatanova, T (2005) 'Patients' expectations with regards to their GPs in the period of reform' *Health Management* 3 (in Bulgarian).

- 5  $2 \times 1.8 \text{ leva (€ 0.92)} \times 1\,142\,375 \text{ (half the 0-18 age group in Bulgaria)}$ .
- 6  $2 \times 5.9 \text{ leva (€ 3)} \times 1\,142\,375 \text{ (the transfer payment to paediatricians for the examination of patients under 18 in 2006 (Art. 146 s. 1, NFC))} \times 1\,142\,375 \text{ (half of the 0-18 age group in Bulgaria)}$ .

Clinical paths in primary health care can be regarded as a serious economic inefficiency. Often, physicians encourage patients to undergo unnecessary examinations in order for a clinical path to be paid. It is easily proved that, in primary health care for 2005 alone, the number of realized highly-specialist examinations (HSEs) increased by 8.3% on the previous year. Additionally, HSEs amongst health-insured people increased by 20%.<sup>7</sup> This sharp increase in HSEs in health-insured people is due to the strong incentive applying to their recommendation, even when they are completely unnecessary.

If we assume that at least 15% of all HSEs amongst health-insured persons are unnecessary then malpractice here leads to a loss of approximately 3.3m leva (€ 1.68m).<sup>8</sup>

Time-consuming administrative work for GPs is considered to be another serious inefficiency. According to Zlatanova, more than 50% of GPs' working time is occupied by the writing of clinical paths and prescriptions, as well as some other administrative activities.<sup>9</sup> These processes result in a technical inefficiency causing GPs to spend more time on administrative obligations than on examinations. In this manner, the time assigned for examinations and personal consultations with patients is greatly reduced.

Serious problems may be seen in the diagnosis sphere in spite of the drastic increase in public health costs (33.6% in 2006 in comparison to 2005).<sup>10</sup> These problems are attributed to the economic inefficiency of the health care system, the lack of screening of health-associated at-risk groups and the lack of access to popular health literature. The cost incurred as a result of these malpractices is estimated to be 3m leva (€ 1.53m).

## The management and condition of secondary health care

Economic reform in the health care system, which substituted the socialist central planning model, started in the period 1997-1999. A result of the implementation of some market principles in public state hospitals was a drastic reduction in hospital beds. From 53 280 hospital beds in 1995, their number has continuously decreased to 32 025 in 2006.<sup>11</sup> Despite this sharp reduction, the overall occupancy of hospital beds in Bulgaria is still a low 79%, in comparison with a EU hospital bed occupancy of 85%.<sup>12</sup>

The direct and indirect result of these inefficiencies is estimated to amount to 50m leva (€ 25.56m) (equal to 9.8% of the Bulgarian public health budget for 2006, with the presumption of 6% lost capacity).<sup>13</sup> Furthermore, some serious incentives for cor-

- 7 Komitov, G. and S. Genev (2006) 'Ensuring the access of health-insured patients to primary health care' *Health Management* 6 (in Bulgarian).
- 8 See: <http://www.blsgb.com/serv/Document?Action=show&OrderBy=CreationTime&Order=DESC&DocID=1170194495> (in Bulgarian). The calculations are made with data for 2006 on the basis of the presumption from medical practice that each HSE requires secondary examination.
- 9 Zlatanova, T (2006) 'Analysis of public opinion regarding reform of the health care system' *Health Management* 6 (in Bulgarian).
- 10 See: [http://www.nhif.bg/bg/reshenie\\_zpl.phtml](http://www.nhif.bg/bg/reshenie_zpl.phtml) NHIF data (in Bulgarian).
- 11 See: <http://www.mh.government.bg/stat.php?id=1802> BMH data (in Bulgarian).
- 12 See: <http://qjmed.oxfordjournals.org/cgi/content/full/92/4/199>.

ruption exist in the secondary health sector. Typically, they are connected to the choice of medicine suppliers and of supplies for state hospitals. Often, the final decision of the hospital administration is compromised by supplier-firms.

Some 20% of hospital budgets is spent on medicines and supplies. Ten per cent of the budget appointed for supplies and medicines is taken up by corruption payments. In monetary terms, the cost of corruption connected with hospital supplies is 12.2m leva (€ 6.23m) per year.<sup>14</sup>

An additional problem with respect to economic inefficiency is the persuasion of patients that they need to be hospitalised so that a clinical path may be paid. According to Hadjiiska, between 20% and 30% of hospitals are inefficiently using their capacities for acute and post-acute health care by tolerating unnecessary hospitalisations.<sup>15</sup> The financial loss that results from this malpractice amounts to 50m leva (€ 25.56m) if we assume that 5% of all hospitalisations are unnecessary.

Serious economic inefficiencies can be seen in the clinical paths in secondary hospital health care and the transfer payments associated with them. Due to the established system of payments, the specifics of a disease and the patient's condition are often ignored. In order to be paid, the clinical paths often require unnecessary examinations which involve additional spending on drugs and on hospital supplies. In addition, the hospital infrastructure is amortised and hospital personnel are occupied on inefficient work.

At the same time, examinations needed by patients with chronic diseases and with concomitant diseases are not paid through the clinical path system which, in turn, leads to direct losses for hospital budgets.

Furthermore, there is a complex principal-agent problem between senior hospital administration and hospital personnel. Personnel who work additionally in the private sector use state hospital infrastructure and supplies in order to execute private examinations. In this manner, private costs are saved and the hospital budget used. This problem cannot be easily solved because there is no market or regulatory mechanism to stop such malpractices.

A clear problem is represented by the method of distribution on the part of the clinical paths assigned to the work of hospital personnel. The distribution is customarily delegated to the senior state hospital administration which decides how to divide

13 See: <http://www.parliament.bg/?page=ns&lng=bg&nsid=5&action=show&Type=cmS-teno&SType=show&gid=164&id=71> (in Bulgarian). The calculations are made on a weighted average of day beds in Bulgarian state hospitals (at 2005 prices).

14 See: <http://www.parliament.bg/?page=ns&lng=bg&nsid=5&action=show&Type=cmS-teno&SType=show&gid=164&id=71> (in Bulgarian). For the calculation, data from the Law of the Budget of the NHIF (2006) has been used. Ten per cent was chosen as a weighted number between one-sixth corrupt payments in public medicinal tenders with regard to the NHIF and 7.4% corrupt payments in public commissioning tenders (see Centre for the Examination of Democracy (2006) *op. cit.* p. 29-31 (in Bulgarian)).

15 Hadjiiska, I (2006) 'Policy for the optimisation of hospital stays - the opinion of patients and medical personnel' *Health Management and Health Policy* 3 (in Bulgarian).

the financial resources among the personnel. Typically, clinical specialists are in a better position than other specialists while, at the same time, the senior hospital administration distributes a significant part to itself. The lack of a normative framework with respect to the distribution of these funds has the potential to create conflicts amongst the senior administration, junior personnel and at the level of the hospital units. These methods of distribution additionally stimulate unofficial payments and act as a disincentive to the personnel.

The final important issue in the secondary health care sector concerns unofficial payments. Typically, these payments are made as a result of feelings of under-estimated work, as well as the huge imbalance between levels of pay in primary and secondary health care. Hospital physicians feel under-estimated because they are paid on a 'work done' basis, in contrast to their colleagues in primary health care who are paid mainly on the 'per capita' principle. For the first half of 2006, the average salary of physicians in state hospitals was 812 leva (€ 415.16), in comparison to physicians in primary health care who had average salaries of 1 618 leva (€ 827.27).<sup>16</sup> The issue is exacerbated because the average salary of physicians in the primary health care sector for 2007 is expected to rise to 1 864 leva (€ 953), in contrast to the average salary of physicians in secondary health care, which is expected to rise only to 872 leva (€ 445.83).

This imbalance between the two sectors will amount to 213% in favour of primary health care. Namely, this factor can be pointed to as the main reason for the level of unofficial, corrupt payments in secondary health care. An exact estimate of the extent of corrupt payments is extremely difficult to calculate. Even so, it has been suggested that 26.2% of physicians in state hospitals require unofficial payments from their patients.<sup>17</sup> If we presume that these physicians target the salary of their colleagues in the primary health care sector, and the difference is covered by corrupt payments, then they amount to 23.8m leva (€ 12.16m) per year.<sup>18</sup>

### **The management and condition of emergency health care**

Emergency health care in Bulgaria is a state monopoly structure. It is of extreme importance for the general health condition of the population and with respect to national security. Nevertheless, the regulatory framework concerning emergency health care impedes the emergence of competing private structures which could ease the functioning of public emergency health care and improve its efficiency.

The recent reform associated with the decentralisation of emergency health care to state hospitals is regarded as exceptionally positive. It allows the zoning of emergency cases, the lessening of transport costs and the faster transportation of patients.

On the other hand, however, the basic issue in this sector is asymmetric information. Approximately 40% of emergency calls for 2003 were, in fact, non-urgent calls. In this manner, emergency health care for real emergency cases is delayed, in addition

16 See: <http://sofia-obl.nhif.bg/inc/short162.htm> <http://www.mh.government.bg/stat.php?id=1802> (NHIF and BMH data, in Bulgarian).

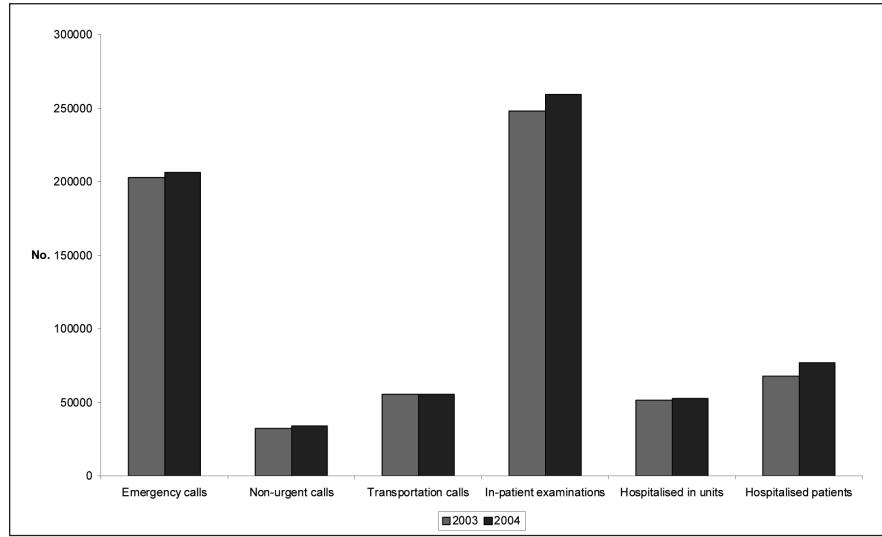
17 Centre for the Examination of Democracy (2006) *op. cit.* p. 13.

18 7 616 physicians occupied in state hospitals (see: <http://www.mh.government.bg/stat.php?id=1802> (in Bulgarian)) x 26.2% corrupt physicians x 992 leva (€ 507.2) (the difference in salaries between primary and secondary health care sectors) x 12 months.

to the inefficient use of budgetary resources. If we presume that this percentage stayed relatively constant in 2006, then the financial losses thus incurred amount to 6.5m leva (€ 3.32m).<sup>19</sup>

Calls in respect of non-urgent cases are a direct result of the inefficiency of primary health care, as well as its challenged availability. The regulatory framework obliges GPs to take responsibility for the care of non-urgent cases but, because of the lack of sanctions, as well as the lack of financial incentives, GPs refuse to take them.

**Figure 2 – Distribution of emergency calls**



Source: Bulgarian Ministry of Health [http://www.mh.government.bg/doc/Salchev\\_DEYNOST-1-4-2003-2004\\_files/frame.htm](http://www.mh.government.bg/doc/Salchev_DEYNOST-1-4-2003-2004_files/frame.htm) (in Bulgarian).

The relatively high volume of in-patient examinations is a result of the inefficient work of GPs, the consequence of which is an irrational compensation for a lacking primary health care by emergency health care.

In addition, the lack of e-health systems that could ease the work of the three health care sectors increases both inefficiencies and costs. Furthermore, a sharp shortage of technical devices is observed in emergency health care; it is estimated that the technical capacity in the sector covers 70% to 80% of the real level of need.<sup>20</sup>

The condition and skills of human resources in the sphere of emergency health care is another key important issue. Approximately two-thirds of physicians in the sector do not have specialisms.<sup>21</sup>

19 See: <http://www.focus-press.net/?path=0,23,33&cat=33&mes=34442> (in Bulgarian). The calculations are made on the presumption that the 40% of non-urgent calls generates 40% of the operational budget for emergency health care for 2006.

20 BMH data: <http://www.mh.government.bg/stat.php?id=774> (in Bulgarian).

**Table 1 – Type and number of occupied personnel in emergency health care (2006)**

Type of personnel	Number
Physicians	1 527
– specialists	509
– generalists	1 018
Middle-ranking personnel	2 272
Drivers	1 981
Sanitary personnel and administration	469
Total	6 731

Source: BMH <http://www.focus-press.net/?path=0,23,33&cat=33&mes=34442> (in Bulgarian).

Another serious problem is the permanent fluidity of labour. This results from several factors. The first is the imbalanced salaries in the emergency health care sector, which acts as a strong incentive to physicians to switch to the primary health care sector. The second reason is the form in which emergency health care is subsidised: subsidies are fixed and do not depend on the volume or the quality of the services delivered. This factor represents a complex financial disincentive to the personnel. The third and last factor is the unattractiveness of the sector, as well as the lack of professional development opportunities and schemes.

## Conclusions

In spite of the implementation of partial market principles and the implementation of patient choice in the Bulgarian health care system, there are still many economic inefficiencies. The total amount of inefficiency in public health care amounts to 228.4m leva (€ 116.77m) (11.2% of the public budget for health care in 2006).

These inefficiencies are distributed in the following order:

- primary health care and diagnosis – 23.9m leva (€ 12.21m) (10.4% of the total inefficiency)
- secondary health care – 136m leva (€ 69.53m) (59.8% of the total inefficiency)
- emergency health care – 6.5m leva (€ 3.32m) (2.8% of the total inefficiency)
- BMH public tenders – 15m leva (€ 7.66m) (6.5% of the total inefficiency)
- NHIF public tenders – 47m leva (€ 23.67m) (20.5% of the total inefficiency).

21 BMH data: <http://www.focus-press.net/?path=0,23,33&cat=33&mes=34442> (in Bulgarian).

The greatest economic inefficiency is observed in secondary health care (59.8%), followed by public tenders (27%). Additionally, there are qualitative inefficiencies which cannot be financially estimated. Among these are the absence of an assessment system and the lack of quality control. Furthermore, there is the lack of working financial incentives and the serious pay imbalance between public health sectors.

In conclusion, the strong necessity for a radical reform of the health care system and of obligatory health insurance can be underlined. Optimum liberalisation and a form of public-private mix are needed to guarantee both the future of the health care system and its efficient functioning.