Current healthcare in Bulgaria: time for predictive diagnostics and preventive medicine

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Abstract Since 1990 Bulgaria gradually moved from monopolistic to market regulated economy and healthcare. In 2007 the country became member of the European Union and started to adopt EU legislations. However, significant gaps between the average European and Bulgarian level of social, health and economic efficiency remain to be narrowed. The major challenge is the demographic situation, where recent trends give alarming signals. Plans for reformation include transition towards out-patient palliative healthcare centers for the aging population as well as reduction of the costs with new electronic system of health insurance. The favorable location of the country at the Black Sea coast gives opportunities for medical tourism, which can provide quality health service for foreign customers. Finally, national platforms on prevention of major non-communicable diseases, such as obesity, cancer and diabetes, must be established as coordinated actions for the health and wellness of next generations.

Keywords Healthcare · Bulgaria · Medical tourism · E-Health · Predictive diagnostics · Preventive medicine

Introduction

2010 introduced major challenges for the world healthcare and social models. Even societies with long-term stability in the systems started to suffer from the lack of resources. To address those issues, several countries initiated health

insurance reforms that will provide more security and stability to those who have health insurance, coverage for those who don't, and will lower the cost of healthcare [1]. The Global Healthcare Update from Hewitt Associates provides comprehensive source of information bi-monthly and summarizes trends in existing plans for reforms [2].

On that global map, Bulgaria is struggling in-between with economy gross domestic product (GPD) such as for a Developing Country [3], from one side, and regulatory demands for state-of-the-art services as Member of the European Union, from the other side [4]. Thus criticism both from inside or outside viewers must be addressed on very careful basis, taking into account the present worldwide situation, as well as the past history of the country.

Nevertheless, alarming statistics show that in 2009 the population in Bulgaria has decreased by 11 ppm, making 79,000 people per year and it is projected that after 10 years the Bulgarians will be 800,000 less [5]. Thus besides, the ongoing plans for reforms it is crucial to implement disease screening procedures, national prevention programs and health promotion for the children and young people.

Healthcare in Bulgaria: overview

PubMed search with the term “Healthcare Bulgaria” reveals 242 papers most of which are case reports [6]. However, in-depth overview is published every second year from the European Observatory on Health Systems and Policies [7].

Before the structural reforms of the 1990s the organizational arrangement of healthcare, decision-making and funding were centralized. Following the transition to democracy, Bulgarian healthcare switched to a system of payroll contributions, establishing a semi-autonomous National Health Insurance Fund (NHIF) to raise revenue,

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allocate resources and govern providers. The Fund's operational activities are managed through the 28 regional health insurance funds. Detailed diagram of how healthcare is organized is presented in Fig. 1.

Since the health system restructuring, Bulgarian health providers are mainly reimbursed prospectively for the services they will provide to the population on a per-case and per-capita basis. This means that actual payment rates are agreed in the contract before the treatment takes place. Each year the NHIF, together with the Bulgarian Medical

and Dentists Unions, negotiates payment mechanisms to the health facilities contracted with the NHIF. Some types of health provider receive fee-for-service payments, which are a typical form of retrospective reimbursement.

Primary care is provided in private practices, group practices and at outpatient departments. The General Practitioner (GP) is the owner of a private practice and a group practice is owned by its founders. If physicians want to work in the outpatient sector, they are statutorily required to register to provide either primary or outpatient specialized

Fig. 1 The structure of Bulgarian Healthcare (Source: European Observatory on Health Systems and Policies)

care in either single or group practices; or to be employed by a diagnostic and consultative center, a medical center, a dental center, or a medical and dental center.

Hospitals receive funding mostly through case-based payments (*clinical pathways*). An Australian like model, *the clinical pathways*, was introduced in 2001 as part of the National Framework Contract, based on a single flat rate per pathway. In 2001 there were 158 diagnoses grouped in 30 clinical pathways. The number of clinical pathways increased from 40 in 2002 to 120 in 2005, to 298 in 2006 and reached 299 in 2007 [8].

Depending on the political and personal preferences of the governments the local healthcare system is subsequently directed towards/named, respectively, as “following” the French model, the German model or the Swiss models. Unfortunately, a good example how a Bulgarian model should be implemented comes from totally different area of business, such as the Agriculture, where the current authorities issued label “Stara Planina” for meat and dairy products produced within the Bulgarian state-of-the-art traditions [9]. Therefore, a good idea would be to look back in the traditional Bulgarian medicine, which people do trust, and try to promote it, instead of pendulum move back and forth between different foreign systems.

General criticism is also frequently voiced by international and European institutions [10]. In most cases, they make assumptions for the whole region (Romania, the former republics of Yugoslavia) rather than paying attention to the specificities of each country. For example, there is huge difference between Bulgaria and Romania in terms of demographic situation, which reflects the healthcare costs subsequently.

Demographic crisis

In contact to Romania, Bulgarian population is aging. 18% of the population in Bulgaria is above 65 year old, while in Romania 38% of the population is in the age between 18 and 35 years [11]. In addition, the population growth rate in Romania is -0.127% , while in Bulgaria it is -3.5% . Finally, Bulgaria has the lowest birth rate in Europe. It is projected that after 40 years the population will diminish to four million citizens. Thus it is essential, to establish a national

platform encouraging families to increase the birth rate. Indeed, this would depend a lot on economical factors, but strategic plan for the future is a matter of urgency.

Ongoing reforms

Government human resources are assigned to health facilities in accordance with the National Health Map, which specifies by region target numbers of healthcare professionals per institution [12].

Despite a reduction in the number of beds during the reforms, Bulgaria has a much higher ratio of hospital beds to population than many countries in the WHO European Region, and the average length of stay (8.2 days in 2004) is lower than in most countries in the WHO European Region and further reduction is ongoing.

What will change in access to medical care?

The country will be divided into six regions, each of which will have all types of hospitals. The six regions, which split the country are: North, North Central, North East, South, South Central and South East. The aim is that every one of them has all kinds of hospitals—from the GP offices to the most high-tech hospitals, so everyone will be able to quickly reach the required medical attention. The medical centers of these six regions will be the best and most advanced hospitals in the country. There, everyone will be able to promptly receive the best medical care, particularly for serious conditions or specialized care. In other cases where hospital stay is required medical care will be available in district and municipal hospitals (Fig. 2).

Future directions

Health tourism

In the past years Bulgaria’s medical sector has gradually developed. Many private and public medical institutions in the country are now well equipped with the most modern equipment and offer services and treatment of European quality at competitive prices. The clinics and hospitals can offer treatment in the fields of plastic surgery, dentistry,

Fig. 2 Access to healthcare in Bulgaria

prophylaxis, surgery, dermatology, rehabilitation, ophthalmology, sports medicine and any other desired by the needs of the patient.

The unique combination of mountain and sea resorts with numerous mineral springs makes Bulgaria a preferred tourist destination for spa and rehabilitation.

E-health

New unified electronic system for the healthcare is planned to start 2011. It will facilitate communication between different parties (health insurance, hospitals, GPs and patients) and will reduce costs and waiting hours.

In addition, Bulgaria has strong history of well educated and qualified IT specialists. Thus biomedical qualifications program should be introduced so they can join the future e-health initiatives. Genomic technologies and particularly bioinformatics have significantly changed biomedical research during the last decade and are being recognized as potential methods for application also in medical practice and public health. There exists a growing need for different collectives of the healthcare sector to receive training in the methods, tools and databases related with these new areas.

The increasing demand of training courses in new technologies related to genomics and bioinformatics by health professionals provides a good opportunity for the development of tailored courses based on their specific needs, expectations and demands geared to bridge the gap between research and practice and facilitating their everyday work.

Predictive diagnostics and preventive medicine

Disease screening tests for example for neonatal hypothyroidism must be introduced again as this was a routine

procedure 20 years ago. In addition, further perinatal screening tests have to be implemented, so that Bulgarian medicine can catch up with the global efforts for prevention of epigenomic related disorders, such as obesity and cancer.

Genomics is one of the key technologies enabling personalized medicine and the broader field of theragnostics (i.e., the fusion of therapeutics and diagnostic medicine) is expected to give advances in all areas of life science and public health.

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