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CHALLENGES OF THE HUNGARIAN HEALTH CARE SYSTEM

DOCTORAL (PHD) DISSERTATION

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1. Introduction

1.1. Justification of the topic

One of the central issues in the daily press concerns healthcare, a good example of this is Obama's package of reforms introduced in the United States in 2010. Some or other aspect of healthcare is on the agenda almost every day. Hungary got into a critical situation in terms of economic performance; it is now clear that health care services provided by the welfare state is not sustainable.

Very recently experts of thirty working committees and the Health Care State Secretariat of the National Resource Ministry released the Semmelweis Plan with the explicit goal to articulate the fundamentals for an ongoing health policy discussion.

These considerations justify the choice of topics: the review of the current status of the Hungarian health care.

1.2. Structure of the dissertation

The dissertation is made up of seven chapters:

The *first and second chapters* describe the socio-economic background of the health care sector. The *third chapter* covers the peculiarities of the health care sector. The *fourth chapter* discusses the Hungarian health care system. In the *fifth chapter* the role of primary care in the Hungarian health care system is investigated. The *sixth chapter* lists the changes recommended in the organization of primary care. Finally the *seventh chapter* introduces the theses, the research results, compiles the problems of health care surfacing throughout the dissertation, draws conclusions and articulates recommendations for the Hungarian health care system.

2. Research questions, propositions and novel scientific results of the dissertation

Health care systems bear numerous problems in the beginning of the 21st century. The greatest cost explosion was witnessed in the global health care sector on the millennium, with the share for health care markets increasing from 8% to 8.6% between 2000 and 2005. The indices are similar in the Hungarian relations as well (WHO, 2008).

This growth is the net of complex processes and stems from the fact that the health care structure mainly originating from in the 18th century has to meet the requirements of the welfare state. The basic goal of the welfare state is the parallel maximization of efficiency and societal equity. These two considerations are fundamentally important with respect to the functioning of the health care system. Considering the fact economically efficiency is closely related to the functioning of markets, and it is an obligatory base of societal equity (Barr, 2009 a, b), we limit our further investigations to the question of efficiency.

The basic principles for market coordination are not fully met in health care, since:

- there is a lack of perfect competition (Mihályi, 2003a; Nagy, 2005),
- lack of perfect information (Mihályi, 2003b),
- the economic principles of insurance are hindered (Barr, 2009b), and
- externalities are present (Mihályi, 2003c).

2.1. *Thesis 1*

The historical heritage of economic development fundamentally determines the structure of a health care system, the degree of market allocation and governmental intervention.

2.1.1. Introduction

At the beginning of my PhD studies several questions emerged upon the investigation of the background of health care provision. These form the basic structure of my dissertation. Upon the assessment of the socio-economic background the first question surfacing considered whether the economic system fundamentally determines the way a specific region's health care system differentiates, or is it possible for large economies of similar historical background to have fundamentally different health care systems with respect to market coordination and governmental intervention?

A comparative assessment was made including the health care system of the United States and Great Britain as both economies developed in a mixed economy. The question is how did the health care systems founded at the time of industrial revolution adapt to the insufficiency of market allocation mechanism?

2.1.2. Results

The results obtained upon the comparison of the health care systems of Great Britain and the United States are summarized in Table 1.

2.1.3. Discussion

It seems that fundamentally different health care systems developed in these two large market-driven mixed economies. Both systems have their advantages and disadvantages regarding health consumers, health care providers and financing authorities. It is worth noticing however that there are two strategic similarities between the systems in the United States and Great Britain namely the extensive regulation of the health care system and the need for cost containment.

Comparison of Two large health care systems		
Aspect	**USA**	**Great Britain**
Ownership of the health care provider	private ownership	public ownership
Financing of health care provider	managed care systems fee-for-service performance-based funding	public funding, full capitation based primary care (fundholding), specialist care financed by primary care
Individual preference	upon utilization: private insurance - co-payment Medicare – co-payment Medicaid – free below 150%, co-payment above 150% (max. 20%)	free care upon utilization - primary care free - specialist care free - emergency care free - 85% of eligible patients receive prescription medication free
Financing	1. private health insurance- quasy insurance statistical approach (approx. 50%) 2. state (federal and state) financing- Medicare, Medicaid (approx. 50%)	mostly public funding -74% from tax income -20% from social security contributions - 2,5% from fees
Regulation	private health insurance – strict budgetary restraints state financed – open ended, retrospective financing, no budgetary upper limit	strict budgetary restraints prospective financing bargain of the financial minister and the health care minister

Table 1.: Comparison the health care providing system of the USA and Great Britain (Bíró et al, 2011).

Another similarity between the health system of Great Britain and the Medicaid system of the US is the lack of directly emerging costs at the point of service for either the patient or the physician, generating accelerated utilization of services that results in a considerably higher consumption than what would be seen if either party has to directly bear costs at the time of service utilization. In the British system overutilization is handled by the fundholder, the primary care group praxis functioning as gatekeepers. It is interesting to note that the two systems handled the issue of market failure fundamentally differently- the British system is a state-financed uniform system, while the American system emerged on basis of a market-based system. As a result of the reform attempts

undertaken during the previous years the convergence of the two systems was witnessed as the British system moved toward the markets, and the American system suffered an increase in governmental intervention. A great burden of the health care system overseas is that approximately 15% of the population lacks health insurance. Under insurance is equally burdensome as aside from emergency care less severe, or scheduled interventions may be delayed or rejected in some cases. On top of this these people are poor working men who are not poor enough to meet the eligibility criteria for Medicaid provision. This paradox is attempted to be resolved by the Obama reform, that extends Medicaid eligibility to cover over 50 million uninsured Americans, as everyone living under 133% of the poverty threshold could apply. These escalated costs would be covered by the federal government, possibly leading to further cost escalations (Medicare chartbook, 2010; Medicaid: A primer 2010).

2.2. Thesis 2

The Hungarian partial capitation financed primary care is sufficient to provide for the efficiency of the health care system *per se*.

2.2.1. Introduction

Similarly to the British health care system the access to the Hungarian health care system is also free at the point of service, however unlike the British system where the primary care physician is a gatekeeper limiting overutilization the Hungarian system lacks a strong gatekeeper. In Hungary every citizen has the right to freely select a general practitioner with respect to primary care. As for secondary and tertiary care free selection of the health provider institution is a right given by law. It can be stated that since the limit price for the individual equals to zero at the time of health service consumption, considerable overutilization is generated by the presence of third party payer, since the Hungarian system lacks a player whose interest is to set limits to this overutilization. A timely question arose whether the current method of financing primary care is sufficient to enable the efficient functioning of health care system?

2.2.2. Results, discussion

Efficiency in health care

General considerations

According to the general definition of efficiency utilization of resources is most efficient if the sum of benefits is maximal on the level of the whole society (Nagy, 2005). On traditional competing markets the prices and the competition are sufficient to formulate the optimal relationship between production and consumption in line with the Pareto theorem (Szalai, 2005).

Traditionally two dimensions of efficiency may be differentiated in health care: production and allocation efficiency (Józwiak-Hagymásy et al, 2006a).

Production efficiency means the minimization of the cost of a health care service/product. The usefulness of the health care service/product for the society as a whole is irrelevant from the standpoint production efficiency. On the other hand allocation efficiency is determined by the extent a product or service is appreciated by a community (Evetovits and Gaál, 2005).

Production efficiency may be defined as the horizontal dimension of efficiency namely the optimization of production efficiency within a given allocation level. On the other hand allocation efficiency reflects the success of dividing resources between the different allocation levels. Generally there are three allocation levels- macro-, mezo- and microallocation levels (Józwiak-Hagymásy et al, 2006b).

Macro level resource allocation

Macro level resource allocation is the optimal level of expenditure that should be spent on healthcare (Mossailos and Dixon, 2002).

Before 2005 the financing of preventive-curative services was done within soft budgetary restraints using an open ended, retrospective method. A significant change was seen when the performance volume limit (PVL) was introduced in 2004 (264/2003. (XII. 24.) governmental decree).

Mezo level resource allocation

Mezo level resource allocation is the distribution of the preventive-curative budget between the different forms of care (primary care, secondary, tertiary care etc). In the budget of 2006 a joint budget was allocated for specialty care

(including ambulatory and inpatient care) with the restriction that funds cannot be converted from the ambulatory care to the inpatient care (Report on the 2006 execution of the Health Insurance Fund, 2006).

Micro level resource allocation

Micro level resource allocation means defining the financing for individual health care providers and services with respect to the preventive-curative services. The structure of the health care system remained unaltered for a long time prior to the CXXXII. law of 2006 that came into effect in April 01. 2007.

The current allocation methods therefore lack sufficient financial incentives to govern the efficiency of patient referrals between the different care levels (primary care, ambulatory care, and inpatient care).

Efficiency in the Hungarian health care system

The Hungarian health care financing system rests on a primary care system financed using a partial capitation fee. This method of financing is simple and reliable but since it should only cover the expenses of the praxis *per se*, it provides incentives for cost containment (Boncz et al, 2004). However since the additional expense of any extra activity (labor, screening) is deducted from this partial capitation fee it is understandable that partial capitation fee hinders the provision of definitive care or initiation of screenings, shifting the management of patients on higher level of care. According to a study performed by the OECD the activity of a primary care praxis is mainly limited to writing prescriptions and referral notes (Orosz and Burns, 2000) causing disproportional cost increase. Foreign data shows that the financing of primary care praxis is responsible for 20% of costs and 80% of expenditures (Donelan et al, 1996). Previously in Hungary the financial risks were handled by optimization of production efficiency- that is by the health care providers decreasing the cost of services. This phenomenon is reflected by the optimization of costs- 30% increase of the ratio of 1 weight per cost between 1994 and 2000 (Gaál, 2004), and the increase in the quantity of production. However as of the 2nd half of 2006 the financial risk of health care was gradually handed over from the government to the health care service provider.

2.3. Thesis 3

The Hungarian primary care based on partial capitation financing provides health care services complying protocols and practice guidelines.

2.3.1. Introduction

The results of the previous thesis suggests that there are changes needed in Hungary, as it is evident that the problems of the health care system will further deteriorate in view of the demographic and epidemiologic background. After experiencing the financial anomalies a question arises about the significance of professional aspects in primary care?
Nowadays clinical decision making based on individual decision making is being increasingly overtaken by health care provision based on protocols and guidelines based on the results of randomized clinical trials. Using available data we investigated the extent of protocol compliance in the primary care practice with respect to hypertension and diabetes mellitus. Furthermore we assessed if it is possible to evaluate or monitor the quality of maintenance care using the available data bases.

2.3.2. Method

Protocol compliance may be characterized by the number of interventions performed annually in a target population; therefore we determined the proportion of patients registered for hypertension or diabetes mellitus that had the interventions set forth by the relevant protocols. Maintenance care of hypertension and diabetes was analyzed based on the guidelines of the Hungarian Hypertension Society and the Diabetes Working Group of the Hungarian College of Internists, respectively.
The number of patients suffering from hypertension and diabetes was calculated by extrapolating the data obtained from the General Practitioner's Morbidity Data Collection Program- a program that yields prevalence data based on a representative sample of the Hungarian inhabitants.
Queries concerning the ICD codes (International Statistical Classification of Diseases and Related Health Problems) and WHO International Classification of Procedure in Medicine codes were obtained from the data warehouse of the

Hungarian National Institute for Strategic Health Research (NISHR) on June 08. 2009.

2.3.3. Results

Based on the analysis of the parameters used to describe maintenance care in hypertension it could be stated that even the most frequently performed investigation recommended in hypertension was done in less than 9% of the patients. Investigations concerning the lipid metabolism was least assessed in case of LDL-cholesterol (less than 1% of the hypertensive patients had it done), while total cholesterol level was only checked in approximately 5% of the patients.
Determination of HgA1c- a laboratory parameter of utmost importance in the maintenance care of diabetes (its evaluation is recommended twice a year) was only done in 5-7% of cases, meaning that less than 2,5-3,5% have this investigation done at the recommended frequency. Lipid parameters were checked, optic disc and lower extremity Doppler examination were performed in 7%, 9% and less than 5% of diabetic patients, respectively. Renal function assessed by urinary protein analysis, and serum creatinine levels was determined in 4% and 8% of cases.

2.3.4. Discussion

Our results show that compliance with the relevant protocols in the general practitioners' care did not receive sufficient priority during the time period assessed. These low indices should be interpreted with caution:

- on one hand it should be critically assessed if the data forming the basis of the analysis is valid.
- it should be noted that at the time of assessment there were no guidelines available from the Hungarian College of Primary Care Physicians, only recommendations from other disciplines were available.
- theoretically it may be that data derived from the General Practitioner's Morbidity Data Collection Program database are exaggerating, yielding worse indices of maintenance care than the real situation. Although this is a valid option, based on the data obtained from the quality assurance system of

the Data Collection Program, and those reported annually to the Hungarian Central Statistical Office this is rather unlikely.

- finally the possibility of such low protocol compliance should also be considered. There were only very few motivational factors that would promote providing adequate maintenance (as well as primary and secondary) care.

2.4. Thesis 4

Low protocol compliance found in the primary care practice may be explained by several systemic anomalies.

2.4.1. Introduction

Low protocol compliance discussed in Thesis 3 mandates immediate intervention irrespective of the reason for it being the insufficiency of professional commitment or administrative attempts. Complex (structural, financial, contextual) reform of primary care is imminent in Hungary, in line with the recommendations of the WHO in 2008, that placed the reform of primary care into the focus of general health care reforms even in countries that have a more rational and efficient health care system than ours (Glazier et al, 2009; Starfield, 2009). In order to correct these shortcomings the health care system should be overviewed as a whole, and the causes that led to this situation in health care as well as the anomalies that need immediate correction should be identified.

2.4.2. Results, discussion

Qualitative/quantitative problems concerning health care personnel, lack of clearly defined competencies

The Hungarian praxis law came into effect in year 2000, that practically defined the number primary care physician practices. Of the 6801 practices 1582 offers pediatric care exclusively, 1545 offers care for both children and adults and the rest manages only adult patients. There are some regions that are not too attractive either due to economic, geographic peculiarities or due to the composition of the praxis population. Today approximately 160 practices are

vacant. The profession of general practitioners(GP) became old, the proportion of GPs aged 60 years or more increased from 10.38% to 27.44% between 1990 and 2007 (Ádány, 2008; Grösz and Papp, 2008).
Similarly to the other specialty fields of health care the competence of health care personnel is not clearly defined.

Incomplete definition of the services expected
The content of services offered by the general practitioner is not sufficiently defined as the borderline between the interventions offered by the general practitioner and that by the specialist is not clearly delineated for the diseases, therefore unjustified referral of patients to the more costly specialist care is a general phenomenon.

Capitation financing lacking quality performance indicators
Financing primary health care is done using capitation financing as of 1992. The capitation fee is based on the number of registered patients (insured patients). An inherent characteristic of capitation financing is that the extent of reimbursement does not depend on either the quantity or the quality of services, furthermore it offers incentives for the general practitioners to maximize the number of registered patients (limited by the digression threshold) and the minimization of performance.

Lack of quality assurance
Although previously there were recommendations to quantify the quality of services offered by primary care, and to incorporate these measures into financing, and there was a call for voluntary auditing in 2009 offering financial bonuses; a comprehensive quality assurance system for primary care is yet to be executed (Institute for National Primary Health Care Services, 2009).

2.5. Thesis 5

The Hungarian primary care system has the potential to become a care organizer receiving full capitation fee, and as such could optimize production efficiency and allocation efficiency.

2.5.1. Introduction

Comparison of the two large health care systems provided some lessons, and suggested that the primary care physician placed in the center of care as a care coordinator could form the basis for an efficient health care system. Starting from this the system of Hungarian primary care was assessed from an economic and professional point of view. After seeing the anomalies of the system that mandate correction, the question arose whether or not would the Hungarian primary care system be appropriate to fulfill the role of such coordinator, and if so what recommendations could be made to increase the efficiency of the health care system as a whole?

2.5.2. Results, discussion

Establishment of primary care teams

The complex curative and multi faceted preventive care expected today from a primary care praxis could only be executed by the establishment of primary care teams (Bocienheimer, 2008).

Change in the financing of primary care

A mixed financing system incorporating performance-based indicator linked financing should be contemplated, taking health economic aspects into consideration, as quality indicators reflect the insufficiency in the quality of care (Ádány et al, 2009).

Quality indicators linked to the levels of prevention

Additional to performance-based measures, financing based on quality indicators could be another element to consider. This could be assigned to the

different levels (primary, secondary and tertiary) of preventive care (Ádány et al, 2009).

a, ***Primary prevention***

- **Health promotion**

  This includes indicators reflecting the efficiency of health promotion campaigns.

- **Immunization activities**

b, ***Secondary prevention***

Incorporation of screening related activities into financing and monitoring oncologic screenings in primary care.

c, ***Maintenance care and rehabilitation – tertiary care***

According to the OECD definition, the primary task of primary care is to offer maintenance care of chronic diseases, in order to decrease exacerbations and prevention of complications (Marshall et al, 2004).

A fundamental of performance based financing is the development of registers for chronic diseases using a uniform set of criteria, formulation of indicators and definition of target values.

Quality management of primary care

A prerequisite for the quality management system is the development of performance indicators based on the recommendations, protocols and guidelines, so protocol compliance could be uniformly assessed.

Strengthening the role of primary care physician

The World Health Report of 2008 proposes that the ideal primary care covers the management of a wide array of health problems with the aid of primary health care teams (WHO, 2008).

Provision of complex, integrated care

Today primary care encompassing health promotion, prevention, diagnosis, acute and chronic care of diseases, rehabilitation, home care and social support is needed.

Provision of continuity of care

Optimally treatment of patients lasts till the patients' problem is resolved, and all diagnostic and therapeutic interventions are followed through by the primary care physician. Continuity of care fundamentally influences therapeutic efficacy (Weinick and Krauss, 2000).

Access to care always at the same point

It is important for the patient to nurture a stable, long-term relationship with the medical personnel at the access point of care.

Strengthening the primary care physician's role as a gatekeeper

A primary care with strong gatekeeping activity may be sufficient to optimize the production and allocation efficiency in health care.

Responsibility of the primary care physician for a well defined population

Empowering the primary health care team to manage the complete care for a well defined population could also contribute to reaching the predefined goals.

Primary care as a coordinator of care

If the primary care teams become fully responsible for the health and well-being of a well defined population parallel to assuming a strong gatekeeping role, the primary care team becomes a mediator, linking the individual, the community, the patients and care levels together (WHO, 2008).

Summarizing it may be said that the Hungarian primary care system could be eligible to take on the task of coordinating health care and by this optimizing the production and allocation efficiency in health care on one hand since the premises for a strong gatekeeping are given, on the other theoretically the possibility to take full responsibility for the health of a certain population is established due to the present system of health care districts.

3. Further research directions

After the analyses presented in this dissertation a new governmental decree came into effect on April 01. 2011 (11/2011. (III. 30.) NEFMI decree) that covers the rules for the indicator based assessment of primary care performance and the evaluation of the prescribing practice of physicians. The decree discusses the detailed rules for evaluating the preventive, curative and maintenance care using specific indicators defined separately for adult, pediatric and mixed practices.

The National Health Insurance Fund quarterly evaluates the preventive-curative services using target values defined for each indicator, each county and praxis group. The target values are valid for a given calendar year and are determined using data from the previous year.

Latter on the effect of this novel indicator-based financing on the activities performed in primary care as well as their effect on the whole health care system could be evaluated.

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