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THE MODEL OF HEALTH CARE SYSTEM EFFICIENCY'S ANALYSIS

Introduction

The efficiency of health care systems evoked, as a study area, in the second half of the XX century (see [8]). However, its role increased greatly after publishing, in 2000, The World Health Organisation Report «The health care systems: Improving efficiency» (see [10]). The report provoked the discussion on the possibilities of the practical measurement of health care system efficiency and brought about criticism that pointed out the WHO methodological discrepancies, nonetheless it constituted one of the first comprehensive thesis, dealing with this study area. The 2000 Report, inspired many future elaborations related to measurement of the health care system's efficiency.

The following article aims at theoretical framing of the health care systems efficiency. It is of cognitive and application nature. We based, primarily, on literature review..

1. The concept of efficiency

Efficiency is a method of resource's use measurement, that allows to obtain the biggest value out of the fix inputs. Efficiency requires the analysis of two variables i.e. the inputs and the effects – outputs (see [9]). From the practical point of view, the efficiency analysis is often reduced to study of the relations between the general effects and the resources with the use of the quotient's or differential's formulas (see [3]).

The efficiency of the health care system is a complex and multidimensional notion. It can be evaluated at the macro-economical level, when studying the system of health protection, or at the micro-economical, when taking into consideration the efficiency of the healthcare providers (see [1]). The efficiency of the health care system consists of proficiency, effectiveness and beneficiary or rationalization. When seen from the economical point of view – it is the relation between the outputs and inputs discussed by Krot (see [2]).

In literature we can find also the notions of the technical, productive and allocative efficiency. The technical efficiency is achieved, when the biggest possible effect is gained with the fixed resource's base, whereas the non-efficiency is experienced when the same (or higher) level of outputs can be achieved with smaller usage of inputs or, at least, one of the resources. This notion makes the comparison impossible, when proportions of resources in different. The allocative efficiency means the situation, when the resources available for use are utilized in the way, that is the closest to the real distribution of the social preferences (see [12],).

One of the effectiveness principles in economy is the Pareto rule. Pareto claimed, that the optimal distribution of allocated resources is reached when the efficiency of a person cannot be increased without diminution of other people's efficiency. This principle is a theoretical model, that is applied for the collective choices, however, it was formulated to assess the behaviour of the particular units. The choice, accordingly to the Pareto rule, is the optimal when at least one person in a group considers the change of resource's allocation as the reduction of its efficiency (see [6]). More adequate principle, for the health care sector, is the theory of Kaldor-Hicks (see [3,4,7]), that introduces some modifications to the Pareto rule. The Kaldor-Hicks principle is expressed through the following criterion: if the change of efficiency of a person (A) would increases the efficiency of other person (B) to the extent, when the benefits of B would surpass the loss of A' efficiency (B is able to compensate for the loss of A), than the change is an effective one according to the Kaldor-Hicks theory. The Pareto principle usually cannot be used in case of public sector, whereas we can apply the Kaldor-Hicks theory without any limitations.

2. The efficiency model

One of the simplest models of efficiency's analysis is the one employed by, e.g., The International Monetary Fund, assumes the existence of three components of the health care system (Fig.1) (see [5]).

- health care expenditures,
- health care resources,
- health care effects.

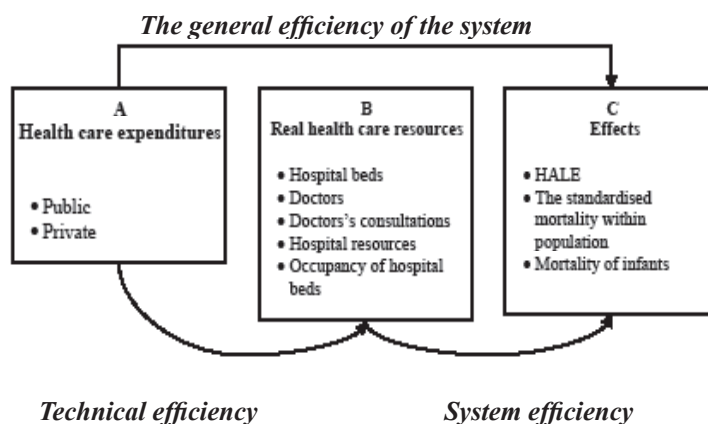


Fig. 1. The model of the health care system efficiency – The International Monetary Fund

Source: Jafarov, E., Gunnarsson, V., Government Spending on Health Care and Education in Croatia: Efficiency and Reform Options, IMF Working paper Vol. 136, The International Monetary Fund, 2008, p. 34.

From a general point of view, the efficiency of the health care system (the relation between a and c – see Figure 1) comprises of:

- the technical/cost efficiency (a-b) presenting how effectively financial resources are used (hospital beds, medical staff, but also health benefits, the bed's occupancy),
- system efficiency (b-c) transforming the resources within the system to the health care outputs such as: life expectancy, standardized mortality indicators, infant's mortality, morbidity of the chosen sicknesses.

Within the study on the elements of the health care system resources, we should analyse the quantity of the resources generated in the system split into three groups: financial, human and material resources.

The main measures of the volume of resources are the following:

- for financial resources: totalexpenditures on health (absolute or relative measures),
- for human resources: the number of doctors for 1000 of inhabitants, m
- for material resources: number of hospital beds for 1000 of inhabitants, number of MRI or CT scanners for 1 million of inhabitants.

The effect is related to the degree of obtaining the main aim of the health care system, i.e. improving the health state of the population. There is a great number of measures which can be applied to different aspects of the «health» notion.

- Life expectancy – (LE),
- Potential Years of Life Lost - (PYLL),
- Disability - Free Life Expectancy - DFLE),
- Chronic Disease Life – (DisFLE),
- Life Expectancy with Disability (LEWD).

The complexity of health care system effectiveness's assessment, according to many different determinants and measures, usually leads to the necessity of employing the econometric tools (see [10]).

3. Conclusions

The model presented in the article allows the evaluation of the health care system's efficiency.. The studies on the health care systems's efficiency are conducted rarely, due to the fact that the relation between the financing, organization, management and health condition of the population is extremely complex. Studies showed, that countries can achieve quite different result with given inputs (see [11]). That's way healthcare system's assessment should brought a clear evidence, which should create a link between efficiency measures and health policy (see [1]).

The authors (see [2]) presented broaderly the construction of two measures of the health care system efficiency proposed, inter alia, by OECD. For the chosen socio-economical measures in the European countries we performed the evaluation of influence of the health expenditures on the health indicators. The model of the health care system efficiency can be used for evaluation of the health care financing's methods on the level of health status of the population in the UE countries.

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