

# Can the Health Care System Be Effective? - The Research Results

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## Abstract

The different definitions of efficiency (in their medical meanings) are presented as the result of meta-reviews found in scientific databases. Efficacy and efficiency are often mismatched with effectiveness in the research of healthcare systems in different countries. In addition to the classic Bismarck's and Beveridge's models the modern concepts of health systems include personalized medicine, recognition of health as economic value. However, the basic problem in the Polish healthcare system is the low quality of overly specific and often changed legislation

## Introduction

Healthcare is a special area of research and description in the field of change management. This area is characterized by a particular variety of forms and types of business. Also, changes in this area, due to the fact that they are closely related to the provision of health services, are becoming more social than technical or economic. The aforementioned diversity has certain consequences. They mainly reflect interpretation problems. For this reason, the following task has been undertaken to organize the scopes of terms, especially the names of organizations that make up the health services market. For efficient change management in this area, the organization of names allows, first of all, to precisely define the requirements for participants of changes. It also facilitates the classification of potential changes. Moreover, the unification of terminology in healthcare creates an opportunity to look at the system with greater transparency and facilitates the description of the relationship between individual elements of the structure of this system, and makes it possible to improve the organizational system in a situation of financial constraints and the simultaneous need to meet patients' expectations.

The used term "health protection" is understood as all activities aimed at preventing and treating diseases, maintaining human biopsychosocial abilities, extending life, ensuring proper development for new generations and improving the quality of human life. Healthcare creates the necessary organizational conditions in which scientific and technical achievements can be optimally used for the benefit of human health. The World Health Organization's Committee of Experts suggests adopting the term "Health Care" (the correct translation should be "caring for health") to denote an organized action for the health of the public. This term is also used in our literature interchangeably as "health care". In other words, health care is a system of all those activities that are done to prevent, treat and eliminate the consequences of diseases and to maintain physical, mental and social abilities of people, prolonging life and ensuring their successful development.

In other words - health protection means a system of all those activities that are performed to prevent, treat and eliminate the consequences of diseases and to maintain physical, mental and social abilities of people, prolonging life and ensuring their successful development.

The term "health care" covers almost all human species activities, including education, culture and the economy. Shortell, Kaluzny distinguish the following components of the security system health:

- a. healthcare - medical medicine,
- b. health protection - a set of activities for public health being carried out
- c. by various sectors of socio-economic life,

- d. healthcare and healthcare management structures,
- e. sources and routes of financing all activities for health.

Terminological issues are important when we take into account the determinants of health according to Lalonde [1]. The impact of restorative medicine on the health of the population is in the order of a dozen or so percent, while over 50% are factors dependent on lifestyle. According to the report Romanow [2], health is not an individual matter of every citizen, but a common good, which should result in a specific health policy.

Healthcare organizations are often referred to as being unique, specific, or at least distinct from other organizations. Moreover, these differences are considered significant, especially in the field of change management.

The quoted Shortell and Kaluzny mention the following among the most frequently mentioned differences:

more difficult measurement of work results,

- a. Greater diversity in work,
- b. The work is more comprehensive,
- c. Most of the work is immediate and cannot be postponed,
- d. The work allows for a small tolerance of ambiguity or error,
- e. Activities at work are highly independent of each other and require a high degree of coordination between different groups of specialists,
- f. Work requires an extremely high degree of specialization,
- g. Members of the organization are highly specialized and are more loyal to their professional groups than to the organization,
- h. In many health care organizations, there is a dual service (clinical and administrative) subordination, especially in hospitals, which can create some coordination and accountability problems and difficulties due to confusion of competences.

From the above characteristics, the organization of health care

is “extraordinary”. These are organizations that have a combination of all of the characteristics listed above. The nature of the specialization, technical skills, substantive values resulting from ethics, professional attitudes pose special challenges to healthcare, and especially to the management of healthcare organizations.

### Basic concepts related to health protection

The creator of the world’s first integrated health care system was Sir Edwin Chadwick (1800-1890). The aim of this system was to keep employees in the best possible health until old age. Models of health care systems: Siemaszki, Bismarck and Beveridge were created much later and are emanations of politics in individual countries. Bismarck’s model resulted not so much from concern for the health of citizens as for the votes of voters.

The Beveridge model was an expression of the concept of the welfare state. While Siemaszko’s model was created in the 1930s, when infectious diseases (typhus, tuberculosis, Spanish flu), as well as hunger and living conditions were the main health problems. These models were “GP based” rather than multidisciplinary teams, no costly diagnostic procedures, no surgery options, no antibiotics, no medications psychotropic drugs, interventional cardiology [3]. They fulfilled their role at the cost of low effectiveness in medical terms, and thus with significant mortality, e.g. due to pneumonia, which were treated with quinine, lobelin, ephedrine, pyramidone and expectorants (Medical Calendar 1937). While the Bismarck and Beveridge models are still being refined, Siemaszki model has been abandoned. The concept of “health care system” is primarily equated with health care, especially in terms of financing healing.

“Our healthcare system now instead of focusing focuses on patient value and focuses on hospital amenities and profits, cost-cutting and cost-effectiveness of patient care. These are important issues, but without focusing on the patient, they lead to waste and pain. ‘ This opinion is for the US. The “failure of the health care system” is identified with the indebtedness of hospitals, the long wait for a “medical service”, that is, de facto with malfunctions related to treatment. To better understand health care organizations, Mudie, Cottam, Middleton distinguish the following features (Table 1).

**Table 1:** Features of healthcare organization.

Feature	Integrated Healthcare	Environmental Healthcare	Hospitals
The external environment	Moderate complexity	Relatively simple	Complex
	Moderate changes	Moderate changes	Big changes
	Big competition	More and more competition	Big competition
Mission and goals	Emphasis on primary care	Quality of life Emphasis on primary care	Emphasis on acute care
Task groups and work structure	Integrated primary care and specialized	Simple structure, mainly individual contact with the patient	Departmental teams and inter-departmental, there is a great need for coordination of activities
Organizational structure	Functional, integrating primary care physicians and specialists	Functional	Faculty and matrix
Changes and innovations	Response and creating new approaches to manage patient care	Response to demographic changes	Reacting to a new paradigm, implementing new roles within vertically integrated systems
Strategic issues	Extension of the concept of specialist care	Demonstrating constant values	Adapting to the changing service delivery system

In Poland, the recipe for the health of citizens was to be first the Health Fund (1920), then the Social Insurance Institution (1934), after the war: nationalization of hospitals and pharmacies (1948-1950), industrial medicine (1950s), healthcare teams (1975), independence of health care teams, privatization pharmacies and open health care (1990s), again Kasa Chorych (quasi-insurance), commercialization and privatization of hospitals, transfer of medical treatment to local governments, one payer (NFZ), separate emergency medical services, benefit baskets, lists of reimbursed drugs, the Act on activities medicinal. Organizational changes result from successive legislative changes. It has even come to be believed that the primary way to solve problems next laws should be introduced to protect health. In fact, legislation is only the basis of health policy, which is implemented at various organizational levels [4].

In recent years, the concept of basing the assessment and financing of hospital health services depending on the achieved health effect (value-based purchasing - VBP, pay for performance - P4P) has become popular, and the erroneous thesis that "imbalance between the producer of health services and the consumer is so huge that in most cases you can sell him anything at any price" he still has his supporters. Just like the assumptions that the health needs of the population are unlimited, and the introduction of an electronic patient card will simplify the work of doctors and even solve the problems of queues. It was only "the COVID-19 crisis made many European societies realize that the health care systems in force in their countries are ineffective and do not work".

Therefore, questions arise whether the health care system can be effective as a whole, what is the methodology for assessing the effectiveness of the system, what are the legal causes of the current failures of the health care system in Poland, and are these phenomena occurring in countries other than Poland? The aim of the study was an attempt to determine the current state of research and theoretical concepts regarding the effectiveness of health care systems as well as the legal and structural conditions for the effectiveness of the system, with particular emphasis on Poland.

## Material and Methods

Medical (PubMed, High Wire Press, Cochrane Collaboration) and multi-specialist (EBSCO, Springer link) Internet databases were reviewed to determine the theoretical basis for measuring the effectiveness of the health care system (as a whole). The keywords were: effectiveness, efficiency, efficacy, health care system. The inclusion criteria were publication in professional journals, the Evidence Based Medicine methodology, analysis of the entire health care system, and numerical data on health outcomes.

The exclusion criteria were works related to specific issues, e.g. effectiveness in various disease entities, works that do not meet the EBM criteria and works older than 10 years - due to legislative changes that have occurred in the last decade. An attempt was also made to evaluate the determinants influencing the effectiveness of healthcare in Poland, based on the legal acts included in the ISAP database. Official statistical data on the structure of health care

and health protection contained in the materials of the Central Statistical Office in Poland (2018) were also used.

## Results

The terms "health care system" and "health care system" - distinguished in Polish literature - in Anglo-Saxon terminology are referred to as health system or healthcare system. The database review results for keywords and for the phrase "effectiveness of health care system" are presented in Table 2.

**Table 2:** Database review results.

Base	Number of Pages for Words Keywords	Number of Publications for the Phrase
EBSCO	1806	27
Springer link	2 690	2 690
PubMed	33 145	0
HighWire	125 133	2
Cochrane Collaboration	100	1
Google science publications	2 627 000	36

Only 2 publications meeting the search criteria were found in medical databases, while in the EBSCO database - 27 items. In the Cochrane Collaboration database, only one work (meta-review) concerned the methodology for assessing the effectiveness of the health care system. The obtained results indicate significant methodological difficulties in assessing the effectiveness of the health care system. The results of searching for legal acts according to entries in the Polish Internet System of Legal Acts (ISAP) are presented in Table 3.

**Table 3:** ISAP passwords.

Password According to ISAP	Number of Legal Acts
Healthcare	1641
Hospitals	345
Health insurance	213
Doctors	356
Pharmacies	125
Nurses	234
Medical practice	109
Pharmaceuticals	46

The search results in the ISAP system include both current and obsolete acts. Apart from the acts and resolutions of the Parliament, there are: related acts, repealed acts, acts deemed repealed, implementing acts, amending acts, amended acts, European directives, references. There are laws often amended, which does not reflect the quality of the law, e.g. the Act on health care services financed from public funds (2004), amending 43 other legal acts, was amended (after the adoption of a consolidated text in 2018) 31 times in less than 4 years. Law on medical activity, repealed 12 other acts, was amended 4 times in 2 years, and regulates many

overly detailed issues, e.g. standards working time of employees of healthcare entities (as if the labor law did not exist). Some legal acts regulate in detail obvious matters, such as the ordinance of the Minister of Health "on the procedure of a medical entity performing stationary and 24-hour medical activities health services with the patient's remains in the event of death. patient "or the ordinance of the Minister of Health" on the detailed scope of powers and duties of the medical emergency coordinator " orders the preparation of a report on the 24-hour on-call duty.

The "health care system", especially in Poland, requires changes, as 795 hospitals, 16 60 815 health care centers, 79 337 doctors, 184 748 nurses, 6 927 medical practices, 11 297 pharmacies and 10 medical universities with 42 clinical hospitals separately pursue their sub-goals.

In the literature, medical personnel (especially doctors) are often treated as a homogeneous group, forgetting about 70 types of medical specialties, 12 nurses, as many as pharmaceuticals and 23 types of medical professions. Designing a system that consists of all the above structures (including personnel) is an extremely difficult, if not impossible task. Moreover, the effectiveness of the system is assessed based on the number of services provided ("health services": 7,344,000 hospitalizations, 290 million consultations, 42% of which in specialist clinics 7.4 advices per capita) negative health indicators (mortality, morbidity) and financial outlays of PLN 100 billion annually

## Discussion

Research on health care systems reflects concepts that are not necessarily consistent. Apart from the two main models of health care (Bismarck versus Beveridge), one can distinguish the concept of "salutogenesis" (as a development of personalized medicine combined with preventive action) [5].

Personalized medicine (patient-oriented medicine) is based on an individual approach to the patient, using genetic testing as opposed to evidence-based medicine (EBM), which refers to the results of population studies [6]. Care optimization projects based solely on economic criteria are common [7] or the belief in the effectiveness of computerization [8].

Successive concepts combine efficiency health system with quality [9]. Of the 414 publications found by Rockers et al. [10] - 259 met the inclusion criteria, 50% of the analyzes were limited to the results of controlled studies, and 68% were based on the EPOC (Effective Practice and Organization of Care) criteria. Overall, the authors considered it necessary to conduct further research on the criteria used in the study of health systems, provided that increasing the number of criteria must not compromise the reliability of the research [10], Shah et al. [11] in a work devoted to the effectiveness of actions for Health Impact Assessment shows that out of 51 programs, only eight achieved improvement in QALY, while in 18 other health benefits were identified, some programs did not allow cost-benefit assessment. Resource allocation

decisions are made differently by the Department of Health and the National Institute for Health and Clinical Excellence (NICE), leading to financial ineffectiveness of programs. Methodological difficulties in assessing the quality of life underlined by Paz et al. [12].

The tools used for this purpose (SF-36, HUI, EQ-5D, QWB-SA, HALex, MLHFQ, NEI-VFQ-25) are, to a limited extent, suitable for assessing the quality of life of the general population. Vest and Gamm [13] assessed the effectiveness of healthcare transformation in the US based on 9 publications that met the inclusion criteria, using Six Sigma, Lean / Toyota Production System, and Studer's Hardwiring Excellence. Authors state that due to methodological limitations, the results of 9 studies may be questioned because of study design errors, inappropriate analyzes and failures in excluding alternative hypotheses.

Eccles et al. [14] state that the theoretical foundations are not used in implementing effective clinical practice in the UK NHS. Many politicians recognize that conducting comparative research on the effectiveness of health protection can reduce waste in the US health care system. For this purpose, Hoffman et al. [15] propose the concept of "marginal medicine" (analogy to marginal costs) consisting in the development of guidelines for the selection of the best health options. However, the underlying problem is the scarcity of data both in observational studies and in developing evidence of efficacy. The question arises whether various specialists dealing with this problem can develop sufficiently accurate measurement tools? A possible solution is to develop assessment tools effectiveness of individual actions for the health of the population [16].

Tenbensen et al. [17], based on data from the Health Policy Monitor in 11 developed countries, showed that better health outcomes (outcomes) are obtained:

- a. in tax-financed health systems,
- b. when the center-left dominates the government,
- c. when social security-based systems are more concerned with cost reduction and economic efficiency. On the other hand, the political composition of the government is not the main factor shaping the health policy of the state. It is only from 2019 that the role of initiatives targeting societies, assessing accessibility and equality, and health effects on the population due to the COVID -19 pandemic, increases [17].

Thus, unlike research on the effectiveness of healthcare on selected groups of patients, research on the effectiveness of healthcare systems is few. This is mainly due to from methodological difficulties, the complexity of the problem, and political conditions. Only in recent years, and especially in 2020, has there been a greater interest in the effectiveness of health care systems at the national and international level, although some of the concepts presented are a return to the ideas from the 19<sup>th</sup> and 20<sup>th</sup> centuries [18-23].

1. Determining the effectiveness of the health care system requires overcoming numerous methodological problems,



the solutions of which require further research with the participation of multidisciplinary teams.

2. The problem of the effectiveness of health care applies to both developed and developing countries. It does not only result from the limited financial resources allocated to health care.
3. For many years, in the Polish health care system, there has been a tendency to solve all problems by means of excessively detailed and frequently amended legal acts, with insufficient funding and underestimating the role of partners from various professional groups [24-28].
4. In transforming healthcare, the specificities of the sector must not be underestimated. These specific features include the relationship between the doctor, nurse and patient, the right to professional change of care and information about it. It is also about health needs and the right of equal access to medical services, possibly with limitations, but this is an undisputed principle. For health is a private good as well as a public good. It is very difficult to establish boundaries between them. However, even serious difficulties cannot justify unprofessionalism in carrying out changes. The advantages of party interests over the public interest and the advantages of certain groups of medical professions over others, and even more so of the medical community over the interests of the patient [29-33].
5. Managing efficiency in healthcare requires knowledge, substantive preparation and prudence. The current changes consisting in centralizing decisions in a situation of great difficulties caused by the COVID-19 pandemic can be treated as a kind of system rationalization attempt [34-37].

Centralization in a COVID -19 crisis situation is sometimes necessary. However, as a permanent solution, it is irrational and socially dangerous. It is a solution of the type of "enlightened absolutism" based on discretion, based on the assumption that one authority is better than independent units operating in a coordinated system.

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