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# SELECTED MODELS AND THE CLASSIFICATION OF HEALTH CARE SYSTEMS

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#### **ABSTRACT**

Health care is a fundamental element of each country's social policy. It is mainly organised and implemented through the adoption of a certain political framework (defined objectives and priorities), strategic and operational management (planning, organising, motivating and controlling), and generation of resources (e.g. defined activities of collection and distribution of financial resources, training of medical professionals, and the purchase of technology and pharmaceuticals). These principles are either formulated on the basis of already functioning health care models or bespoke models are being created. An important element of a given model is to define its mission (the reasons for its creation and operation), while such elements as the functions, objectives, resources and methods of operation attribute to its individual properties and values.

Health care systems may be organised differently. Their main distinguishing features are the ownership (public, private or mixed), sources of financing (public, private or mixed) and management (centralised, dispersed), or they can be structured with regard to political aspects (single-centric, multi-centric and pluralistic).

This article, based on the latest scientific developments, presents the historical outline of the selected models for health care systems and the new concepts regarding their classification. The article also offers theoretical analyses of those health systems, which have become the models for others.

The aim of this article is to present the classification and the characteristics of the selected models for health care systems, both from the historical perspective and the perspective of those currently in operation. The documents analysis method was used, which included the leading positions in the Polish and foreign literature, in the field of the issues addressed, as well as the literature published by the related institutions.

This topic is already being discussed within the literature of the subject, nevertheless it is still relevant and, due to its undeniable importance, deserves further examination because it directly or indirectly concerns every human being.

**KEYWORDS:** classification, model, health care system

#### **BACKGROUND**

Classification, in the view of comparative research, is an integral part of science. In allows us to identify both similarities and differences between individual variants that belong to the same category. Health care systems are subject to similar principles and can be classified according to a number of criteria, indicative of the public policies of the countries in which they operate. Furthermore, they can be organised with proportions of government and private funding, and public and private ownership, based on the method of their management or considering political aspects [1].

The adopted solutions and the correlations between these elements allow for the description of a model (a simplified presentation of the basic features or mutual relations [2]), according to which health care operates in a given country. Meanwhile, defining the characteristic attributes of the model already in operation, together with their description, enables identification, designation, and future evaluation.

In the theory of management, a systemic approach has been distinguished whereby a system is defined as a set of interconnected and interdependent parts [3]. Effective solutions to health care challenges are implemented in a systemic way, due to the complexity of the matter and the necessity for the cooperation of many correlated (interconnected) elements, all of which serve a specific function. Therefore, we refer to them as the models for health care systems.

Classifying the models for health care systems (clustering them due to their similarity to those considered exemplary) allows to understand how a model func-



tions. A starting point for analysing and evaluating the existing health care systems throughout the world is identifying the typical models for health care systems, whose characteristics have been clearly established [4]. Once these health care models have been identified, it is then possible to assess their effectiveness (how they achieve the intended objective) and efficiency (the relation of the benefits achieved to the costs incurred).

Every day, people's lives depend on the efficient operation and management of health care systems. We can observe that health care systems in different countries, although assigned to the same model, are operated in a different manner and there are discrepancies in the way they are managed. Ultimately, such a situation has an effect on the quality, value and life expectancy of the society they are intended to serve [5].

### SELECTED TYPOLOGIES OF HEALTH CARE SYSTEM MODELS

## Conventional classification of health care system models

A commonly used classification refers to historical aspects, where the main distinguishing feature of the models is the method of subsidising funds, which according to Lewandowski [6], is related to the position of the authorities and their views on the health of the citizens. In the historical perspective, the following models of health care systems were adopted: the insurance model (German, Bismarck); the socialist model (Soviet, Siemaszko); the national model (British, Beveridge); and the market model (residual, American) [7].

The first obligatory insurance premium, in the form of a disability insurance for workers, was introduced in 1883 in Germany, and its assumptions laid the foundation for the creation of an insurance model. The insurance model was based on a commonly paid (by both the employer and the employee) and obligatory paid (resulting from the provisions of law) health insurance premium. The authorities' concerns for the health of their citizens were not the prerequisites for introducing a systemic model of health care, yet this model became the first traditional model of health care system. With the introduction of the insurance model by means of legal regulations, the existence of financial institutions in health care was normalised, related to the collection of insurance premiums and the financing of medical services. This was also the first time that the amount and the frequency of a premiums payment scheme were regulated by law [8].

Based on the experiences of Germany, the same health care model was introduced in France, Belgium, Austria, the Netherlands and Japan, and in the interwar period also in Poland.

After the October Revolution in 1917, the establishment of the communist state began in Russia. After the communist statehood was strengthened, a new model

of health care was introduced – the socialist model, also known as the Siemaszko model. This model functioned on the basis of the country's five-year development plans. The state assumed full control of the health care system, and the organisation and financing were centralised. Under the doctrine of the socialist state, the government structured and financed health care, and assumed full responsibility for the functioning of the health care system and the health of its citizens, who were entitled to full access to such services [9].

After the Second World War, the socialist model was adopted by the so-called countries of people's democracy: the Czech Republic, Lithuania, Hungary, as well as Poland and China. However, it can be noted that not all the principles of the socialist model were implemented in these countries. In Poland, the Act on the Medical Profession of 1950 [10] allowed the doctors, whose primary place of work was a social institution, to pursue their profession outside the national health care facility. Direct payments could be made by patients for the medical services rendered in private practice, and in this way, private health care was allowed, to a limited extent and under the full control, to operate alongside the national health care system.

During the Second World War, there was a conviction formed that the health of citizens is a public good, and the state should foster and protect it. On the basis of these beliefs, the UK government introduced a system of national health services with the intention of providing 'social security' for the population and to protect it 'from cradle to grave'. The introduction of the National Health Service (NHS) was driven by the views of Sir William Beveridge, presented in the so-called 'Beveridge report' of 1946 on, among others, unification of the pension and social security plans [11]. The national model predicted that the state would take full responsibility for the health of all citizens and provide them with free access to medical services. Characteristic features of the national model are its universality (all citizens are entitled to benefits, regardless of their social status) and free access to health care. The British model implements the principle of social solidarity (assistance in providing benefits to persons in need through a fund developed by the joint efforts of insured persons) [12]. However, in the assumptions of the national model, the rejection of private health care and private financing from other sources, e.g. voluntary private insurance, was not included.

The national model of health care, following the example of the United Kingdom, was introduced in Denmark, Finland, Sweden, Greece, Spain and Canada.

The final example of traditional classification models for health care systems is the residual model. This is mainly based on a rejection of the caring role of the state and thus access to medical services for its citizens. In this model, the health care sector is a market, where demand and supply play a major role and the patient is treated as a customer who can freely choose to purchase the medical services offered. The availability of

such medical services depends on the patient's financial resources and are financed through individual payments for the services provided or through individual insurance premiums [6].

Originally, the USA adhered to only the residual model; however, over the years the intervention of the state in the US health care sector has increased. Currently, some areas of health care are financed from public funds (for people in special situations, e.g. the elderly or the poor). [13]. As a result, the residual model in its original assumptions currently does not exist.

### Classification of health care system models in a political context

In the literature on the subject, a typology of health care models can be noted whose decisive feature is the organisation of the decision-making process. This includes a political aspect. Here there is a distinction between single-centric, multi-centric and pluralistic models [14].

The single-centric model of health care is characteristic of a government that strives for a maximally centralised system, where the competent authority has exclusive rights in the decision-making process. The model is managed centrally, through the hierarchically structured units performing the assigned tasks. Everything is decided by the authority that fully controls the system. In a single-centric system, the participation of private entities is acceptable, however, they are treated objectively and instrumentally. In contrast, in a multicentric model, the fundamental principle is to create a system based on the market mechanisms, where the regulating factors are supply, demand and competition. This model has many participants – patients, providers and payers - who act independently and make their own decisions. The role of the authority is limited and only has an indirect impact on the operation of the model, e.g. the creation of its general and legal framework.

The features of both single-centric and multi-centric models can be found in the pluralistic model. Decision-making in this model is shifted to a lower level of government and those in need, while the role of central government is to create a general and legal framework, and to monitor and encourage participants in the system to cooperate with one another. The operation of the pluralistic model is carried out by means of negotiations and contracts between participants in the health care system. A number of different stakeholders are involved in the functioning of the system and different forms of management are applied, as described in an article by Ahmed et al. [15].

Solutions characteristic of the single-centric model can be found in France and the UK, where health care systems are centralised. The single-centric model is attributed to national health systems, while the characteristic features of the multi-centric model can be found in the American health care system, where pri-

vate ownership is firmly rooted. Features of the pluralistic model can be observed in the current German or Canadian health care system, as well as in many low-income countries such as Bangladesh and Cambodia.

### Classification of health care system models based on the elements of the system

Romer was one of the first to propose the concept of classifying health care systems based on the elements of the system (as in the systemic approach).

His earlier concept, referred to in the literature as 'Romer's First Concept', stated that health care models consisted of seven subsystems – source of financing, human resources, material resources, provision of services, preventive services, regulation, and administration – all of which perform specific functions [16].

'Romer's Second Concept' lists five basic elements: management, resources, way of providing services, economic (sources of financing and programmes) and the institutional form responsible for organising the system [14]. We can note that this later concept details an element – resources – which received a broader context, including human and material assets.

Another approach classifying health care systems based on its elements was proposed by Zweifel. Zweifel listed patients and medical service providers (doctors) as the basic elements of the health care system, however, he considered that the nature of a system is determined by realisations between these elements. In a doctor-patient relationship, the ability to control the patient comes down only to the choice of financial function, which provides the doctor with an appropriate stimulus. Optimal payment schemes for the doctors' services may be considered socially unacceptable, and the patient may not recognise such a scheme, which may affect the quality of the service received. Therefore, Zweifel proposed 'complementary entities', which characterise the system and include financing and finance-shaping mechanisms. He indicated five groups of complementary entities that may be important in the health care systems: medical associations, employers, private health insurers, social health insurers, and local and central governments. Moreover, the selection of a dominant complementary entity, which eliminates conflicts in the doctor-patient relationship, is a characteristic feature of a given health care system. One example of this is Germany, where medical associations function in a very similar way to complementary entities, through their participation in the doctor-patient relationship and determining the ways of financing medical services [17].

The individual elements of the system can be considered as subsystems of a larger structure. In this case, the subsystems are separated and considered autonomous elements functioning in the environment, which is a broader system itself.

The analysis of the models for health care systems, based on the concept of multi-level organisations, was

proposed by Strumberg. In his concept, Strumberg presented a system consisting of the elements defined as separately functioning systems that interact with one another, and have consistent values, objectives and rules within the whole health care system. Furthermore, he indicated the functioning of those subsystems on four levels: macro level (policy and management at the national level); meso level (health care management at the regional level); micro level (provides local individual health care services); and nano level (personal health issues and independent management of personal well-being and diseases) [18].

The presentation of a health care model as a multilevel organisation (system) with many subsystems (elements of the system) is consistent with the theory of the systems and their complexity.

### Multidimensional classification of health care system models

The economic changes and the tasks faced by the authorities resulted in an increase in the demand for financial resources. These stemmed, among other things, from the fact that the population was ageing, as well as from the subsequent technical progress that enhanced therapeutic possibilities. These motivations led to an intensified interest in the organisation of health care [6]. As a result, the concept of multidimensional classification of the models, proposed by the Organisation for Economic Cooperation and Development (OECD), which considered the method of their financing (fundraising and their transfer), was established [14].

The OECD proposed a new classification, where the simplest model was that of direct fees paid by the consumer. It has also identified the models of voluntary and compulsory insurance, allowing for the reimbursement of all or part of the expenses incurred. In the first situation, a patient makes informed decisions, chooses the insurer, concludes a contractual agreement and pays a premium. They decide on the choice of a provider and make a direct payment for the services obtained. The patient's contract with the insurer is the basis for claiming reimbursement of some or all of the costs incurred. With compulsory insurance, a patient is no longer free to choose an insurer, which is regulated by law.

A slightly different OECD proposal was voluntary and compulsory insurance models based on contracts between insurers and medical service providers. In a voluntary contract-based insurance model, a patient is free to choose an insurer, which then concludes contracts with health service providers on the patient's behalf. The role of the patient is limited to paying a premium, while the insurer pays for medical services. In a contract-based compulsory insurance model, the patient is not free to choose the insurer and is obliged to pay an insurance premium. However, all medical services are paid by the insurer.

Finally, the OECD classified an integrated system for the models of voluntary and compulsory insurance, which differ in terms of the approach to insurance design. Here the model of voluntary insurance is characterised by unconstrained affiliation. The patient chooses an insurance institution and the insurer organises medical services as part of its own, self-organised medical services. However, in the model of compulsory insurance in this integrated system, the autonomous choice of insurer is limited. A patient cannot be uninsured and, while using the medical services provided, cannot benefit from services outside the system, which is organised by the institution that collects the funds [19].

In 2006, Wendt et al. presented the concept for the classifying health care models as a combination of three determinants - financing, provision of health services, and management - considering the impact of the state, society or market forces on their implementation. The authors proposed 27 combinations (3×3×3) of theoretical types of heath care system, and from these they identified three ideal systems whose characteristics in all three determinants are implemented in the same manner. In the ideal public health care system, the financing, provision of services and management would be undertaken by public entities and institutions. In the ideal social health care system, social entities (non-governmental) would take responsibility for financing health care, its provision and management. The ideal private health care system would be where all three dimensions are under the patronage of market entities. In addition to each ideal type category, there were combinations of mixed types, in which the identification takes place through the manner in which their characteristics are realised. The authors also indicated types of models where each of the features is realised in a different way, referring to these as purely mixed types [20].

Freeman proposed his own concept for the division of health systems. He described health care systems according to several dimensions: health care provision (doctor, manager and patient); medical finance (salaries and fees, taxes and premiums); and regulations (markets, hierarchies and networks) [21]. He pointed to many variables that affect the diversity of the models in different countries. Health care can be provided, financed and regulated (or governed) in different ways, in hospitals or in private practice. He drew attention to the different ways in which doctors are remunerated, to the forms of ownership and activities of therapists, and to the way health care is paid for. According to Freeman, health care can be paid for either through general taxation or both public and private insurance schemes. Financing and provision of health care can be administered centrally, regionally or locally. He identified national health systems as a combination of ways to achieve these dimensions. Further, he proposed a three-dimensional classification according to

the typical models, defined as national health services and social security systems.

Böhma et al. classified 30 different health care systems based on the OECD countries, and proposed 10 models of health care systems. The proposed typology distinguishes three basic dimensions of the health care system (regulation, financing and provision of services) and three types of entities (public, social and private). They concluded that there is a hierarchical relationship between those three dimensions (regulation, financing, provision of services), where the overarching dimension limits the nature of the subordinate ones [22].

Toth proposed the adoption of a classification of health care models, considering the mechanisms of financing and provision of health care services, and in particular the relationship between health care providers and insurers [23].

### Classification of health care system models based on the functions of the system

The World Health Organization (WHO) has proposed a classification of health care models based on the functions of the system to achieve certain objectives.

WHO provided indicators of the performance of national health care systems in relation to three general objectives: good health of the consumer society in the model; responsiveness to the expectations of the population; and fairness of funding. Considering the first objective, it was pointed out that a well-functioning health system primarily contributes to the good health of society and at the same time reduces the inequalities and improves the health of the less fortunate. According to WHO, the ability to respond to the expectations of the population comes from having

the capacity to address the demands of people in relation not only to health, but also to other issues, such as education. Moreover, the system should be focused on those in need. The third objective of financial fairness acknowledges that health care can be expensive, therefore it is important to protect people from choosing between deprivation and loss of health. WHO also pointed out that the mechanisms for mitigation and risk-sharing, in order to provide financial protection, are more important than in other cases such as home insurance, motor insurance, etc. [24].

WHO set target categories as qualifiers for the formulation of a health care model fulfilling four basic functions and recommendations for each of these functions: service delivery; generation of financial resources; management; and investment in human and sustainable resources.

Hołówka proposed group health care models on the basis of four normative requirements for health care, adding that these are 'not feasible models'. The author distinguished four theoretical models: moral, bureaucratic, free-market and insurance, assigning ownership to each of them [25]. These models are shown in tab. 1.

Kumakawa presented an integrated health care system, targeted at the elderly community, as the third type of system (the world's highest number of 100-year-olds live in Japan). The health system consists of five elements: three specialist medical services (prevention, treatment and nursing care) and two non-specialised services (home care and social welfare support) [26].

Efforts are also being made to design future health models based on the achievements of the science of management. Kraft and the co-authors presented the health care model as an organisation capable of con-

Table 1. Health care system models according to Hołówka.

Feature of the model	Moral	Bureaucratic	Free-market	Insurance
Foundation of its operation	life and health are the greatest good, health protection and saving lives is the highest obligation at all costs	science and scientific evidence, strictly described and defined objectives and procedures	free-market unrestricted supply and demand regulate the needs of the patient and their fulfilment in the field of health	rational behaviour, pluralism, respect for the diversity of the needs in the field of health
Supervision and responsibility	autonomy – a moral duty, the patient should receive the required and effective medical assistance, because the patient and medical personnel is a specific vocation	central administrative, responsibility of the administration	corporate institutions, the patient is responsible for their own health	insurer
Sanctions and infringements	public punishment, stigmatisation, moral criticism	in accordance with legal regulations, procedures and bylaws	is not the subject of an external evaluation, the limitation of financing, possible claims are considered by the court in accordance with legal regulations	evaluation of the participants of the model, protests
Access for patients	Universal – the economic factor is morally unacceptable	limited, resulting from legal orders, procedures and regulations	limited to funders only	limited to insured persons only

Source: author, based on Hołówka [25]

tinuous learning [27], proposing changes to be made at the organisation level in five areas: objectives and strategies, culture, people and processes, educational infrastructure and technology.

#### **SUMMARY**

The presentation of the selected models of the health care systems, together with their systematisation, provides a view on classification as an important and inherent element of the comparative research and the comparative analysis of the health policies in various countries.

Through the analysis of a health model of a given country, we can find similar features and attributes that occur in a health care system of another. If an analogy is found, we can then group the health care systems of these countries into one recognised model, using the same method of their classification, while still recognising the differences between them.

Many classifications of health care systems are already in operation, yet distinct criteria have been used to establish the purpose of each of them. While there are slight differences between the listed types or benchmarks of each of the systems, through analysis of the relevant literature we can observe that the classifications presented are mainly based on three fundamental criteria: the recipient (patient), the pro-

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vider (doctor), and financing (private, private and social insurance). This, in turn, determines the way medical services are provided and accessible for a patient. The above-mentioned criteria are the main factors differentiating the existing models for health care systems worldwide. Further classification concepts are a compilation of the basic criteria.

In all cases, the proper classification of a model of health care system and its assignment to a given type requires a solid analysis of its organisation and mechanisms of operation.

None of these classifications of health models is optimal (the best), as there are no ideal models for health care systems. The chosen classification is the most advantageous one considering the purpose it is supposed to serve, i.e. the reasons for its creation.

There have been dynamic economic, social and demographic changes leading to certain reforms in health care in a number of countries. Technological progress also enforces rapid changes in the health care system. Therefore, we can observe that efforts are being made in order to reform and adapt health care systems to modern requirements, together with simultaneous aims to increase efficiency (the best possible results in relation to the costs incurred). As a result, the subject of the classification of health care system models is and will remain relevant.

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