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BASIC DETERMINANTS OF EFFECTIVE HEALTH INSTITUTIONS MANAGEMENT AS AN ELEMENT OF SOCIAL AND MEDICAL PROVISION IN A REGION ¹

The research subject is the socio-economic relations system that takes place in the management system of health care institutions. The article aims to identify directions for increasing the efficiency of management of health care facilities. A comparative analysis of existing approaches to managing medical facilities was carried out. Conclusions were made that the national health care system of Ukraine, needs adaptation to modern technologies and socio-economic changes caused by the emergence of epidemiological threats such as COVID-19. The authors determined the peculiarities of the functioning of the medical services market. Specific characteristics for the market of medical services and unique accents in the state regulation of this market are revealed. The health care system of another country is briefly analyzed with an emphasis on innovative components. Based on the research results, proposals are given for implementing measures to improve the management of health care institutions.

Keywords: regional health, innovations in health care, financing of medicine, management in the field of activity of medical institutions, COVID-19.

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ОСНОВНІ ДЕТЕРМІНАНТИ ЕФЕКТИВНОГО УПРАВЛІННЯ ДІЯЛЬНІСТЮ ЗАКЛАДІВ ОХОРОНИ ЗДОРОВ'Я ЯК ЕЛЕМЕНТА СОЦІАЛЬНОГО ТА МЕДИЧНОГО ЗАБЕЗПЕЧЕННЯ НАСЕЛЕННЯ РЕГІОНУ

Предметом дослідження авторів є система соціально-економічних відносин, що мають місце у системі менеджменту закладів охорони здоров'я. Здоров'я автори розглядають як основний драйвер зростання продуктивності економіки та соціальних зрушень, а також покращання якості життя. Крім того, зазначається, що питання профілактики, а, головне, вчасного та коректного лікування захворювань набуло особливої актуальності в умовах пандемії коронавірусу. Наведено статистичні дані щодо наслідків пандемії для соціально-економічного світового розвитку. Метою статті є виявлення напрямків підвищення ефективності управління закладами охорони здоров'я. У рамках дослідження проведено порівняльний аналіз існуючих підходів до управління медичними закладами. Зроблено висновки про те, що національна система охорони здоров'я, зокрема в сфері медичних послуг, Україні потребує адаптації до сучасних технологічних та соціально-економічних змін, зумовлених виникненням епідеміологічних загроз на зразок COVID-19. Авторами визначено особливості функціонування ринку медичних послуг. Виявлено специфічні характеристики для ринку медичних послуг та унікальні акценти в державному регулюванні цього ринку. Автори зауважили на доцільності економічної оцінки ефективності змін у медичній сфері та розглянули можливість додаткових джерел фінансування закладів охорони здоров'я. На підставі експертних оцінок зроблено висновок про доцільність пошуку додаткових джерел фінансування регіональних медичних систем. Коротко проаналізовано систему охорони здоров'я іншої країни з підкресленням інноваційних складових. Приділено увагу огляду загальних принципів побудови організаційно-економічного механізму управління закладами охорони здоров'я. За результатами досліджень дано пропозиції щодо впровадження заходів для покращання менеджменту закладів охорони здоров'я. Підкреслено необхідність реформування галузі охорони здоров'я, що мають бути спрямовані на зміцнення централізованого державного контролю з використанням адміністративних та інформаційних технологій.

Ключові слова: регіональне здоров'я, інновації в сфері охорони здоров'я, фінансування медицини, менеджмент у сфері діяльності закладів медичної сфери, COVID-19.

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Introduction. The population's health is the driving force of social production growth and quality of life improvement. The field of health care needs the permanent opening of innovations designed to ensure the process of restoration and maintenance of health. This issue has become especially relevant during the COVID-19 pandemic, and its relevance has not decreased over the months. COVID-19 has become the most potent modern threat to the national security of all countries of the world. Since the number of dead has already reached about 6.29 million people, the amount of losses is 4.4% of world GDP, in Ukraine – 108.5 thousand people and 5% of GDP, respectively [1]. The outbreak of this pandemic has primarily tested the strength of national health care systems, their potential to counter a new infection, the degree of preparedness and the speed of response to emergencies. The rapid spread of this epidemic worldwide, its extraordinary scale, and its significant economic and social impact emphasize the urgent need not for a fundamental but comprehensive restructuring of the management system of medical institutions in Ukraine. In current conditions, the importance of medical management is increasing with the identification of those elements of control of the activities of organizations in the system of medical provision of the population, which will contribute to the achievement of the state of the resilience of the domestic health care system to epidemic challenges of diverse nature.

Analysis of recent researches and publications. Scientists interpret the effectiveness of the management of health care institutions in different ways. There are differentiated approaches to ensuring smooth and efficient operation of the institution in different operating conditions and under different circumstances. In particular, the authors of the work [2] consider the issue of re-hospitalization of patients as an unnecessary demand for health care resources. They propose methods for identifying patients at high risk of re-hospitalization using predictive models (machine learning and statistical survival methods). Scientific works dedicated to improving the efficiency of medical institutions in the conditions of COVID-19 have gained special relevance. In particular, [3] analyzes the impact of effective knowledge management and organizational intelligence on the ability of hospitals to respond to outbreaks of COVID-19. The authors put forward a number of hypotheses that were tested using a medical personnel questionnaire and the PLS-SEM technique. The study confirmed that effective management of organizational knowledge and work productivity is essential in countering the pandemic. Scientists offer their model for managing the response of health care institutions to the COVID-19 pandemic. A model based on neural networks is proposed in work [4], and the authors prove the perspective of building predicted models of the impact of COVID-19 on various areas of human life, which helps in planning the strategy for the further development of the health care system. The main goal of the article [5] is to determine directions for improving the activities of health care institutions with a proposal for future changes after identifying the strengths and weaknesses of the work of medical clinics based on the analysis of the opinions of their patients. The research was conducted based on non-state healthcare institutions in one of the regions of Poland. Considerable attention in works of recent years has been devoted to the issue of the implementation of Industry 4.0 approaches in the medical

care system of the world's countries. Researchers in [6] propose their own problem-oriented methodology for using algebraic operations to prioritize the integration of Industry 4.0 technologies in hospitals. The proposed method aims to assess the maturity of the medical institution in this area and the opportunities for improvement. Digitization of health care organizations is indicated as an element of increasing their potential to ensure a state of resilience in the face of pandemic challenges or other upheavals in the medical field and public health [7]. Also, over the past two decades, the computerized health care information system has become an essential element of management in the medical field. Naturally, medical institutions pay more attention to replacing traditional approaches in control with those that allow the processing of larger volumes of data about patients, treatment, diseases, etc. This study aims to assess organizational barriers in implementing a health care information system based on big data. The model proposed by the authors can provide hospital managers with information about predictions and consequences that will help to eliminate such barriers when implementing a healthcare information system based on big data in national healthcare delivery systems. As a result, such an approach can provide advantages for the medical institution regarding the productivity of its work and formulate effective strategies for solving problems according to priorities. In the book [8], the question of the principles of modern management in the health care field is revealed with examples of practical strategies. In particular, those management methods that negatively affect the quality of the provision of medical services are analyzed, it is described in detail how it is possible to change the approach to strategic management in this area through changes in organization, scale and management style. Many works emphasize that the health care system is the field where it is appropriate to use the concept of marketing to improve management efficiency. Thus, in the article [9], the peculiarities of the communication strategy and building a corporate brand for hospitals are investigated. In [10], attention is paid to forming a green brand to achieve sustainability in managing institutions of various purposes, including medical ones. The authors of the work [11] in-depth study the innovative marketing communications used by modern business entities focus on non-traditional types, particularly those used by medical institutions. Results in this direction are also expanding in [12–15].

Some works are devoted to developing KPI models that determine the performance of healthcare institutions. In particular, in [16], such a model is based on the identifiers of the motivation of medical personnel and the competitiveness of healthcare institution. The authors continue their work in [17], where they expand the set of KPI indicators for each team member within the framework of business entity management. There is a lack of comprehensiveness in the studies of modern scientists of the main parameters that determine the level of effectiveness of the direction of a health care institution in various initial conditions of its functioning.

Task statement. The article aims to investigate modern approaches to the organization of management of health care institutions using the example of the Sumy Regional Clinical Hospital to identify the main shortcomings and problems of the activity of medical institutions in Ukraine

in current conditions and to propose optimal ways of solving them to catch up with the state of resilience to various challenges, including the onset of pandemics. The method of comparison, generalization and monitoring was used for the analysis. A study of various aspects of the functioning of the medical services market was carried out to identify proposals for improving the management of medical institutions.

Main material. Medical service is a benefit provided to individuals through medical care of a particular type and volume. This good can be in the form of goods. Then the specificity of the medical service is that it is aimed at meeting the population's social needs. The peculiarity is that the production of this service and its consumption co-occur. The state is obliged to control the quality of medical services and finance socially significant types of medical care, such as treating tuberculosis and infectious diseases. State regulation in the field of health care leads to the emergence of external effects: a decrease in the level of morbidity in the region or the country as a whole, an increase in the number of long-lived people, and also, under the condition of efficiency, causes positive economic consequences, such as the prevention of financial losses due to incapacity for work, a decrease in medical expenses public service of a non-preventive nature, etc.

Like other industries, the medical industry functions in market relations conditions, the key element of which is competition. Depending on the ratio between the number of producers and consumers, competition can be perfect, or imperfect, such as "oligopoly", "monopoly", "monopsony", and "monopolistic competition". When certain objective obstacles exist for sellers and consumers in the market, imperfect competition occurs. Analyzing the health care sector of foreign countries, it is possible to note the presence of certain restrictions. For example, the American Medical Association, which unites about half of all private doctors in the country, plays an important role in unnaturally restraining the supply of services in the US medical industry. This association limits the recruitment of students to medical faculties, adjusts the cost of education, and controls the number of emigrant doctors and their admission to medical practice classes. Significant initiatives in the field of medical care are not adopted without her knowledge. In addition, there are other artificial barriers for providers of medical services when they enter the market: periodic attestations and activity licensing. For these reasons, the market for medical services differs from a perfectly competitive market. All differences are grouped in the Table 1.

A modern approach to managing health care facilities is the strategy of socio-economic marketing, which involves conducting medical and preventive activities and selling goods and services for certain special groups of the population. The commercial activities of medical institutions should include such elements as sponsorship, discounts, integrity, and ethical orientation. Undoubtedly, implementing reforms in the health care field can be facilitated by the performance of the principles of management and marketing and economic and socio-psychological methods in management.

Until recently, the improvement of management processes in the field of health care was carried out through economic experiments, which gave a socio-economic effect due to changes in the management mechanism, Table 2.

A possible variant of the economic assessment of management is the determination of the effectiveness of the main functions of control through calculating costs for implementing the procedure and its result. To formalize the economic assessment of the management of a medical facility, the following indicators are used: the number of divisions, the number of employees by division, the specific weight and dynamics of the number of employees engaged in main and auxiliary activities, the structure of management personnel, the average number of employees per department, level of education of management personnel, technical equipment of management personnel. At the same time, generalizing indicators of management efficiency are the ratio of the volume of implemented services to the number of management personnel, the ratio of the cost of fixed assets to the number of management personnel.

From April 1, 2020, the "Program of Medical Guarantees" was launched in Ukraine at the state level of secondary (specialized) medical care. As of September 2020, 3,095 providers of medical services to the population were contracted with the National Health Service of Ukraine, which were paid UAH 51.6 billion for providing services to patients under the state Program of Medical Guarantees. Of these, UAH 13.3 billion was paid to primary care institutions; UAH 29.7 billion – to institutions providing secondary (specialized) assistance; UAH 3.7 billion to emergency medical care facilities. Also, UAH 4.9 billion was paid to medical institutions that offer assistance to patients with COVID-19 or suspected disease [18]. From January to September 2020, the number of Ukrainians who signed declarations with doctors increased by 1.5 million. At the same time, 30,610,000 Ukrainians have already signed declarations with primary care doctors. The number of doctors providing direct care to patients

Table 1

Differences of the market of medical services from the market of perfect competition

A perfectly competitive market	The market of medical services
A large number of sellers	The number of sellers is limited. In addition, there are market entry restrictions. Even situations close to a natural monopoly are possible
Homogeneity of the product	Heterogeneity of the medical service, its individuality, uniqueness
Good customer awareness	Informing specific categories of consumers may not be sufficient
The possibility of comparing the price of the product and its quality	The impossibility or difficulty of comparing price and quality
Manufacturers seek to maximize profits	The presence of a significant number of public or private "loss-making" organizations
Products are sold, as a rule, directly to the consumer	In most cases, the participation of a "third party" is required – a competent intermediary who pays for a significant part of medical services

Table 2

Types of economic experiments in the field of health care	
Characteristic	Result
Extending the rights of heads of health care institutions to apply the principles of economic stimulation	It is allowed to use up to 1.5% of the salary fund for employee bonuses (at the expense of fund savings)
Brigade form of organization and remuneration of junior medical personnel	Improving the quality of care for patients, and the quality of cleaning premises with a smaller number of employees. Supplements in the amount of 75% of the official salary.
Intensification of the use of inpatient beds in large city hospitals	Shortening the duration of hospital treatment. Supplements to wages in the most efficiently working departments.
Expanding the rights of top managers regarding the use of resources (independently set: staffing schedule, allowances, salary fund, bonuses)	Improving the quality of medical care and improving work efficiency
Comprehensive restructuring of the system of economic relations in health care, introducing new forms of management, planning, and financing. Decentralization, economic management methods, change in the performance indicator system, etc.	Implementation of the mechanism of economic interest of medical workers in improving the health of the population.

has increased. Since the beginning of the year, more than 800 of them have existed.

Primary health care plays an essential role in the fight against the pandemic. The workload on doctors has increased significantly because they are primarily approached by patients suspected of having COVID-19. 1051 mobile brigades were formed in almost 600 primary medical care institutions. More than 290,000 patients received specialized medical care under priority services in April-August 2020. Medical institutions have received UAH 2.7 billion for providing priority patient services [19].

Given the structure of the inpatient sector of treatment and prevention institutions in the cities of Ukraine, the most promising direction of structural reorganization is the differentiation of operating institutions (bed stock) by intensity levels. First, creating a hospital for intensive short-term treatment and care of patients with acute diseases and disorders is advisable. For this purpose, it is expedient to reorganize the city clinical hospital No. 1, which will include a nearby ambulance station. It will make it possible to place a department of vascular surgery, a center of vascular neurology, a department of polytrauma in which patients with polytrauma will be treated and a 24-hour emergency neurosurgical care center will be organized.

As an example and an object for analysis, a typical peripheral city in the Sumy region, the regional center – the city of Sumy, was chosen. The Sumy Regional Clinical Hospital, a multidisciplinary medical institution with developed paraclinical services, provides the opportunity to provide highly qualified specialized medical care to the population of the Sumy Region. The Sumy Central District Clinical Hospital and many private clinics of various specializations also operate here.

To increase the efficiency of the management of health care facilities in the region, it is advisable to reorganize one of the city's clinical hospitals into an institution for the treatment of chronic patients – a hospital of a therapeutic profile, where medical assistance will be provided to patients with a somatic profile. In one of the city's medical institutions, it is necessary to organize a hospice department for cancer patients in the terminal stage, a city patronage service to provide medical assistance to cancer patients at home. It is possible to reorganize another city hospital into an emergency surgical care hospital, which

will make it possible to concentrate all types of specialized surgical care and improve the timeliness of providing medical care to patients with a surgical profile in case of difficulties in establishing a surgical diagnosis, saving time for transporting patients and consulting in other medical and preventive institutions.

To implement preventive medicine aimed at preventing and timely detection of diseases and separating sick from healthy persons, it is necessary to open a self-supporting consultative and preventive polyclinic on the basis of the city polyclinic. It is expedient to create therapeutic and surgical self-financing departments based on the city dental polyclinic, which will make it possible to gradually increase the share of special revenues without increasing the budget's general fund by transferring the staff of the polyclinic to a new form of management. It will reduce the burden on the city budget and improve the quality of providing dental care to the city's population, save existing jobs and redirect the freed funds to enhance the quality of dental care to privileged and low-income populations.

Voluntary and mandatory medical insurance is another component of medical financing (the draft Law of Ukraine "On financing of health care and medical insurance" has been submitted for consideration in the Verkhovna Rada). This Law will make it possible to ensure the same rights of citizens to receive free medical care, contribute to the development of the health care system, and create conditions for proper and effective financing. An example of a successful implementation of the health insurance system is the health insurance system of Israel, where since 1994, according to the Law on State Health Insurance, all residents of the country are insured by state health insurance ("Bituach Briut"). All citizens have the right to receive medical services, for which the state is responsible and finances them. The list of services included in medical insurance is determined at the legislative level – "basket of medical services". These services are provided mainly by the health insurance funds, so to receive them, everyone must be registered in one of the health insurance funds. Every resident of Israel over the age of 18 is required to pay monthly health insurance contributions to the National Insurance Service. The contribution amount depends on the status of the insured (salaried employee, entrepreneur, etc.) and on the income level.

Conclusions. The Ukrainian medical care system needs adaptation to modern technological and economic changes. At the same time, it is essential not to provoke irresistible opposition from the population and employees (especially the administrative and management apparatus). The study identified the characteristics of the medical services market. Currently, the medical sector is being reformed in Ukraine. Of course, this requires time and significant financial resources. Carrying out such a renovation according to modern standards without losing control over the cost of providing services is difficult. The latter should be carried out by increasing the efficiency of resource allocation within the framework of established capital investments (from the state budget and extra-budgetary). The improvement of the management system involves strict control over costs in each hospital,

decentralization of the management system in the health care field, training and introduction of medical managers to supervisory boards, and the transfer of the chief physician's powers to the latter. Peculiarities in determining the goal in the management system determine the implementation of specific approaches to evaluating the effectiveness of institutions. A skillful combination of types of analysis, subordinating them to management goals, significantly increases the institution's efficiency. The article summarizes the principles of building an effective organizational and economic management mechanism. Within the framework of this task, the following were analyzed: the structure of costs, the peculiarities of managing material, financial and labor resources, pricing methods in modern health care and possible directions for their further development.

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