

## MONITORING A HODNOTENIE V OBLASTI ZDRAVOTNÍCTVA V SYSTÉME MIESTNEJ SAMOSPRÁVY

### MONITORING AND EVALUATION IN THE FIELD OF HEALTH CARE IN THE SYSTEM OF LOCAL SELF-GOVERNMENT

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#### **Abstract**

*The process of managing the health care system at the level of local self-government bodies should include monitoring and evaluation of the health care system. Digital technologies expand the possibilities of effective monitoring and evaluation in the field of health care. At the level of local self-government bodies of the Vinnytsia urban territorial community (Ukraine), a system of monitoring and evaluation of the health care system using digital technologies has been developed, implemented and used. This system of monitoring and evaluation using digital technologies makes it possible to assess the needs of the population of a defined territory in the field of health care, helps local self-government managers to evaluate the results and performance indicators of the health care system, to forecast the results of the implementation of certain local programs and measures, determine their economic efficiency and expediency. The experience of using the monitoring and evaluation system of the health care system by the local self-government bodies of the Vinnytsia urban territorial community with the use of digital technologies has confirmed the effectiveness of the management and effectiveness of the proposed monitoring and evaluation system both in normal conditions and in conditions of new challenges and problems: the COVID-19 pandemic and military aggression against Ukraine.*

**Key words:** managing, health care system, self-government, monitoring, evaluation

#### **Introduction**

Management in the field of health care at the level of local self-government is important for the implementation of measures aimed at protecting the health of the population of the community. Rational and effective management at the level of local self-government is associated with the decentralization of health services, support of stakeholders, fair contribution and distribution of resources, contributes to increasing the productivity of the health care system. The World Health Organization (WHO) defines management as a core function in health theories and systems [1], [2], [3]. WHO describes the principles of effective management of the health care system and

emphasizes the importance of empowering participants and increasing the accountability, transparency and responsiveness of health care systems in the management process. [4]

To address global health challenges, in 2015 193 United Nations (UN) member states signed the Sustainable Development Goals (SDGs) and committed to achieving universal health coverage (UHC) by 2030 . According to the SDGs, the importance of management in the field of health care is noted [4], the importance of implementing management structures, rules and processes for healthcare sector organizations is emphasized; mechanisms of independent supervision, monitoring, control and audit [5]. It is noted that the use of indicators to monitor the evaluation of health information helps to ensure the quality of data and early response to threats to public health [6]. Ensuring accountability, management of health care resources and decision-making is an important factor for health management [7].

The researchers note that the adoption of a robust health management system that includes collection, analysis, interpretation and reporting practices in health systems is necessary to ensure effective monitoring in health care to support equity-oriented implementation of health care and achieving goals related to health security during pandemics and health crises [8], [9]. The authors also draw attention to the need to develop the use of digital data and an automated unified reporting system [10].

In turn, the international anti-corruption organization Transparency International examines management in the field of health care from the perspective of corruption risks, emphasizes the importance of transparency and accountability of decision-making processes and notes that increasing the transparency and accountability of decision-making processes can facilitate the detection of corruption and fight against it. [11].

In the management process, there is a high demand for the use of high-quality and reliable data in the field of health care. Data is used to monitor and evaluate efficiency and effectiveness in health care, in turn, monitoring and evaluation is one of the most important management functions. Monitoring and evaluation help collect and analyze data on activities in the field of health care and transform the received data into strategic information necessary for management and informed decision-making, improving the effectiveness of implementation and implementation of programs in the field of health care.

Ted Lankester [12] in 2019 conducted research and described the meaning, purpose and benefits of monitoring and evaluation (M&E). The author notes in his publication that monitoring and evaluation (M&E) are methods used to find out how well a health program is achieving its goals, so monitoring and evaluation methods are one way to measure success. The author suggests the application of monitoring and evaluation in health management for both communities and government, while noting that communities can often achieve more effective results than

government. [12].

Understanding that effective management allows to achieve better results in the field of health care, requires further research into directions and methods of management, in particular, monitoring and evaluation, which correspond to modern realities and challenges in the field of health care.

### **1. Organization of medical services for the population and management in the field of health care in the system of local self-government bodies on the example of an urban territorial community (the city of Vinnytsia, Ukraine)**

Management in the field of health care is an important part of the activities of local self-government bodies. During the last five years, a number of important reforms have taken place in Ukraine, in particular the reform in the field of health care and the reform of the decentralization of power, the demand for accountability and transparency of activities, and the involvement of interested parties has increased. The approaches, volumes, powers and capabilities of local self-government bodies to meet the needs of the community's population in the field of health care have changed.

Today, the reform of the health care system in Ukraine continues and includes measures to ensure state financial guarantees of medical care for the population, a state-guaranteed amount of free medical care is provided. In Ukraine, the reform of decentralization of power is also continuing, which involves the transfer of powers and budget revenues from state bodies to local self-government bodies. Expanding the powers and financial capabilities of local self-government makes communities economically self-sufficient and capable of solving issues at the local level in various areas, including health care.

The territorial community has its own health care system, the activities of which are ensured in conditions of decentralization and local self-government and must ensure the needs of the population of the community in the field of health care. The health care system of the Vinnytsia city-territorial community includes municipal health care facilities, in addition, regional level medical facilities and private medical facilities provide medical services on the territory of the community. Municipal health care facilities are subordinated to local self-government bodies, in particular the Department of Health Care, which provides management and coordination of activities. The municipal health care system includes health care institutions that provide primary medical care and specialized medical care facilities in various areas of medical services. The health care system provides medical services to the population of the community - more than 371 thousand people.

## **2. Experience of digitalization (electronicization) in the field of health care at the local level in Ukraine**

In the spheres of activity of local self-government bodies, digital technologies are gradually being introduced, which ensure the entry, processing and preservation of data on activities in territorial communities. There is also a process of digitalization (electronicization) in the field of health care. The reform of the health care system as a whole supports the development of digital technologies, which makes possible the wide and rational implementation of the electronic health care system. At the ministry level, the central component of the database of the electronic health care system (eHealth) has been created. Local databases integrated with the central component of eHealth function at the level of communities, the operation of local databases is provided by medical information systems. Digitization of the health care system of the Vinnytsia urban territorial community began in 2011 at the initiative of the local authorities at the expense of municipal funding. Digitization involved not only the introduction of automation and electronicization of data generation processes in health care institutions, but also the creation of a single medical information space at the level of the urban community: automated workplaces were created in all municipal health care institutions, which are united in a single network and connected to a single server. To date, 1,056 automated workplaces have been created to work in the community's electronic health care system, 2,787 system users, including 1,680 doctors and 820 nurses, have been created in 15 municipal health care institutions and the health department. Patients has an electronic medical card (670+ thousand patients), which is the only one for all municipal health care institutions, the card is replenished during the provision of medical care, medical data is entered continuously online. Today, 197 thousand+ patients have online access to a personal electronic medical record from any corner of the world where there is access to the Internet.

Digitization is implemented according to the principle of "horizontal" distribution as opposed to "vertical" distribution within the structural subdivisions of individual health care institutions.

**Table No. 1 Comparative characteristics of types of digitization by implementation volumes**

<b>Sign</b>	<b>Vertical type of digitization (within the health care facility)</b>	<b>Horizontal type of digitization (within the joint network of health care institutions)</b>
Volume of information	Within a certain healthcare	Within the network of institutions united in a

	facility	single information space
Data set for accounting	Accounting according to the needs of a certain health care institution	Unified accounting in accordance with the needs of management in the field of health care of the community, takes into account the needs of the population of the community
The possibility of monitoring the activity of the health care system	The possibility of monitoring at the level of a certain health care institution is ensured	The possibility of operational monitoring is ensured in all subordinate health care institutions according to unified standards according to needs
Electronic medical card of the patient	Within a certain healthcare facility	A single electronic medical card within the single information space of the network of institutions
The possibility of exchanging medical data	Formation of data sets upon additional request	Within a single electronic card, information is available to all participants in the process of providing medical services online and non-stop
Implementation of accounting, indicators and activity indicators	Takes into account management needs at the level of a specific health care facility	A unified and unified approach within a single information space takes into account the needs of management at the level of health care institutions and local self-government bodies

### **3. Improving the organization of monitoring and evaluation in the field of health care at the level of local self-government bodies on the example of an urban territorial community (the city of Vinnytsia, Ukraine)**

Management in the field of health care at the level of local self-government bodies of the Vinnytsia urban territorial community is ensured with the aim of effective operation of the community health care system to meet the needs of the population in medical services. Management and strategic decision-making in healthcare is closely related to data and information. The local self-government of the Vinnytsia urban territorial community widely uses monitoring and evaluation in the management process in the field of health care to measure the results obtained regarding the effectiveness of activities, the achievement of defined goals and standards in the field of community health care. In a practical aspect, monitoring and evaluation help to achieve the

desired results in the field of health care, ensure control and rational use of resources available to the community, allow to regulate activities in the field of health care in such a way that the effectiveness in the field of health care of the community meets the expected standards, goals and action plans.

The experience of using monitoring and evaluation in the field of health care at the level of local self-government outlined the main practical recommendations for successful management using monitoring and evaluation: determining the purpose of collection and the amount of required data; simple methods of data collection using digital technologies; accuracy and completeness of data entry; monitoring should be carried out on the basis of a defined set of data and indicators; regularity and systematicity of data collection and processing; feedback and data exchange; corrective actions should be based on the data obtained in the monitoring process.

At the level of local self-government of the community, municipal indicators and performance indicators in the field of health care have been developed and implemented, and the list of accounting data necessary for monitoring and evaluation is dynamically reviewed in accordance with the needs of modern conditions. They are developing an algorithm for the use of accounting data in order to obtain reports, indicators, indicators that characterize certain aspects of activity in the field of community health care. This algorithm is complex and built on the logical structure of the combination of process and result in the field of health care. When developing algorithms for monitoring and evaluating accounting data, reports, indicators, and indicators, their objectivity, the degree of display of the result, and the mutual influence of indicators on the characteristics of the result are taken into account. A well-tuned algorithm helps to obtain objective and reliable data that is used for monitoring and evaluation.

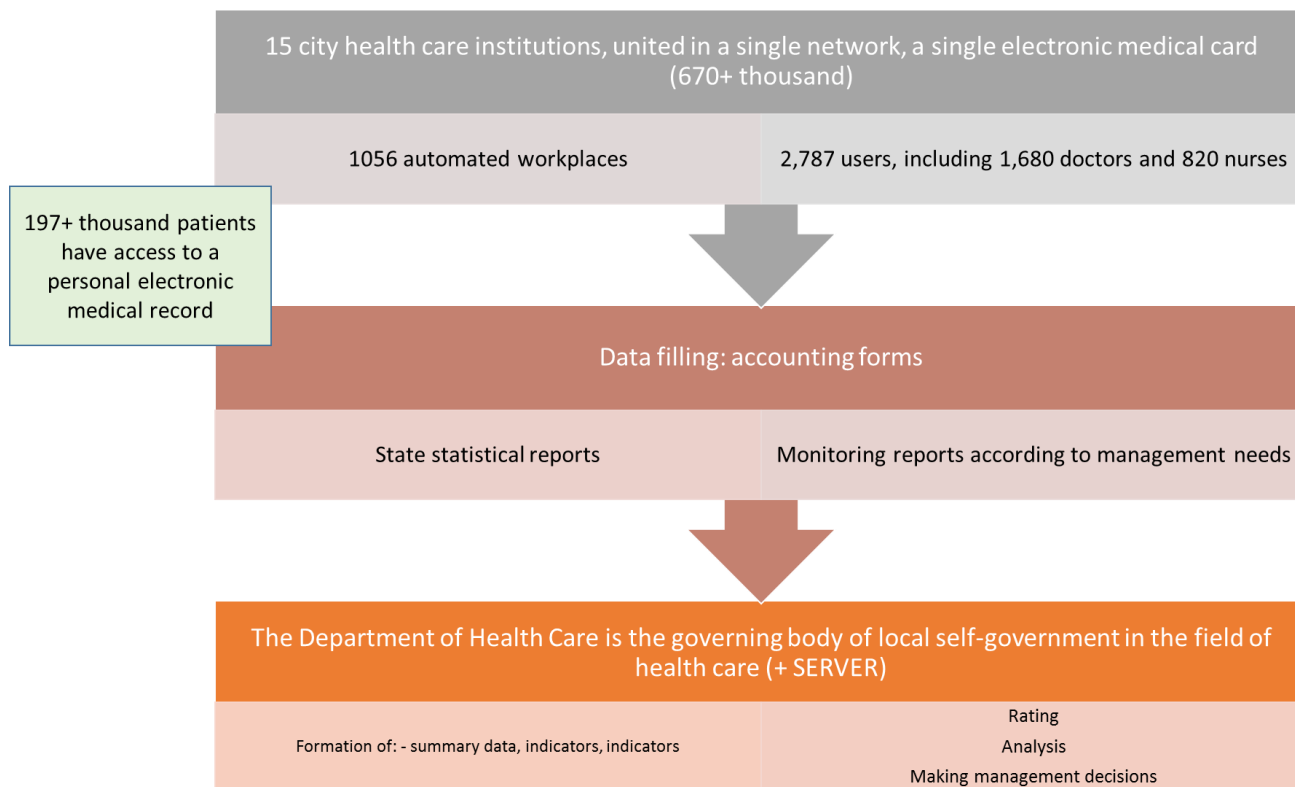
In the Vinnytsia urban territorial community, the main areas of data collection necessary for monitoring and evaluating the effectiveness of community health care have been determined. This process is provided with the help of digital technologies. Digitization in the field of community health has improved and expanded the possibilities of recording, processing and saving data. The health care system of the Vinnytsia urban territorial community and the local self-government body have the ability not only to automate the process of recording medical data and generating reports, but also to use the municipal electronic health care system as a tool for systematic monitoring, evaluation, control of the obtained results and management in the field of community health care. This became possible thanks to the "horizontal" digitization of the community's medical sector: interaction and unification of all municipal health care institutions into a single information network, a single medical information space was created, and a single patient electronic medical card is functioning.

Digitization according to the "vertical" type at the level of individual health care institutions

at the local level does not make it possible to obtain the specified advantages and opportunities for monitoring and evaluation at the level of local self-government due to the lack of a combination of databases and the absence of a single medical information space.

The organization of the system of accounting and data processing in the field of health care with the "horizontal" type of digitization within the Vinnytsia urban territorial community is shown in Picture n. 1.

**Picture n. 1 System of accounting and data processing in the field of community health care**



The proposed algorithms for monitoring and evaluation in the field of health care using digital technologies have improved the process of recording data, obtaining reports, and forming the necessary indicators and indicators in the field of community health care. As a result, the process of monitoring, evaluation, control, forecasting the results of the implementation of measures and management in the field of health care at the level of local self-government has been optimized. Monitoring and evaluation can be carried out online at certain intervals or at a specific point in time, which allows for dynamic and operational monitoring, evaluation and management. Thanks to digitization in the field of community health care and unification into a single medical information space, it is possible to carry out comprehensive monitoring and evaluation of indicators and indicators in their aggregate and dependence, taking into account various influencing factors. For example, in order to assess the effectiveness of the implementation of the state program on the supply of medicines at the local level, various indicators and indicators are monitored and evaluated

in their aggregate: the level of referrals to a specialist, the level of detection of diseases, the prevalence of the disease, the frequency of referrals for consultation to a specialist or for inpatient treatment, the level permanent disability due to a certain disease, mortality rate. If necessary, an additional study is conducted - the scope and quality of the treatment and adherence to treatment, the frequency of complications, the presence of concomitant diseases and risks, etc. are evaluated. On the basis of the mentioned research, it is possible to draw objective conclusions regarding the effectiveness of the program. It is the extended monitoring and evaluation that can take into account various factors and interactions that could affect the result and help identify negative impact factors (insufficient number of personnel - specialists who provide examination and treatment of patients, unsatisfactory quality of examination or treatment, lack of patient adherence to treatment, etc.).

Since 2011, thanks to digitization and conducting systematic monitoring and evaluation, we have been monitoring certain indicators and indicators that shape trends and trends in the field of health care at the local level, and we conclude that the dynamics of indicators and indicators have a logical explanation and reflect the influence of certain factors. This makes it possible to determine the causes (etiology) of certain changes and to understand how it is possible to ensure influence on certain processes (pathogenesis). Determining and understanding the causes and process of changes in indicators and indicators in the field of health care makes it possible to ensure effective management. It is worth noting that the right choice of indicators and indicators used for monitoring and evaluation, in particular their combination and correlation, which increases the objectivity and reliability of conclusions, is important for making correct and effective management decisions.

Therefore, at the level of the local self-government bodies of the Vinnytsia urban territorial community, algorithms for monitoring and controlling the activity of the health care system using digital technologies have been developed, implemented and used, which makes it possible to assess the needs of the population of the specified territory in the field of health care, helps managers of local self-government to evaluate the results and performance indicators of the health care system, to forecast the result of the implementation of those programs and measures, to determine their economic efficiency and expediency.

## **Conclusion**

The conditions of decentralization and reform of the health care system increase the need local self-government bodies in obtaining data for the purpose of management in the field of health care. Reliable and effective monitoring, evaluation and control is an important factor in the success of management in the field of health care in the local self-government system, it allows to ensure effective management and rational use of resources, achievement of organizational, legal, economic, financial, social and political effects in the field of health care at the local level.



Digitization of the health care system at the local level makes it possible to conduct operational monitoring, evaluation, control of the health care system and effectively use and plan resource provision, control the process and ensure management of the result.

The possibilities of digital technologies in the field of community health care make it possible to unite medical institutions in the territory of the community in order to create a single medical information space of the community and to set up an effective and convenient system of monitoring, evaluation and control at the level of local self-government. The system of organization of monitoring, assessment and control in the field of health care provides the possibility of operational management in real time based on the analysis of the needs of the population in the field of health care and indicators and performance indicators of the health care system.

The experience of using the monitoring and control system of the health care system by the local self-government bodies of the Vinnytsia urban territorial community with the use of digital technologies has confirmed the effectiveness of the management and effectiveness of the proposed monitoring and control system both in normal conditions and in conditions of new challenges and problems: the COVID-19 pandemic and military aggression against Ukraine.

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