

Analysis and analytical methods in the planning system of health care institutions

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Abstract

In the article, a critical assessment of the planning system in the field of health care in modern conditions was carried out, a list of plans and their relationship with the management of the activities of a medical institution were identified. It is proposed to strengthen the adaptability of plans to the requirements of the management system; the principles of improvement of the plans were formed (in terms of their standardization and content content). On the basis of the method of generalization and critical analysis, the main problem areas in planning have been identified, for which the application of analysis and its methods will be a reasonable solution. Attention is focused on areas of improvement and the planning algorithm in accordance with the developed author's approach. The development of such an approach is based on an assessment and analysis for the purpose of identifying problems in planning. Thanks to these methods, a study of the indicators of financial provision of health care was also carried out, directions for solving management tasks were formed in terms of improving planning and analytical work. Synthesis, grouping, generalization, comparison was used to identify directions and improve the planning methodology algorithm, including by applying analytical methods in its implementation.

Due to this, using tabular and graphic methods, formalization, an approach to conducting a comprehensive assessment of the current state of activity and resources of the health care entity was formed, and its main stages were described and the necessary comparative indicators were determined. Implementation of the proposed approach makes it possible to improve planning in health care and contributes to the development of real and objective plans for the activities of medical institutions.

Keywords: planning, health care, plan, classification, management, analysis, indicators, analysis methodology, algorithm improvement, stages.

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1. Introduction

Health care in any country is one of the most significant and socially industries. Healthcare institutions provides a very important vital need of a person – preservation of his health. It is important for such institutions to function in a coordinated mechanism. In this regard, taking into account various stabilizing tools and their use is a mandatory element of the activities of medical institutions. Anticipation of threats of various kinds lies, first of all, in the plane of analysis and planning. Their use involves taking into account threats and dangers, and therefore allows you to avoid a number of negative phenomena associated with the use of available limited resources.

2. Literature review

As evidenced by the critical analysis of available literary sources, the problems of analysis and planning in health care have been actively studied by scientists in recent years. In particular, issues of organization and methods of planning and analysis are comprehensively studied, as well as recommendations for their improvement are provided. Among the researchers of this direction should be mentioned such scientists as O.Berdanova, M.Braga, V.Vakulenko, I.Valentiuk, N.Husak, T.Lepioshkina, L.Masyuk, V.Rudy, T.Sitash, A.Tkachuk and many others.

In the vast majority, both scientists and practitioners, highlighting the issues of planning and analysis in the field of health care, touch upon the issues of their organization and methods.

In the publications, they also suggest a number of improvement measures and seek to cover as fully as possible all issues of these important management functions [2–4, 11–12]. Accordingly, the powers and functions of both responsible persons (including managers) and structural divisions are also described in scientific articles [1, 5–6]. Despite this, many methodological and organizational issues continue to remain unresolved, which indicates the relevance of the chosen research topic.

The purpose of the study was a critical analysis of the current theoretical principles and practice of planning, establishing the place of analysis in this process, substantiating proposals and measures aimed at improving the theoretical-normative, organizational and methodical principles of their implementation.

3. Methodology research

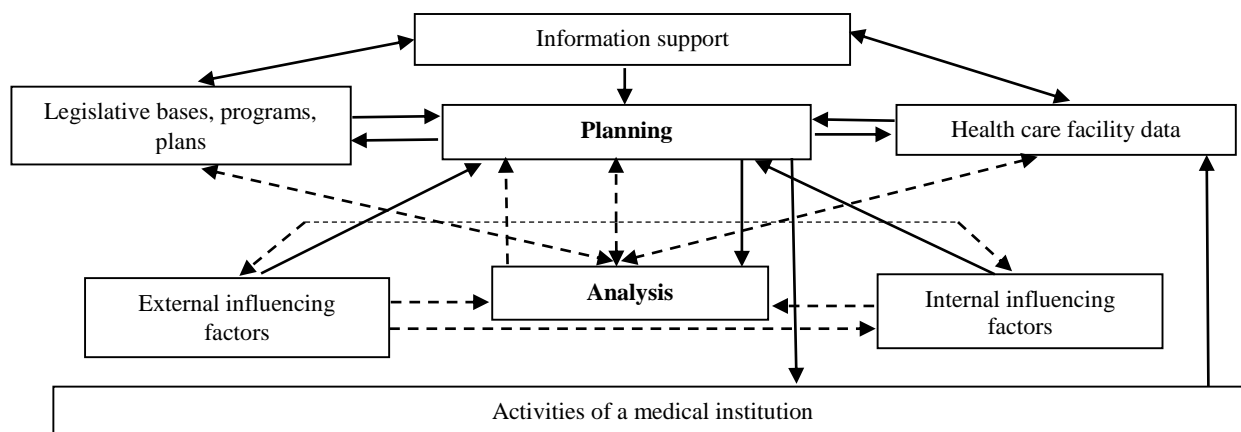
The research was conducted using general scientific and special methods and techniques. In particular, the following are applied: assessment and analysis to identify problems in planning, research on indicators of financial provision of health care, solving management tasks, improve planning and analytical work; synthesis, grouping, generalization, comparison were used to identify directions and improve the algorithm of the planning methodology, including in the part of applying analytical methods in its implementation.

4. Results

In practice, planning in the activities of a health care institution is implemented as a process related to determining the amount of necessary financial resources. Modern planning in health care institutions in connection with the administrative reform is significantly different from that which was carried out in accordance with the requirements established as part of the budget process.

Instructive and methodological support for the formation of plans consists in the use of relevant orders, letters, regulations and other legal acts of Ukraine and the Ministry of Health of Ukraine. In a generalized form, the basis of planning in health care institutions includes a number of requirements provided by regulatory documents, which must be followed.

Planning is also influenced by external and internal factors. That is why the analysis takes an important place (Fig. 1).



Source: Summarized by the author

Fig. 1. The main components of planning the activities of health care institutions

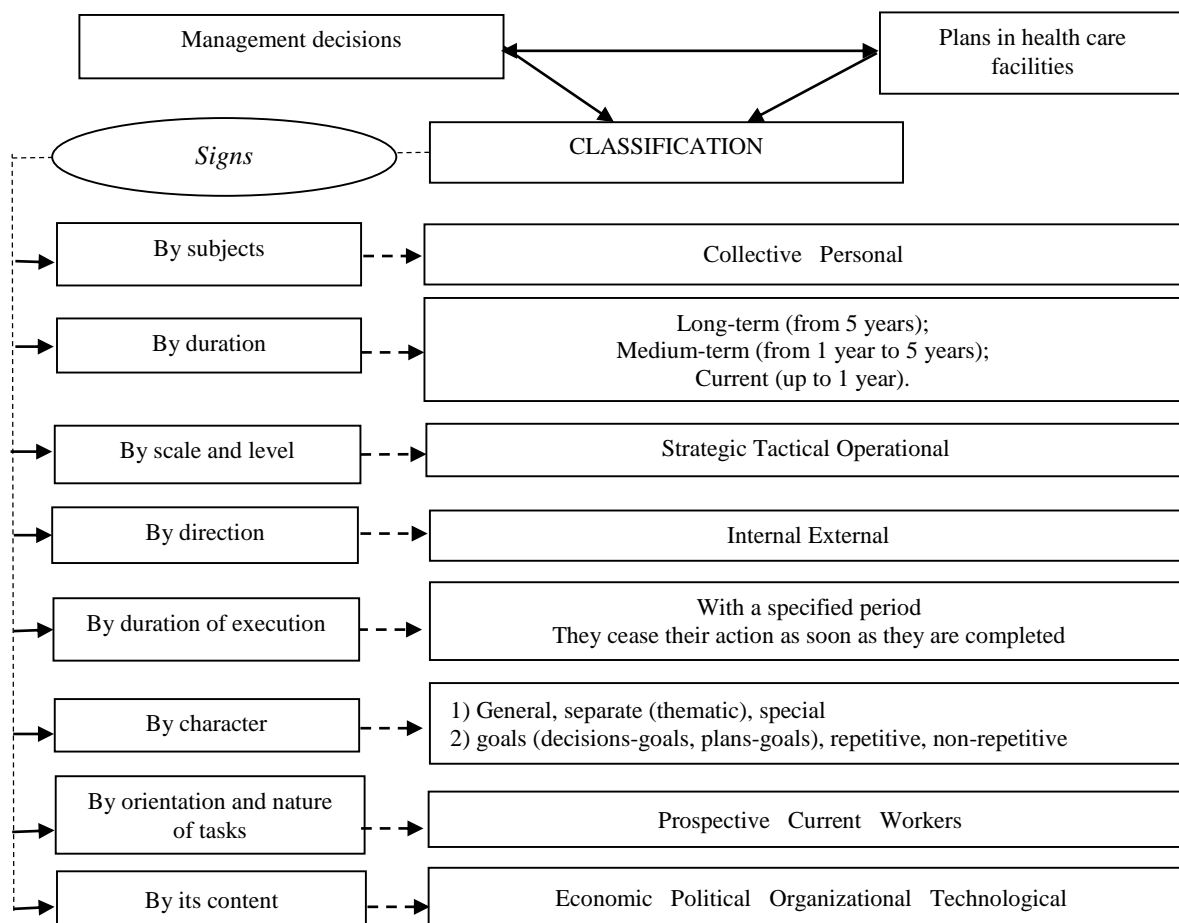
The basics of planning, especially regulatory and methodological ones, need to be developed and improved. The active use of a risk-oriented approach in the management and planning of the activities of health care institutions is especially relevant in modern conditions of instability (pandemics, wars). From this point of view, the analysis and development of relevant indicators is particularly relevant topic.

Accordingly, a step-by-step planning scheme should be formed (developed), should provide for:

- 1) Description of the normative basis of planning (including internal instructions);
- 2) Justification of the choice of types of plans to be drawn up;
- 3) Methodology for drawing up plans (with a detailed description of the application of analysis and its methods for substantiating planned indicators);
- 4) Responsibility (establishment of responsible persons, their powers, duties, deadlines for drawing up plans, etc.).

Such an organizational component will significantly improve the process of drawing up plans, their quality, accuracy and contribute to solving many problematic issues that arise during planning. This process should be preceded, first of all, by establishing the types of plans that will be drawn up in the health care facility. It goes without saying that such institutions must draw up the plans stipulated by the current legislation. But for the quality organization of activities, the management of the institution can independently resolve the issue of expanding this list to satisfy its information and management requests.

The connection of management with planning and plans leaves an imprint on the content of the latter. Therefore, considering that planning is a component of the technology of implementing management decisions, it is accordingly determined by the management system. That is, there is a corresponding direct correlation that determines the identical characteristics and content of both management and plans. In view of this, the directions of classification of plans can be identical to the classification of management decisions (Fig. 2).



Source: Formed on the basis of a study of the positions of various authors and current practice

Fig. 2. Classification of management decisions and plans in health care

Plans related to the financial provision of health care belong to the financial group. Their main attribute is the information in the monetary equivalent. Such plans are very important for subjects of medicine, because they form the basis of their activities. Without financial support, it is impossible to carry out activities and provide medical services. At the same time, the latter significantly depends on the amount of government spending on health care. Therefore, even at this level, the analysis of such expenses makes it possible to more objectively forecast the financial support of the activities of medical institutions.

The healthcare sector in Ukraine is developing quite dynamically and in accordance with the reforms approved at the state level. The importance of this industry and its workers is extremely high, especially in wartime. The state provides medical guarantees at the expense of budget funds and clearly controls health care expenditures. In the state budget of 2022, health care expenditures in the amount of UAH 197,2 billion were foreseen. These volumes meet the requirements of Law No. 2168–VIII [8] and the provisions of Decree No. 261/2021 [12]. In general, was planned to reach the level of spending on health care in the amount of UAH 197,2 billion, which is by UAH 35,8 billion. more than in 2021, and the potential additional resource was planned in the amount of UAH 9,3 billion. Of course, the ambitious plans were canceled by the war. But the strategic course to achieve high positive results in health care continues to be relevant.

From the point of view of methodology, the simplest analysis option can be the ranking of expenditure areas. For example, funding in 2022 had appropriate directions for: purchase of equipment, provision of various types of aid, construction and other purposes. Methodologically, the rating analysis can be represented in the form of the table below (Table 1).

Table 1
The planned structure of health care expenditures in the 2022 budget

Direction of expenses	Amount of expenditures, UAH billion	Percentage in the total amount, %	Place / Rating
Medical guarantee program	157,5	79,9	1
Highly specialized medical assistance and purchase of medicines	19,1	9,7	2
The public health system and vaccination against COVID-19	6	3,0	3
Major construction (development of a capable network of health care institutions)	4	2,0	4
Medical equipment	2,7	1,4	5
Support of regional events and institutions	2,4	1,2	6
Transplantation and treatment abroad	1,5	0,8	7
Creation of bio cluster «Biological safety and development of biotechnologies»	1	0,5	8
Other expenses	3	1,5	
EVERYTHING	197,2	100	

Source: The analysis was carried out on the basis of [10]

Taking into account the results of such an analysis, it can be argued that when planning the activities of a medical institution, emphasis should be placed on medical guarantee programs. This follows from the fact that in the state budget they account for 79,9 % of the total amount of expenses.

However, changes in health care financing in recent years have not been so positive. In particular, this is indicated by the analysis of plans and their implementation for 2015–2020 (Table 2).

Table 2
Changes in health care financing in 2015–2021

Indicator	2015	2016	2017	2018	2019	2020	2021	Difference in %	
								2020 to 2015	2021 to 2015
Real expenditure on health care per capita, UAH billion*	1657	1553	1850	1 897	1959	1988	1848	20,2	-8,4
Real expenditures on health care, UAH billion*	71,0	66,3	78,6	80,2	82,3	83,2	77,0	17,1	-8,7
Expenditures on health care (% of GDP)	3,6	3,2	3,4	3,3	3,2	3,0	3,0	-14,8	0

Source: [1, p. 4]; * Real expenditure figures reflect an inflation adjustment based on annualized changes in the CPI (it measures price changes based on a defined basket of consumer goods and services). The real GDP growth rate is adjusted for annual changes in the GDP deflator, which grew much faster than the CPI during 2015–2020. As a result, deflator-adjusted real GDP growth shows slower dynamics compared to changes in CPI-adjusted real spending

Against this background of a certain decline in expenditures planned in recent years for health care, it is worth pointing out the incorrectness of such an approach, especially in the context of a pandemic. Along with this, recent events in the state indicate the correctness of increasing allocations for defense industries and economic activity. It turns out that such a course of expenditure planning can be recognized as correct.

On the other hand, this approach in planning follows from macroeconomic indicators and available real opportunities. And yet, the implementation of plans to finance the industry in recent years has a negative context. Usually, the planned volumes are not achieved.

At the same time, it should be recognized that the share of Ukraine's state budget expenditures in relation to GDP before the start of the war was quite high, even higher than in developed countries. In particular, according to official data, even after a significant decrease in the level of public sector expenditures in 2019, they accounted for 41,51 % of GDP, in 2020 it was expected that this share would amount to 47,41 % of GDP. Instead, the situation changed significantly in 2023. Total state

expenditures on health care for 2023 amount to UAH 176,9 billion, which corresponds to 6,8 % of all funds. Compared to the previous year, the share of health care expenses in the state budget decreased, which is associated with an increase in general expenses for financing the security and defense sector. As a percentage of GDP, the volume of health care costs is reduced to 2,8 %, which brings Ukraine back to the indicators of 2019. The final provisions of the law «On the State Budget for 2023», as in previous years, stop the effect of paragraph 1 h. 5th century 4 of the Law of Ukraine «On State Financial Guarantees of Medical Services of the Population» regarding the financing of the Medical Guarantee Program at a level not lower than 5 % of GDP. Compared to the previous year, in national currency, health care expenses decreased by 10 %. However, in the dollar equivalent, the reduction is more noticeable and amounts to almost 40 %. According to UHC estimates, in 2023, per capita total government spending on health care will decrease from \$159 to \$116 in 2023 compared to the previous year. Compared to neighboring countries that are members of the EU, this indicator is low. It should be noted that in these countries the share of the state in financing health care costs is currently higher than in Ukraine [3].

Against this background, the financing of healthcare facilities is also characterized by certain tensions and problems. In view of this, there is an objective need for a detailed assessment and analysis of relevant indicators. In this case, it is worth using the fact that all medical institutions of communal ownership form a Report on the implementation of the financial plan. In particular, it provides analytical data on the deviation of actual indicators from the planned ones. From the point of view of informativeness, this reporting form is sufficiently detailed, which strengthens its role as a source of analysis. It allows to establish the reasons and factors that influenced the implementation of the plan. For example, even if the overall indicator is overachieved, it includes indicators that are underachieved. Under such circumstances, it is good that the financial plan is detailed by components.

To improve planning, in particular financial planning, it is important to correctly assess a number of important issues and points. First of all, as we have already mentioned above, the current legal requirements for planning and forecasting in the field of health care should be brought to a common denominator – which is the development of uniform requirements for plans. This does not indicate a state restriction, because within the framework of the plans, each institution will be able to add its own elements to the section of the proposed sections of the plan, and it means only the standardization of planning.

Secondly, it will not create additional and complex procedures, because many aspects in medicine are already standardized in one way or another. For example, when drawing up a financial plan, only those allowed by the Budget and Tax Codes can be used as sources of financial support. That is, these sources are already established and their list is the same for all medical institutions. Another question is whether all such sources can and want to be used by health care institutions themselves.

Costs are similarly standardized, not only by the Codes, but also through the application of the Chart of Accounts and its recommendations. In general, standardization and its regulatory and legal basis should be considered one of the important directions for improving planning and forecasting.

An equally important improvement measure is preliminary analysis before drawing up plans. But for each of the types of plans, the analysis can and should be carried out using the appropriate types and methods. For example, before drawing up a business plan for a medical institution, it is advisable to conduct a SWOT analysis to identify strengths, weaknesses, opportunities and threats during its implementation. Such an analysis is especially important in the case when the provision of new types of services and expansion of activities is planned. At the same time, a service improvement plan is being developed in the practice of modern health care entities.

In addition, an important condition for drawing up real plans is taking into account external factors influencing the activities of medical institutions, as well as, in particular, the state of health of the population being served.

Therefore, the analysis in this context is also extremely important and should be included as one of the stages (sub-stages) in the formation of plans in health care.

This can be considered an element of improving the methodology of their compilation.

In the classical sense, the method of drawing up plans should be considered a *step-by-step* method of forming a system of plans in the field of health care, as well as methodological techniques for establishing their indicators. Some practitioners and scientists use the phrase «road map» to outline the methodology of building plans. The development of a better methodology or the improvement of the current one requires compliance with certain stages as well.

In all cases, there is a need to carry out a comprehensive assessment of the current state of activity and resources of the health care entity. Therefore, in the first stage (let's call it normative and organizational) of planning improvement, in addition to a critical assessment of legislative prescriptions, a comprehensive assessment of the state of both the business entity itself and the functioning planning and forecasting system should be carried out. In other words, it will be an analysis of the original basis of improvement.

A comprehensive assessment should cover:

1) analysis of the current system of regulatory and legal resources and the resulting potential of the activity of a medical institution with a detailed assessment of the strengths and weaknesses of planning and forecasting, as well as activities in general, methods, tools, methods of planning and development of the institution's staff, the level of personnel engaged in planning and forecasting and their effectiveness in achieving planned performance indicators;

2) analysis of the content of the strategy and development plans of the medical institution in the context of the goals it wants to achieve, the conditions for achieving them;

3) assessment of the availability and content of other plans (current, tactical, financial, etc.) for their compliance with the strategic plan;

4) assessment of factors affecting activity and planning and forecasting (external and internal);

5) establishment and identification of key existing problems in the planning system.

A complex analysis carried out according to the recommended procedure allows you to assess the initial conditions (starting point) for improving the state of activity and the planning mechanism and determine further steps aimed at eliminating the

existing gaps between the desired results and the current situation and accordingly adjust the plans for the further development of the business entity.

For the further implementation of improvement measures regarding planning and forecasting at the next stage (II stage), it is recommended to conduct a comparative assessment of the medical services market. For example, it is necessary to compare the demand and supply of medical services both in the medical facility itself and in the market in general. Comparative indicators should include certain groups of indicators:

- 1). Indicators of assessing the level of loading and workload of employees and available other types of resources (workload, fund and material capacity, or better).
- 2). Indicators of assessment of the market of medical services in the region and requests for them (available offer on the market; population and morbidity, average annual number of treated patients, etc.).
- 3). Indicators of the results of the implementation of plans.
- 4). Indicators of comprehensive assessment of activities and resources (taking into account influencing factors, strengths and weaknesses). Such analysis is also very informative and allows for more advanced approaches in planning and forecasting. But the emphasis still needs to be made on the SWOT analysis. In the case of application, you cannot go to the stage that we will propose below, but immediately go to the stage of developing measures to improve planning and forecasting.

Therefore, the next stage can be the determination of gaps between the planned and actual performance indicators of the plans and a critical assessment of the causes of deviations (the so-called Gap analysis). At this stage, an analysis of internal and external factors affecting existing gaps should be carried out.

5. Conclusion

The proposed approach to the method of improving planning in the field of health care using analytical methods is characterized by a certain algorithmic nature. At the same time, the proposed innovations should be implemented annually, that is, they should be cyclical in nature. It is clear that every plan, no matter how imperfect it may be, always has a non-100 percent probability of implementation. Therefore, it is advisable to repeat the improvement cycle when at least 75 percent or more of the planned measures have been implemented at the previous stage. The implementation of our proposed approach (the proposed methodology for improving planning and forecasting) will become an important improving principle for the development of planning in health care. In the future, it is advisable to direct scientific research to the development of unified methods of analysis and the possibilities of computerization of the analysis process.

This will make it possible to quickly determine analytical indicators, objectively assess the real state of the health care entity on the market, and form real business plans.

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