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Improvement of Cost Calculation of Receipts and Services Rendered in Medical Enterprises

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Abstract. Pushing forward public hospital reform and optimising the medical service system has become the top objective of Uzbekistan's new medical reform, as the country's society continues to expand and people's living standards rise. Meanwhile, the guiding principles of the medical reform have shifted to include public hospitals as the front-runners in the healthcare system, encouraging the concurrent development of non-public hospitals, and maintaining non-profit hospitals as the core of the healthcare system with for-profit hospitals serving as supplements. The competition amongst hospitals has increased as a result of this shift in guiding principles. Hospitals are putting a lot of emphasis on cutting costs and raising service standards in order to compete.

Key words: Information systems, Business Process Reengineering, Consumable Medical Supply Management Process, Total Quality Management, and Medical Supply Interconnection Service Platform.

Optimal resource management, or making the best use of the material resources available for healthcare and rationally developing material and technical management, is one of the pressing issues facing modern health care (Starodubov et al., 2002a, pp. 19–24; Starodubov et al., 2002b, 10–13).

The lack of timely and accurate information about the condition and dynamics of fixed assets of rural medical facilities complicates the development of management systems for the material and technical resources of rural health care.

Every rural health care institution must consider over 170 parameters in order to obtain this information. These parameters include the population health as the primary factor, socioeconomic and climatic-geographical differences of regions, and territorial features of the established medical assistance organisation systems (Martynchik, 2007, p. 53). Without the aid of information technology, evaluating and analysing each of the aforementioned characteristics is portrayed as a laborious and expensive task.

The automatic collection, processing, storage, and analysis of MTM FMS and OC data is an actual solution to this problem given that modern information technologies, whose development allows for the optimisation of management, the intensification of activities, the possibilities for effective control, forecasting, development planning, and financing, are widely used in all sectors of the national economy, including health care (Gulieva et al., p. 6-18 2011; Sannikov et al., 2008, pp. 96-97).

Literature review

Problems of accounting information formation in the conditions of information systems technologies' application were considered in (Berest, 1969, pp. 1039-1047; Manevich, 1967, pp. 53-56; Ng *et al.*, 2017, p. 34) studies and others. However, questions related to the system automation in the sphere of resource support in health care institutions remain underinvestigated.

The definition of the accounting information system in a generalized form is given in (Éksler, 1985, pp. 218-222; Mil'chenko *et al.*, 1980, pp. 327-331; Zernov *et al.*, 1975, pp. 429-432). Information support is a dynamic system of obtaining, evaluating, storing and processing data created for the purpose of developing managerial decisions.

Based on the above definition (Grigor'ev *et al.*, 2015, pp. 244-250) we can allocate the main aspects of reforming the accounting information structure of a medical institution:

Hardware-in-the-loop (environment and means of economic information's automated processing);

Organizational (management system, hierarchy of levels, objectives, integration of management functions, program-target approach);

Accounting and methodological.

Accounting and information system – is a set of implemented solutions for the volume, location and forms of organization of information circulating in the system of economic information's automated processing. In the study (Éksler, 1985, pp. 218-222) breaks down the entire accounting process into several stages while maintaining the financial accounting under the conditions of the automated information processing system and considers that a comprehensive study of automation of accounting, control and analysis requires the creation of a conceptual model.

The main prerequisites for organizations to introduce information technologies are due not only to the desire to increase the productivity of everyday work, but the need to increase the efficiency of the medical institution management as a whole through the adoption of rational management decisions. In addition, keeping records, in particular, the movement of material values in medical institutions requires the organization of a cumbersome workflow with the compilation of a significant amount of primary documents and the maintenance of accounting registers. Daily manual processing of primary accounting documents with the entry of data into the accounting registers is quite laborious. Successful implementation of the task assigned to the counters should be provided by modern computer facilities.

The importance of solving the problem of constructing an effective accounting system in the field of resource provision in the conditions of rapid informational support of society predetermines the need for using such information products that have a wide range of functionality, that is, they contain the necessary data for planning, accounting, monitoring, analysis, and evaluation of medical institutions.

Therefore, it is possible to improve the efficiency of accounting work of an accountant, analyst or manager in a medical institution through the use of modern information technologies and the document circulation automation. It is possible to quickly solve the tasks and satisfy the interests of all stakeholders in the accounting with the help of information technology. In conditions of rapid development of information systems and technologies, software products that are used in medical institutions often do not meet the requirements set by the company's management team (for example, centralized resource management, etc.) through their functional obsolescence. As the issues of long-term development of the company determine the direction of improving the

management system, we therefore proposed the use of an integrated automated management system based on modern software products in medical institutions.

The costs of the logistics process should be subject to a constant and strict accounting, as along with other costs have an impact on the formation of the organization's final financial result. The lack of information on the costs of the logistic support process contributes to their ineffective management. In turn, incomplete research and study of these costs contributes to their uncontrollability. Depending on the form of organization of the activity type and the existence of various barriers in the activity of the medical institution, such expenses can be significant and essentially affect managerial decisions regarding future activities. That is why ignoring the issues of their reflection in the account is not advisable.

However, this issue did not find an unequivocal solution in the modern accounting system, and the reflection of costs arising at the stage of the material and technical management's organization and in the future is not regulated by law. So, you can get the necessary information about the costs of the logistics process with the help of a well-organized system of financial and management accounting. Based on this information, the management of the medical institution will have the opportunity to optimize the amount of these expenses.

It is stated in paper (Sygulla *et al.*, 2014, pp. 107-115) that the cost of purchasing and supplying resources is roughly equivalent to one third of the total costs due to inefficient management of material resources in general. This is explained by the inconsistency in the planning of material and technical management's processes, the acquisition of excess stocks or, conversely, the shortage of necessary resources. That is why it becomes necessary to clearly organize the process of material and technical management in the medical institution and determine the list of cost elements that will characterize each of these processes.

So, the main problems that medical institutions face when reflecting the accounting of supply costs are:

accounting for the costs of the material and technical management's process is not regulated by any normative document at the state level and, accordingly, it is not maintained, mostly. Probably, the laboriousness of collecting information on the costs of the logistics process should be compensated by the economic effect of using this information to reduce it, in which the modern accounting and information systems help significantly.

The basis for creating a formalized paper accounting form was the standard for equipping FMS and OC (Order of the Ministry of Health and Social Development of the Russian Federation of May 15, 2012 No. 543n "On Approval of the Provision on the organization of primary health care for the adult population"), adjusted for the projects on the comprehensive equipping of health facilities with medical equipment implemented in the region in 2007-2014.

We determined the following scheme for organization of work on the collection, processing and analysis of information on the equipment of FMS and OC. The first stage is the dispatch of a formalized registration form to each FMS and OC of a medical facility located in the countryside. The second stage is the quarterly monitoring of the collection of completed paper forms in the regional data processing center (DPC). At the third stage, the information sent is digitized, automatic recognition of the data is performed using the automated system created with the simultaneous input of information into the database, on the basis of which further analysis of the of the MTM FMS and OC conformity to normative indicators is carried out.

The use of modern information technologies in everyday life turns computing technology from an auxiliary tool to the determining factor of accounting organization. This is due to the fact that the ways of data processing as well as the speed of reporting information are changing, which, in

turn, changes the efficiency of the accountant, analyst and manager at the enterprise. Such a significant increase in efficiency due to the means of informational support and automation of document circulation allows to quickly accumulate relevant databases on the results of economic activity and use them for the formation, editing and printing of output documents, quarterly, semi-annual and annual reports, as well as provide information services on performance to relevant organizations.

The computer program is the basis of the computer form of accounting; it does not exist without it. In this case, accounting registers in different programs have similarities, but they are not the same, which distinguishes one computer program from another. Therefore, automated data processing on accounting for the material and technical management process in practice is provided in various ways:

development of the administrative information system of a medical institution (including the information system of accounting) by a special company;

purchase of a universal software package (or its separate module) in the software market;

automation of the accounting process by the specialists of the automated data processing unit of the enterprise;

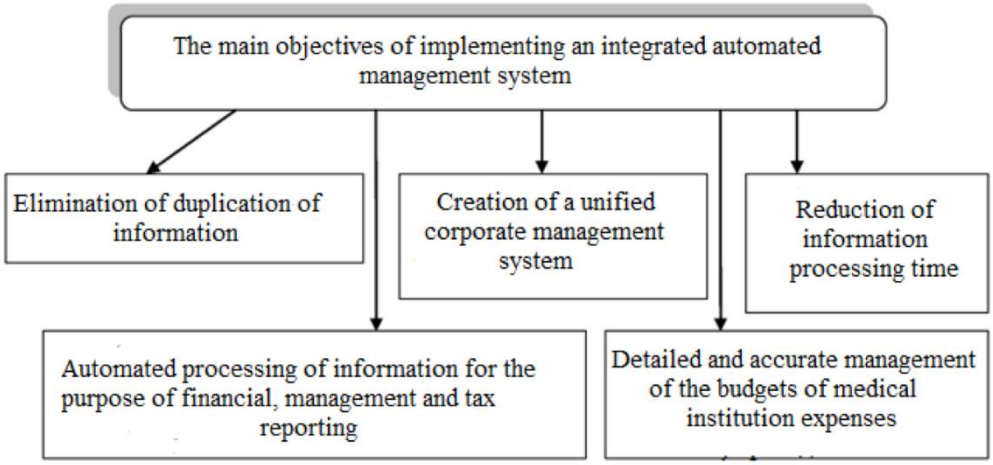
use of table processors by accounting personnel to provide an automated solution of individual tasks of a specific accounting site.

However, regardless of the chosen form of accounting, their common features are characteristic for any of them.

Integrated automated management system is a corporate information and analysis system of a modular type that is designed to record, monitor business processes, compile reports and conduct business analysis (Fig. 1).

Figure 1

Adaptation of integrated accounting systems in a medical institution



Based on the above mentioned, it can be concluded that the use of an integrated automated control system makes it possible to:

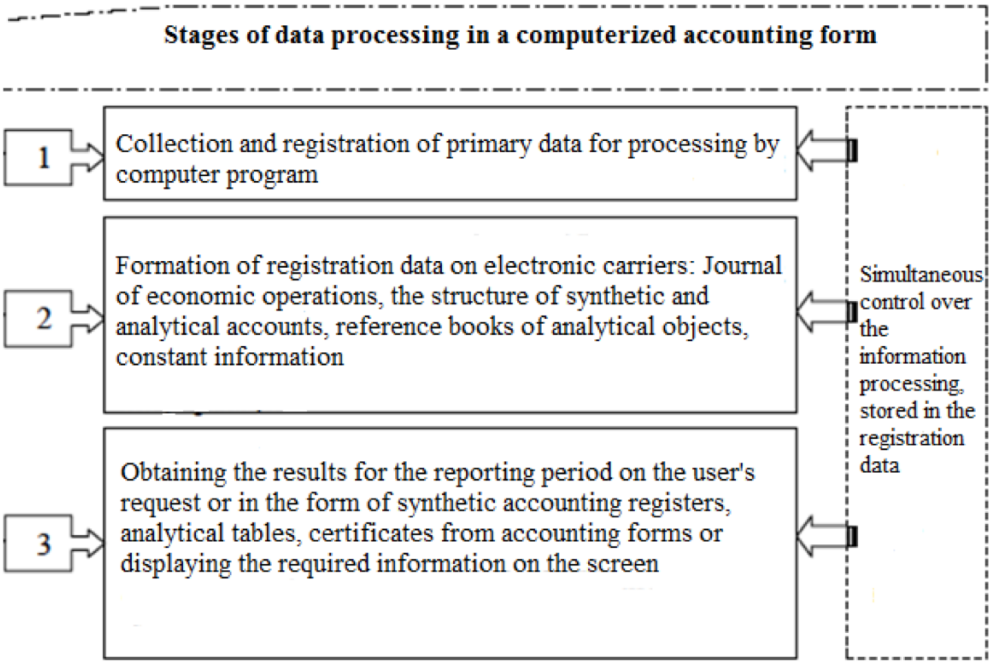
ensure a complete life cycle of work with documents – from creation, editing and joint processing using routes of coordination and implementation control, archival storage organization with appropriate time control in accordance with the requirements of the country's legislation, internal enterprise's orders;

provide general access and work not only to direct program users, but also to users who are not directly involved: everyone can work with a single documents' archive, although using different access paths.

The introduction of an integrated automated management system will improve the exchange of information between structural divisions and form a single space for decision-making at the tactical, operational and strategic levels of government. Thus, the management system will become more flexible – it will give an opportunity to coordinate changes that are introduced in the process of carrying out economic activities. This is especially relevant in the process of material and technical management, since several links and levels of management take part in making a final decision about its progress and imagery (fig. 2).

Figure 2

Stages of using accounting information



It is important that the use of the information system makes it possible to take into account the organizational structure of medical enterprises' management, the composition of units and their interaction among themselves, the scope of activities, the level of centralization and the degree of managers' authority at different levels of management, taking into account the information needs of each of them for making effective managerial decisions.

To carry out the technological process of data processing in a computerized form of accounting, three stages should be distinguished, each of which must correspond to the accounting methodology adopted in the organization.

When using a computer form, the entry of economic transactions into an array of data and the creation of registers can be carried out by making business transactions or by filling out electronic primary documents.

A software product developed by the authors, which has a number of modules that simplify accounting procedures in the process of FMS and OC material and technical management, is interesting for use in practical every day work.

To start the work, the user needs to enter the names of FMS and OC, taking into account their belonging to the territory, and also to enter the names of the reported quarters as information is received (Kovačević *et al.*, 2014, pp. 152, 159-160).

To recognize the digitized accounting form, the corresponding module, based on the algorithm developed by us, is used.

When starting the specified process, the data of the MTM from all 2 sheets of the form are automatically entered into the database. It is possible to check their correctness and to make the

necessary corrections by enabling the "Perform step by step" function or by returning to the primary program window. The received data array can be exported to the MS Excel using the corresponding item in the main menu of the primary window of the automated system.

The analytical component of the program is presented in the table with the required values of FMS and OC equipment parameters for the selected medical institution and the reporting period, the norm ranges and the conclusion about the excessive, inadequate or normal value of all parameters.

With the information accumulation for several reporting periods for each FMS and OC, it becomes expedient to use the monitoring module of MTM, which is presented in the form of a graphic time series for the selected equipment parameters. This analytical information can be used as a tool for making managerial decisions by health care managers in forming programs for the development of material and technical management for rural health care.

Automatic processing of information about the MTM FMS and OC in the framework of the automated system "Monitoring of material and technical management of rural health care" (FMS and outpatient clinics) will significantly reduce the received data processing and analysis time to make a correct and timely management decision in the direction of modernizing rural health care.

The process approach makes it possible to consider the material and technical management as a continuous band of interrelated management functions (organization, planning, regulation, motivation and incentives, accounting, control) adapted to the needs of enterprises in providing business processes with material and technical resources (Starodubov *et al.*, 2002a, p. 23).

The objectives of the material and technical management plan are to determine the optimal need of the medical institution for material resources to carry out activities; timely, uninterrupted and complete provision with all necessary material resources.

The work on planning the medical facility's need for material resources is part of the planned activity and is carried out with the aim of providing all types of material and technical resources and reducing costs (Gasnikov, 2002, p. 5).

The balance method is designed to reflect the ratios, proportions of two groups of interrelated and balanced indicators, the results of which should be identical. This method consists in comparing two sets of indicators that aspire to a certain equilibrium (Gasnikov, 2004, pp. 4-11).

The sphere of applying the balance method is planning, forecasting, statistics, economic analysis. With the help of the balance method, there is a mutual comparison of the available material, labor, financial resources with the needs in them.

The balance method allows to mathematically and structurally present the financial and economic mechanism and its operation within the framework of any organization from a small enterprise to the state as a whole (Kudrjakov, 2011, pp. 106-109).

The use of the balance method seems appropriate at all levels of material and technical management planning (MTM) - strategic, tactical and operational. At the strategic level, a long-term forecast is being developed. At the tactical level (timeframe – from several months to a year), there is a mutual alignment of private plans for procurement services, machinery and equipment maintenance. Tactical plans are subject to periodic review during the year.

Conclusion.

As the economic system transforms, the market mechanism establishes and matures, Uzbekistan's economy and the world economy have become mutually penetrated and intertwined. As a result, the medical industry in Uzbekistan has also undergone profound

changes. In this environment, a large number of foreign medical institutions have entered Uzbekistan; the number of private hospitals has been increasing by the day in the past few years; and resource-rich public hospitals have also been growing. Foreign medical institutions, Uzbekistan's private hospitals, and Uzbekistan's public hospitals emerged to become the three pillars of Uzbekistan's medical industry. As a result, patients are now able to choose from a wider range of hospitals and doctors. Hospitals are no longer public welfare institutions. In order to survive and grow, hospitals need to provide patients with low cost but high quality service, ensure fair compensation and welfare of their medical staff, and at the same time lower cost. Therefore, improving and raising hospital management level, lowering hospital costs, and improving medical service quality have become some of the most important objectives for hospitals. As medical technologies rapidly advance, the use of consumable medical supplies has soared. Consumable medical supplies have become a top cost element for hospitals, second only to drugs. Cost related to consumable medical supplies is the second largest category of hospital working capital. Furthermore, Uzbekistan announced in 2009 that its overall goal of medical system reform is to establish basic medical and health care system that covers both urban and rural residents, provide the population with safe, effective, convenient and affordable medical and healthcare services). Resolving problems related to the management of consumable medical supplies has become one of the most important and difficult challenges. As such, reengineering consumable medical supply management process to reduce cost and improve quality has become an inevitable trend.

References:

1. Zhaoqian, L. (2015). Reengineering the Management Process of Hospital Consumable Medical Supplies to Reduce Cost and Improve Quality-An Empirical Study in China (Doctoral dissertation, ISCTE-Instituto Universitario de Lisboa (Portugal)).
2. Michel, A., Shaked, I., & Daley, J. (1985). The proprietary hospital industry: A financial analysis 1972–1982. Social Science & Medicine, 21(3), 235-242.
3. Rezanov, V. (2013). Analysis of Computer-Aided and Artificial Intelligence Technologies and Solutions in Service Industries in Russia.
4. SOZONOV, A. I., BRYNZA, N. S., KUDRYAKOV, A. Y., RESHETNIKOVA, I. S., & SUNGATULLINA, L. A. (2018). Modernization of accounting of material and technical management of rural health care through information technology. Revista ESPACIOS, 39(04).
5. Wehby, G. L., & Cassell, C. H. (2010). The impact of orofacial clefts on quality of life and healthcare use and costs. Oral diseases, 16(1), 3-10.
6. Feldstein, M. S. (1970). The rising price of physician's services. The Review of Economics and Statistics, 121-133.
7. Schwartz, G. T. (1993). National Health Care Program: What Its Effect Would Be On American Tort Law and Malpractice Law. Cornell L. Rev., 79, 1339.
8. Iglehart, J. K. (1992). The American health care system: Medicare. New England Journal of Medicine, 327(20), 1467-1472.
9. Shyshka, I., Mashchenko, O., & Tomareva, V. (2023). Theoretical And Methodological Foundations Of The Healthcare System Of Ukraine. Baltic Journal of Economic Studies, 9(4), 253-261.

10. Curtiss, F. R. (1988). Recent developments in federal reimbursement for home health-care services and products. American Journal of Hospital Pharmacy, 45(8), 1682-1690.
11.
12. Woolhandler, S., Campbell, T., & Himmelstein, D. U. (2004). Health care administration in the United States and Canada: micromanagement, macro costs. International Journal of Health Services, 34(1), 65-78.
13. Lena, A. S. Modernization of accounting of material and technical management of rural health care through information technology.
14. TENGFEI, L. (2018). RESEARCH ON COST CONTROL OF PRIVATE PHARMACEUTICAL ENTERPRISES TAKE X MEDICINE COMPANYAS AN EXAMPLE (Doctoral dissertation, SIAM UNIVERSITY).