

# Improving Public Medical and Social Services Market Management: Application of Information Technologies

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## Summary

This article examines the features of improving the public management of the market of medical and social services using information technology to improve the efficiency of public activity in modern conditions. The interpretation of the essence of the categories "information technologies" and "information support" is analyzed. The importance of the organization of information support of public authorities in the insurance of the state apparatus of information management for the adoption and solution of state issues of the market of medical and social services has been studied. Issues and system of information support of public management of the market of medical and social services are considered. The stages of the ICT implementation process in the market of medical and social services are described. The tools of state regulation in the market of medical and social services and the introduction of targeted programs for the development of the social sphere and health care are highlighted. Recommendations for improvement are formulated public management of the market of medical services and social way introduction of ICT tools, which provide for the implementation of a set of measures aimed at intellectualizing the entire system public data management spheres. The necessity of development of innovative tools of public management of the market of medical and social services of Ukraine for the purpose of working out of strategies of increase of quality of medical and social services in the XXI century is substantiated. A number of benefits from the implementation of an effective process of application of information support of public management of the market of medical and social services to ensure the efficiency of public authorities of Ukraine. It is proposed to create a "Department of information support of self-government" and electronic health care system (e-Health) to improve the management decision-making process, which will provide an opportunity to accumulate, process, analyze, and as a result, get the expected effect in the form of balanced management decisions by public authorities of Ukraine.

## Keywords:

*information technologies, information support, public authorities, public administration, e-Health, market of medical and social services, e - government.*

## Formulation of the problem

Among the urgent tasks in building the rule of law facing the country and society today, the priority is the development of public management of the market of medical and social services. In the light of the implementation of these tasks, it is required the further research on the methods and forms of application of information technology. In the modern journalistic literature there are more and more opinions that there are no universal methods of construction and management in the medical and social spheres.

The timing of the development of a legal, democratic state with a socially oriented market economy, active institutions of public power and governance depends on various factors that require legal guarantees, regulation of rule-making by public administration and which are one of the decisive factors in publicity is the use of information technologies for the effective functioning of public management of the medical and social services market.

In recent years, there has been a trend of general computerization, which applies to all activities. With the help of information support, you can present information in a user-friendly form, speed up and simplify operations for its input and processing, increase the clarity and simplicity of the required reports. Today, in the process of management, the use of information support in public authorities provides a promising chance to reduce the time spent on staffing and save financial resources and the main task is to provide the state apparatus with the necessary information, so it is important to consider improving public market management using information technology.

## Analysis of recent research and publications.

A significant number of researchers are researching the use of information technology to improve the public management of the market of medical and social services. In particular, the scientific works of A. Blinov,

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A.V. Chernovivanenko, B.B. Lemishko, V.V. Galunko, V.V. Godin, V.V. Gritsenko, V.D. Gavlovsky, V.I. Kravets, V.S. Tsymbalyuk, I.K. Korneev, I.M. Tokhtarova, K.V. Lazareva, L.V. Balabanova, L.V. Naboka, M.O. Durman, O.E. Nikitenko, P. Makushev, R.A. Koval, R.Yu. Hrytsko, S.M. Petrenko, T.V. Slisarenko, T.I. Alacheva are devoted to the analysis of some aspects and features of application of information technologies for improvement of public management in modern conditions within the limits of globalization processes that have influenced the genesis and formation of the medical and social services market in the adoption of important state issues in the medical and social spheres.

### Setting objectives.

The aim of the research is to study an application of information technology to improve the public management of the market of medical and social services to ensure effective public policy. To achieve this goal, the following tasks have been identified: to determine the essence of information technology and information support in the public management of the market of medical and social services; to identify the main innovative tools for public management of the market of medical and social services; to propose preventive measures for the implementation of the main ICT tools in the public management of the medical and social services market. General scientific and special research methods were used in the research, in particular analysis and synthesis, comparison, generalization and system-structural analysis method.

### Presentation of the main research material.

At the present stage, one of the most powerful tools for the functioning of public authorities in the medical and social spheres are the implementation of modern information support, which makes it possible to use innovative tools for quality service to citizens; helping to increase the efficiency of work and the formation of optimization, formalization, and description of current processes; registration of documentation; automation of organizational processes of public authorities, as well as the implementation and maintenance of software products [1, p. 136-137].

An increase in information relations in the public sphere over the past decade has prompted the scientific community to adjust the vector of research in this direction, which has led to a significant number of scientific concepts and approaches to understanding the term "information technology".[2].

There are many interpretations of information technologies in domestic and international scientific thought. Among them, the most accurate, in our opinion, are:

- management tool designed to improve coordination and control over the organization of public management of the market of medical and social services [3, p. 198];
- process that uses a set of methods and tools for the implementation of operations of collection, registration, transmission, accumulation and processing of information based on software and hardware for the organization of public management of the market of medical and social services [4].

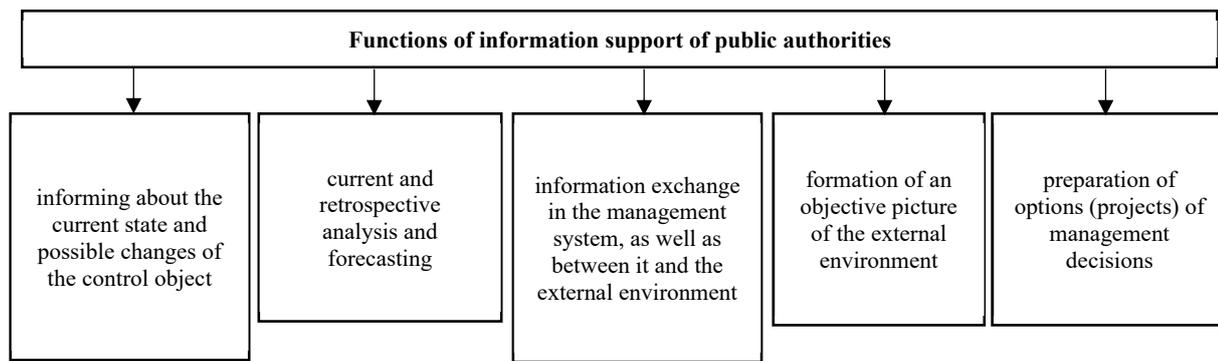
For research, it is necessary to reveal the essence of the term "information support" public management of the market of medical and social services, which is interpreted as:

- insurance of the system of public management of a set of ideas, concepts, data and as an activity related to the means of collecting, registering, transmitting, storing, processing and presenting information [6];
- information service of public administration, as actions to provide the necessary information for management activities in the right place on the basis of certain procedures with a given frequency, as well as measures to create an information environment of management [5, p. 37; 8, p. 9];
- part of state activity on analysis, planning and preparation of management decisions, which is a smooth process of processing and application of information on the current state of the state executive service, which is implemented using information tools and methods, and focused on securing the relevant functioning of the state executive service of Ukraine [7, p. 335];
- a set of implemented decisions regarding the amount of information, its qualitative and quantitative composition, location and forms of organization, where the overall purpose of information support is the actual presentation of necessary and appropriate information for government decisions [9, p. 20].

Thus, it can be concluded that the majority of scientists consider the concept of "information support" from two points of view: as an activity related to the processing of information at all stages of its passage to the final result and as a system of indicators needed to determine the state management system or the basis for determining the best alternative in the management decision-making process [10, p. 120]. Thus, it can be concluded that the majority of scientists consider the concept of "information support" from two points of view: as an activity related to the processing of information at all stages of its passage to the final result and as a system of indicators needed to determine the state management system or the basis for determining the best alternative in the management decision-making process [10, p. 120].

The effectiveness and efficiency of information insurance of public administration of the market of medical and social services enhances the effect of global policy for the state in creating international information policy, establishes the importance of countries in the world hierarchy, is a factor of international influence, a tool of diplomacy and global strategy [11, p. 105-106].

V. Tsybalyuk, V. Gavlovsky, V. Hrytsenko and others group the functions of public authorities information support in the main areas of work with management information (see Fig. 1) [12, p. 137]. In practice, most departments of public authorities perform these functions.

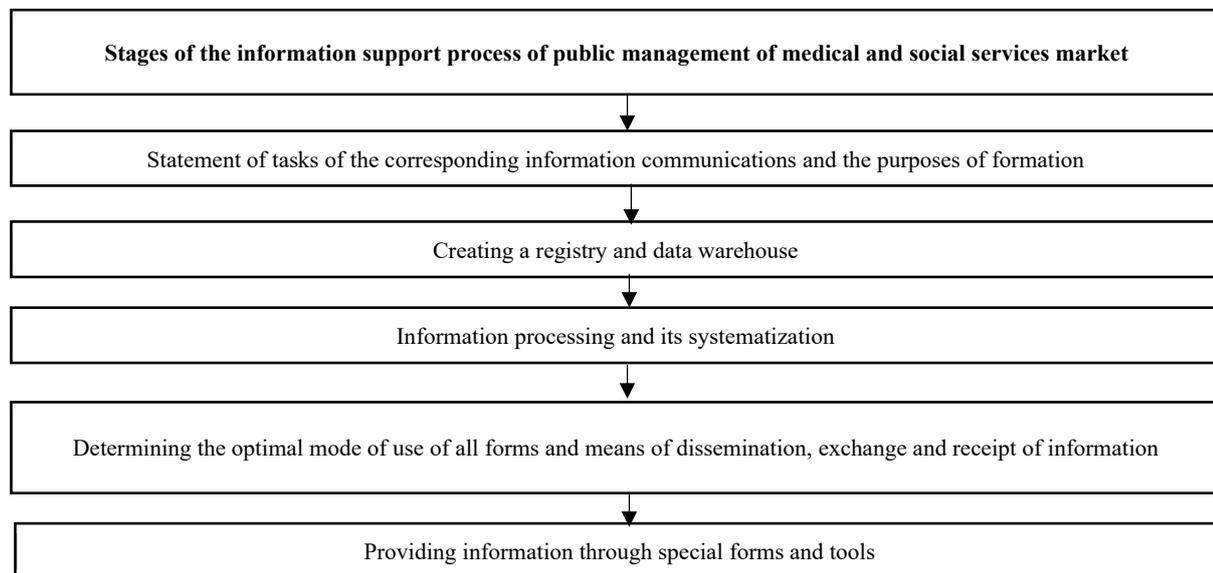


**Fig. 1. The main functions of public authorities information support in the main areas of work with management information.**

Note: formed based on the source: [12, p. 138].

However, for more detailed work with information related to informing about public management of medical and social spheres, the activities of public authorities, special units have been created in government agencies, which can take various organizational forms, such as press services, information management services and public communications, information and information-analytical departments, consultants' offices;

departments of informatization and computerization, etc. The main stages of the process of information support of public management of the market of medical and social services are shown in Fig. 2. [13].



**Fig. 2. The main stages of the information support process of public management of medical and social services market**

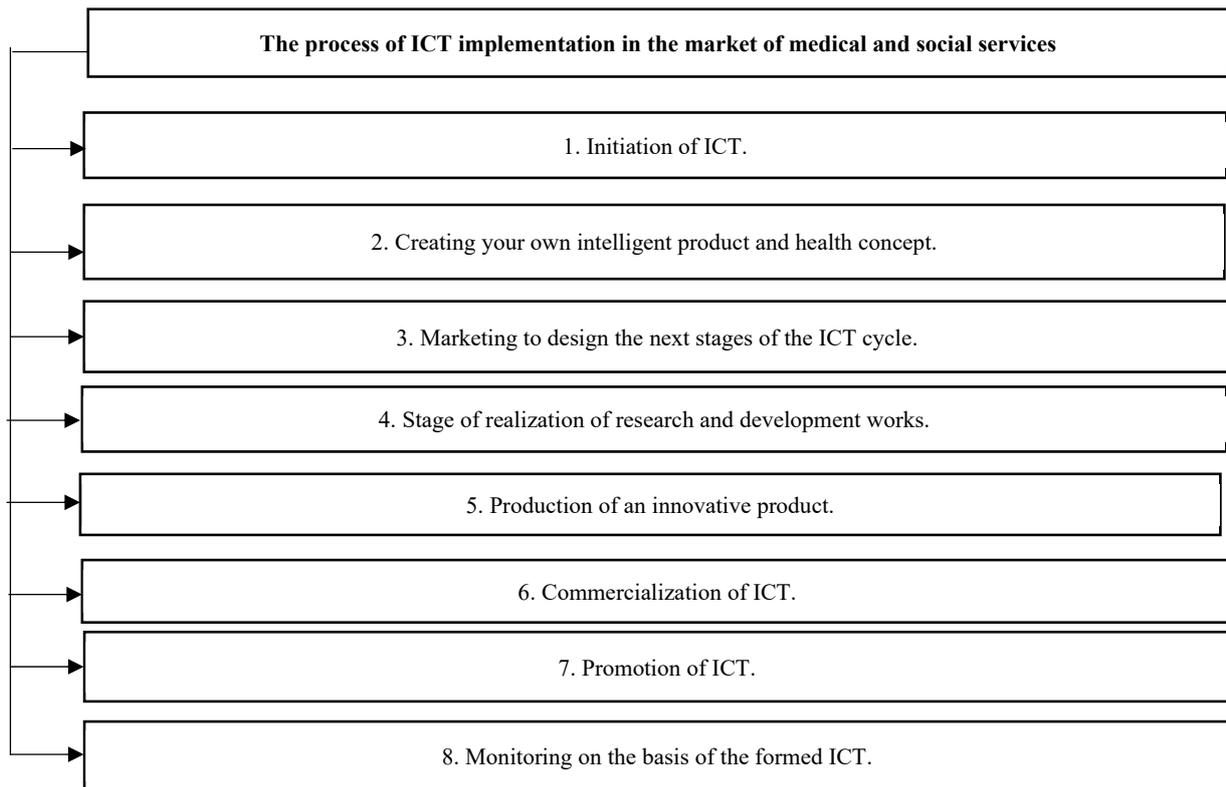
Note: formed based on the source: [13].

The Ukrainian state continues to implement European standards of openness and transparency in the activities of public authorities. Where the cardinal step in this vector of movement was the adoption of the Law of Ukraine "On Access to Public Information" from 13.01.2011 № 2939-VI [14]. Asecution of transparency of access to public information cannot be realized without the use of information and communication technologies (hereinafter - ICT).

Due to the fact, that public administration is a political process of reaching public consensus, reconciling conflicting values in order to achieve freedom and equality, justice and efficiency [15]. Therefore, first at the state level, taking into account national interests and opportunities for their implementation by public authorities, it is necessary to formulate political goals, which further define tasks that require management decisions by heads of government agencies and organizations or provide relevant government services to citizens, businesses, other government agencies and institutions.

Achieving public health is ensured through constant efforts by public and public structures and citizens involved in the social process, i.e. the relationship between public authorities and health care as part of public authority, public and individual health, where the nature these relations determine the state of health of the individual and society [16, p. 156].

ICT in health care is the result realized in the market of medical and social services, obtained from investing in a new product, equipment, machinery or operation. ICT implementation is a process in healthcare from successive chain events, because of which innovative ICT is transformed from an idea into a specific product, technology or service and is disseminated in practical use to achieve general medical and social goals. The process of ICT implementation in the market of medical and social services consists of 8 stages (see Fig. 3). [17, p. 60-62].



**Fig. 3. Stages of the ICT implementation process in the medical and social services market.**

Note: formed based on the source: [17, p. 61-62].

Since the implementation of ICT is a very complex and full process that permeates all functional areas - planning, research, project development, production of medical and social services, marketing and the modernization of all activities require the development of appropriate organizational and economic tools to improve innovation infrastructure in the market of medical and social services as a specialized target organizational and managerial subsystem of the market of medical and social services, designed to stimulate and provide effective support for the emergence, design and implementation of innovative ideas, products and ICT [18, p. 47].

The formation of a unified national policy in the market of medical and social services based on a system of modern standards of medical care and social standards will bring us closer to the level of foreign countries. Innovative development of the organizational and management system in the market of medical and social services requires the use of a full range of modern tools. This set of tools can be structured by levels according to competencies. The development of such areas as public-private partnership and liability insurance of doctors has a significant impact on the development of ICT in the organizational and management system in the market of medical and social services.

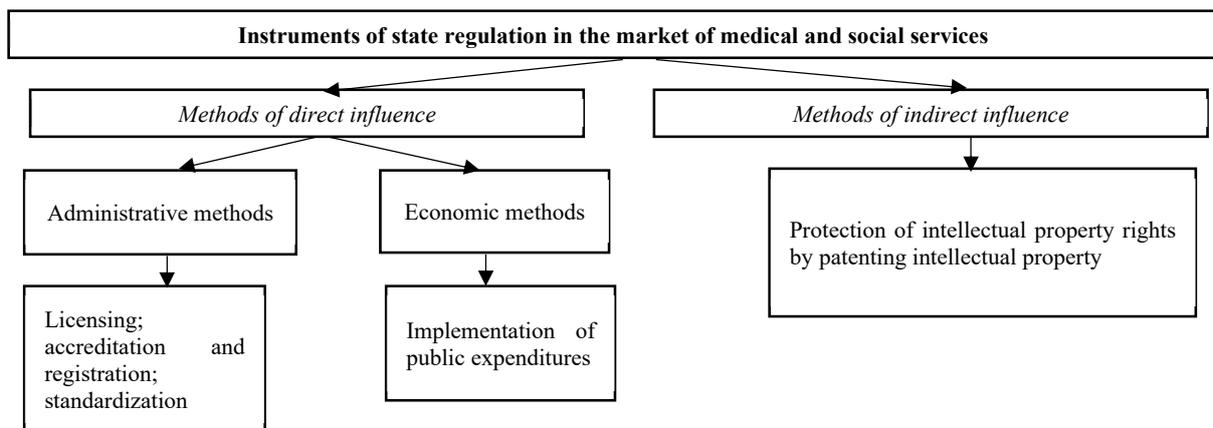
With the help of public-private partnership mechanisms, the task of implementing ICT for management in the market of medical and social services is quite real. The use of public-private partnership can bring the culture, knowledge, methods and tools of corporate governance, through which, in our opinion, it is possible to implement much more effective and competent management of key assets in the market of medical and social services: human, financial, material, intellectual assets, information technology and asset relationships.

The system of medical liability insurance is a prerequisite for the functioning of health care systems in all

developed European countries. The introduction of this system will allow to realize financial responsibility in health care, will give the chance to be engaged in the professional activity, instead of to be distracted on the decision of problems which belong to competence of other organizations that in turn will promote quality of medical services.

Another tool for information support for the public administration development in the market of medical and social services is a balanced system of performance indicators aimed at improving the quality and efficiency of medical and social services. The system takes into account the characteristics of the organization, its human, financial, innovation potential, linking the performance of all departments and employees of the organization. In essence, the system of balanced scores is a tool that helps to implement the strategy of the organization in the market of medical and social services. The activities of each unit and employee of the organization should be aimed at achieving a common goal [19, p. 88-91].

We consider the tools of state regulation in the market of medical and social services as the integrity of methods and principles, the phasing of which is the mutual benefit of economic entities in order to quantitatively and qualitatively influence the needs of society and sustainable development of medical and social services. The use of tools should be aimed at improving efficiency and competitiveness, standardized criteria of which should be the availability, level and quality of medical and social services, maximum use of all resources, optimization of the management process by improving management principles, approaches and functions. The classification of instruments of state regulation in the market of medical and social services is shown in Fig. 4.



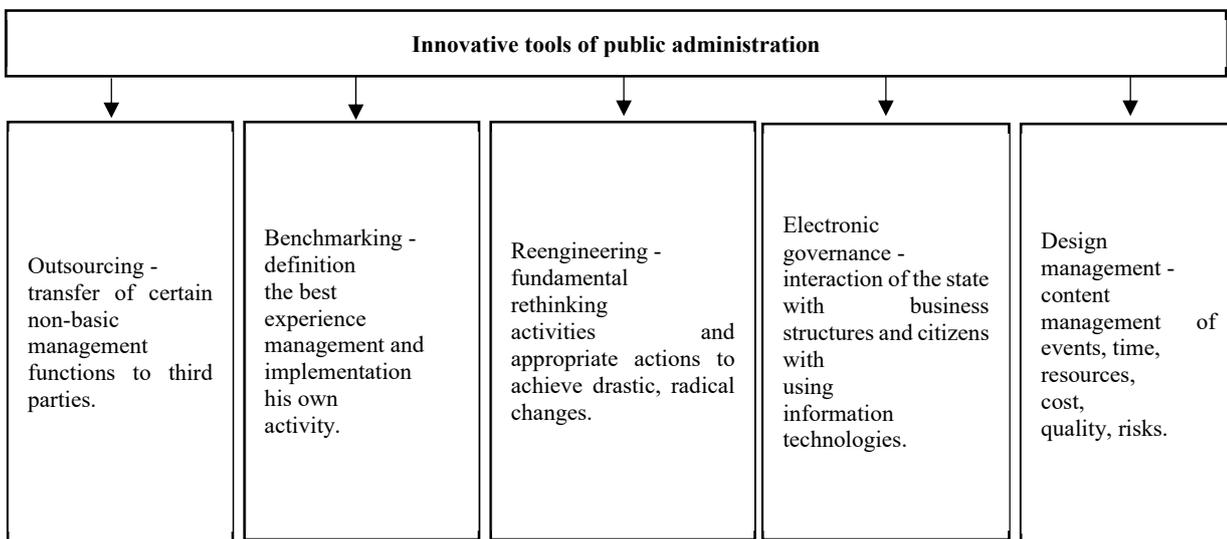
**Fig. 4. Classification of instruments of state regulation in the market of medical and social services**

Note: formed based on the source: [20, p. 172].

As can be seen from the figure, the classification of instruments of state regulation in the market of medical and social services is divided into methods of direct and indirect influence. Methods of direct influence include administrative (licensing; accreditation and registration; standardization) and economic (public spending). When regulating the market of medical and social services, methods of indirect influence (protection of intellectual property rights by patenting intellectual property) are not used. [20, p. 172-173].

Active processes of reorganization of the health care and social sphere in Ukraine, which are continuing at the present stage at both the national, regional, and municipal levels of government, require the use of new methods and tools in public administration. There

are extremely responsible tasks that facing public authorities in the market of medical and social services in the context of the need to implement the Law of Ukraine "On Amendments to the Fundamentals of Legislation of Ukraine on Health Care to Improve Medical Care", № 3612-VI adopted by the Verkhovna Rada of Ukraine on July 7 2011 [21] and "Strategy for the development of the social services system in Ukraine until 2022" [22]. The main innovative tools of public administration are outsourcing, benchmarking, reengineering, e-government and project management, the content of which is presented in Fig. 5[23, p. 9].



**Fig. 5. The content of innovative tools of public administration**

Note: formed based on the source: [24, p. 166].

The innovative mechanism of public administration is an artificially created complex system that has a certain structure, set of legal norms, methods, means of state influence on the management object and is based on the use of innovative management tools and ICT to achieve goals, where innovative management methods and their tools can be successfully used in various traditional mechanisms of public administration (political, organizational, motivational, economic and legal), which belong to the complex mechanism of public administration of the health care system and social sphere in Ukraine [25, p. 112].

One of the methods of development and management of the health care system is considered to be program-targeted management. The main feature of state regulation based on the use of program-targeted model of innovative development in the medical and social services market is its

focus on the end result, which is expressed in reducing mortality, disability and disease, improving the quality and accessibility of health care, improving demographics, overcoming poverty, prevention of difficult life circumstances, etc. [17, p. 62].

Therefore, at the stage of modern transformation processes and available opportunities of ICT there are questions of search of effective tools of formation of the open and transparent power. An effective tool is e-government, which secures new forms of communication between citizens, business and government, unimpeded access to public information and promotes citizen participation in the development and implementation of public policy in the medical and social spheres [26]. One of the ways to improve electronic information support is the order of the Cabinet of Ministers of Ukraine "On approval of the Concept of e-government development in Ukraine."

The concept [27] clearly states the goals, in particular: the modernization of public services and the development of interaction between government, citizens and business through information and communication technologies, modernization of public administration with the help of information and communication technologies and management of e-government development.

A promising direction in the medical services market is the development of the e-Health system in the world, the tools of which include secure communication tools that allow patients to access information in their electronic records, personal health records, maintain secure e-mail, use personal tools for monitoring vital signs, mobile applications for a healthy lifestyle, online resources for learning about healthy living. For physicians, health care providers and governing bodies simplifies the keeping of medical records through autonomy, optimizes the management of medical information, and thus provides enhanced opportunities for public health management [28].

E-Health is an information and telecommunication system that provides automation, accounting of medical services and management of medical information by creating, posting, publishing and exchanging information, data and documents in electronic form, which includes a central database and medical information systems, between which the automatic exchange of information, data and documents are provided [29].

Today, the concept of e-Health is gaining more and more supporters among patients and doctors, as well as among officials. Researchers analyzed the use of ICT in health administration and health care delivery in seven countries of the European Union [30], which found that 71% of all Internet users also used the network for medical purposes. Therefore, e-Health is an essential part of e-government, where the e-government concept defines the use of digital technologies by the government to interact with citizens, firms, other governments and organizations of all types, and thus allows public administration and administration [31]. In addition, in recent years, it has been observed that national health authorities are beginning to focus on e-Health services, such as electronic medical records.

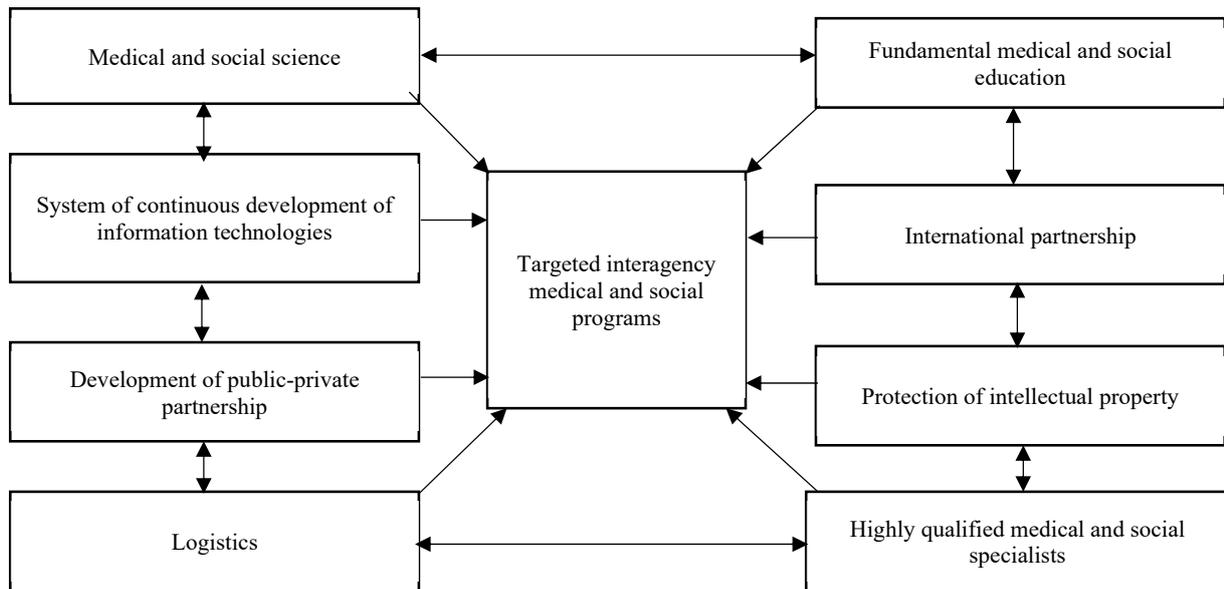
Today, the provision of information to citizens, according to current legislation, is carried out by press centers of public authorities through the publication of press releases, announcements of public authorities, press conferences and briefings, establishing constant contact with the media, etc. [32, p. 215]. At the present stage of activity of public authorities, there is a lack of centralization in the organization of information support, as the main tasks and functions of this sector are distributed among several

structural units. In general, the structure of public authorities in this sector includes general department, press service, department for dealing with citizens' appeals, control sector, organizational department. Almost all structural units of public authorities implement search procedure, analysis of information and preparation of materials for the implementation of effective management decisions. In our opinion, the efficiency of information support of councils and their executive bodies will significantly increase because of the creation of the "Department of self-government information support".

In the transition to the information society, the active use of the latest information technologies becomes relevant for public authorities. Computerization of workplaces, constant updating of the information presented on the own website, activity of an electronic reception, introduction of systems of electronic document circulation should be perceived by councils and their executive bodies as obligatory performance of current tasks. Strengthening the state of openness and transparency of public authorities, their connection with the local community is possible through the provision of electronic administrative services through its own website, organization and conduct of Internet conferences, online forums and online surveys. Successful implementation of these tasks requires an appropriate level of computer and information literacy of the executive bodies of the council [33, p. 46-47].

Therefore, the innovative model of health and social development should include the unity of medical and social science, development of continuing medical and social education, international partnership with leading countries and research centers, protection of intellectual property, development of public-private partnership, creation of targeted interagency medical and social science programs (see Fig. 6) [18, p. 46].

To implement strategic areas for improvement public management of the Ukraine medical and social services market, using information technology, it is necessary to form and implement a system of measures involving the tools of state innovation policy. Regulation of state bodies of innovation in the social sphere and in the field of health care should be multidisciplinary and correspond to those areas that involve active development, change and implementation of innovation programs [34, p. 154].



**Fig. 6. Tools of the innovative model in the medical and social services market.**

Note: formed based on the source: [34, p. 153].

Therefore, Ukraine must set clear guidelines and priorities for development public administration, develop a strategy, policy to achieve the strategic goals of innovative development and implementation of ICT to ensure the appropriate level of public administration market of medical and social services.

**Conclusions and prospects for further exploration.**

Thus, information support is the basis for the implementation of management activities, which contains the information necessary for the effective process of information activities of public authorities, which in turn involves the productive management of the market of medical and social services. The use of ICT to improve public governance of the market for medical and social services is a complex multifaceted mechanism, the implementation of which is to enhance its key functions.

In general, the prospect of improving the information support of the public administration system is the need to centralize information based on creating a single for all structures of the information system of the market of medical and social services. In modern conditions of functioning of economy of Ukraine innovative development of the market of medical and social services opens new directions of strengthening of level of protection and improvement of the population. The foundation of such

development is innovations in the studied segment, without which it is impossible to increase the productivity of medical and social services, economic performance of economic entities in these industries.

Thus, the social sphere and health care, as well as any economic activity involving the use of limited resources, have two main tasks: to ensure efficiency and quality in the provision of medical and social services. Therefore, one of the strategic objectives of providing high quality medical and social services is to ensure the innovative implementation of ICT in public administration. Its effectiveness is reflected in the qualitative improvement of health and comfort, increasing life expectancy, solving demographic problems, allows countries to be successful in worldwide and is one of the main indicators in the global competitiveness index.

A promising area of further research on this issue is to assess the effectiveness of ICT in public management of the market of medical and social services, which represents both scientific and applied value and the development of optimal methods that will allow long-term and targeted costs to introduce elements of information state power.

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