

FINANCIAL AND ECONOMIC COMPONENT OF THE INFORMATION AND LEGAL FRAMEWORK FOR HEALTHCARE SERVICE DELIVERY IN UKRAINE

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Abstract. The article examines the financial and economic component of information and the legal framework for healthcare service delivery in Ukraine in the context of the digital transformation of healthcare and the modernisation of the public administration system. The relevance of the topic is due to the rapid growth of the role of the latest information and communication technologies in the process of ensuring the appropriate level of accessibility, quality and continuity of medical services. This is coupled with the emergence of the need to form effective mechanisms for financial and economic support for the modern digital infrastructure of the healthcare sector. The *purpose of the study* is twofold: firstly, to comprehensively determine the essence, content and significance of the financial and economic framework for healthcare service delivery; and secondly, to substantiate the directions of its further improvement in Ukraine. The *object of the study* is the social relations that arise during the digitalisation of healthcare service delivery. The *methodological basis of the study* comprises general scientific and special legal methods of cognition. These include dialectical, system-structural, formal-legal, comparative-legal, logical-semantic and functional methods. This paper analyses modern scientific approaches to understanding the information and legal support for providing medical services. It reveals the role of information as a managerial and economic resource and determines the role of financial and economic instruments in ensuring the functioning of digital medical infrastructure. The study provides a distinctive definition of the financial and economic aspects of the legal and informational framework for healthcare service delivery. The *results of the study* showed that the financial and economic component is one of the system-defining elements of the information and legal framework for the provision of healthcare services, as it is precisely through mechanisms such as budgetary funding, state financial guarantees, local co-funding, international technical assistance and public-private partnerships that the functioning of the electronic healthcare system, electronic prescriptions, electronic referrals, telemedicine services and other digital tools is ensured. The *practical significance* of the research results lies in the development of scientific approaches to enhancing the financial support for the digital transformation of healthcare. These approaches include the introduction of medium-term budget planning, an economic audit of digital medical services, cost monitoring systems and the use of big data analytics to manage medical service resources.

Keywords: information and legal framework, healthcare service delivery, healthcare, digitalisation, financial and economic component, public administration, medicine, budget financing, electronic medical services.

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1. Introduction

Contemporary developments in healthcare service delivery are inextricably linked to the implementation of digital technologies, electronic information systems and innovative health data management approaches. In this context, information is acquiring not only managerial but also economic significance, since the quality of healthcare services, the efficient use of public finances, and the overall performance of the healthcare sector depend largely on the effectiveness of information management and utilisation. At the same time, the ongoing digital transformation of healthcare requires adequate and sustainable financial support. This emphasises the importance of examining the financial and economic aspects of the legal and information framework that governs the delivery of healthcare services.

Despite the large number of scholarly publications that address various aspects of the digitalisation of healthcare, public administration and information law, the financial and economic dimensions of the information and legal framework for the delivery of healthcare services remain insufficiently explored. This issue is becoming increasingly relevant in the context of Ukraine's ongoing development of its electronic healthcare system and the expansion of digital healthcare services, as well as the growing need to ensure their long-term financial sustainability. This article examines the essence, content and specific features of the financial and economic component of the information and legal framework for healthcare service delivery in Ukraine. It also identifies prospective areas for improvement.

To achieve this objective, the study employs a combination of general scientific and special legal research methods, including dialectical, system-structural, formal legal and functional approaches. The research is theoretically underpinned by scholarly works in the fields of administrative law, information law, financial law, and health economics. The study follows a logical sequence encompassing the examination of the theoretical and methodological foundations of the research subject; the analysis of the legal, organisational and financial mechanisms supporting the development of digital healthcare infrastructure; the assessment of the economic significance of digitalisation for healthcare service delivery; the identification of key challenges and risks associated with its financial support; and the substantiation of prospective directions for improving relevant financial and governance instruments.

2. Results and Discussion

2.1. Theoretical and Methodological Foundations for Studying the Financial and Economic Component of the Information

and Legal Framework for Healthcare Service Delivery

Contemporary developments in Ukraine's healthcare system are characterised by a gradual transition from traditional organisational and managerial models towards digital mechanisms for delivering healthcare services. In this context, the information and legal framework governing healthcare services is becoming increasingly important, as it affects both the quality of managerial processes and the efficiency with which financial resources are utilised within the healthcare sector. Consequently, contemporary legal science no longer considers the legal framework and information to be merely an auxiliary element of the healthcare system. Instead, it is now considered an independent set of legal, organisational, informational and technological instruments that aim to create the conditions necessary for realising the right to healthcare and ensuring access to high-quality healthcare services.

Theoretical approaches to understanding the information and legal framework have evolved within the fields of information law, administrative law and public administration theory. An analysis of the relevant academic literature suggests that the majority of scholars define the information and legal framework as a system of legally regulated processes for creating, collecting, processing, storing, transmitting, protecting and using information that is necessary for a specific area of social interaction to function. Within the healthcare sector, such information assumes particular significance due to its direct correlation with the protection of constitutional rights, the operation of healthcare institutions, the allocation of public financial resources, and the implementation of state policy in the field of healthcare services.

From the perspective of administrative law, the information and legal framework for healthcare service delivery should be considered an integral component of the public administration mechanism in the healthcare sector. The primary function of the system is to establish appropriate informational conditions for managerial decision-making, oversight of healthcare service providers, transparency in the use of public funds, and the implementation of state financial guarantees for healthcare services. In this context, information is no longer merely an object of legal regulation; rather, it becomes one of the key instruments of public administration.

A distinctive feature of the current stage of healthcare development is that information resources have effectively become one of the fundamental elements of healthcare service delivery. Consequently, particular attention should be paid to the interaction between administrative and legal mechanisms and economic instruments used in healthcare governance. Administrative and legal mechanisms have been

determined to establish and regulate the operation of information systems, to govern the processing of health data, and to define the powers of public authorities and healthcare providers (Zub, 2023).

Research on the information and legal framework for healthcare service delivery demonstrates the need to identify a distinct financial and economic component within its structure (Stakhiv, 2023). This necessity is predicated on the fact that virtually all information-related processes in the healthcare sector require substantial financial support. The financial and economic component of the information and legal framework encompasses the set of social relations associated with the formation, allocation, utilisation, and control of financial resources necessary for the creation, operation, and development of the healthcare system's information infrastructure.

Information systems occupy a particularly important place within the structure of this financial and economic component. The development and maintenance of the electronic healthcare system, electronic health records, electronic prescription systems, electronic referrals, and other digital healthcare services require significant financial resources, long-term budget planning, and the continuous improvement of organisational and legal mechanisms governing their operation. From the authors' perspective, the financial and economic component of the information and legal framework for healthcare service delivery exhibits a complex structure, encompassing a financial and budgetary block, an information technology block, an investment block, an analytical and managerial block, and an information security block. The development of a systemic understanding of healthcare digitalisation processes, and the assessment of their impact on the effectiveness of healthcare service delivery, is facilitated by such a structure.

A synthesis of extant theoretical approaches indicates that information and legal support, and financial support for healthcare services, are generally examined as relatively independent areas of research. However, in view of the prevailing economic conditions in Ukraine, where the digitalisation of healthcare is coupled with the imperative for the judicious utilisation of public financial resources, the attraction of investment, and the preservation of the financial sustainability of information infrastructure, such an approach appears inadequate. In such circumstances, the processes of digital transformation in healthcare objectively require a comprehensive examination of both information and legal dimensions, as well as financial and economic dimensions, within a unified conceptual framework, since their interaction ultimately determines the effectiveness of the contemporary healthcare service delivery model (Kosteniuk & Pienkova, 2021).

In this regard, it is proposed that the financial and economic component of the information and legal

framework for healthcare service delivery be defined as a system of legally regulated financial, economic, organisational, managerial, and informational relations. The aim of these relations is to form, allocate, utilise, and control the resources necessary for the creation, operation, protection, and development of healthcare information infrastructure. The purpose of this is to ensure the accessibility, quality, continuity, and economic efficiency of healthcare services.

The proposed definition has the potential to reposition the financial and economic component not as an auxiliary element of the information and legal framework, but rather as one of its system-forming components. In this capacity, it functions as a unifying element between administrative and legal governance mechanisms, information technologies, and the economic outcomes of the healthcare system. This pivotal role is instrumental in shaping the future trajectory of healthcare service delivery in Ukraine.

2.2. Legal, Regulatory, and Organisational-Economic Foundations of Financing Information Support for Healthcare Service Delivery in Ukraine

2.2.1. Legal and Regulatory Framework for Financing the Digital Transformation of Healthcare Service Delivery

The legal and regulatory framework governing information support for healthcare service delivery in Ukraine consists of a multi-level system of legislative and regulatory acts that establish the legal, financial, and organisational foundations for the creation, operation, and development of digital healthcare infrastructure. It is important to note that the following acts are of particular significance:

1. The Constitution of Ukraine constitutes the highest level of legal regulation of the digital transformation of healthcare service delivery. Articles 3, 32, 34, 49, and 95 guarantee the right to healthcare, the right to information, the protection of personal data, and establish the constitutional foundations for public financing of the social sector. The combined effect of Articles 49 and 95 establishes the legal foundation for the provision of budgetary support to healthcare digital infrastructure (The Constitution of Ukraine, 1996).

2. The Budget Code of Ukraine establishes the financial and legal foundations for financing digital projects in the healthcare sector through budget programmes, budget appropriations, and the activities of principal spending units. It is evident that Articles 20, 22, 23 and 48 provide the legal mechanisms that enable the financing of the electronic healthcare system, the implementation of cybersecurity measures, and the digital modernisation of healthcare institutions (The Budget Code of Ukraine, 2010).

3. The fundamental legislation of Ukraine on healthcare (The Law of Ukraine "Fundamentals of the Legislation of Ukraine on Healthcare" No. 2801-XII), in conjunction with the Law of Ukraine "On State Financial Guarantees of Medical Service to the Population", constitutes the sector-specific legal basis for the digitalisation of healthcare service delivery. Of particular importance is Article 24-2 of the Fundamentals, which regulates the functioning of the electronic healthcare system (The Law of Ukraine "Fundamentals of the Legislation of Ukraine on Healthcare" No. 2801-XII), as well as the provisions of the Law of Ukraine "On State Financial Guarantees of Medical Service to the Population" concerning the Medical Guarantees Programme and the activities of the National Health Service of Ukraine (The Law of Ukraine "On State Financial Guarantees of Medical Service to the Population" of January 1, 2026, No. 2168-VIII). These legislative acts ensure the integration of information technologies with the financing of healthcare service delivery.

4. Information legislation, including the Laws of Ukraine "On Information" (The Law of Ukraine "On Information" of January 20, 2026, No. 2657-XII), "On Personal Data Protection" (The Law of Ukraine "On Personal Data Protection" of June 14, 2025, No. 2297-VI), "On Electronic Identification and Electronic Trust Services" (The Law of Ukraine "On Electronic Identification and Electronic Trust Services" of 18.12.2024, No. 2155-VIII), and "On Electronic Documents and Electronic Documents Circulation" (The Law of Ukraine "On Electronic Documents and Electronic Documents Circulation" of 31.12.2023, No. 851-IV), establishes the legal framework for the processing, protection, and use of health data and ensures the legal validity of electronic medical documents and digital healthcare services.

5. Cybersecurity and information protection legislation, particularly the Laws of Ukraine "On Protection of Information in Automated Systems" (The Law of Ukraine "On Protection of Information in Automated Systems" of 20.04.2025, No. 80/94-VR) and "On the Basic Principles of Cybersecurity in Ukraine" (The Law of Ukraine "On the Basic Principles of Cybersecurity in Ukraine" of October 19, 2025, No. 2163-VIII), establishes the legal and financial foundations for protecting healthcare information resources against cyber threats. In the context of healthcare digitalisation, cybersecurity expenditures have effectively become an indispensable component of financing healthcare information infrastructure.

6. The Law of Ukraine "On Public Procurement" (The Law of Ukraine "On Public Procurement" of August 24, 2026, No. 922-VIII), together with subordinate legislation adopted by the Cabinet of Ministers of Ukraine concerning the functioning of the electronic healthcare system, provides the practical

mechanisms for implementing digital transformation in the healthcare sector. Particular significance should be attributed to Resolutions No. 410 and No. 411 of the Cabinet of Ministers of Ukraine of April 25, 2018, which regulate the financing of healthcare services under the Medical Guarantees Programme and establish the procedure for the operation of the electronic healthcare system (The Resolution of the Cabinet of Ministers of Ukraine "On Contracts for the Provision of Healthcare to the Population under the Medical Guarantees Programme" of April 25, 2018, No. 410; The Resolution of the Cabinet of Ministers of Ukraine "Certain Issues Relating to the Electronic Healthcare System" of April 25, 2018, No. 411).

The legal and regulatory framework for financing information support in healthcare therefore encompasses constitutional guarantees of the right to healthcare, as well as budgetary and financial legislation, sector-specific healthcare legislation, information legislation, personal data protection regulations, legislation on electronic documents and electronic identification, cybersecurity law, legislation on the digitalisation of processes, and public procurement law (Shapoval et al., 2022). It is the opinion of the present authors that this combination of legal instruments demonstrates that the digitalisation of healthcare service delivery should be regarded not merely as a technological process, but also as an independent area of administrative-legal and financial-economic support for healthcare development in Ukraine.

2.2.2. Institutional System of Actors Involved in Financing the Digitalisation of Healthcare Service Delivery

The system of actors involved in financing digital healthcare services in Ukraine is characterised by a multi-level structure. This structure encompasses public authorities and specialised public administration bodies, as well as direct users of financial resources and international and private partners who participate in creating, developing and maintaining healthcare digital infrastructure. Taking into account their areas of expertise, sources of financing and position within the legal and information framework for healthcare service delivery, the following groups of actors can be identified.

1. Actors Responsible for Strategic State Policy Formation

This group includes the President of Ukraine, the Verkhovna Rada of Ukraine, and the National Security and Defence Council of Ukraine.

Through strategic planning instruments, presidential decrees and the coordination of the security and defence sector, the President of Ukraine determines the state's digital development priorities, which directly influence the modernisation of the healthcare sector.

The Verkhovna Rada of Ukraine is responsible for establishing the legislative framework for the digital transformation of healthcare service delivery, approving the State Budget of Ukraine and determining the scope of healthcare financing. Decisions regarding the legal status of the electronic healthcare system, state financial guarantees for healthcare services, the protection of personal data, and the digital transformation of public administration are made at a parliamentary level.

The National Security and Defence Council of Ukraine plays a key role in developing the country's cybersecurity policy, which is particularly important for safeguarding the electronic healthcare system and healthcare data registries.

2. Actors Responsible for the Formation and Implementation of State Financial Policy

This group comprises the Cabinet of Ministers of Ukraine, the Ministry of Finance of Ukraine, and the Ministry of Economy of Ukraine.

The Cabinet of Ministers of Ukraine is responsible for implementing state policy on the digitalisation of healthcare and determining the procedures for allocating and using public funds.

The Ministry of Finance of Ukraine is responsible for budget planning and the formation of public expenditure policy. It also monitors the efficiency of financial resource utilisation and approves budget programmes related to the digital transformation of healthcare.

The Ministry of Economy of Ukraine is involved in developing investment policy, promoting public-private partnerships and attracting international financial resources for digital transformation projects (Turchyn, 2025).

3. Specialised Actors of Healthcare Digital Transformation

This group includes the Ministry of Health of Ukraine, the Ministry of Digital Transformation of Ukraine, the National Health Service of Ukraine, and the State Service of Special Communications and Information Protection of Ukraine.

The Ministry of Health of Ukraine is responsible for formulating state policy in the healthcare sector and coordinating digitalisation reforms in the healthcare sector.

The Ministry of Digital Transformation of Ukraine facilitates the integration of digital healthcare services into the national digital ecosystem.

The National Health Service of Ukraine effectively acts as the central financial administrator of the electronic healthcare system.

The State Service of Special Communications and Information Protection of Ukraine is responsible for cybersecurity and the protection of state information resources, including healthcare information systems.

4. Direct Users of Financial Resources

This category includes state and municipal healthcare institutions, as well as administrators and operators of healthcare information systems.

Healthcare institutions utilise budgetary resources directly for the acquisition of computer equipment, server infrastructure, software solutions, licensed products and cybersecurity tools. Medical information systems play a particularly important role by facilitating interaction between users and the central database of the electronic healthcare system.

5. Actors Providing Local-Level Financing

This group consists of local self-government bodies that ensure the co-financing of digital modernisation initiatives within healthcare institutions.

Local budgets are utilised for the procurement of computer equipment, the establishment of connections between healthcare facilities and data transmission networks, the development of telemedicine services, and the modernisation of community information and communication infrastructure.

6. International Actors Providing Financial Support

This category includes international financial institutions and donor organisations, such as the World Bank, the European Union, the European Investment Bank, the European Bank for Reconstruction and Development, the World Health Organization, the United States Agency for International Development (USAID), and the governments of partner states.

It is imperative to emphasise that, particularly following 2022, international assistance has emerged as a pivotal source of financial support for Ukraine's healthcare sector and its digital transformation initiatives.

7. Private-Sector Actors

Private-sector actors include private investors, information technology companies, developers of medical information systems, telecommunications operators, and participants in public-private partnership projects.

These actors contribute to the development of software solutions, the technical maintenance of digital platforms, the implementation of innovative technologies, and investment in the advancement of digital healthcare services.

It is the contention of the present study that the interaction between public authorities, local self-government bodies, international partners, and private-sector actors forms the foundation of the contemporary model of financing the digital transformation of healthcare service delivery in Ukraine. The effectiveness of this model is contingent upon the coordination of activities, the sustainability of financial support mechanisms, and the integration of legal, organisational, technological, and economic instruments within a unified system of healthcare governance.

2.2.3. Sources of Financing Information Technologies in Healthcare Service Delivery

Unlike traditional areas of healthcare financing, which primarily rely on public budget resources, the development of information technologies in healthcare service delivery is based on a combination of budgetary, extra-budgetary, international investment and partnership-based sources of funding. Consequently, the contemporary model of financing the digital transformation of healthcare is characterised by a multi-channel structure, which enhances its resilience in the face of economic instability, martial law and continuous technological development.

In this study, the sources of financing information technologies in healthcare service delivery are examined, and a classification system is proposed based on financial significance and resource volume. The principal sources are listed herewith.

1. State Budget of Ukraine

Public budget expenditures represent the primary source of financing for the operation of the central database of the electronic healthcare system, the maintenance of state electronic registries, and the development of the digital infrastructure of the Ministry of Health of Ukraine, the National Health Service of Ukraine, and other public administration bodies. State financing has become a particularly salient issue in the wake of healthcare reform and the introduction of the electronic healthcare system. As of 2025, the total funding allocated to the Medical Guarantees Program exceeded 175 billion UAH, representing the largest financial resource devoted to the healthcare sector during the entire period of Ukraine's independence (Ministry of Health of Ukraine, 2024).

2. Resources of the Medical Guarantees Program

An important source of financing comes from the Medical Guarantees Programme, which is administered by the National Health Service of Ukraine.

This source's distinctive feature is its direct connection with the digital healthcare infrastructure. To receive funding under the programme, healthcare institutions must utilise the electronic healthcare system, electronic health records, electronic referrals and electronic prescriptions. Therefore, financial support is directly linked to the implementation and use of digital technologies.

3. Local Budget Resources

Local budgets are an important source of funding for the digital modernisation of healthcare institutions. These funds are used to finance the purchase of IT equipment, the creation of local server networks, internet connectivity, the implementation of telemedicine services and the upgrading of the digital infrastructure of municipal healthcare facilities.

4. International Technical Assistance

Since the Russian Federation's full-scale armed aggression against Ukraine began, international technical assistance has become a key source of support for the digital resilience of the Ukrainian healthcare system.

International partners, including the World Bank, the European Union, the World Health Organization and the United States Agency for International Development (USAID), provide financial support for digital healthcare projects.

5. Loans from International Financial Institutions

Since the beginning of the full-scale war, international financial assistance in the form of loans has increased significantly. This funding is intended to support the development and digital resilience of the healthcare sector.

The major providers are the World Bank, the European Investment Bank and the European Bank for Reconstruction and Development. Unlike grant funding, these resources are primarily allocated to large-scale infrastructure projects, such as the digitalisation of healthcare institutions and the modernisation of healthcare information systems.

6. Own Revenues of Healthcare Institutions

Following reforms to healthcare financing, municipal non-commercial healthcare enterprises were granted the right to use their own revenues to develop their material, technical and digital infrastructure. These revenues can come from payments for healthcare services, rental income, charitable contributions and other legally permitted sources. Some of these funds can be allocated to developing information technologies and digital healthcare services.

7. Charitable and Humanitarian Assistance

The role of charitable foundations and international humanitarian organisations increased substantially during the martial law period.

According to the Law of Ukraine "On Humanitarian Aid", humanitarian assistance may be provided in the form of property, equipment, works, and services necessary to satisfy socially significant needs and address the consequences of emergency circumstances (The Law of Ukraine "On Humanitarian Aid" of 02.01.2026, No. 1192-XIV).

In practice, the provision of charitable and humanitarian assistance to healthcare institutions is often instrumental in the acquisition of computer equipment, server infrastructure, software solutions, information security tools, telemedicine equipment, and other technical resources necessary for the operation of the electronic healthcare system and the development of digital healthcare services. Consequently, humanitarian and charitable assistance serves as a significant supplementary source of material and technical support for healthcare information infrastructure.

8. Public-Private Partnerships

The main benefit of public-private partnerships is their capacity to secure private investment for digital transformation projects without placing an additional financial burden on the state budget. Public-private partnerships make it possible to develop cloud-based healthcare services, digital platforms, data processing centres and telemedicine complexes. These projects modernise healthcare infrastructure while ensuring public resources are allocated more efficiently.

9. Investment Projects

Although investment projects are currently the least widespread source of financing for healthcare digitalisation, they are potentially the most promising. In European Union member states, venture capital investments play a crucial role in developing digital healthcare, artificial intelligence applications, remote diagnostics and big data analytics. Gradually expanding investment financing in Ukraine could lead to the adoption of innovative technologies and strengthen the competitiveness of the national healthcare system.

Therefore, financing information technology for healthcare services is based on a diversified system of funding sources combining public, local, international, charitable, investment and private-sector resources. This diversification enhances the financial sustainability of the digital transformation of healthcare in Ukraine, creating the conditions necessary for the long-term development of digital healthcare infrastructure and the implementation of innovative technologies, as well as improving the quality of healthcare services.

2.3. Economic Potential of the Digital Transformation of Healthcare Service Delivery in Ukraine

2.3.1. The Electronic Healthcare System as the Economic and Governance Foundation of Healthcare Digitalization

At the current stage of healthcare development, digitalisation is gradually evolving from an auxiliary administrative tool into a key factor in the economic efficiency of healthcare service delivery. While the initial implementation of electronic technologies was primarily focused on simplifying document management and automating individual administrative processes, digital infrastructure has now become the foundation upon which the entire healthcare system operates. In this context, particular importance is attached to the Electronic Healthcare System (eHealth), which facilitates interaction between patients, healthcare professionals, healthcare institutions and the National Health Service of Ukraine.

It is argued that the economic value of the electronic healthcare system lies primarily in its creation of a unified digital environment for the recording of

healthcare services and the conducting of financial settlements (Aleksandrenko, 2025). According to official data from the Ministry of Health of Ukraine, the electronic healthcare system integrates more than 35 million patients, hundreds of thousands of healthcare professionals, and dozens of medical information system operators (Ministry of Health of Ukraine). Concurrently, by 2025, the system encompassed over 4.4 billion medical records, encompassing electronic prescriptions, electronic referrals, diagnostic test results, and other forms of electronic health documentation (Sanotska et al., 2026). Moreover, in 2026, the electronic healthcare system of Ukraine exceeded five billion medical records, thus underscoring the magnitude of digital transformation and the mounting importance of information resources in healthcare governance (Ministry of Health of Ukraine, 2026).

An important part of the digital transformation process has been the introduction of the electronic prescription system. Its implementation has strengthened control over the dispensing of medicines, reduced the risk of prescription fraud and ensured transparent reimbursement of pharmaceuticals under the state's Affordable Medicines Programme (Ministry of Health of Ukraine). According to the National Health Service of Ukraine, more than 111.8 million electronic prescriptions had been generated through the electronic healthcare system by May 2026 (National Health Service of Ukraine, 2026).

Telemedicine services have become particularly important under martial law. They have enabled residents of remote areas and regions affected by military hostilities to access consultations with specialised healthcare professionals. Telemedicine is one of the most economically efficient ways to develop digital healthcare, as it reduces transportation costs for patients, optimises the workload of healthcare personnel and improves access to healthcare services without requiring investment in new facilities (Borovyk & Shkarupa, 2025).

From an economic perspective, the electronic healthcare system performs functions that extend far beyond the exchange of information. It monitors healthcare expenditure, verifies services provided under the Medical Guarantees Programme, reduces administrative costs, improves transparency in financial flows and enhances the efficiency of public resource allocation. Consequently, eHealth should be regarded not merely as a technological platform, but as a vital instrument for the economic and governance support of Ukraine's sustainable healthcare development.

2.3.2. Optimisation of Public Healthcare Expenditures Through Digital Technologies

One of the most significant outcomes of the digital transformation of healthcare provision is the

optimisation of the use of public resources. Above all, digitalisation helps to reduce administrative costs. The automation of patient registration, medical record management, reporting procedures and financial settlements reduces the amount of manual work and minimises the need for additional administrative resources. As a result, costs associated with information processing, document storage and records management are significantly reduced.

Information technologies also contribute to reducing transaction costs. This approach is consistent with the findings of J. Bassi and F. Lau's study, in which they analyse the economic evaluation of medical information systems and draw attention to the need to determine their 'value for money', i.e., the ratio between the costs of implementing an information system and its resulting managerial, financial, and organisational effects (Bassi & Lau, 2013). Previously, the verification of healthcare services provided required considerable time and extensive human involvement. In the contemporary context, the pertinent information is systematically documented within the electronic healthcare system. This facilitates expedited financial settlements between the National Health Service of Ukraine and healthcare providers, while concurrently enhancing the precision of accounting for public healthcare expenditures.

Particular attention should be paid to monitoring public financial resources. The electronic healthcare system enables financial transactions to be tracked and state resources to be monitored in real time. This significantly improves financial oversight and strengthens accountability mechanisms within the healthcare sector.

Another important consequence of digitalisation is enhanced financial transparency. Digital records documenting each healthcare service delivered create additional mechanisms for public and governmental oversight of budget expenditure. These mechanisms contribute to improved financial discipline, greater accountability and more efficient management of public funds within the healthcare system.

From an economic perspective, digital technologies reduce operational expenditure and improve the overall efficiency of public financial management. By increasing transparency, reducing transaction costs and strengthening financial control mechanisms, digitalisation helps to create a more sustainable and accountable healthcare financing model in Ukraine.

2.3.3. Socio-Economic Outcomes of Implementing Digital Instruments in Healthcare Service Delivery

The analysis conducted provides grounds for concluding that the economic effects of healthcare digitalisation extend far beyond reducing expenditure and contribute to forming a fundamentally new model

of managing healthcare resources. In this context, the results of a systematic review by A. Gentili et al. are indicative of the positive economic effects that digital tools in healthcare can have. However, their effectiveness depends on the quality of implementation, the organisational environment, and the healthcare system's ability to transform digital solutions into real resource savings (Gentili et al., 2022). Under the current system, the state can finance healthcare services based on actual delivery rather than maintaining healthcare institutions according to the residual financing model characteristic of the previous system. Another important outcome is the increased productivity of healthcare professionals. Automating administrative procedures, electronic documentation and information exchange enables medical staff to spend more time on patient care and professional activities, rather than routine administrative tasks. This improves service quality and makes human resources more efficient.

One of the most significant economic outcomes of digitalisation is the reduction in corruption risks. The automation of healthcare service accounting and financial transactions substantially limits opportunities for the manipulation of documentation, fictitious patient registration and the misuse of public funds. Digital records and automated verification mechanisms increase transparency and strengthen accountability throughout the healthcare system. Digitalisation also generates broader social benefits by improving access to healthcare services, enhancing continuity of care and reducing disparities between urban and rural areas. These effects are especially significant in the context of martial law, as digital tools provide displaced persons, residents of affected areas and vulnerable population groups with access to healthcare services.

Therefore, the digitalisation of healthcare should be viewed not merely as a technological process, but also as a key factor in achieving economic efficiency, financial sustainability and the long-term modernisation of healthcare service delivery in Ukraine. By integrating digital technologies into healthcare governance and financing mechanisms, the state can improve service quality, optimise resource allocation and strengthen the resilience of the healthcare system amid ongoing social and economic transformation.

2.4. Challenges to Ensuring the Financial Sustainability of Healthcare Information Infrastructure

The conducted analysis demonstrates that while the digitalisation of healthcare service delivery generates substantial economic benefits, it simultaneously creates a complex set of financial, organisational, and security-related challenges. It is asserted that, in the present circumstances, the primary challenge lies not in the

implementation of digital technologies themselves, but rather in ensuring their long-term financing, technical maintenance, and secure operation.

The primary challenge pertains to the constrained availability of budgetary resources that can be allocated to the development of healthcare information infrastructure. Despite the gradual increase in healthcare expenditures, a significant proportion of public funding continues to be allocated towards the provision of current healthcare services, whereas investments in digital infrastructure are often financed on a residual basis. Such an approach is associated with potential risks for the long-term sustainability of digital transformation initiatives and may impede the modernisation of healthcare information systems.

The second group of challenges relates to the economic risks associated with the digital transformation of healthcare. Implementing information technologies requires initial capital investment, as well as ongoing expenditure on technical maintenance, software upgrades, system modernisation and cybersecurity measures. According to the CERT-UA governmental response team, the number of cybersecurity incidents in Ukraine is measured in thousands annually, highlighting the need for continuous financing of information security measures (State Service of Special Communications and Information Protection of Ukraine, 2026). Furthermore, there are risks associated with technological dependence on individual software vendors and the necessity of regularly updating digital infrastructure in accordance with evolving technological standards.

The third group of challenges relates to information security risks. The unauthorised disclosure or compromise of medical data can result in substantial financial losses relating to incident response, system recovery and the restoration of affected services. For this reason, cybersecurity financing should be regarded as an integral part of the financial framework that supports the delivery of healthcare services, rather than as an additional expenditure category. Although Ukraine has yet to establish a comprehensive system for assessing the economic costs of healthcare data breaches, international experience shows that the healthcare sector is one of the areas most vulnerable to the financial consequences of information security incidents (IBM). Consequently, expenditure on cybersecurity should be viewed as a strategic investment in the resilience and sustainability of healthcare information infrastructure.

It is evident that the primary challenges facing the development of healthcare information infrastructure in Ukraine can be classified into three interrelated categories: resource and financial challenges, technological challenges, and information security challenges. It is the opinion of the present authors that in order to address the challenges previously

mentioned, it is necessary to increase investment in digital projects. In addition, the development of a long-term state policy is required, with the aim of ensuring the financial sustainability, technological resilience, and cybersecurity of healthcare information infrastructure.

2.5. Prospective Directions for the Development of the Financial and Economic Component of the Information and Legal Framework for Healthcare Service Delivery

The findings of this study indicate that the further development of the information and legal framework for healthcare service delivery requires not only increased financing for digital solutions but also the improvement of specific financial and managerial instruments. This paper puts forward the argument that priority should be given to the advancement of budget planning mechanisms for digital projects, the enhancement of investment support for digital healthcare, and the introduction of modern economic tools for healthcare data management.

It is recommended that medium-term budget planning be initiated for expenditures related to the development of the electronic healthcare system, healthcare information systems, telemedicine services, and cybersecurity infrastructure. Such an approach would facilitate greater predictability of financing and improve the sustainability of digital transformation initiatives. It is imperative to establish a system for evaluating the economic effectiveness of digital healthcare projects. Such a system should be based on indicators such as public expenditure savings, reductions in administrative costs, and improvements in healthcare workforce productivity.

The evaluation of digital health projects should take into account not only the direct costs of their implementation, but also the costs of scaling, technical upgrades, user adaptation, changes in organisational processes and the long-term impact on the efficiency of health care delivery. The choice of methodology for such an evaluation is also particularly important, given that digital solutions in the healthcare sector often have delayed economic effects associated with reducing administrative burdens, improving access to services, optimising clinical pathways, and improving the quality of management decisions (Gomes et al., 2022). The implementation of performance-based assessment mechanisms would enable a more rational allocation of financial resources and strengthen accountability for the use of public funds. It is imperative to allocate particular attention to the development of financial monitoring instruments for digital services and the introduction of economic auditing procedures for the electronic healthcare system, electronic prescriptions, electronic referrals, and other digital

healthcare platforms. Such instruments would enhance transparency and improve financial oversight, facilitating evidence-based decision-making in healthcare governance. Another promising approach is the application of big data technologies. Advanced data analytics could support forecasting population healthcare needs, planning budget expenditure and assessing the effectiveness of state healthcare programmes. Integrating data-driven management approaches into healthcare governance would enable more accurate resource allocation and improve the efficiency of public spending. Accordingly, the financial and economic components of the information and legal framework for healthcare service delivery should be developed based on three interconnected instruments: medium-term budget planning for digital projects, economic auditing of digital healthcare services and big data analytics for healthcare financial management. The integration of these applications would contribute to the enhancement of financial sustainability, economic efficiency, technological capacity, and long-term resilience in the delivery of healthcare services in Ukraine.

The application of big data analytics and artificial intelligence in the field of health financing can be used to forecast population needs, strategic procurement of health services, expenditure planning and increase the validity of financial management decisions. Conversely, the efficacy of such instruments is contingent upon the quality of the medical data, the compatibility of information systems, the transparency of data processing protocols, and the administrative and legal oversight governing their utilisation in the distribution of financial resources (Ramezani et al., 2023). In a broader sense, the successful implementation of these instruments would facilitate the transition from a reactive model of healthcare financing to a strategic and data-driven model of healthcare governance. Such a transformation would not only improve the effectiveness of digital healthcare initiatives but also enhance the adaptability of the healthcare system to future economic, technological, and social challenges.

3. Conclusions

The study has established that the financial and economic component of the information and legal framework for healthcare service delivery constitutes an independent and system-forming element of the contemporary model of public administration in

the healthcare sector. This component integrates the administrative-legal, informational, and financial-economic foundations necessary for the functioning of digital healthcare infrastructure. Its substantive content encompasses a legally regulated system concerning the formation, allocation, utilisation and control of financial resources, with the aim of creating, operating, protecting and developing healthcare information systems, electronic healthcare services and digital platforms that support healthcare service delivery. It has been substantiated that this component's main elements include financial and budgetary, technological and informational, investment, analytical and managerial, and security-related dimensions. These dimensions interact to ensure the effective functioning of the electronic healthcare system and the implementation of state financial guarantees for healthcare services.

The study shows that the financial and economic aspects of the information and legal framework are important for more than just providing resources for healthcare digitalisation. In practice, this improves the efficiency of public expenditure management, enhances the transparency of financial processes, increases the accessibility of healthcare services, strengthens the quality of managerial decision-making and ensures the financial sustainability of the healthcare sector. The findings further confirm that the digital transformation of healthcare service delivery should be regarded as both a technological modernisation process and a comprehensive administrative, legal and financial mechanism that directly influences the effectiveness and resilience of the healthcare system. In this context, the electronic healthcare system serves as a technological platform and an economic and governance tool for managing healthcare resources and public expenditure.

The results obtained indicate that the most promising areas for further developing the financial and economic components of Ukraine's healthcare service delivery information and legal framework include introducing medium-term budget planning for digital healthcare projects, expanding public-private partnership mechanisms, developing economic auditing instruments for digital healthcare services, and applying big data analytics to healthcare financial management. Implementing these measures in an integrated way will strengthen the financial sustainability, technological capacity and long-term effectiveness of healthcare service delivery in Ukraine.

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