

## The role of digitization in modernizing the budget of Algerian Public Health Institutions

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**Abstract---**This study aims to analyze the impact of digitalization on public finance in the health sector by examining the relationship between the adoption of digital technologies and the efficiency of public resource management. The study employed a descriptive and analytical approach based on official data from the health sector. The results indicate that digitalization improves transparency, rationalizes expenditures, and enhances the effectiveness of public finance. However, the extent of these benefits depends on the readiness of digital infrastructure, the competence of human resources, and the adequacy of the regulatory framework. The study recommends scaling up digital transformation in the health sector to ensure better financial sustainability and higher service quality.

**Keywords---**digitization, modernizing the budget, public finance.

### Introduction

The contemporary world has witnessed a radical transformation in methods of managing resources and data due to the rapid development of digitization technologies and digital transformation. Health institutions have become among the sectors most affected by this technological wave, given their sensitivity and the importance of the role they play in improving the quality of services provided to citizens. In this context, digitization represents a strategic tool that contributes to enhancing transparency, accuracy in financial processing, and the speed of decision-making within the healthcare system.

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The budget of health institutions constitutes a central pillar in achieving economic efficiency and ensuring the sustainability of services, as it requires precise management of human, material, and financial resources. With the introduction of modern digital systems, it has become possible to monitor expenditures and revenues in real time, improve mechanisms of control and financial planning, and reduce administrative and financial waste.

From this perspective, this study aims to highlight the role of digitization in modernizing the budget of health institutions by analyzing the impact of digital tools on the efficiency of budget management and measuring their contribution to achieving transparency, effectiveness, and good governance in the health sector.

Despite the significant progress in the field of digital transformation, many Algerian health institutions still face difficulties in adopting digital systems within their financial operations, particularly in budget management and financial planning. While digitization is expected to contribute to improving spending efficiency and enhancing transparency, the limited digital infrastructure, weak technical competencies, and the multiplicity of traditional administrative systems may hinder the achievement of these objectives.

Hence, the main problem addressed by this article can be formulated as follows:

To what extent does digitization contribute to modernizing the budget of health institutions, and what is its impact on financial management efficiency, transparency, and the quality of decision-making within these institutions?

To answer this problem, the study was divided into three main sections as follows:

Section One: Digitization and its role in health institutions

Section Two: The implementation of digitization in the national healthcare system

Section Three: Mechanisms for implementing digitization in the budget of Algerian public health institutions

### **Section One: Digitization and Its Role in Health Institutions**

Digitization has become a model for public sector reform throughout Europe and the world at different levels. The digital transformation of the local public sector can also be considered a step toward making local service delivery more citizen-centered and user-oriented, transforming local governments from traditional bureaucratic organizations into smart cities and communities. However, digital-era governance (DEG) “is more about governance than merely digital change”<sup>1</sup>. In this section, we<sup>1</sup> highlight the fundamental concepts of digitization and its role in health institutions.

#### **First: The Concept of Digital Health**

The World Health Organization defines e-health as the safe and cost-effective use of information and communication technologies to support health-related fields, including healthcare services, health surveillance, health literature, health education, knowledge, and research. There is clear evidence of the growing impact of e-health on healthcare delivery worldwide today and how it makes health systems more efficient and more responsive to people’s needs and expectations. Experience shows that harnessing information and communication technologies for health requires strategic and integrated actions at the national level in order to make the best use of existing capabilities while providing a solid foundation for investment and innovation.<sup>2</sup>

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<sup>1</sup> Kuhlmann, S., & Bogumil, J. The digitalisation of local public services. Evidence from the German case. In: *The Future of Local Self-Government: European Trends in Autonomy, Innovations and Central-Local Relations*, 2021, p.101.

<sup>2</sup> consulted on February 18, 2023, at 19:29 pm. [emro.who.int](http://emro.who.int)

### **Second: The Importance of Digitization in the Health Sector**

Healthcare contributes approximately 10.4% of the global GDP, while the value of e-health exports reached nearly 80 billion dollars in 2017. Digital health relies on artificial intelligence, big data, electronic health records, and telemedicine. Therefore, its advantages can be summarized as follows<sup>3</sup>:

Improving the quality of healthcare services;

Reducing costs and increasing efficiency in resource planning;

Strengthening databases and evidence for optimal use;

Monitoring and geographically and demographically identifying epidemics, as occurred with COVID-19;

Diagnosing, monitoring, and treating patients more accurately;

Providing better, personalized, and customized services.

### **Third: The Role of Digitization in Decision-Making within Public Health Facilities**

The electronic management system enables individuals to participate in the issuance of administrative decisions. Through the spread of information centers, individuals dealing with the administration can alert it when certain errors occur in the early stages of decision-making. Consequently, the administration can avoid these errors before issuing the decision. However, if public participation is limited to commenting on administrative decisions after their issuance through criticism or complaints, the administration takes these remarks into account regarding future decisions related to similar matters<sup>4</sup>.

### **Fourth: The Role of Digitization in the Governance of Public Health Facilities**

The role of digitization in the governance of public health facilities can be highlighted as follows<sup>5</sup> :

Bridging the digital divide in healthcare facilities: through investing in advanced information and communication technologies to deliver healthcare services to citizens and hospital institutions regardless of their location or the timing of service requests.

Facilitating rapid information transfer: enabling the adoption of necessary procedures among all actors in the health sector. For example, during the COVID-19 crisis in Algeria, due to weak digitization in the sector, hospitals and laboratories were unable to provide RT-PCR results on time. In some cases, results were delayed by a whole month, leading to public dissatisfaction and mistrust toward service-providing institutions.

Enhancing opportunities for development and administrative and economic reform in the health sector: as e-government can help business institutions, especially small and medium enterprises dealing with healthcare facilities, transition to online platforms to obtain services and requirements. Thus, e-government offers opportunities to develop the capacities, capabilities, and skills of businesses and citizens alike, enabling them to achieve higher levels of productivity and support good performance.

Strengthening cooperation mechanisms: electronic administration in the healthcare field enhances cooperation among various governmental health institutions and facilitates the exchange of information and data, thereby increasing effectiveness in achieving established health objectives.

Supporting investment in institutional resources: this investment materializes through reducing the cost of healthcare services, operations, and governmental information along with the multiple procedures associated with them.

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<sup>3</sup> Beshari Salma, The Development of Digitization in Algeria as a Mechanism for the Post-Corona Pandemic Stage, *Le Cahier du CREAD*, Vol. 36, No. 03, 2020, p.08.

<sup>4</sup> Brich Mohamed Abdelmoneim, The Impact of Digitization on the Governance of Algerian Health Facilities and Its Role in Facing Crises from a Legal Perspective (COVID-19 Crisis), *Journal of the Research Unit for Human Resource Development*, Vol.12, No.1, University of Algiers, Faculty of Law2020, p.17.

<sup>5</sup> Brich Mohamed Abdelmoneim, *Ibid.*, p.248.

Eliminating bureaucracy: electronic administration contributes to simplifying operations and procedures within hospital institutions and eliminating bureaucratic performance.

Achieving transparency: full transparency within electronic administrations results from the existence of electronic monitoring that ensures periodic accountability for all services provided. Transparency is considered the bridge linking citizens and civil society institutions on one side with authorities responsible for public service missions on the other, allowing society as a whole to participate in the overall vision.

Achieving participatory governance: through opening channels of dialogue via electronic platforms for all stakeholders, including health-related associations and citizens, in order to address their concerns in a timely manner.

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#### Introduction

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## **Section Two: The Implementation of Digitization in the National Healthcare System**

After years of setbacks, the Ministry of Health has begun relying on the involvement of consulting offices specialized in communication technologies in order to determine how to deal with digitization and benefit from its services. This is achieved through accelerating digitization, improving sector governance, and supporting digital transformation, especially after the pandemic imposed a state of health emergency and precautionary measures that accelerated the pace of digitization across all sectors, including the health sector. In this section, we highlight the most important achievements of the <sup>11</sup> Ministry of Health in this field.

### **First: The National Health Information System**

In an attempt to establish a legal framework ensuring the digitization of the healthcare system, Section Six of Chapter Three of Law No. 18-11 of July 2, 2018 emphasized the mandatory integration of public and private health institutions into the National Health Information System, which Article 213 defines as follows:

“A national health information system shall be established based on all current or future technologies.”

All health-related data are incorporated into this system, which also ensures interoperability with information systems belonging to various sectors of activity.

In this regard, it should be noted that although Law No. 18-11 related to health was published in Official Gazette No. 46 of 2018 more than three years ago, the regulatory texts referred to by most of its legal provisions have not yet been issued, including those relating to Section Six of Chapter Three concerning the National Health Information System, which constitutes the cornerstone of the strategy for digitizing the healthcare system.

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<sup>11</sup> Nawal Wessar, Digital Health in Light of the COVID-19 Pandemic (Smartphone Digital Health Applications as a Model), *International Journal of Social Communication*, Vol. 09, No. 01, University of Abdelhamid Ibn Badis, 2022, p.409.

The recommendations resulting from the National Conference held on January 2 and 3, 2022, concerning the renewal of the national healthcare system, specifically the workshop entitled “The National Health Information System and Digitization”, included the following:

- Preparing a national strategy for digital health in Algeria;
- Establishing the legal framework for the digitization of the health sector;
- Accelerating the creation of the National Agency for the Digitization of the Health Sector;
- Regulating the digitization of patients’ medical records;
- Adopting and expanding the use of telemedicine technologies;
- Digitizing hospital pharmacies;
- Generalizing the use of the national identification number in the health sector in coordination with related sectors;
- Digitizing patients’ administrative files.

### **Second: The Electronic Patient File**

The first axis of the Patient Action Plan also included provisions related to digitization and the electronic patient file issued by the Minister of Health in 2022, which included the following measures:

- Adopting a more effective and technologically advanced electronic patient program than the current (Patient) program, which became operational in 2023 under the name DEM (Dossier Électronique du Malade);
- Preparing a “Paperless Ministry of Health” vision by 2024 or 2025;
- Establishing a digital platform for remote appointments and teleconsultations;
- Adopting an advanced electronic program for pharmaceutical management, enabling the management of orders and stock monitoring;
- Requiring the adoption of official social media pages to promote healthcare services;
- Digitizing the Directorate of Pharmaceutical Vigilance in order to ensure the availability of medicines;
- Using alert phones to strengthen the internal security system;
- Installing digital surveillance devices to reinforce internal security systems;
- Making the adoption of an electronic ticketing system mandatory within emergency departments to ensure the success of local emergency plans;
- Proper preparation of medical equipment in order to improve the quality of healthcare services;
- Integrating information and communication technologies within the framework of the national communication plan;
- Activating and developing the electronic program RH SANTE to manage the professional career paths of human resources.

The electronic patient file aims to accurately monitor the patient’s healthcare pathway within health institutions through<sup>12</sup>:

Preserving all comprehensive medical data related to examinations, biological and radiological diagnoses, treatments, reports, and important medical decisions, while avoiding errors related to the entry of personal information. This system is connected to the civil status database of the Ministry of Interior through a shared programming interface between the two sectors, enabling the use and exploitation of the national identification number as well as the biometric card to verify the patient’s true identity.

The system also ensures the management of the following:

- Various emergency medical services and multi-service clinics from which the patient benefited;
- Results of medical laboratory analyses;
- Radiological examination reports;
- Medical and hospitalization records;
- Admission office costs;
- The implementation of contracting procedures and white billing operations.

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<sup>12</sup> Statement by the Minister of Health, Abdelhak Saihi, presentation to the Prime Minister on digitization in the health sector, October 2023.

**Third: The Contracting Process**

The electronic medical file enables the activation of the contracting process through the generation of a statement (invoice) that includes all medical and paramedical services, as well as the medications consumed during the hospitalization period. In coordination with the services of the Ministry of Labour, Employment and Social Security and the Ministry of Finance, the Ministry of Health has begun the actual implementation of the contracting process through the use of a triple-accounting system. Model institutions were also selected, and paperless invoicing between the two sectors was launched starting from January.

**Fourth: Registration Platforms for Nursing Assistant Positions and the National School of Health Management and Administration**

The two platforms have been developed since 2020 and aim to enable remote registration for candidates wishing to apply for nursing assistant positions as well as the National School of Health Management and Administration, while also allowing them to upload their application files without the inconvenience of travel.

**Fifth: Remote Training for Medical and Paramedical Staff (E-TRAINING)**

The electronic distance-learning platform was established in cooperation with the regional office of the World Health Organization in Algeria. It is hosted at the Ministry of Health's data center, which is equipped with an internal backup system, thereby ensuring the security and confidentiality of users' personal data. The platform has been operational since March 2023.

**Sixth: Management of Radiotherapy Appointments for Cancer Patients**

Initial Phase: On-site Registration through the Following Steps

Visiting the nearest radiotherapy center and submitting the request;

Registering the patient on the platform by entering all personal data and medical records;

The platform is connected to all treatment centers nationwide and displays all available medical appointments according to the nearest available dates;

Once the treatment date arrives, the patient goes directly to the center without carrying any paper documents, where the appointment is verified and treatment begins immediately;

A new appointment is scheduled for each subsequent treatment session for the same patient;

At the Ministry of Health level, a specialized team monitors this process through a dashboard and monitoring system provided by the same platform.

**Second Phase: Remote Registration**

Citizens will soon be connected to the platform in order to allow remote registration through mobile phones.

**Seventh: Medical Equipment Maintenance Management Program (MGMAO)**

This program enables:

Conducting inventories and real-time monitoring of the condition of medical equipment within each institution;

Compliance with regulatory obligations imposed on such equipment through the documentation of all completed interventions;

Maintaining records related to quality, safety, maintenance, and equipment status;

Managing all interventions carried out or planned by staff members or other accredited parties;

The program is currently operational in 81% of health institutions and is expected to reach 100% coverage by the end of the year.

**Eighth: Electronic Drug Order Form between Health Institutions and the Central Hospital Pharmacy**

This modern mechanism has enabled:

Optimal control over the management of pharmaceutical products and medical consumables;

Rationalization of expenditures;

Immediate response to the requests of health institutions;  
 Saving time and effort while optimizing financial resources;  
 Regulating pharmaceutical products and distributing them rationally among different health institutions.  
 The electronic order form was officially launched on April 3, 2023, and full access has been recorded across all public health institutions.

There are also numerous platforms that have been activated within the framework of the digitization of the health sector, including in particular:

- The human resources management platform;
- A mobile application for managing remote specialized medical appointments;
- The digital Hajj platform;
- The digital platform for rare diseases;
- The digital platform for locating health structures;
- The digitization of medical and paramedical consumables used in the prevention of COVID-19;
- The digital platform for oxygen stock management across all health institutions;
- The digital platform for managing COVID-19 patients;
- The digital platform for COVID-19 vaccination;
- The digital platform for mandatory notifiable diseases;
- The digital platform for blood disease patients;
- The digital platform for newborn vaccination;
- The digital platform for managing hospital pharmacies;
- The digital platform for managing private doctors and private clinics;
- The digital platform for maternal and child healthcare management;
- The digital platform for monitoring health projects;
- The digital platform for statistics;
- The digital platform for managing cochlear implant patients and stock;
- The digital platform for cardiac patients;
- The digital platform for scorpion sting cases;
- The digital budget platform;
- The digital platform for the detection and monitoring of AIDS patients;
- The digital platform for diabetes patients;
- The digital platform for the renal failure registry;
- The digital platform for the Algerian health system (sis-dz).

These platforms aim particularly to:

- Facilitate access to healthcare services;
- Enable the exchange and sharing of patients' administrative and medical files among health institutions;
- Improve the quality of healthcare and reduce medical errors;
- Provide early medical alerts to ensure patient safety.

### **Section Three: Mechanisms for Implementing Digitization in the Budget of Public Health Institutions**

Algerian public health institutions have undergone profound changes in the field of financing, particularly with the emergence of clear legislative and legal texts regulating the mechanisms of digitization. These changes can be summarized in the following points:

#### **First: Program and Performance Budgeting**

(Organic Law No. 18-15 Relating to Finance Laws)

This law is considered the constitution of finance laws, as it aims to reform the budgetary and accounting framework and bring about a radical transformation in the management of public funds through the issuance of a set of legislative and regulatory texts. Some of these texts have already been issued, while others are still pending, such as the law relating to public accounting, the law concerning local authorities, and the decrees regulating the functions of the financial controller, the public accountant, and the authorizing officer.

The framework related to budgeting (Budgetisation) constitutes one of the most important axes of reform. It seeks to establish a new integrated system for managing the general budget with the aim of activating results-based management instead of means-based management through the following mechanisms<sup>13</sup>:

Restructuring public expenditures (budget classifications):

This is achieved through the preparation of a single budget that combines operating expenditures and equipment and investment expenditures, while adding the concept of transfer expenditures, which include the various subsidies granted to individuals, institutions, and local authorities, with the objective of achieving the goals of a specific program.

Management based on programs, results, and multi-year planning:

This involves linking each program to a responsible manager. A program includes a set of multi-year activities directed toward achieving objectives and implementing the orientations specific to each ministry and approved by the government. These programs are evaluated through the measurement of predefined results and objectives.

The objective represents the expected outcome of a given program and must be measurable, precise, forward-looking, time-bound, and subject to evaluation criteria review by the authority that approved it. Programs are assessed through cost analysis and are planned according to a medium-term approach to ensure coordination between economic policy and budgetary programs.

Regarding the financing of these programs, the optimal use of available resources through the adoption of rational financial choice techniques ensures the maximization of benefits at the lowest possible costs. This makes planning an important tool for the rational use of resources and an effective mechanism for solving resource-related problems, thereby achieving the highest efficiency of available resources.

Renewing the general budget cycle:

This reform consists of two main components: budget preparation and budget execution. The project aims to simplify the process of public expenditure execution, improve the quality of control, enable rapid collection and centralization of financial data, and improve both the quality and speed of account presentation.

New roles and responsibilities for managers:

Improving the capacities of managers in order to make clear decisions requires the strengthening of oversight mechanisms. The role of control should not be limited merely to verifying the legality of expenditures but must also extend to monitoring effectiveness and the extent to which the targeted objectives are achieved during and after the implementation period.

Organic Law on Finance Laws introduced a radical transformation in the budgetary management of public health institutions. Public health institutions were classified as “similar public institutions” rather than administrative public institutions, in accordance with Article 2 of Executive Decree No. 21-62. The most important provisions introduced by Law 18-15 can be summarized as follows:

### 1. Structuring the Program Portfolio of the Health Sector

Figure No. (01): Structure of the Program Portfolio of the Health Sector



<sup>13</sup> Lahoul Kamal, Previous Reference, p.333.

**Source: Students of the National School of Health Management and Administration, Tenth Promotion, Modernization of the Budgetary System in Algeria in Light of the New Reforms: The Health Sector as a Model, Promotion 2022–2024.**

Paragraph 3 of Article 04 of Executive Decree No. 20-354 of November 30, 2020, which defines the constituent elements...

For the classification of State budget expenditures, it is stipulated that each program portfolio manager, for the purpose of preparing expenditure classification according to activity, must clearly, evaluatively, and hierarchically present the structure of programs and their subdivisions.

The programs of the health sector were divided as follows<sup>14</sup>:

Executive Decree No. 23-32 of January 2, 2023, which includes the distribution of commitment authorizations and payment appropriations opened under the State budget pursuant to the Finance Law of 2023 and placed at the disposal of the Minister of Health, allocated an amount of 702 billion for commitment authorizations and 711 billion for payment appropriations. These appropriations were distributed in detail according to activity and the nature of expenditure.<sup>15</sup>

As for the classification according to economic nature, it was established by Ministerial Decision No. 124 of August 15, 2020, which defines the subcategories of expenditures as well as the coding of classification according to the economic nature of State budget expenditures. Concerning health institutions, the coding number stops at 1700 because health institutions operate under the Financial Accounting System (SCF)<sup>16</sup>

## **2. Establishing a Contractual Framework for Relations**

The representative of the Ministry of Finance (the budget controller) establishes a contractual framework governing relations with the head of the public health institution (the director). This framework specifies, in particular, the main mission assigned to the institution, detailed according to activity and sub-activity, as well as the objectives set out in detail according to strategic objectives, expected results, and performance indicators.

The representative of the Ministry of Finance also undertakes, through one of the clauses of the contractual framework, to make available to the institution's manager the allocations necessary for carrying out and completing the assigned mission.

It should be noted that the activity and sub-activity of public health institutions constitute part of the sub-program determined by the portfolio holder, namely the Ministry of Health.

## **3. Stricter Procedures for Preparing and Approving the Budget of Public Health Institutions**

It has become mandatory for the authorizing officer of the public health institution to prepare the budget in consultation with the budget controller and the competent accounting officer. The budget is then submitted to the deliberative body (Board of Directors) before being approved by the supervisory authority.

It should be noted that the preparation of the budget for year (N) is based on the financial and budgetary data of years (N-1) and (N-2), as well as on the business plan outlining the institution's strategy (Ministerial Circular No. 8158, 2022, p.2).

Furthermore, before the preparation, approval, and ratification of the budget, a management dialogue takes place between the program manager at the Ministry of Health and the director of the public health institution. During this process, the program manager evaluates, determines, and justifies the financial appropriations necessary to achieve the objectives defined within the contractual framework (Ministerial Circular No. 6111, 2022, p.2).

<sup>14</sup> Executive Decree No. 20-354 of November 30, 2020.

<sup>15</sup> Executive Decree No. 23-32 of January 2, 2023, including commitment authorizations and payment appropriations opened under the State budget pursuant to the Finance Law of 2023 and placed at the disposal of the Minister of Health.

<sup>16</sup> Ministerial Decision No. 124 of August 15, 2020, defining the subcategories of expenditures and the coding of classification according to the economic nature of State budget expenditures.

## **Second: The Financial Accounting System**

With the aim of modernizing public accounting, the Ministry of Finance enacted Law No. 23-07 of June 21, 2023, relating to the rules of public accounting and financial management, replacing Law No. 90-21 of August 15, 1990, concerning public accounting.

This law was prepared on the basis of seventeen (17) State accounting standards derived from the International Public Sector Accounting Standards (IPSAS), which themselves are based on the International Accounting Standards (IAS) and certain French public accounting standards.

Article 302 of the new Health Law No. 18-11 also stipulates that public health institutions shall be subject, in terms of financial and accounting management, to the following provisions<sup>17</sup>:

### **1. Personnel Expenditures**

Personnel expenditures, corresponding to the first title of the institution's budget, remain subject to public accounting rules. This is logical since Article 299 stipulates that the provisions of the General Civil Service Statute apply to employees of public health institutions.

Consequently, the first budget title remains subject to prior control exercised by the financial controller (currently known as the budget controller), affiliated with the General Directorate of Budget under the Ministry of Finance, as well as by the public accountant affiliated with the General Directorate of Treasury of the same ministry and by the Civil Service Inspectorate.

Experts in hospital management consider that this system protects employees' rights and guarantees equality among them. If personnel expenditures were left entirely to financial accounting, each institution would establish its own collective agreement determining wages and the rights and obligations of employees, which would create disparities among health institutions across the country.

### **2. Other Expenditures**

Other expenditures are subject to the Financial Accounting System provided for in Law No. 07-11. These include operating expenditures such as the acquisition of equipment and furniture, payment of travel and mission expenses, judicial expenses, repair of infrastructure, and vehicle-related expenditures. However, up to the present time, the Ministry has not yet implemented this type of management. The existence of the law alone is insufficient, as numerous explanatory regulatory texts and implementation procedures are still awaited.

Regarding oversight of the accounting system within health institutions, Article 303 specifies that personnel expenditures are subject to prior financial control, meaning they fall under the supervision of the budget controller. As for the other expenditures managed under the Financial Accounting System (SCF), they are subject to posterior control.

The question then arises as to the nature of this posterior control. Article 304 answers this by stating that the auditing and certification of the accounts of public health institutions shall be entrusted to a statutory auditor appointed jointly by the Minister of Finance and the Minister of Health.

The role of digitization in modernizing financial and accounting management within public health institutions can be summarized in the possibility of digital interaction between the agents responsible for budget execution. The law authorizes the preparation, transmission, and storage of supporting documents and records in digital form, subject to conditions that will later be specified by a decision issued by the Minister of Finance.

The same law also stipulates that public accounting, with its three branches, shall be managed through an integrated information system and digital means that ensure the preservation, identification, security, reliability, and recoverability of data.

### **Third: The Contractual System**

When examining the financing method of the healthcare system, it becomes evident that it falls directly upon the State budget. The health sector occupies the fourth rank in terms of allocated financial resources after the Ministries of Defense, National Education, and Local Authorities.

This traditional financing system constitutes a heavy burden on the State budget, which seeks to reduce its effects through the establishment of an updated contractual system. This system is expected to

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<sup>17</sup>Article 302 of Health Law No. 18-11 mentioned above.

improve the performance of health institutions and ensure the provision of high-quality healthcare services.

However, its practical implementation requires substantial digitization within the services of health institutions, since this system depends on the smooth flow of health data and information across three levels:

The first level consists of communication between departments and services within the same health institution;

The second level concerns communication and coordination among the different institutions within the healthcare system;

The third level consists of ensuring digital communication and data transfer between various health institutions and structures and the social security bodies.

## Conclusion

### Study Findings

A set of theoretical findings can be drawn that highlight the positive impact of digitization on the development and modernization of the budgets of health institutions, whether in terms of efficiency, transparency, or financial governance. The most important findings are as follows:

The integration of general accounting within public accounting under Law No. 23-07 constitutes a clear change compared to the previous Public Accounting Law. General accounting will make it possible to inventory all assets of various types belonging to public bodies and institutions, thereby enabling oversight authorities to hold managers accountable for the misuse or neglect of such assets, especially those generating income;

Through the digitization of financial operations, all transactions become traceable and auditable, which contributes to strengthening internal control systems and reducing opportunities for financial corruption or data manipulation;

Digital systems provide real-time financial reports and immediate performance indicators, enabling decision-makers to react quickly to financial and operational changes while enhancing short- and long-term strategic planning;

Digitization contributes to building a more disciplined and transparent financial system, thereby supporting the principles of good governance within health institutions and increasing the confidence of oversight bodies;

There is a close relationship between digitization and its impact on the efficiency, effectiveness, and transparency of financial and administrative management. Therefore, digitization has become indispensable for transitioning from traditional administration to the model of new public management as a reform-oriented approach for Algerian public health institutions.

### Study Recommendations

Based on the great importance of the digitization of the national healthcare system and its role in budget modernization, the following recommendations may be proposed:

Making optimal use of innovations and ideas in the field of information systems design and giving them a distinctive technical character, whether they are Algerian or foreign;

The necessity of integrating a unified information system within health institutions in the use of digitization alongside the maintenance of records and registers;

Establishing a clear and binding legal framework regulating the digital transformation of the national healthcare system, while defining rights, duties, and responsibilities;

Strengthening and developing digital infrastructure through the involvement of the Ministry of Post and Telecommunications in supervising the development of infrastructure for various health institutions and structures, while enhancing national capacities.

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