THE ROLE OF PUBLIC HOSPITALS IN IMPROVING THE MEDICAL SERVICE (THE ELECTRONIC MEDICAL FIlE AS ONE OF THE DIGITAL TRANSFORMATION MECHANISMD) FIELD STUDY AT THE PUBLIC HOSPITAL "MOHAMED SEDDIK BEN YAHYA" IN JIJEL



Kemih Nadia[1*]

[1] The Multidisciplinary Laboratory of Applied Human and Social Sciences for Development, University of Jijel, 18000 jijel, (Algeria).
nadia.kemih@univ-jijel.dz

[2] Nadji Leila

[2] University of Jijel, 18000 jijel, (Algeria),
leila.nadji@univ-jijel.dz

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Abstract:

This study tackles the aspects of digitalization in the public hospitals, and shows how digitalization improves the medical service. In this regard, the electronic medical file (DEM DZ) is a cornerstone in the process, as it has many benefits for the whole Algerian society, such improving the medical services and hospital performance in general.

Keywords: digitalization, public hospital, quality of medical service, electronic medical file

JEL classification: *O33.; I11; I18; O32.*

ملخص:

تهدف هذه الدراسة إلى التعريف بموضوع الرقمنة في المؤسسة العمومية الاستشفائية، ودورها في تحسين الأداء الصحي، حيث ركزت هذه الدراسة على الكشف عن مظاهر الرقمنة السائدة في المؤسسة ومن أهم هذه المظاهر: الملف الطبي الإلكتروني (DEM DZ)، بموافقة وزارة الصحة الجزائرية، والذي يُعد محورًا أساسيًا في عملية التحول الرقمي حيث يعمل على تحسين الأداء الصحي وتحسين الخدمة العمومية الاستشفائية، لما له من إيجابيات تعود بالنفع على المجتمع الجزائري بصفة عامة، والمجتمع الجيجلي بصفة خاصة.

الكلمات المفتاحية: *الرقمنة، المؤسسة العمومية الاستشفائية، جودة الخدمات الصحية ، الملف الطبي الإلكتروني*

تصنيف جال: *O33، I11، I18، O32.*

Introduction:

Amid the recent technological changes in Algeria that aim at digitalizing all sectors, the public hospitals adopted ICTs and initiated the electronic medicaloffice, the electronic medical emergencies, the digital archives, and the digital administration to facilitate and reach zero-paper transactions and improve data treatment. In addition, the concept of the digital hospital came into surface to foster the use of the electronic medical file EMF in all departments of each hospital and improve the medical service and healthcare delivered to the Algerian citizens. Based on what was said, we raise the following problematic, "how does public hospital digitalization improve the medical service? Does the electronic office accelerate services? Does EMF improve the service quality?"

Importance of the Study:

Medical digitalization, with its different aspects, applications, and software, needs in-depth study because of the challenges faced in the field.

Aims of the Study:

This study aims at finding out more about the role of public hospital digitalization in improving the medical service and about the main aspects of digitalization, including the electronic office that includes a digitalized sorting bureau that uses waiting application, and EMF that covers different parts, starting with the digital office. In addition, the study sheds light on the role of the electronic office in accelerating service delivery.

Method of the Study:

The study uses content analysis because we shall analyze the interviews conducted with the staff of Mohamed Seddik Ben Yahya Hospital in Jijel to find out more about the role of EMF in enhancing the service quality.

1.The Theoretical Framework:

1.1Definition of Medical Digitalization:

It is the integration of ICTs and modern applications and techniques into diagnosis, treatment, and administration to ensure patients' safety and medical service efficiency, speed, and quality. The use of paper in digital hospitals is rare, as most transactions are online. In addition, the medical digitalization is the delivery of all medical services using medical and non-medical cyber systems, sophisticated techniques, and automation (Eciyok & Uslu, 2023, p. 167). The digital public hospitals promote fast access to data and protect patients'

information and privacy against any hacks or loss; therefore, digital hospitals must purchase strong protection systems to protect digital data and ensure full secrecy.

1.2The Importance of Digitalizing Hospitals:

Digitalizing hospitals accelerates data collection, management, and transfer thanks to ICTs, improves diagnosis and treatment because it helps staff reduce mistakes and take fast and informed decisions, helps detect defrauded medicines and information, and simplifies and accelerates the financial transactions to allow patients to pay treatment costs and staff to get wages (Eciyok & Uslu, 2023, p. 168).

1.3Requirements of Digitalization:

Digitalization needs the respect of all laws to establish the suitable legal environment and avoid any violations, and requires a good communication infrastructure, including internet, computers, and imagery machines. Moreover, it needs efficient cyber systems that help collect data and ensure quality, and qualified human resources, regardless the sophistication of tools, to deal with medicines and modern techniques (Boukhari & Yahiaoui, 2022, p. 459)

1.4The Quality of the Medical Service:

Before tackling the service quality, we have to define quality. The latter is about the achievement of accuracy and the continuous improvement to build up a work philosophy that governs staff and relations under common values. It is a unique performance that requires given circumstances (Ben Tria & Boukheloua, 2017, p. 271). As for the quality of the medical service, it refers to the application of medical sciences and techniques to achieve the maximum medical benefits without increase of risks. Thus, the quality degree is determined based on a balance between the risks and benefits (Al-taher & Abdel Qader, 2015, p. 904). In addition, it is any intangible activity or activities resulting from interaction between patients (citizens) and service providers (Michel, p. 372).

Moreover, WHO defines it as the harmony and compatibility with the correct performance criteria at secure and reasonable costs to increase patients' satisfaction and decrease deaths, disabilities, and malnutrition (Niaz, 2005, p. 26). Procedurally speaking, the quality of the medical service is about the efforts of a qualified and dedicated service provider to deliver psychological, mental, and physical healthcare to patients.

1.5The Dimensions of the Quality of the Medical Service:

Quality is a multidimensional term, and the quality of the medical service relies on different dimensions. In this regard, measuring this quality requires its existence, first, and respect of the following dimensions:

Response: It is about the will, readiness, and capacities of service providers to serve patients when needed (Al-taher & Abdel Qader, 2015, p. 904).

Reliability: It refers to the organization's ability to provide reliable service with a high rate of accuracy and correctness.

Trust and confidence: It is about the degree of trust in service providers and in their honesty and dedication.

Compassion: It reflects the service providers' ability to identify and understand the patients' needs, and provide healthcare (Ben Terbah & Maazouzi, p. 79).

Safety and security: This indicates the patients' feeling about medical safety thanks to hospitals that work against diseases and epidemics and their effects.

Continuity: It is about unceasingly delivering services when needed, regardless place or time. The medical records facilitate the work of service providers, decision-making, and treatment, as they show information and history of the patients (Djennad, 2016, p. 201).

1.6The Electronic Medical File:

The digital files have different natures, uses, and benefits compared to the paper. The US Association for Healthcare Systems defined the electronic medical file as an electronic file that includes the patient's personal information, diagnosis, history, treatment protocol, agreement on the protocol, and administrative information. The file can be accessed by the medical and administrative teams at the same time (Boutora & Balnour, 2024, p. 315).Usually, the digital transformation in hospitals starts with EMF that shows the patient's history and treatment plans and outcomes. Such files allow medical service providers to smoothly exchange information.

In Algeria, DEM DZ is a unified file that provides information on the patient's history, ID, address, and other sides and is shared by health practitioners, who can access a specific part. The system relies on tracing back the patient's history and clinical journal, secrecy of the professional information and commitment to professional ethics to ensure the patient's decency, and protection from hacks (Bahlouli & Tayebi, 2022, p. 1454). In this context, DEM DZ contains integrated facades that ensure the full care of the patient inside the hospital. First, it contains the medical arrangement façade that shows the personal and vital

information of the patient, including name, date of birth, previous diseases, and general state.

In addition, the doctor's façade allows access to the file, diagnosis, treatment, and case development. The façade of the admission office allows for creating the file, including the personal information, and managing the lists of admitted patients, new births, permissions, administrative leaves, medical and administrative documents' printing, medical appointments, and a dashboard to show statistics on patients' movement (entry, exit, death, empty beds, patients per department, gender, etc). Moreover, the nurse's façade allows for recording the daily vital indices, the nursing procedures, the heart schemes, and the flux papers (Moksi, 2025, pp. 19-24).

1.7The Advantages of the Electronic Medical File:

EMF allows for:

- Smoothly exchanging information between the medical and paramedical teams.
- Reducing the medical mistakes, as studies reported a 30% decrease in prescription mistakes, and 25% of check's repetition.
- Facilitating taking clinical decisions on diagnosis and treatment.
- Remarkably improving the administrative work, alleviating the burdens of documentation, and fostering patients' safety (Surabli & Nehru, 2025, p. 54).

2.The Framework of the Field study:

We interviewed 25 employees from different departments of the hospital.

2.1 Presentation of the Interview and Analysis of its Content:

Interview 01: with the doctor assigned with EMF in Mohamed Seddik Ben Yahya Hospital in Jijel on 09-02-2026 at 14:00.

The doctor confirmed that digitalization is very necessary because it accelerates the services, allows access to medical data and information in time, maintains medical information secrecy, and allows for patients' monitoring. Besides, the electronic office that use Fil d'Attente Program helps establish equality between patients by sorting out cases based on their state (urgent, average, normal) and between staff by dividing tasks in emergency departments. EMD is a national application that allows accessing the patient's information at any national hospital. Moreover, the patient can access his medical file using a code that often starts with his national identification number.

However, the doctor confirms that EMD does not reduce the common medical mistakes (prescription and diagnosis) because some old doctors refuse renovation and stick to the old traditional diagnosis without any digital tools. EMD is a technical controlling tool that is supplied by many parties, as all staff must record every procedure and detail taken with the patient for more meticulousness and efficiency. Regarding obstacles, aside from the need for more machines, the doctor sees none because the Ministry of National Health allocated all technical tools and anti-virus software. As for the horizons, the doctor believes that linking the national hospitals with one net reduces medical files and deaths of chronic diseases patients. For example, the patient may face a severe accident far from his main city; in this case, EMD provides the necessary information, such as on allergy to some medicines.

The interview shows that the hospital under study has achieved a good phase of digitalization, as it adopts EMD, the electronic office, and Fil d'Attente Program to end bureaucracy and inequality, facilitate service delivery, organize information, provide access to information and data, and stop any hacks. Besides, digitalization allows doctors to monitor patients since admission until exit of hospital without any obstacles. The application is a technical control tool that monitors all staff, mainly the old doctors who refuse renovation in diagnosis and prescription, and detect medical mistakes. In general, the healthcare has improved and still needs widening the communication net between all national hospitals to accelerate access to patient's files before any medical intervention that may cause danger or death.

Interview 02: with an employee in the electronic admission office on 10-02-2026 at 13:00:

The employee stated that digitalization in the hospital is vital because it accelerates service delivery and facilitates treatment, mainly in emergencies and dangerous cases. As for the electronic office that uses the waiting program, she sees it is good because it facilitates arranging the emergency department and sorting patients out based on their states. She expressed admiration of EMD because it facilitates access to the medical information, improves treatment, and enhances coordination between departments. She added that the patients loved the application, as they can access their medical information.

As for the medical mistakes and diagnosis, she confirms their decrease because the application is a control tool that focuses on all patient details that are written in each patient's file. However, the application suffers the weakness of the infrastructure and lack of qualified computer technicians and sophisticated tools due to the low budget allocated for digitalization. Despite these issues, the staff receives training on the application from the executives, who in return, receive

periodic training in Constantine. She added that all treated obstacles give better insights into a better future and benefits the hospital, the patients, and the whole community.

The interview added new information to those provided by the doctor, as about the weak infrastructure and lack of qualified technicians of computer sciences, and the periodic training received by the staff from the executives and the application engineer. The employee confirms that everybody aims at widening and unifying the communication network to reduce the common mistakes and protect the patients from any mistakes that may threaten life or cause permanent disability.

Interview 03: with an employee in the electronic office on 14-02-2026 at 10:00

The employee confirmed the need for full digitalization of the hospital because it helps maintain information in electronic devices and get rid of papers that are usually lost and take place. In addition, she confirms that the employees like the electronic office because it helps sort out patients and update information. Moreover, she advocated the notion of unifying EMF because it helps maintain the medical documents, monitor the patient's state, and save time and effort. The medical file starts in the electronic office that uses Fil d'Attente program if the patient visits the hospital for the first time, and from other departments if the doctor requests so based on the health state.

EMF helps coordinate the work of the hospital departments to serve patients and is liked by patients because they can access their medical information. However, some people prefer the traditional method and think that digitalization hinders their personal interests. In this regard, digitalization is a tool to protect the patients, control the medical team, and enhance the medical conditions. Regarding the obstacles, the employee stated the low internet access and lack of financial and technical support, which slightly affect the process. She adds that overcoming such obstacles will make a better future for the hospital, patients, and community.

Based on this interview, we find out that EMF protects files from loss, ends paper transactions, promotes speed and flexibility in emergencies, and facilitates recording the patients' information from the electronic office until leaving emergencies or admission to the hospital. Nevertheless, some parties refuse it thinking that renovation hinders their personal interests and negatively affects treatment. Besides, the low internet access and lack of technical and financial support are other issues that must be overcome.

Interview 04: with the head of emergency department on 16-02-2026 at 13:30:

The head confirmed that digitalization is necessary and that Mohamed Seddik Ben Yahya hospital is one of the first in Algeria to adopt it. She added that digitalization allows saving patients' information, facilitating the medical work, and arranging patients, and that the electronic office at emergencies is not enough because there is no sorting office with more employees to absorb the continuous pressure on the department. The head went on saying that EMF is unique, saves time, reduces movement between departments, and fosters transparency despite the lack of the human resources, which hinders access to the medical analyses. Thus, she suggested linking the application to the mobile phones to facilitate work and reduce use of the central computer in the emergencies department.

In addition, the patients liked the application for its easy use and access to their information, what allows patients and their families to find information on the department and treatment room in the electronic office without taking time to search in rooms. Regarding the medical mistakes in prescription and diagnosis, the head confirms that some mistakes still exist, mainly when interns do not refer to experienced doctors. Moreover, the application is a control tool that focuses on all patients' details and improves medical conditions. However, she mentioned that the process faces low internet access that hinders a better service delivery and mistake reduction. In sum, the head mentioned the lack of human resources in sorting patients out despite the big number of cases that need treatment, and that the lack of nurses hinders access to the medical files when the hospital is crowded. Therefore, it is better to connect the smart phones of the team with the application.

Interview 05: with a nurse in Urology Department on 17-02-2026:

The nurse confirmed the need for digitalizing hospitals in modern time, as it facilitates work and excludes paper transactions that take time and effort. Besides, digitalization facilitates contact and coordination between all departments and staff. As for the electronic office, it is a good service if the employees do their work correctly to sort out the patients and facilitate the work of doctors. Concerning the EMF itself, the interviewee expressed her approval of this new application, noting that her medical department was the first to adopt it. She mentioned its positive aspects, such as keeping pace with global technological changes and facilitating communication between departments and medical teams. It also contributes to increasing transparency, as medical, paramedical, and even administrative technical teams possess individual accounts within EMF, each with a specific interface, obligating them to complete their assigned tasks. Besides, she pointed out the necessity of the EMF in instances where physical paper records are damaged.

EMF is a new update welcomed by patients for the medical information and details it contains, enabling them to easily understand their health status. Furthermore, companions can access advice for patient care, such as medication dose and specific observations noted by the doctor in EMF, particularly for elderly patients or young children. She considered the EMF a file that may not directly reduce medical or diagnosis mistakes, but may promote a technical control. It places any user of this application under accountability in the event of a medical error, which prompts them to review their mistakes and avoid them in the future.

As for the obstacles, several technical barriers were mentioned, such as the shortage of devices, scanners, and printers, weak internet connection, and lack of technicians. Besides, IT technicians are often unable to attend immediately due to their duties in their own departments. Additionally, financial support is insufficient because of the lack of equipment and human resources; if these obstacles are mitigated, digitization promises a better future. Regarding the unification of the EMF in Algeria, it also requires a unified communication network, which is currently being developed by specialists to improve the quality of healthcare.

This interview showed that digitization must be adopted entirely without resorting to paper, and that using the paper medical file and the EMF simultaneously is a waste of time and does not provide a clear picture of digitization. Therefore, all users must commit to their tasks fully. Medical cases are no longer as disorganized as they were previously; they are now classified according to their severity—from critical to moderate to routine cases. Doctors have responded well to the electronic office, which facilitated their work by sorting and digitizing these cases in turn, without chaos or the need for intermediaries.

Since this department was the first to adopt the EMF, it represents a modern adoption that keeps pace with the world and its technological transformations. Hospital services require speed, accuracy, and coordination between medical teams, which this application facilitates directly. Furthermore, the application fosters monitoring without the need for direct supervision; it is a technical oversight tool that raises the spirit of responsibility and prioritizes the patients and the improvement of their health conditions. Digitization faces the shortage of human resources, the lack of technical equipment and ICT, and the weak financial support.

2.2 Analysis of the Results in the Light of Hypotheses

Analysis of the Results in the Light of Sub-Hypothesis 01:

Our findings show that the electronic admissions office in the public hospital is necessary for the modernization of health services. It aims to organize patient movement, accelerate administrative procedures, reduce queues, and dispense treatment more rapidly. The electronic office contributes to the speed of providing health services by sorting medical cases according to the degree of severity: red for emergency cases, orange for moderate severity, and green for routine cases. Emergency cases do not require waiting; therefore, the companion of the patient receives the entry ticket on their behalf because every minute is vital to their life. The electronic office also organizes the emergency department, giving each patient their turn and a specific number inscribed with their full name to establish the principle of social equality and eliminate all forms of bureaucracy that hinder healthcare delivery. Only emergency cases may enter immediately without prior notice, making it easier for doctors to provide the service smoothly without pressure, allowing the largest number of patients to receive treatment in time.

2.3 Analysis of the Results in the Light of Sub-Hypothesis 02:

Our study shows that EMF improves the quality of health service, facilitates medical teams' access to patients' medical files wherever they are, serves as an alternative to the paper file, and preserves patient information and data. Furthermore, the patient can access his medical file using a code that usually begins with his National Identification Number (NIN). In addition, EMF contributes to the coordination between all departments, makes it easier for them to complete their tasks, and fosters control on staff. Each member has a specific role in the file and is obliged to record every step taken with the patient. The medical staff pays attention to all patient details, which has contributed to improving the patient's health conditions compared to the past.

The true role of digitization manifests in improving the quality of health services by promoting EMF, which allows for rapid and accurate access to the patient's history, improves treatment safety and efficiency of administrative operations, and lowers the costs of the health institution. Besides, accelerating appointment taking reduces patient's waiting time and the electronic medical information helps coordinate the hospital departments and teams and ensure speed, efficiency, quality, and continuity. Thus, despite the obstacles, EMD helps provide a better medical service.

Conclusion:

Based on what was said, Algeria managed to digitalize the health sector whose outputs reflect general development. In this regard, the public hospitals have adopted digitalization to facilitate their work and initiated the electronic

office that uses the waiting program that sorts patients out based on their needs, and the electronic medical file that improves the quality of the medical service, accelerates service delivery, prioritizes urgent cases, protects medical information, facilitates medical teams' work, and links the departments of the hospital.

The medical digitalization achieved a good phase and is highly welcomed by the Algerian community despite some technical and human obstacles that must be handled to reach health welfare, upgrade the medical service, and reduce the medical mistakes thanks to connection between the national hospitals and exchange of patients data, mainly of those who seek treatment in hospitals other than that of their city.

Références

Eciyok, & Uslu, D. (2023). Digitalization in healthcare: Mobile healyh (m-health). *journal university faculty of economics and adminsistrative sciences*.

Al-taher, & Abdel Qader. (2015). Measuring the Quality of Health Services in Govermment Hospitals in Sudan from the Patients' and Visitors' Perspectives. *Jordanian Journal of Business Administration, 11*(4).

Bahlouli, & Tayebi. (2022). Oran University hospital establishment: Reform and perspective. *Algerian Review of law and political sciences, 7*(1), pp. 1445-1461.

Ben Tria, & Boukheloua. (2017). Business Ethics and Social Responsibility: The role of professional Ethics In Promoting A Culture of Quality.

Ben Terbah , & Maazouzi. (s.d.). Dimensions of Health Service Quality and Their Role in Achieing Excellence. *Journal of Administrative and Financial Sciences, 2*(1).

Boukhari, & Yahiaoui. (2022). Requirements for Implementing digitalization and its role in improving the performance of local administration: A cas study of the electronic window of the municipality of bouira. *journal of economic studies, 16*(3), pp. 457-471.

Boutora, & Balnour. (2024). The Importance of Digitalizing the Health Sector in Achieving Quality of Health Services. *Journal of Environmental Studies and Sustainable Development, 3*(1).

Djennad. (2016). Assessing the Quality of Health Services from the Perspective of Doctors and Nurses in Algerian Hospitals: A Study of Some Hospitals in the Province of Setif. *Journal of Law and Human Sciences, 136*(20).

Michel. (s.d.). Marketing industriel: Stratégies et mise en oeuver. *2*. paris.

Moksi. (2025). Electronic Management of Medical Records in Hospital : The Patient's Electroncic Medical Record as a Model. *Al-Imtiaz Journal for Economics and Management Research, 9*(1), pp. 12-27.

Niaz. (2005). Quality of Healthcare: Theortical foundations and application. *1*. King Fahd National Library.

Surabli, & Nehru. (2025). Digital Transformation in healthcare technology: A technical perspective. *European journal of computer science and information Technology, 13*(3), pp. 50-60.