Digital Transformation In The Health Sector: Experiences Of Arab Countries In Strengthening Digital Health

Rahil Assia*
University of M'hamed Bougara Boumerdes,
Algeria
a.rahil@univ-boumerdes.dz

submitted:30/04/2026 Accepted:02/06/2026 published:30/06/2026

Abstract:

This study examines the differing pathways of digital transformation in the health sector across five Arab countries: the Kingdom of Saudi Arabia, Qatar, Algeria, Egypt, and Jordan. It investigates the national strategies and initiatives adopted by these countries and reviews the digital platforms implemented in each context, thereby enabling a deeper understanding of the mechanisms of digital health transformation and their practical applications. The study also identifies the main challenges facing this transformation. A descriptive approach was employed to analyze the various dimensions of these policies and initiatives. The study concludes that digital transformation in the health sector is progressing at an accelerating pace in the countries under examination, yet there are notable disparities in levels of maturity, investment, and digital infrastructure among them. These disparities have led to the formulation of a set of recommendations aimed at promoting regional cooperation and the exchange of experiences.

Keywords: digital transformation, digital health, telemedicine, national strategies, electronic platforms, Arab countries

JEL Classification Codes: I11, I18, O33, L86

---

*correspondent author

Introduction:

The contemporary world is witnessing unprecedented and far-reaching transformations across various economic and social sectors as a result of the digital revolution, which has reshaped modes of work, production, and service delivery. The health sector is among the most prominent domains affected by these profound digital changes, as digital technologies have become a cornerstone for improving the quality and efficiency of health services. The concept of digital transformation in the health sector refers to the integration of digital technologies into all aspects of healthcare provision.

The COVID-19 pandemic has accelerated the pace of digital transformation in the health sector at an unprecedented rate. The imperatives of social distancing and quarantine have compelled countries to rapidly adopt digital health solutions, such as telemedicine, contact-tracing and epidemiological surveillance applications, and online appointment-booking platforms. This crisis has revealed the urgent need for digital technologies to ensure the continuity of health services during emergencies.

In the Arab context, digital transformation in the health sector acquires heightened strategic importance in light of demographic and epidemiological challenges confronting the region, rising rates of chronic diseases, and the need to enhance the efficiency of health resources. Faced with these challenges, Arab countries are seeking to adopt ambitious national strategies and increase the volume of government investment directed toward developing technical infrastructure, in order to bring about a fundamental transformation in healthcare and to address, in a sustainable manner, the challenges facing health development.

However, Arab countries differ significantly in terms of their level of progress, available resources, and the challenges they face. From this perspective, the problematic dimension of the study emerges in the following main research question:

What is the current state of digital transformation in the health sector in Arab countries?

Sub-questions

Subsumed under this central problematic are the following sub-questions:

What is meant by digital health?

What are the main national initiatives and strategies adopted for health-sector digital transformation in the countries under study?

What are the similarities and differences among the experiences of Arab countries in digital health?

What are the common challenges facing digital health in the Arab context?

Research methodology

To address the research problem, this study relies on the descriptive-analytical method, as it is the most appropriate scientific approach for diagnosing the issue and achieving the study's objectives. This method enables us to draw on previous studies and research related to the digitization of the health sector in Arab countries.

Study objectives

This study seeks to achieve the following objectives:

To describe and analyze the experiences of five Arab countries (Saudi Arabia, Qatar, Algeria, Egypt, and Jordan) in the field of digital health, including an overview of the main national strategies and programs implemented in this area;

To review the key digital initiatives and platforms implemented in the countries under study;

To identify the common challenges facing digital transformation in the health sector in the Arab region;

To put forward practical recommendations for strengthening digital health in Arab countries.

Structure of the study

This study is organized into three main sections:

Section I: The conceptual framework of digital health

Section II: Experiences of selected Arab countries in strengthening digital health

Section III: Challenges facing digital health in Arab countries

Firstly – The conceptual framework of digital health

The adoption of the concept of "digitization" and the integration of information and communication technologies (ICT) into healthcare services with the aim of improving both the quality of care and the management of health institutions have led to the emergence of what is commonly referred to as the digitization of the health sector.

1-Defining digital transformation

Digital transformation is a multidimensional concept that has developed considerably over the last two decades. According to Hess et al. (2016), digital transformation focuses on the changes that digital technologies can bring to an organization's business model, leading to modifications in products, organizational structures, or the automation of processes (Hess et al., 2016, p. 124).

Vial (2019) defines digital transformation as "a process aimed at improving an entity by introducing fundamental changes to its characteristics through the combination of information technology, computing, communications, and network connectivity" (Vial, 2019, p. 120).

Verhoef et al. (2021) further describe it as "the change in the way a company uses digital technologies to develop a new digital business model that helps create and capture greater value for the company" (Verhoef et al., 2021, p. 891).

Digital transformation, therefore, constitutes a comprehensive and strategic process involving the integration of digital technologies into all organizational dimensions, leading to fundamental changes in how the organization operates and enhancing the creation of added value.

2-Defining digital health

The concept of digital health transformation is a composite notion that has been approached from multiple angles in the literature. The World Health Organization (WHO) refers to several definitions of digital health, including the idea that it is "the field of knowledge and practice concerned with the development and use of digital technologies to improve health." This concept is broader than e-health, as it encompasses additional digital-technology applications such as the Internet of Things (IoT), advanced computing, big-data analytics, artificial intelligence, and robotics (World Health Organization, 2021, p. 11).

From another perspective, the European Commission defines digital transformation in the health domain as "a fundamental shift in the delivery of healthcare through the use of digital technologies, data, and analytics to improve health outcomes, enhance the patient experience, reduce costs, and enable innovation in care models" (European Commission, 2022, p. 1).

Accordingly, digital health can be defined as a shift from traditional methods of screening, monitoring, and treatment toward the adoption, utilization, and application of modern technologies—software, tools, devices, and digital methods—in order to provide the highest possible standard of precise and convenient medical care for patients, their families, healthcare professionals, and health institutions of all types (Snaousi, 2023, p. 5).

Digital health has also been defined as the integrated use of information and communication technologies (ICT)—including electronic transmission, storage, retrieval, and sharing of information—in healthcare domains, covering medical, public-health, educational, research, and administrative applications, whether delivered in the same location or remotely (Mechari, 2019, p. 50).

On this basis, digital health may be defined as the dual use of electronic information and communication technologies in the health sector in order to provide the highest possible standard of healthcare services.

3-Importance of digital transformation in the health sector

The advantages of digital transformation in the health sector can be summarized as follows (Snaousi, 2023, p. 5):

Bridging the digital gap in health institutions by leveraging advanced information and communication technologies to deliver healthcare services to citizens and healthcare establishments in need of such support;

Facilitating the rapid transmission of health information so that all stakeholders in the health sector can take timely and appropriate measures;

Strengthening collaboration, as electronic management in healthcare enhances cooperation among different public health institutions and promotes the exchange of information and data between them;

Supporting investment in health-institution resources by reducing the cost of healthcare services, administrative operations, and associated government procedures;

Reducing bureaucracy, as electronic management simplifies processes and procedures within healthcare institutions and eliminates bureaucratic inefficiencies in service delivery;

Enhancing transparency, since full transparency within electronic administrations results from the implementation of electronic monitoring mechanisms that ensure regular accountability for all services provided;

Promoting participation, realized through the opening of dialogue channels via electronic platforms that allow all actors in the health sector to engage and interact

4-Applications of digital health

Digital health applications have undergone continuous development in order to improve public health. Among these applications are: (Abdi & Hanan Laroq, 2024, pp. 378–379)

4.1 Telemedicine

Telemedicine refers to the practice of medicine through communication technologies that enable interaction between physicians and patients for diagnosis, the provision of appropriate treatments, and the continuation of remote patient care. It is delivered through virtual clinics, telephone consultations, remote medical-preventive devices, and medical robots.

4.2 Big data

Big data denotes datasets whose volume exceeds the capacity of traditional databases to collect, segment, transfer, store, and analyze within a reasonable time. Big-data technologies also help detect the health status of the population and intervene promptly in the event of epidemics, by tracking individuals' movements and social interactions through social-network graphs.

4.3 Artificial intelligence

Artificial intelligence (AI) is the discipline of building machines that perform tasks requiring intelligence when carried out by humans, including speed, accuracy, and improved effectiveness. Among its main health outputs are wearables, i.e., smart devices that can be worn as comfortable accessories such as rings, shirts, watches, and similar items.

4.4 Electronic health records

Electronic records contain all of a patient's personal data and vital signs, as well as various information related to their disease and the procedures followed for its treatment, in addition to all details concerning their health status throughout the course of illness. They are divided into:

4.4.1 Electronic medical records (EMRs): These store patient data and allow processing and transmission over specific networks within a single healthcare facility, thereby facilitating electronic communication among departments.

4.4.2 Electronic health records (EHRs): These connect a set of healthcare facilities within or beyond a given health institution, enabling integrated information sharing across the health system.

Secondly – Experiences of selected Arab countries in strengthening digital health

In the Arab context, digital health has gained significant momentum in recent years, particularly in the wake of the COVID-19 pandemic, which highlighted the urgent need to adopt digital solutions in the health sector. Arab countries, however, display considerable variation in their experiences in this field. The following section outlines a set of Arab models that are shifting their healthcare practices from traditional to digital modes.

1-The case of the Kingdom of Saudi Arabia in digital health

The Kingdom of Saudi Arabia is among the leading countries in the Middle East regarding digital-health transformation. The Saudi government has attached great importance to this domain as part of Vision 2030.

1.1 National strategies and initiatives

1.1.1 Saudi Vision 2030: Vision 2030 has driven a transformative leap in the healthcare sector in the Kingdom of Saudi Arabia through targeted investments and forward-looking strategies. The healthcare-transformation program places four priorities at the core of its agenda: prevention, public health, innovation, and sustainability. It seeks to expand the delivery of electronic health services and digital solutions, improve the quality of healthcare, and transform the health-care system into one that is more comprehensive, integrated, and aligned with international standards in service delivery (Vision 2030, 2016).

Digital health and innovation have been adopted as cornerstones of the healthcare-sector transformation under Vision 2030, manifested in: (Mani & Krzysztof Goniewicz, 2024, p. 6)

Telemedicine, overcoming geographical barriers and making medical consultations and follow-up accessible to those living in remote areas;

The implementation of comprehensive electronic health-record systems in healthcare facilities, streamlining the management of patient information;

The deployment of artificial-intelligence-powered solutions to support diagnosis, predictive analytics, and personalized medicine, providing new insights into patient care and significantly improving the accuracy and speed of diagnosis and treatment plans;

A robust digital infrastructure and regulatory framework ensuring the security and privacy of patient data through strict cybersecurity measures, thus protecting sensitive health information and building trust in digital health services among patients and healthcare providers;

Empowering patients to play an active role in managing their health, through mobile health applications and wearable devices that allow individuals to monitor their health, track progress toward fitness goals, and manage chronic conditions more effectively;

Fostering a culture of innovation by investing in health-tech startups and research initiatives;

Enhancing training and education programs for healthcare professionals to include digital-health competencies, ensuring that the workforce is prepared to use these new technologies effectively.

1.1.2 The virtual hospital: The virtual "Seha Virtual Hospital" was launched in 2022 to provide remote healthcare using the latest communication and artificial-intelligence technologies. It is the largest virtual hospital of its kind in the world and links more than 150 hospitals, offering over 30 specialized health services across the Kingdom (Vision 2030, 2016).

1.2 Digital platforms and applications

1.2.1 The Sehhaty platform ("Sehhaty"): Sehhaty is an electronic platform for delivering health services to individuals in the Kingdom of Saudi Arabia. It enables users to access health information and benefit from a range of health services provided by various entities within the national health sector (https://sehhaty.sa/, 2026).

1.2.2 The Seha platform ("Seha"): Seha is the centralized electronic gateway for health services in the Kingdom, addressed primarily to healthcare establishments and health professionals. It offers a number of services, including issuing and renewing healthcare-facility licenses, medical coding services, electronic sick-leave services, and others (https://seha.sa/, 2026).

1.2.3 The Anet platform ("Anet"): Anet is a unified digital platform for healthcare practitioners registered with the Saudi Commission for Health Specialties. It aims to support health professionals in reaching the highest standards of practice, simplify procedures for professional practice, and build a communication network among practitioners for the exchange of experiences (https://anat.sa/, 2026).

2-The Qatari experience in digital health

Qatar has adopted a distinctive approach to digital transformation in the health sector, centered on investing in precision-care technologies, developing genomic research, and strengthening international academic partnerships.

2.1 National strategies and initiatives

The Qatari government has attached the highest importance to digital health and has launched several strategies through the Ministry of Public Health:

2.1.1 National Health Strategy (2018–2022):

This strategy outlined twelve priorities up to 2022 to improve the health status of the Qatari population, meet the needs of current and future generations, and establish an integrated system aimed at delivering a higher standard of healthcare and care services and generating greater value for all stakeholders. Enhancing information systems, remote medical screening, and digital-health solutions were identified as key elements for realizing the integrated-care model (Ministry of Public Health, 2018, p. 16).

2.1.2 Qatar National eHealth and Data Programme:

This programme falls under the National Strategy for Electronic Health and Data Management 2016–2020, which sets out the envisaged characteristics of Qatar's e-health direction. It highlights Qatar's ambition to become a global leader in adopting, using, and developing innovative health solutions. The shift in existing methods and practices is accompanied by costs, but also by expected benefits that will help

improve patient safety, reduce overall healthcare-system costs, and enhance accountability for all actors in the health system. The strategy is implemented through the following components (Ministry of Public Health, 2020, pp. 14–22):

Technology adoption

Personal health accounts

Electronic medical-record systems

Population-health systems

Electronic health and data management

Legislative and regulatory changes

Data-privacy laws

E-health and data-management standards

2.1.3 National Health Strategy (2024–2030):

This strategy focuses on three priority domains: population health, service delivery, and health-system efficiency. These priority areas reflect the remaining challenges facing Qatari health, including reducing the incidence of non-communicable diseases, harmonizing integrated patient pathways, and transforming the Qatari health system into a fully digital system. Health-system efficiency and resilience are to be achieved through the following outcomes (Ministry of Public Health, 2024, p. 26):

Strong and effective health-system governance

A sustainable model for healthcare financing

An efficient digital health system

Data-driven decision-making

Excellence in health research, development, and innovation

A skilled, active, and effective health workforce

Dynamic health-system planning

Effective emergency preparedness and response

2.1.4 Linking electronic health records with Qatar Biobank:

This is a strategic initiative to establish a national biobank for biological samples, aimed at accelerating scientific research and enabling researchers to access high-quality patient data. This linkage

represents a qualitative leap in supporting medical studies and improving the quality of healthcare, in line with Qatar's 2030 vision of promoting digital-health innovation (Corporation, 2023).

2.2 Digital platforms and applications

2.2.1 Sehati ("Sehati") portal:

Sehati is the official, unified electronic patient portal in Qatar, enabling secure access to medical files, test results, medications, and appointments within Hamad Medical Corporation and Primary Health Care Corporation. It may be accessed via the Sehati website or the mobile application (https://www.phcc.gov.qa/ar-qa/patient-portal, 2026).

2.2.2 Ehteraz app:

Launched in response to the COVID-19 pandemic, the Ehteraz app is now used to deliver integrated health and electronic services. It tracks patients' health status, manages COVID-19 testing appointments, and sends health notifications.

2.2.3 Electronic home-care platform:

This is an integrated digital solution supporting the home-care system. It connects nursing teams and other home-care providers with families through an online marketplace where users can search for care services, review them, pay for them, and book them. The platform also enables patients' families to monitor the care journey, collaborate with caregivers, and access resources and educational content to strengthen care delivery (https://www.phcc.gov.qa/ar-qa/patient-portal, 2026).

3-The Algerian experience in digital health

Algeria represents an emerging case in the field of digital health, as it seeks, like other countries, to mobilize resources and capabilities and exploit them through technology to the best possible extent.

3.1 National strategies and initiatives

The Algerian government has launched several strategic initiatives aimed at digitizing the health sector in order to ensure that all citizens have access to high-quality healthcare. Among the most prominent is:

3.1.1 Algeria e-Strategy 2013:

This strategy included a dedicated axis on e-health. In this context, the Minister of Health, Population, and Hospital Reform, Abdel-Rahmane Benbouzid, announced the launch of five digital

projects within the health sector (Zidan & Hassan Ben Khadi, 2023, pp. 163–164).

3.1.2 The health information system in Algeria

The health information system in Algeria consists of six subsystems: the human-resources information system, the information system related to mandatory disease notification, the maintenance-related information system, the electronic vaccination-file information system, the application related to health activities, and the information system concerning scorpion-sting poisoning (Messar, 2018, pp. 7–11).

3.1.3 The Shifa card system

The Shifa system relies on the use of "smart" technologies that generate a chip-based card known as the Shifa card. This system falls within the broader modernization of the social-security sector; launched in 2007 as a smart card for health and social insurance, it contains administrative and medical information about the insured person, including their name, surname, and social-security number. It is used to identify the insured individual and to regulate the use of the electronic Shifa card by health professionals. The Shifa system project aims to: (Ireri & Karim Bichari, 2022, p. 205)

Improve the quality of benefits delivered by streamlining the procedures for obtaining benefits and entitlements, ensuring prompt and regular compensation, and strengthening relations among healthcare providers, including pharmacists, physicians, and healthcare institutions;

Enhance control and management, through increased productivity, precision, and monitoring, as well as the combat of all forms of fraud and abuse.

3.1.4 Electronic medical records

The Algerian legislator, through the provisions of Law No. 18-11 dated 2 July 2018 on health, published in the Official Gazette No. 46 of 29 July 2018, particularly Articles 26 and 13 paragraph 2, has obliged all public healthcare establishments to provide an electronic medical file for each patient as one of the tools for diagnosis and treatment and as a means of protecting and promoting patients' health (Machnaf, 2024, p. 27).

3.2 Digital platforms and applications

3.2.1 The online medical-appointment booking platform "Sihhatech" ("SihhatTech"):

This digital network was established by the Algerian Company for Innovation and Development ("Sihhatech") and is considered an emerging and leading platform for online medical appointments. Data are organized by wilaya and/or by medical specialty, and the platform includes the name and address of the healthcare institution as well as its precise geographical location (https://sihhatech.com/, 2026).

3.2.2 The Esiha digital platform:

The Esiha platform is one of the most prominent recent electronic health platforms in Algeria. It encompasses several healthcare domains, including medical analysis, general medicine, and dentistry, among others. Esiha offers several digital health services, such as audio-visual consultations, remote medical-appointment booking, physician search through geolocation, and the creation and monitoring of a digital patient file (https://esiha.dz/, 2026).

3.2.3 The BeSiha digital platform:

BeSiha was founded by a group of young Algerian engineers and entrepreneurs, in partnership with healthcare professionals, and is entirely free of charge. Its core service is online medical-appointment booking, through which the BeSiha platform provides access to more than 800 healthcare specialists (https://www.beesiha.com/fr, 2026).

4-The Egyptian experience in digital health

The Egyptian state has made substantial investments in the field of digital health, particularly in the wake of the COVID-19 pandemic, in order to provide better healthcare for the Egyptian population.

4.1 National strategies and initiatives

The Egyptian government has launched several ambitious initiatives under the framework of the "Egypt Digital Strategy 2030," which aims to transform Egypt into a fully integrated digital society.

4.1.1 The 100 Million Health Initiative:

The "100 Million Health" initiative is one of the most important health interventions undertaken by the Egyptian state, implemented by the Ministry of Health and Population in recent years. The flagship initiative, launched in October 2018, targeted the elimination of hepatitis

C and the screening of non-communicable diseases. It was followed by a series of public-health initiatives aimed at raising citizens' awareness of the importance of healthy lifestyles, avoiding risk factors for non-communicable diseases, and the value of early detection and follow-up in the event of diagnosed disease to prevent complications. The initiative also included preventive messaging and measures to limit the spread of infectious diseases. In addition, 100 Million Health encompassed services aimed at reducing the prevalence of hereditary diseases among newborns and providing psychological support for certain groups in society, such as couples preparing for marriage and the elderly (100 Million Health, 2018).

4.1.2 Universal Health Insurance Law:

Enacted in 2018, the Universal Health Insurance Law establishes a solidarity-based social system through which high-quality medical services are provided to all social groups without discrimination. The state bears the financial burden for those unable to pay, with the aim of reducing morbidity rates and ensuring medical protection for all citizens. The universal health-insurance system covers all necessary medical services for beneficiaries and their families, ranging from the initial medical consultation through laboratory tests, radiology, medications, dental care, cancer treatment, emergency services, and surgical operations (Universal Health Insurance Law, 2018).

The General Authority for Universal Health Insurance announced on Monday, 26 January 2026, in cooperation with e-Health, a leading company in the provision of specialized digital solutions for the operation and management of health-insurance services, the launch of an integrated digital platform for collecting and analyzing the Authority's revenues. This strategic step aims to reinforce the digital-transformation agenda and enable the Authority to strengthen the governance of its revenue cycle from all sources in accordance with the provisions of the Universal Health Insurance System Law (Launch of an integrated digital platform for the analysis and governance of universal health-insurance revenues, 2026).

4.1.3 National Digital Health Strategy (2025–2029):

The National Digital Health Strategy (2025–2029) is a comprehensive roadmap designed to develop Egypt's healthcare sector through the strategic use of information and communication technologies. The strategy aims to contribute to a more efficient, equitable, and sustainable health future. It is built on establishing an integrated, human-centered

digital-health ecosystem by 2029, ensuring secure and equitable access to high-quality health services by developing secure and interoperable systems, and unifying health data at the national level. This framework is intended to support decision-makers and enhance the quality of services delivered to citizens (National Digital Health Strategy 2025–2029, 2025).

4.2 Digital platforms and applications

4.2.1 Vezeeta:

Founded in 2012, Vezeeta is a leading electronic-healthcare platform for online doctor appointments and clinic-management systems in the Middle East and North Africa. It currently operates in Egypt, Saudi Arabia, the Levant, the United Arab Emirates, Kenya, and Nigeria. The company aims to master all aspects of the healthcare industry and continue launching products that make a positive difference in people's lives (https://www.vezeeta.com/ar, 2026).

4.2.2 Shezlong:

Founded in 2014, Shezlong is an online psychotherapy platform that enables patients to communicate with therapists anytime over the internet. It allows users to search for therapists in different specialties and to book appointments based on therapists' available slots (https://www.shezlong.com/ar, 2026).

4.2.3 El-Dacatra:

Founded in 2015, El-Dacatra is a platform that catalogs and compares private-sector healthcare providers, enabling patients to make informed decisions by providing easy access to information on physicians' qualifications and patient reviews, while also raising medical awareness (https://www.eldacatra.com/, 2026).

5-The Jordanian experience in digital health

The Jordanian experience represents a noteworthy model of tangible achievements in the field of digital health.

5.1 National strategies and initiatives

5.1.1 The Hakeem programme (Program Hakeem):

In 2009, the company EHS for Healthcare Computing launched its flagship Hakeem programme, the first nationwide digital-transformation initiative in Jordan's healthcare sector. The Hakeem programme aims to facilitate the delivery of efficient and high-quality healthcare in the

Kingdom by implementing and deploying an electronic health-record system (EHR) nationwide and digitizing clinical workflows. The programme relies on electronic systems developed in line with international best practices in healthcare. Through Hakeem, physicians, pharmacists, medical technicians, and other healthcare professionals can easily and quickly access patients' medical records in all healthcare facilities implementing the programme across the country by entering the patient's national identification number.

EHS adopted the VistA system as part of its strategy to implement the Hakeem programme in Jordan. VistA is an enterprise-level information-management system used throughout the U.S. Department of Veterans Affairs' healthcare system (EHS, 2009).

5.1.2 National Digital Health Strategy 2024–2030:

The Ministry of Health, in collaboration with the World Health Organization, has issued the draft National Digital Health Strategy 2024–2030, which aims to: (Ministry of Health, 2025)

Implement a governance framework and establish a national digital-health-governance structure;

Digitize health systems;

Enhance the effective and secure exchange of health information;

Build capacity and improve infrastructure;

Support persons with disabilities;

Ensure sustainable financing and integrate advanced digital technologies into healthcare.

The strategy is based on the WHO Global Strategy on Digital Health 2020–2025 and is aligned with existing national health policies and regional trends.

5.2 Digital platforms and applications

5.2.1 Hakeem-My (Hakeem-My platform):

"Hakeem-My" is a website and mobile application that allows users to access their medical records, laboratory results, and documented medications in the electronic health-record system (Hakeem) in full confidentiality (https://my.hakeem.jo/index.php/ar, 2026).

5.2.2 e-Health gateway system:

As part of the initiatives undertaken by NatHealth (the National Company for Health Insurance Management) to improve Jordan's healthcare sector and enhance the patient experience, the company launched in 2019 the electronic health-gateway system. This system aims to improve the level of medical services and increase the efficiency of health management in the Kingdom (https://nathealth.net/en, 2026).

5.2.3 Tadawi platform:

Tadawi is a specialized digital platform for the centralized management of clinics and medical centers in Jordan. The Tadawi platform (https://etadawi.com/) provides an integrated cloud-based system designed to meet the needs of the healthcare sector. It enables clinics and medical centers to manage all operations—including patient records, appointments, billing, and inventory—from any location and on any internet-connected device, without the need for local servers (https://etadawi.com/ar, 2026).

Thirdly – Challenges facing digital health in Arab countries

Arab countries face multidimensional challenges in the digital-health transformation of their healthcare sectors, despite increasing efforts and large investments in this field. The main challenges may be summarized as follows (Qasrawi & al., 2025):

1-Infrastructure-related challenges and the digital divide

The digital divide and weak technological infrastructure constitute major barriers to the implementation of digital health in the Arab world. Although internet access rates have generally increased, disadvantaged groups or those living in areas with fragile infrastructure are often unable to benefit from telemedicine services or digital health resources, thereby threatening to exacerbate pre-existing health inequities.

2-Low levels of digital literacy and the lack of specialized education

The acute deficiency in digital-health literacy is a fundamental obstacle that hinders the optimal use of technology in healthcare. This challenge highlights that the mere possession of smart devices and internet connectivity is not sufficient; the absence of skills required to search for health information, understand it, and apply it with confidence significantly limits individuals' ability to manage their personal health and make sound medical decisions.

3-Crisis of trust in electronic health-information sources

A crisis of trust in digital health-information sources represents a major challenge for users in the Arab region. This scepticism stems from concerns about the spread of misinformation and the lack of scientific accuracy in non-specialized discussions, which in turn limits the successful adoption of digital-health tools and negatively affects patients' active and effective engagement with digital services.

4-Limited trust in AI-based applications and health apps

This reflects an urgent need for specialized digital-awareness programmes that enhance individuals' understanding of these modern technologies and encourage their adoption with confidence.

5-Regional, social, and demographic disparities

There are fundamental regional disparities among the Gulf, North Africa, and the Arab Mashreq in the way digital determinants affect health. A marked gap exists between urban and rural areas, particularly in North Africa. In addition, gender-related challenges appear in the Mashreq, where cultural and social dynamics restrict women's participation in using digital health tools, necessitating the adoption of strategies tailored to local contexts.

6-Work-related, time-related, and technological-use barriers

Digital health also faces behavioural and resource-related obstacles that limit its effectiveness. Work pressure and time constraints reduce employees' capacity to use digital health tools. Furthermore, the diffusion of misinformation and weak health-communication strategies on these platforms undermine the proper use of such technologies.

7-Weak integration between digital policies and the health system

Arab countries face a challenge related to the absence of comprehensive and unified national digital-health strategies. Some countries experience low improvements in health outcomes linked to digital determinants despite adequate devices and internet access, due to weak digital governance and poor integration between infrastructure, digital education, and health services.

8-Limited measurement of actual health outcomes

There is a shortage of tools capable of measuring the true impact of digital health on patient outcomes, which calls for the development of objective evaluation instruments and the conduct of longitudinal studies

to understand the real relationship between digital engagement and health-status improvement.

Conclusion

Digital transformation in the Arab health sector is no longer a choice; it has become a strategic and inevitable necessity, driven by rapid global changes and mounting health challenges. The variance in digital-health maturity among Arab countries offers valuable opportunities for learning and sharing experiences and technologies. At the same time, the shared challenges call for strengthened regional cooperation to address them more effectively, as well as the development of innovative digital solutions that take into account the specificities of the Arab region and respond to its actual needs.

Study findings

The study arrived at the following main findings:

Digital transformation in the health sector constitutes a comprehensive strategy to reconfigure medical services through modern technology;

Digital health has become a key tool for improving the quality of care and reducing costs;

The COVID-19 pandemic has acted as a pivotal turning point, accelerating the pace of digital-health transformation across all Arab countries;

The Arab health sector is undergoing rapid but uneven digital transformation, differing among countries in terms of infrastructure and institutional support;

Saudi Arabia and Qatar lead the digital-health agenda thanks to strong political will and substantial investments;

The Arab health sector faces major challenges, including infrastructure-related constraints and the digital divide, low levels of digital literacy, and limited trust in artificial-intelligence-based applications;

Arab countries have genuine strategic opportunities to accelerate health-sector digital transformation through regional cooperation and by leveraging a young demographic structure.

Recommendations

Based on the study's findings, the following practical recommendations are proposed to advance digital-health transformation in Arab countries:

Develop comprehensive national digital-health strategies that take into account local contexts;

Enact integrated legal frameworks to protect personal health data and regulate telemedicine and digital-health practices;

Allocate sustainable budgets for health-sector digital transformation;

Invest in building digital competencies among health personnel through continuous and incentivized training programmes;

Strengthen regional and international research cooperation to share experiences and develop innovative digital solutions suited to the region's specificities;

Establish an Arab cooperation network for digital health and an Arab fund to finance transformation projects in countries with limited resources.

List of references:

1. 100 Million Health. (2018). Retrieved from https://www.100millionseha.eg/

2. Abdi, A., & Hanan Laroq. (2024). Digital health in the post-pandemic scenario: global experiences and the Algerian case. Journal of Research and Development Studies, 11(1), pp. 303–374.

3. Corporation, H. M. (2023). Integration of Oracle Cerner Electronic Health Record across Hamad Medical Corporation and Qatar Biobank helps accelerate scientific research. Retrieved from https://hamad.qa/EN/news/2023/June/Pages/Integration-of-Oracle-Cerner-Electronic-Health-Record-Across-Hamad-Medical-Corporation.aspx

4. EHS (Company for Healthcare Computing). (2009). Retrieved from https://ehs.com.jo/ar

5. etabib. (n.d.). Retrieved from https://etabib.dz/

6. European Commission. (2022). Communication from the Commission to the European Parliament and the Council – A European Health Data Space: harnessing the power of health data for people, patients and innovation. Retrieved from https://health.ec.europa.eu/publications/communication-commission-european-health-data-space-harnessing-power-health-data-people-patients-and_en

7. Hess, T., et al. (2016). Options for formulating a digital transformation strategy. Information Systems Management, 15(2), pp. 123–139.

8. Ireri, S., & Karim Bichari. (2022). The Shifa card as a mechanism for digitizing the social-security sector in Algeria. 17(2), pp. 201–220.

9. Klash, K., & Bouhafs, S. (2022). Emerging features of e-health as a mechanism to respond to COVID-19 in Algeria. Journal of Research Unit on Human-Resource Development, 17(1, Special Issue), pp. 343–344.

10. Launched integrated digital platform for the analysis and governance of universal health-insurance revenues. (2026). Retrieved from the General Authority for Information: https://sis.gov.eg/ar/%D8%A7%D9%84%D9%85%D8%B1%D9%83%D8%B2-%D8%A7%D9%84%D8%A5%D8%B9%D9%84%D8%A7%D9%85%D9%8A/%D8%A7%D9%84%D8%A3%D8%AE%D8%A8%D8%A7%D8%B1/%D8%A7%D9%84%D9%87%D9%8A%D8%A6%D8%A9-%D8%A7%D9%84%D8%B9%D8%A7%D9%85%D8%A9-%D9%84%D9%84%D8%AA%D8%A3%D9%85

11. Mani, Z. A., & Krzysztof Goniewicz. (2024). Transforming healthcare in Saudi Arabia: A comprehensive evaluation of the impact of Vision 2030. Sustainability, 16(8), p. 6.

12. Machnaf, A. (2024). Reality of electronic-health management in the health sector – the electronic medical record as a model. 10(1).

13. Messar, K. (2018). Système d'information RH Santé DZ, Support de formation SIRH. Ministry of Health, Population and Hospital Reform, pp. 7–11. Algiers.

14. Ministry of Health. (2018). Universal Health Insurance Law. Retrieved from https://uhia.gov.eg/

15. Ministry of Health. (5 January 2025). National Digital Health Strategy 2024–2030. Retrieved from https://www.tawasal.gov.jo/Consultations/Public/1106/%D8%A7%D9%84%D8%A5%D8%B3%D8%AA%D8%B1%D8%A7%D8%AA%D9%8A%D8%AC%D9%8A%D8%A9_%D8%A7%D9%84%D9%88%D8%B7%D9%86%D9%8A%D8%A9_%D9%84%D9%84%D8%B5%D8%AD%D8%A9_%D8%A7%D9%84%D8%B1%D9%82%D9%85%D9%8A%D8%A9_%D9%81%D9%8A

16. Ministry of Public Health. (2018). National Health Strategy 2018–2022. Retrieved from https://moph.gov.qa/arabic/strategies/National-Health-Strategy-2018-2022/Pages/default.aspx

17. Ministry of Public Health. (2020). Qatar National eHealth and Data Programme. Retrieved from https://www.moph.gov.qa/arabic/strategies/Pages/default.aspx

18. Ministry of Public Health. (2024). National Health Strategy 2024–2030. Retrieved from https://www.moph.gov.qa/arabic/strategies/Pages/default.aspx

19. Ministry of Health and Population. (2025). National Digital Health Strategy 2025–2029. Retrieved from https://sis.gov.eg/ar/%D8%A7%D9%84%D9%85%D8%B1%D9%83%D8%B2-%D8%A7%D9%84%D8%A5%D8%B9%D9%84%D8%A7%D9%85%D9%8A/%D8%A7%D8%B3%D8%AA%D8%B1%D8%A7%D8%AA%D9%8A%D8%AC%D9%8A%D8%A7%D8%AA/%D8%A7%D9%84%D8%A7%D8%B3%D8%AA%D8%B1%D8%A7%D8%AA%D9%8A%D8%AC%D9%8A%D8%A9-%D8%A7%

20. Qasrawi, R., et al. (2025). Digital health determinants & divide in the Arab countries. 20(13), pp. 1–19.

21. Saudi Vision 2030. (2016). Saudi Arabia Vision 2030. Saudi Arabia.

22. Snaousi, A. (2023). The state of digitization in the health sector in Algeria and the challenges of improving healthcare services under the technological revolution and the impact of global digital transformation. In Management of hospitals in public health institutions in Algeria under the new health law: reality, challenges, and prospects. Chlef.

23. Verhoef, P. C., et al. (2021). Digital transformation: A multidisciplinary reflection and research agenda. 122, pp. 889–901.

24. Vial, G. (2019). Understanding digital transformation: A review and a research agenda. 28(2), pp. 118–144.

25. World Health Organization. (2021). Global Strategy on Digital Health 2020–2025. Retrieved from https://www.who.int/publications/i/item/9789240020924

26. Zidan, A., & Hassan Ben Khadi. (2023). The Algerian experience in digitizing the health sector. 7(1), pp. 150–172.

Other online sources:

- Seha platform: https://seha.sa/ (accessed 10 April 2026)

- Sehhaty platform: https://sehhaty.sa/ (accessed 10 April 2026)

- Anet platform: https://anat.sa/ (accessed 10 April 2026)

- PHCC patient portal: https://www.phcc.gov.qa/ar-qa/patient-portal (accessed 13 April 2026)

- Sihhatech platform: https://sihhatech.com/ (accessed 1 April 2026)

- Esiha platform: https://esiha.dz/ (accessed 1 April 2026)

- BeSiha platform: https://www.beesiha.com/fr (accessed 1 April 2026)

- Vezeeta platform: https://www.vezeeta.com/ar (accessed 5 April 2026)

- Shezlong platform: https://www.shezlong.com/ar (accessed 5 April 2026)

- El-Dacatra platform: https://www.eldacatra.com/ (accessed 5 April 2026)

- Hakeem-My platform: https://my.hakeem.jo/index.php/ar (accessed 24 April 2026)

- NatHealth e-health gateway: https://nathealth.net/en (accessed 24 April 2026)

- Tadawi platform: https://etadawi.com/ar (accessed 24 April 2026)