



# DIGITIZATION OF HEALTH SERVICES IN MOROCCO AND ITS ROLE IN FACING THE CORONA CRISIS

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**Abstract:** This study sought to define the concept of health digitization and its place in Moroccan legislation and the argument for it in light of the technological and informational development taking place in the world, while listing the areas that were concerned with this type of health services in Morocco during the Corona (Covid 19) crisis, whether in the administrative aspect or Through physical or psychological telemedicine. The study also pointed to a number of obstacles to downloading the digital transition in the field of health, the most prominent of which is the digital divide and the weakness of the legislative arsenal concerned with digital health. The study followed the description and analysis approach when presenting the concept of digital health management and its place in Morocco, with the extrapolation approach by tracking models and practical applications of health digitization in the Corona period, to conclude a number of results, most notably: the fact that digital health is an integral part of the digital transition of management in which Morocco has engaged. For a while, and the fields of intervention of this type of services are many and varied during the Corona period.

**Keywords:** digital health, Morocco low, coronavirus

## INTRODUCTION

The rapid technological development is one of the most important reasons that made the world face a reality that imposed itself, which is the attempt to involve this development in various aspects of life. Thus, it has become necessary for every country that aspires to advancement and development to work on developing its technological equipment in a way that serves the public interest and achieves social peace. By creating digital electronic mechanisms that facilitate the process of accessing and benefiting from the services provided by the state, whether administrative, social, economic or others. Based on this development, many effects resulted on the nature and form of administrative systems, as the traditional forms of public service that proved their limitations retreated in favor of a new pattern based on the technological and informational dimension to reformulate the philosophy and essence of public services, and make them based on what the distinguished capabilities of the Internet and business networks offer, and thus The transition towards the era of digitization / electronic management as a concept with implications that suggest speed, immediate and continuous interaction and penetration of borders. As a result of this technological development, the world witnessed the emergence of new concepts, starting with the concept of management information systems, through the concept of electronic business and electronic commerce, then the concept of electronic government, up to a more general concept, which is the concept of electronic management or digital management. Many governments have been interested in introducing technology into administrative reform programs by adopting information technology in its management and using computers in all its administrative operations, especially with the advent of the Internet in the nineties of the last century. In France, the government has been involved in electronic management workshops since 1997 through the government program. For the Information Society PAGSU It is about putting information technology at the service of public utilities and improving the effectiveness of the administrative activity of the state and local authorities in the context of their relationship with the users.



The Corona crisis that befell the world, due to the procedure for activating social divergence and limiting face-to-face meetings, was something that the world, including Morocco, found itself faced with the need to rely on digitization in order to ensure the continuity of some sectors, even remotely, including the facilities that ensure the provision of social services, including education and health. With reference to the Moroccan experience in this context, after entering the Internet for the first time in 1995, awareness grew of the importance of information and communication technology and the orientation towards the knowledge and information society. Its main objective was to work in areas related to the development of the knowledge society by generalizing the use of information and communication technology for the benefit of all actors in public utilities.

With the spread of the Corona epidemic, digitization was also evident in the health sector, as Morocco worked on a digital transformation in the management of health facilities and services, which were subjected to enormous pressures all over the world, which constitutes a tangible test for the Moroccan and global health system in general.

### 1. What is the digitization of health services?

Digital management is one of the basic means to modernize management through the use of information and communication technology. Technology is the optimal use of scientific knowledge, its applications, and its adaptation to human service and well-being at all times, and in difficult circumstances, its importance and virtue emerge more. The digitization of health services is an integral part of digital management in general. Electronic management is defined as: the immediate transition in the completion of transactions and the provision of public services from the traditional manual method, to the electronic form, in order to optimize the use of effort and time, as public electronic services are provided via the Internet without moving personally to complete transactions (Bakir, 2006, p. 54).

OCED (2004) defines it as the use of information and communication technology, especially the Internet, in order to improve the management of public utilities. Since the two previous definitions mentioned the meaning of digital management in general, the World Health Organization defined digital health or what is termed as the digitization of health services as: the use of information and communication technology in a cost-effective and safe manner, in support of health and health-related areas. (WHO, 2018, p. 1). Based on these considerations that came in the definitions, the digitization of health services is characterized by the following characteristics :

- Paperless health services: using computers and portable wireless technology in public health service.
- Management without a place so that it relies on modern means of communication such as the Internet, so the administrative official can make the decision while he is anywhere in the world and his decision-making is not necessarily related to his presence in the physical headquarters of the public facility, which will lead to positive developments in the health sector with regard to employees. (Abdul Latif, 2000)
- Health management without time: so that the electronic health administration does not necessarily adhere to the official working hours. In the Corona period, for example, a set of technological and digital mechanisms were used at any time to raise awareness and prevent the spread of the virus, and to schedule vaccination dates, etc., without being bound by At some point (Fagherazzi, Goetzinger, Rachid, Aguayo, 2020).
- Management without rigid organizations: Thanks to electronic management, we can talk about smart organizations that are flexible and capable of keeping pace with all emergency changes, in contrast to traditional management that is characterized by rigidity, routine, and slowness (Rabeh, 2019).

#### 1.1. Digital health is a national priority and a global strategy

The issue of adopting and generalizing digital management and achieving its desired goals depends on the extent of the legislator's horizon and his ability to enact the various laws that regulate it, and keep abreast of its developments by virtue of its field of operation and its operating mechanisms that are framed within a rapidly changing and transforming globalized world. In this context, the "Digital



Development Agency” was established, pursuant to Law 16.61. Given the importance of information in light of the manifestations of globalization and knowledge societies, the Moroccan legislator worked to implement the directions of the constitutional legislator to keep pace with the manifestations of digitization, through his enactment of Law No. 13.31 related to the right to obtain information. In addition to Law 19.55 related to the simplification of administrative procedures. As well as the establishment of the Digital Development Agency, which is a strategic institution that enjoys legal personality and financial independence. It ensures the implementation of the state’s strategy in the field of digital development and encourages the dissemination of digital means and develops their use among citizens (Digital Development Agency, 2021).

Perhaps the most prominent workshop related to openness to the digitization of the administration, is the issuance of Law 55.19, related to the simplification of administrative procedures and procedures issued on March 19, the general principles regulating the new relationship that must bring the administration together in order to create a climate of trust between them, (Azerwal, 2021).

In this context, the Ministry of Health worked within the framework of developing the integrated health system to confront the suffering of health professionals in the absence of information documentation of patients and the paths of their diseases and treatments. The health sector also suffers from the absence of documented data on health operations and their beneficiaries in the public and private sectors. National work for the period 2021-2023 in order to achieve results, including: documenting and preserving all health information related to patients, as well as training health sector professionals to have real-time access to patients’ medical files and track them, which ultimately means improving health services (Ministry of Health, 2021)

The Ministry of Health and the National Authority for Doctors and Doctors have also concluded cooperation and partnership agreements with the National Committee for Monitoring the Protection of Personal Data, within the framework of the DATA-TIKA program launched by the Committee, which aims to keep pace with the management of the digital transformation of the health system in Morocco, taking into account the fact that private information The patient has a sensitivity that requires protection (Al-Shawi, 2002, p. 56).

The World Health Organization (2021) stated in the context of the global strategy on digital health that one of the priorities of the organization is to motivate and support countries to have a digital health strategy in place, adapt and strengthen it in a way that best suits it, in order to build capacities and build a health workforce capable of using digital technology Because the human element is the one who performs the services through these means, this is self-evident that they must be rehabilitated and trained to deal with these technological means (Moreu, 2000).

## **2. Areas of digitization of health services and their impact on confronting Corona in Morocco**

### **1.2. The field of digitization of health administrative services**

According to Al-Juhani (1998), the quality of health services depends on the good health management of the institution, as with good management, priorities emerge and the service adapts according to changing needs, and limited resources are used as efficiently as possible, which raises the level and quality of service. Thus, the digitization of the health administration diversifies its fields and interests with the diversity of services provided. It helps to improve human well-being and health. One of the areas of using digitization in the health administrative aspect is facilitating health records kept on the computer: making appointments, etc. as a factor for good health services and evaluating better care, and digital data helps governments to know the health status of society (Committee on the Governance of the Future of Health for 2008). 2030, 2021, p. 7)

During the Corona period, the government in Morocco worked to continuously inform citizens of developments through health data and interviews, on radio and television channels, as well as social networks, and to establish an official portal on the Internet [www.covidmaroc.ma](http://www.covidmaroc.ma) that allows citizens to follow developments in the situation and the measures taken (Moroccan Government, 2021) . During the vaccination period, digitization played an important role in terms of administration and communication, as a group of communication services was made available to citizens, such as



creating an online portal dedicated to the Covid-19 vaccination campaign and launching a telephone line to answer citizens' questions (Moroccan Government, 2021).

A system for booking vaccination appointments has also been established, which requires mandatory pre-registration that enables citizens holding a national card or a residence card via the Internet, and in anticipation of the emergence of any side effects of the vaccine, remote monitoring of people who have been vaccinated either by the person concerned, or by a member of the Health staff through the application (Health Passport) (Moroccan Government, 2021).

One of the living examples related to the health administrative aspect is the adoption of electronic health records, so that a set of initiatives were launched in Morocco to reform a new information system for hospital information in the University Hospital in Fez and Sheikh Zayed Hospital in Rabat (North Africa Health, 2020). Among the companies in force in the field of bringing services closer to citizens in Morocco is this initiative called (daba doc), which is based in Morocco. It helps patients technically and technically to easily find an available doctor nearby and book an appointment with him, and the doctors listed on the platform can communicate with them, and thus maximize their benefit. The service is now available in other countries after it started in Morocco, namely Algeria, Tunisia, Nigeria and South Africa (North Africa Health, 2020).

## 2.2. Digital Medicine

### 1.2.2. Organic medicine,

which is a complementary method to medical practice, so that it can improve primary health care for the population in remote areas to reach some medical specialties. Their commitment to take medication, and the medical network is easily accessible to patients and people with special needs from the comfort of their homes (Al-Shawi, 2022).

Health workers can also provide advice and diagnose many problems via mobile phone or by making a video call, which allows people to deal with some health problems without the need to go to the hospital (Committee on the Governance of the Future of Health 2030, 2021). . Morocco has had an experience in telemedicine since November 2018 by launching the pilot phase of telemedicine initiation, to publish the project for the first time under the supervision of the Moroccan Society of Telemedicine (SMT) in the health centers of Anfko and Imilchil in the province of Midelt and in Azilal, and it is the result of a partnership between the Ministry Health, the Ministry of the Interior and the Ministry of National Education in Morocco, as well as national medical units of the Royal Armed Forces, the National Agency for the Regulation of Telecommunications, and the Mohammed VI University of Health Sciences, to serve the 160 rural community, representing about two million people, who face difficulties in accessing health services (North Africa Health, 2020).

And in connection with the (Covid 19) crisis, some models of this field were represented in some countries such as the United Kingdom and others using the BABLYON application for medical diagnosis, or the possibility of diagnosis and suggesting treatment protocols and appropriate medications by reviewing the patient's medical record, and beyond that NLP programming systems can analyze clinical notes Unorganized on patients. (Al-Rayes, Khashaba, 2020). An example of digital medicine is the use of computers and artificial intelligence by doctors and scientists to help patients detect, treat and prevent diseases at the required speed (Al-Juhani, 1998). And during the Corona period, surgical robots were used that work on their own after being programmed as assistants for doctors and surgeons, and they can reach places inside the body (Al-Rayes, Khashaba, 2020).

In order to face the effects of the pandemic, the National Authority for Doctors and Doctors and the National Authority for Pharmacists in Morocco contributed to providing remote medical consulting services for the benefit of patients, and at the same time the Ministry of Health prepared a draft decree with the aim of bringing the telemedicine decree into existence, and the Ministry of Health launched on June 1, 2020 a telephone application for notification With the possibility of exposure to corona virus infection in the name of (we protect us), it is uploaded on this website [www.wiqaytna.ma](http://www.wiqaytna.ma) (Echo, Khadhar, 2020). Statistically, up to June 6, 2020, the "Weqayatna" application reached one million downloads, days after its official launch, and it has a major role in notification and quick care of people who have been exposed to contact with people confirmed to be infected with the Corona virus, and to ensure the effectiveness of this electronic means, the



Ministry has worked to ensure the principle of strict respect for data of a personal nature, and the identity of positive cases was not disclosed, nor the identity of contacts (Ministry of Health, 2020). In addition to another telephone application for telemedicine consultation under the name of SANTE CONNECT. (Al-Siddiqi, 2020) In addition, the health information published on the Internet has increased significantly, which has led to the promotion of correct data, and thus achieving awareness and sensitization among the citizen. A number of doctors also resorted to launching direct question-and-answer sessions with Moroccans on social media to dispel concerns about the outbreak of the new Corona virus and how to deal with suspected cases in the event of symptoms appearing, while clinics initiated a direct remote diagnosis for those suffering from mild diseases to avoid movement. Outside homes (Amadeus, 2020).

Many doctors have also resorted to creating digital platforms to provide services and consultations to patients that have been transformed into virtual clinics, but their impact is limited (Echo, Khadhar, 2020).

#### 2.2.2. Psychiatry

Basu et al. (2020) stated that since the effects of the virus extended to the psychological aspect as well, in addition to the presence of different segments in Moroccan society that need psychological care before and after the crisis, psychiatric professionals and psychologists to confront the Corona virus and its psychological repercussions, developed a situation Several remote platforms to provide psychological support and counseling services to citizens who suffer from severe symptoms due to stress and tension, with priority given to health workers who are on the front lines. The state of emergency declared by Morocco constituted the largest factor for the negative psychological impact on individuals, in terms of the shock that generates fears related to the general situation in the country, such as the fear of food expiration, the nightmares of epidemics seen in movies, and the increase in the level of false data (Ed Moulid, 2020). ). Here we can stop at two experiences during the Corona period, namely:

- The psychological support platform for Covid 19, launched by the Faculty of Education Sciences at Mohammed V University in Rabat: It is a cell of 25 that includes a professor and a professor specializing in psychology, from the universities of Mohammed V in Rabat, Sidi Mohamed Ben Abdallah in Fez, Ben Tofail in Kenitra, and Hassan I in Settat, Moulay Ismail of Meknes, as well as specialists from the Ministry of Health and Social Protection. To mitigate the impact of COVID-19 from a psychological point of view, by accompanying, accompanying, and tracking the general population, students, and doctors (Basso, et al., 2020). As for the way the platform for remote psychological support works, Ed Maulid (2020) mentioned that the work of this platform is to intervene by providing tips, directions, and instructions on the healthy behavior of families, children, youth, the elderly, and people with disabilities, especially receiving women's calls and providing Psychological support for them, especially those who are subjected to violence (Ed Moulid, 2020).
- The COVID-19 electronic platform launched by the General Administration of Prisons: with the aim of responding to the needs of individuals more privately, and providing psychological assistance to vulnerable groups, headed by inmates of prison institutions (Basu et al., 2020). This is in the context of besieging the repercussions of the pandemic on the prison population by launching the COVID19 - DGAPR - PSY platform, which is a platform that provides psychological support services for their benefit, and aims to help its users to confront various psychological pressures and social repercussions resulting from the quarantine, and this is by receiving their questions and concerns, while providing Appropriate solutions, and since its launch until the end of 2020, approximately 1,740 inmates have benefited from it. According to the study conducted by the General Delegate for Prison Administration, the common denominator among the beneficiaries was the fear of the repercussions of this epidemic on them and their families (High Commission for Prison Administration and Reintegration, 2020).



### 3. Challenges of digital health in Morocco

Despite the progress and progress in the field of digitization of health services, whether before, during or after the Corona crisis, there are still a set of challenges that hinder the prospects set and monitored by Morocco, to win the bet of catching up with countries that have made great strides in Development, and perhaps the most prominent challenge that appears to the observer during the Corona period that hinders this goal is the existence of a digital gap, which separates those who have the knowledge and the ability to use modern technologies, and those who do not have this knowledge and that ability (Al-Daman, 2006). On a set of indicators, including the connectivity density index, technological progress, technological achievement, the network readiness index, the media use and information intelligence index, and the digital access index index (Ali, Hijazi, 2005, p. 3).

In Morocco, there are challenges and problems related to the fact that a number of society members do not have advanced technologies to help adopt digital health applications, and therefore they cannot access digital health interventions that require advanced technologies, which leads to the deprivation of a large group of society members who are deprived of digital health solutions. And if these technologies are found, they encounter the problem of slow network (Bawzana, Hamdoush, 2020). The Arab Barometer (2020) mentioned the data of the digital divide, in a study on the digital divide in 12 Arab countries, stressing that inequalities in the Arab world are still clear and prominent. The study indicated that Morocco ranks ninth in the Arab world in terms of Internet use, as the number of Arabs who use the World Wide Web is 67 percent, meaning that more than 3 out of 10 people in Morocco (31 percent) do not use the Internet at all. The percentage in Kuwait, which ranks first, is 97 percent, and in Yemen, which ranks at the bottom, it reaches 53 percent. The problem arises more in the countryside, as the same study confirmed that there is also a difference between those living in the countryside and cities, as the percentage of urban residents who use the Internet in Morocco is 76 percent, and this percentage declines in the countryside by 55% .

Also, despite the development of digital communication technology, and the existence of a comprehensive legal arsenal that includes all legislative and regulatory texts for telemedicine, its development is known to be remarkably slow, due to the lack of qualification of the human element, and the spread of illegal and unregulated practices through several virtual platforms, which requires the establishment of A committee for tracking and guidance by all those involved (Al-Shawi, 2022, p. 57).

### CONCLUSION

After our presentation of the concept of health digitization, as one of the new concepts brought about by the technology revolution known to the world, which generally means investing in information and communication technology, to achieve health care for individuals within society, at the lowest material and time cost. Digital health is one of the major workshops supported by the World Health Organization, and therefore Morocco has engaged in winning the bet of this workshop, starting with the enactment of a set of legislation aimed at digital transition, and on its basis the draft decree related to telemedicine. Among the results reached:

- Digital health is an integral part of the digitization workshops of the administration and the public utility, which is considered the element of governance as the cornerstone of its advancement.
- That the Corona crisis revealed the urgent need to digitize health services, and therefore this aspect was present for Morocco in the face of the Corona crisis, both in terms of administrative services related to the health aspect, in terms of communication with citizens and the creation of electronic records, and the issuance of cards via the Internet such as a passport, And the passport of the vaccine. Or through telemedicine, which has been approved since 2018, and has taken a unique turn in the Corona crisis; So that we find a group of initiatives, virtual medical platforms, as well as psychological support platforms that are of interest to all segments of society.



- Digital medicine kept pace with the needs of society in the Corona situation, especially with the spread of mental illness and tensions resulting from the epidemic, and therefore a group of psychological support platforms were opened.
- Despite the important strides made in the field of digitization, the aforementioned obstacles force us to give medicine great importance, by enacting a set of legislation related to digital health, and issuing a binding ethical charter for this type of medicine. With the need for the state to take a telemedicine initiative supervised by government hospitals, to be accessible to all segments of society.

Also, a symbol for telemedicine services should be removed in the general classification of professional works, in order to approve compensation for telemedicine work, by determining the appropriate amount for it, so that citizens are not subject to exploitation.

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