ARAB DIGITAL
HEALTH STRATEGY

إتحاد المستشفيات العربية
ARAB HOSPITALS FEDERATION

**DELIVERING THE BENEFITS
OF DIGITAL HEALTHCARE**
together

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CONTENTS

FOREWORD

The Digital information is the essential of providing high quality healthcare with significant and compelling benefits going from avoiding hospital admissions , less adverse drug events, reduction of duplication of tests and examinations, better coordination of care for people with chronic and complex conditions, and better informed treatment decisions.

Digital health can help, save and improve lives...

The Arab Hospitals Federation has been clear about what it expects from the Arab healthcare services today and in the future. The Executive Council in the Federation suggested to have a strategy for Digital Health that was included in its Strategic plan for 2022 - 2025. AHF wants from this Strategy a health system which puts people first - giving more choice, control and transparency. They put as priority the Arab Digital Health Strategy as it is a need and the trend to advance Health in Arab Countries.

The AHF Executive Council Members looks for secure digital services that will provide instant access to a patient information - especially in an emergency, supporting earlier diagnosis and providing better management of diseases.

AHF would like to thank Dr. Youssef Bassim - the Executive Council Member, Mrs. Alice Yammine Boueiz- The Chief Executive Officer and Dr. Mireille Boueiz - The Projects Development Manager for their contribution to the preparation and development of this Strategy.

AHF would also like to express gratitude to the AHF President MP. Fady Alame, the General Secretary Prof. Tawfik Khoja and all Executive Council Members, partners, supporters and AHF team Office for their input and efforts to announce the AHF Strategic plan for 2022 - 2025 aiming to reach their goals in advancing the Health services in Arab Countries and to support all issues that will contribute to a better future for healthcare.

INTRODUCTION

Based on Resolution WHA58.28 on eHealth issued during the World Health Assembly in 2005 that urged Member States "to consider drawing up a long-term strategic plan for developing and implementing eHealth services... to develop the infrastructure for information and communication technologies for health...to promote equitable, affordable and universal access to their benefits." Countries and stakeholders were urged to direct their efforts towards creating a consistent eHealth vision in line with a country's health priorities and resources, developing an action plan to deliver the proposed vision, and creating a framework for monitoring and evaluating eHealth implementation and progress.

Based on Resolution WHA66.24 adopted in World Health Assembly in 2013 on eHealth standardization and interoperability, which urged Member States "to consider developing ... policies and legislative mechanisms linked to an overall national eHealth strategy".

Based on resolution WHA71.7 adopted in World Health Assembly in May 2018 on digital health Drawing on these resolutions and recognizing the need to strengthen digital health implementation, in May 2018 in which it requested the Director-General "to develop ... in close consultation with Member States and with inputs from relevant stakeholders ... a global strategy on digital health, identifying priority areas including where WHO should focus its efforts".

Based on decision WHA73(28) (2020) about The global strategy on digital health 2020-2025 set by the World Health Organization that was endorsed by the Seventy-third World Health Assembly.

Based on United Nations General Assembly on the overall review of the implementation of the outcomes of the World Summit on Information Society (New York, 15-16 December 2015) where the participating ministers and heads of delegation committed themselves to harnessing the potential of information and communications technologies to achieve the 2030 Agenda for Sustainable Development.

Based on the United Nations General Assembly in resolution 73/218 (2019) that "encourages strengthened and continuing cooperation between and among stakeholders from both developed and developing countries"

With the recognition that information and communications technologies present new opportunities and challenges for the achievement of all 17 Sustainable Development Goals, the global health community consent that the strategic and innovative use of digital and cutting-edge information and communications technologies will be an essential element in reaching WHO's triple billion targets included in its Thirteenth General Programme of Work, 2019-2023.

COVID-19 was our wake-up call. Our world was turned upside down in an instant as health officials, government leaders, and everyone scrambled to deal with a disease that we had no way to treat and no way to cure. However, the Arab Healthcare Sector rose to the challenge.

We have seen first-hand how weak we are.and how much we need to be able to instantly scale healthcare services. We have seen the vital role that digital technology has played in saving lives, and it is our responsibility to make sure the lessons we have learned inspire us to climb even higher.

Digital health is the conjunction of health-related sciences and digital technologies that empowers people and populations to advance their health and well-being every day.

It necessitates involvement from all parties: the government, the health authorities, the healthcare facilities, the healthcare professionals and the patients.

• The government's role is to obviously support digital transformation, ensure stability and synergies between different policies, provide funding and infrastructure, and put the necessary laws.
• The Health authorities' role is to design and implement the digital health strategy, to plan and monitor its implementation, evaluate the criteria for success and measure the level to which digital transformation improves the health system.
•Hospitals and Health centers role is to implement health information systems and support responsible use of information, as well to encourage and facilitate the participation of health professionals. They must ensure that digital transformation adds value for patients and professionals.
• Healthcare Professionals role is to pursue the innovation that makes digital transformation accessible, explain their health information needs, support EHR implementation, participate in pilot programs, and evaluate new functionalities.
• Patients role is to protect their rights, confirm that digital transformation offers value, and push for necessary legislative changes.

Furthermore, the smart Hospital approach is essential as it may provide value by systematically addressing the key drivers of any healthcare facility and can complement Digital Health.
Despite the considerable development made by some Arab countries, many countries still require institutional support for the development and consolidation of national eHealth and/or digital health strategies and the implementation of their action plans, which usually requires more resources and capabilities.

Even with some Arab countries' significant progress, many of them still necessitate institutional support for the progress and consolidation of national eHealth and/or digital health strategies, as well as the implementation of action plans, which typically needs more resources and skills.
To seize this moment, the Arab Hospitals Federation works to provide an Arab Digital Health Strategy to guides the Healthcare sector toward important goals.

EXECUTIVE SUMMARY

Digital Health can enhance the quality and ensure sustainability of health and care. It can advance health, save lives, maintain a sustainable health system that delivers safe, high quality and efficient services.

The Arab Digital Health Strategy will help the Arab Healthcare sector to:
• Sustainability and efficiency health system, through less time searching for patient data;
• Avoid adverse drug events, reduce medical errors, improve vaccination rates, better coordinate care and better informed treatment decisions;
• Reduce duplication of pathology tests and x-rays which increases the cost of healthcare;
• Deliver better access to healthcare;
• Expand healthcare availability and improve patient experience by using Person Centered care approach and keeping people out of hospital;
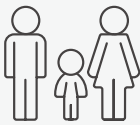
The Strategy suggests five general points to be achieved in order to reach a successful transformation.

1. Health information that is available whenever and wherever it is needed, that can be exchanged securely and that can be used with confidence.
2. Models of care that drive improved accessibility, quality, safety and efficiency.
3. Healthcare workers that are confident in their ability to use digital health technologies in order to deliver health and care.
4. Improved access to prescriptions and drug information.
5. Delivering world-class innovation through a thriving digital health industry

What does AHF want from digital health?

The Arab Digital Health Strategy emphasizes on many subjects that should be used as essential inputs and discuss it with all concerned parties to know exactly what is the aim.
A review of each of the key subjects from different perspectives follows:

1. Assist patients to take the right Healthcare decisions with various choices

Health consumers and carers are eager to be progressively empowered to assume responsibility for their own health choices and to have access to their own personal health information. The effect of digital technologies drives them to benefit more from the advanced innovation that will facilitate the access to healthcare services, delivering services in ways that are convenient for them.

Doctors, providers and bodies recognize the benefits of patient empowerment and data access, but they also recognize that limited Internet connectivity among certain socioeconomic and demographic groups presents risks to medical services access and equity that needs to be highlighted.
They trust that it is vital not to leave patients through the increased dependence on digital health technologies and services.

2. Help all individuals deliver safe and personalised care.

Health consumers and patients, when meeting a healthcare professional, need to share their medical file histories. Patients trust that digital technology can and should make it easier to exchange their medical information with all healthcare providers.

Doctors and providers must have confidence in the accuracy and comprehensiveness of their patients' data in order to give the right health advice to them leading to better results.

Doctors and providers recognize the need to shift from uniform treatment to personalized care, and perceive how reliant this shift will be on solid digital health infrastructure.

3. Create a suitable environment in which providers and patients may use and benefit from innovative technologies.
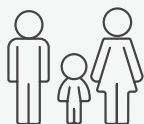
Consumers and providers expect that, like in many other industries, emerging digital technology will continue to improve their experiences with the healthcare system. Access to personal health information using digital technology, such as a mobile app, laptops, or desktops, will change and improve healthcare results.

Doctors and providers requisite development, continuing training, as well as high-quality and dependable digital health technology, clinical information systems, and internet connectivity in order to properly use digital health technology and services.

In order to continuously improve digital health solutions, **the technology sector** expressed a strong desire to collaborate more closely with doctors and providers.
This sector seeks clear regulations and standards for the usage of digital health services to maximize interoperability and lower the cost of integrating health data may be developed.
Furthermore, this sector wants doctors and providers to embrace the cultural shift required to adopt and use digital technologies, as well as promote staff development to maximize the potential benefits of sharing health information.

4. Keep people's confidence in the healthcare system and protect their rights.

Health consumers and carers suppose that the privacy of their health information should be respected, their rights should be protected and their data should be used only as needed and when they want.

Doctors and providers want to feel that the system is secure to allow them to share patient information with other colleagues. They must guarantee that the digital systems they use will assist them in meeting their commitments to keep their patients' health information secure and private, as well as that health data will be utilized safely and appropriately to improve patient results.

The technology sector need non - specific data to be used for research in order to provide visions into health trends and improve population health.
Simple, unambiguous regulations on privacy, security, and data ownership are essential to achieve this.

DELIVERING THE BENEFITS OF DIGITAL HEALTHCARE
together

1
Empower patients to make the right healthcare choices with different options

2
Provide safe and personalised care to all people

3
Build an environment that allowed healthcare providers and patients to use and benefit from Innovative technologies.

4
Maintain the trust in the healthcare system and protect rights.

VISION , PURPOSE, BENEFITS & OBJECTIVES

VISION

Developing and advancing health is the main vision behind the Arab digital health strategy. Following the supervision of the experts in the federation, they found the important need to achieve this goal in order to maintain safe, high-quality and efficient health services, as well to implement suitable, reachable, reasonable, accessible, and sustainable person-centric digital health solutions to avoid, identify, and react to emergencies, build infrastructure and applications that allow Arab countries to use health data to make better decision and reach the third Sustainable Development Goal.

The vision pursues to improve research and development, innovation and collaboration across sectors. It acknowledges that digital health can change the quality and sustainability of healthcare if significant investment is made in governance, workforce development and capacity training.

Digital health may increase the efficiency and cost-effectiveness of care by investing in people and processes, allowing Institutions to plan securely & effectively.

Implementing proper digital health technology is an important part of the strategy, but it can be difficult, especially in low- and middle-income countries. Discovering the capabilities of global solutions and shared services should be considered as part of the strategy, at the same time as generating evidence on the implications for access, cost, quality, safety and sustainability of applying these solutions in health system.

PURPOSE

Improving the quality, efficiency, and effectiveness of the health system is the aim of the digital health strategy, as well Reinforcing it through the use of digital health technologies for consumers, health professionals, providers and others to empower patients and achieve the principle of 'health for all'.

The strategy is aimed to be applicable in all Arab countries even those with limited access to digital technologies, goods and services, and to boost collaboration and partnerships as well to support countries in their national programs to implement their own strategies, advance health & improve healthcare service delivery.

It includes a vision, strategic Direction, Guiding Principles, Strategic Goals, Action Plan and Key Success Factors to advance digital health and will give the opportunity to build a connected digital health system while taking into account possible risks.

VISION , PURPOSE, BENEFITS & OBJECTIVES

The strategy highlights on the critical need for safety and security standards. It stresses the need for strong regulations to protect privacy, confidentiality, integrity and availability of data and the processing of personal health data, and to deal with cybersecurity, confidence building, accountability and governance, ethics, equity and capacity building.

It emphasizes the importance of having robust regulations to secure data privacy, confidentiality, reliability, and accessibility, as well as to tackle cybersecurity, confidence, responsibility, governance, principles, equity, and capacity building.

The patient's permission is very essential for sharing health data in order to improve the quality of services, the results obtained and the continuity of care.

BENEFITS

The Arab Digital Health Strategy aims to lower healthcare costs, enhance patient safety, raise patient satisfaction, promote access to care, and build a more sustainable healthcare system. As well as assisting hospitals in making better healthcare decisions with more data, assisting patients in interacting electronically with their doctors, and ensuring that the system is running smoothly.

OBJECTIVES

The strategy is grounded in the Six following guiding principles adopted globally in other Digital Strategies:

1. Empower each person to take control of its own health.
2. Every community, every individual counts.
3. Collaborate and connect.
4. The outcome is improved health and well-being
5. Ensure privacy, security, and accountability.
6. Improve Patient Experience

A STRATEGIC DIRECTION FOR THE ARAB DIGITAL HEALTH

GUIDING PRINCIPLES

The following principles guide development of this strategy:

1- Empower each person to take control of its own health
Instead of being a passive recipient of transactional services, a reformed ecosystem will empower individuals to take control of their own health.
Individuals should be empowered, protected, and engaged as partners in care while respecting their preferences, needs, and beliefs.

2- Every community, every individual counts
The strategy ensures the transformation of the health ecosystem in a way that decreases current social inequalities in health and promotes health for all individuals and communities without discrimination.

3- Collaborate and connect
Working together across the various ecosystems is a must due to the large-scale change induced by the shift to digital health. The Ecosystems connection, the collaboration among the stakeholders and the transparency are imperatives needed to understand how the change called for will happen and can be overseen while keeping stakeholder trust.

4- The outcome is improved health and well-being.
The success in Health is measured in outcomes achieved whereas the value focuses on achieving positive outcomes both individual and public while taking into account other factors such as cost, patient's and provider's experience.

5- Ensure privacy, security, and accountability
Privacy, Security and Accountability are key factors essential to develop a trusted digital health ecosystem.

6- Improve Patient Experience
Patients' engagement with digital healthcare programs leads to positive outcomes, better well-being, better self-management, better communication with providers, better medication adherence and decrease in the disease symptoms...

STRATEGIC GOALS

The Arab Digital Health Strategy revolves around a set of seven strategic goals.
For each goal, the strategy focuses on a number of objectives highlighting the recommended actions that may be considered by leaders to achieve the goals.

■ *Goal 1: Access, low cost, and use of universal high speed Internet plan for everyone*

As the Coronavirus pandemic outlined, digital technologies have played an essential role in getting health services, support and information.
Therefore, the provision of fair access to affordable high speed internet plans is a must and we should guarantee that people can use it for health related issues.

Objectives

Several measures should be taken to guarantee everybody has accessible, available broadband and the tools needed to use it. Many of the measures should be implemented at the same time.

· **Objective 1-1.** Create a high-speed Internet plan in the country.

· **Objective 1-2.** Make exact mapping of internet accessibility and speed.

· **Objective 1-3.** Make a government wide approach to high speed internet implementation and low cost.

· **Objective 1-4.** Advance digital health measurement, monitoring, practice and research

· **Objective 1-5.** Engage community members to ensure equitability and inclusiveness in the design of digital tools.

> ■ *Goal 2: Cultivating a sustainable health workforce that is capable to use new technologies to provide high-quality, person-centered care.*

Traditional approaches to health occupations, tasks, and functions will be impacted by digital technologies. Therefore, the Arab Digital Health Strategy will need a competent and appropriate workforce to meet demand, in addition to organizational culture change that will lead to a team-based approach to treatment and a shift care to family and home empowerment.

> *"A country's ability to cultivate a digitally capable health workforce is one of the most important enabling factors underpinning national success in digital health."*
> *Dr. Alfred Winter, Professor, Institute of Medical Informatics, Statistics, and Epidemiology of the University of Leipzig, Germany*

Objectives

· **Objective 2-1.** Ensure resources to upskill health workforce.

· **Objective 2-2.** Take advantage of governmental funding opportunities for professional training and programs targeting digital knowledge skill improvement.

· **Objective 2-3.** Update the health workforce's accreditation requisites to address digital knowledge and skill development.

· **Objective 2-4.** Equip the health workers with the needed skills by supporting model programming for continuing education in digital health and data science .

· **Objective 2-5.** Meet capacity needs by developing recruitment and enrolment in health workforce academic programs from a variety of backgrounds.

· **Objective 2-6.** Incorporate health informaticians and data scientists into the health workforce to increase ability to back up a digitally proficient health workforce .

■ *Goal 3: Individuals can use digital technology to safely and securely manage their health and well-being.*

Digital devices and systems are used to collect and analyze data in order to provide coordinated, holistic and integrated care. They must give useful information to individuals and clinicians, as well as empower individual to take care of their health and wellness. In order to achieve this goal, we must ensure that individuals own their data and have appropriate digital health literacy to use it. Based on that, we must increase our collective understanding of our personal health data, better using technologically enabled approaches to care and ensuring that they lead to improve quality and outcomes while lowering costs.

Objectives

· **Objective 3-1.** Establish strategy and legal changes important to give people possession of their own health data

· **Objective 3-2.** Set an action plan to enhance digital health proficiency.

· **Objective 3-3.** Set a framework for the practical use of digital health

· **Objective 3-4.** Determine a path for evolution to reimbursement for digital procedures.

· **Objective 3-5.** Ensure resources to develop methods and data to understand the effects of digital health approaches.

· **Objective 3-6.** Examine and specify limitations on telemedicine use.

■ *Goal 4: Delivering data, information, and education to the right people at the right time reliably and securely by utilizing Data exchange architectures, application interfaces, and standards*

The digital health ecosystem revolves around data. This data should be accessed, exchanged and integrated in a timely, reliable and appropriate manner for the different users from Patients, to clinicians, service providers, researchers, policymakers, government programs, and technology developers. This interoperability will lead to data-driven decisions, improve health services, and redefine value.

Objectives

· **Objective 4-1.** The data should be standardized.

· **Objective 4-2.** The metrics should be standardized.

· **Objective 4-3.** The APIs should be standardized.

· **Objective 4-4.** The algorithms should be standardized.

> **Goal 5**: *A digital health ecosystem that provides timely access to information helps the public to make better decisions and take action.*

It is required to develop digital technologies and data to enable a reactive, robust public health system that eases the timely bidirectional flow of the correct information among the various stakeholders to support evidence-based decision-making,

Objectives

· **Objective 5-1.** Develop long-term funding methods that promote a systemic approach to developing public health technology solutions.

· **Objective 5-2.** Create a method and entity to govern public health infrastructure investment that makes multi-jurisdictional and cross-sector data exchange for public health action easier.

· **Objective 5-3.** Enhance access and use of data to inform public health action by developing new and improving existing relationships and Streamlining data sharing processes

· **Objective 5-4.** Ensure that all public health jurisdictions have equal access and utilization of modern technologies and standards.

> **Goal 6: Integrated governance tailored to face the digital health ecosystem challenges.**

Extensive transformation of existing shattered and old governance structures is required to realize the benefits of digital health and to promote wise and strategic investments, prevent duplication, and unify efforts. Industry demands comprehensive policies that cover data protection, privacy, information security, patient rights, and transparency, as well as that issue protocols and standards to assure interoperability and alignment of quality measurements; and that guarantee the health security.
The reform must be complete on all government levels and should include all stakeholders from health care professionals, technology providers, hospitals, primary care centers, patients, and other people. All of them should take part in the development of digital health governance.

Objectives

· **Objective 6-1.** Develop an entity to set a governance structure that can be used across the whole digital health enterprise.

· **Objective 6-2.** Make digital health a top priority.

· **Objective 6-3.** Develop practical guidelines that foster a culture of respect and accountability, as well as ethical digital health management

· **Objective 6-4.** Define clear roles, duties, and rights that encourage accountability, ethical data use, and proper data protection.

· **Objective 6-5.** Provide support and information to stakeholders in the implementation of guidelines.

· **Objective 6-6.** Gradually formalize governing structures through legislation.

> *"The current transformation of healthcare must be more than just the adoption a nd integration of digital technology with existing healthcare."*

■ Goal 7: Create a smart hospital environment.

There are a number of strategies for hospital executives to ensure a seamless and efficient transition to a smart hospital environment. To begin, they can ensure smart hospital rooms by increasing and supporting human contact while being careful not to replace human interaction or disrupt the clinical staff. Hospital executives can also contribute to the development of the smart health care ecosystem by identifying and defining requirements, as well as selecting technology to fulfill hospital's needs while maintaining a people-first mindset. Finally, they can construct smart hospital "use cases" to create a course to achieve objectives, which may include establishing processes to aid in realizing these objectives.

Objectives

· **Objective 7-1.** Create a smart healthcare ecosystem to fulfill hospital's needs.

· **Objective 7-2.** Ensure that hospital rooms are smart.

· **Objective 7-3.** Create a smart hospital.

· **Objective 7-4.** Create a patient-centered experience using technologies such as telemedicine and other means...

GOVERNANCE

The health system's digital transformation is accomplished by integrating information and communication technologies into its value chain.
Digital health governance needs a strategy, funding, guarantees of all parties' rights, as well as connectivity.

The goal of digital transformation is to improve the health system, which means improving individuals and population health.
Digital health is the outcome of integrating information and communication technology (ICT) into health systems and services, a transformational possibility that needs a new governance model. Digital health governance should consider the challenges and strategies of the health system, the interests and rights of all stakeholders, its leadership, the regulations required, and the obstacles of adopting ICT in the health system and many other factors.

ICT help transform the health system when integrated into its value chain. It evolves into a fundamental tool for planning, managing and accessing healthcare, as well as providing care.

The entire region suffers from a triple burden of disease: chronic or non-communicable diseases, infectious or communicable diseases, and injuries or morbidity caused by external agents.
The rising prevalence of risk factors, combined with an aging population, has led to a higher incidence of non-communicable chronic diseases (NCDs), such as cardiovascular diseases, which are the leading cause of mortality, followed by cancer.

All of this suggests that health systems should look for outcomes that bring value to patients and the society, rather than only evaluating activity and cost, as it has traditionally done. They should consequently pursue both aspects, regardless of how intangible or difficult the assessment of the outcomes can be.

A digital transformation of the health system is required due to the triple burden of disease, economic and financial sustainability, and the need to enhance the quality and efficiency of medical service.

This transformation necessitates a new type of governance: digital health governance.

Intellectual Property Rights

Governments must adopt the following steps, among others, to enable the digital transformation of the health system:
1. Make digital health a top priority.
2. Ensure that the digital health strategy is specific, simple, and widely supported by the public.
3. Provide multi-year financing for digital health.
4. Ensure that the digital health and digital agenda strategies are in harmony.
5. Encourage IT engineers training.
6. Encourage IT engineers and health workforce to participate in digital health training.
7. Ensure that hospitals and other health centers and services are connected and equipped with the appropriate infrastructure.
8. Advocate for and pass legislation that will provide legal certainty to all parties.

Laws governing digital health must include at least the following elements:
1. The legality of electronic health records and documentation, as well as electronic prescriptions, mobile health and telemedicine.
2. The process of identifying (common identifier) and authenticating patients in order to gain access to their medical records.
3. The responsibility to keep track of, keep safe and ensure the security of health-related data, the use of the digital certificates and electronic signatures. All facets of data protection should be included in information security.
4. The protocols and standards to be employed to guarantee interoperability, as well as the governance procedures to be applied for that interoperability.
5. The content of health records indicating the medical documents, their structure, and the information that must be included.
6. The rights of patients in relation to their personal data.
7. Health records can be used for a variety of purposes, including medical care, educational and legal aspects, and for knowledge generation.

ACTION PLAN

There is widespread agreement about the benefits of incorporating ICT into the health system. These benefits are:
· Improved quality and efficiency
· Lower operating costs for medical services
· Lower administrative costs
· The possibility of new forms of care
· Greater effectiveness

Table 1: National governments and governance for digital health

ROLE	ACTIONS
Explicit support for the project	Define digital health as a country-wide or national project.
Funding	Approve a digital health strategy as part of the health strategy and fund it.
Guaranteeing consistency and synergies between different policies	Establish priorities and fund them.
Infrastructure and connectivity Interoperability and standards	Equip the country with the necessary communication infrastructure and define the interoperability framework.
Legal certainty	Pass laws on data protection, patient rights, the validity of electronic records, and other matters.
Propose laws needed for digital health governance to the legislature. Pass regulations that allow laws on digital health to enforce laws.	Draft the bills needed for digital health governance Draft the regulations and technical notes needed in order to be enforced.

The basic laws needed to ensure legal certainty for all should address:
· The validity of electronic records containing health information, like electronic health records, electronic prescriptions, electronic medical documents, as well as the validity of mobile health, telehealth, and the use of remote patient monitoring devices. A key aspect of these regulations is the patient identification procedure (unique identifier).
· Data protection and the security of health information. These regulations should also cover the use of digital certificates and electronic signatures.
· Patient rights in relation to health information.
· The rights and obligations of health professionals, organizations, and health establishments with regards to health information.

Table 2: General management of the health system and governance for digital health

ROLE	ACTIONS
Creating the digital health strategy	Create the digital health strategy with the objectives of improving the quality, efficiency, and effectiveness of the health system. Ensure that information systems, and later on digital health, form part of the health strategy.
Practical implementation of the health and digital health strategies	The short-and medium-term plan should set the objectives, goals, and budget for a period of about 6 to 8 years. It should establish milestones and targets every two years to evaluate outcomes and progressively introduce new functionalities.
Operational planning and management oversight	Develop the two- and four-year work plan with intermediate goals. The plan should have a budget and specific funding for centers where pilot projects take place and for the most advanced centers.
Operational Defining the criteria for success	Specify the scope, timeframe, and cost of each milestone. It is crucial to link these criteria and standards to health system improvements.and management oversight
Defining the model for information systems and electronic health records	Develop and follow the policies and procedures for information security and patient safety from the outset. Define the model for electronic health records, their information architecture, and a framework for interoperability with standards to be used by all health organizations and establishments, among other important matters.
Guaranteeing the participation of all stakeholders	Create task forces to establish the model for information systems and electronic health records. These support teams should have the resources they need to do their job. One or more task force should participate in the process of developing, implementing, maintaining, evaluating, and upgrading the system.
Leadership and plan facilitator	Senior officials should lead the digital transformation of the health system. The facilitator role consists of giving the plan the resources it needs beyond just funds; for example, ensuring the availability of experts and explicitly supporting task forces. Promote the creation or strengthening of programs for degrees in IT engineering and other technical fields. Ensure initial training for both ICT and health professionals on digital health, health information, and medical documentation.

Table 3: Hospitals, primary care centers, and other health service providers and digital health governance

ROLE	ACTIONS
Participating in decision-making	Create and support task forces and committees
Guaranteeing that digital health provides value for patients and professionals	Professional should support, supervise, and evaluate the implementation. The quest for innovation should be constant
Implementing electronic health records	Evaluate each project goal. Propose improvements
Promoting responsible use of information and of the improvements brought by digital health	Promote clinical activity self-assessment systems and clinical decision support systems. Use health information as the principal tool for the establishment's planning, management oversight, and evaluation

Table 4: Health system professionals and governance for digital health

ROLE	ACTIONS
Innovation	Propose changes within the organization (innovation)
Establishing requirements	Participate in establishing requirements and semantic definitions
Supporting implementation	Use electronic health records and other health information systems, participate in pilot projects and in the implementation phase
Participating in pilot projects	Evaluate results (how much value is provided) Propose improvements

Table 5: Citizens and patients and governance for digital health

ROLE	ACTIONS
Defending their rights	Forming associations as a channel for participation
Promoting improvements	Participating in task forces
Pushing for necessary legislative changes	Making proposals Evaluating results (the value they provide)

"The goods and values related to health records are especially important, as they are directly related to people's fundamental rights, such as the rights to a private life, bodily integrity, health, liberty, confidentiality, and privacy" (Yuguero del Moral 2004).

LEGISLATIVE & REGULATORY ASPECT

Rather than trying to figure out who owns the data, Legal laws should specify who has the authority to do what with health data, under what circumstances, and what their responsibilities are.

Table 6: Concerns and laws about digital health

STAKEHOLDERS	MAIN CONCERNS	LAWS
Citizens and patients	Access to their health information Health information kept in a safe and readily available way	Access to their health information Data protection and information security
Health professionals	Validity of electronic records and medical orders Validity of telehealth Validity of electronic prescriptions Confidentiality Access to medical information for improving quality and research Interoperability	Content and validity of electronic health records, telehealth, and electronic prescriptions Data protection Secondary uses of health information Use of dictionaries for terminology (ICDIO: SNOMED)
Health centers and hospitals	Secure storage of health information for a set period of time Access to health information for assessment, management oversight, inspection, and quality improvement purposes Interoperability	Purposes of health records and their safekeeping Data protection Secondary uses of health information Use of standards (HL7) for exchanging and storing information (governance for interoperability) Responsibility of the health establishment for its information system, for correctly integrating it, and for communication standards and protocols
Public health systems	Access to and processing of medical data for public health	Legal requirements for sending data between different centers and services within the health system Secondary uses of health information Data protection Responsibility of public health for its information system, for correctly integrating it, and for communication standards and protocols
Research centers	Access to health information Intellectual property rights	Secondary uses of health information Data protection Intellectual property laws

DATA AND INFORMATION SECURITY

The laws should cover the following aspects:
· Data protection and information security
· Validity and requirements for health information in digital format
· Validity of electronic prescriptions

In order to ensure legal certainty for everyone and respect in regard to their rights, Legislative changes have to be put in place. These laws focus on:
· The validity of electronic records containing health information, such as electronic health records, electronic prescriptions, electronic medical documents, the validity of mobile health, telehealth, and the use of remote patient monitoring devices. An important aspect of these regulations is the patient identification procedure (unique identifier)

· Health information security and data protection. Digital certificates and electronic signatures should also be covered by these regulations.

· Patient rights when it comes to health data.

· The rights and responsibilities of health practitioners, organizations, and institutions in relation to health data.

Legislative changes are required to ensure legal certainty and respect for everyone's rights as a result of digital transformation.

KEY SUCCESS FACTORS

The Arab Digital Health Strategy will emphasize on the following points to ensure successful implementation of the digital health.

Dependence and Safety Assurance

The dependence of Care taker and Healthcare provider on digital health is critical to the success of the Arab Digital Health Strategy. It's very important to put in place a strong privacy, security, safety, and risk management frameworks in order to secure sensitive data while simultaneously allowing safe and efficient information sharing.

Care takers must be taught about their privacy rights in order to make informed decisions about how their health information is used, and healthcare practitioners must know how to use digital tools in a way that protects personal information.

Support, Partnership and Commitment

The collaboration between all parties and the commitment to guarantee competencies are offered to all citizens, wherever their location, are necessary to reach the outcomes and advantages outlined in this Strategy. Cooperating and controlling existing resources and abilities will help skip duplication and accelerate realization.

Setting legislative, regulatory and policy frameworks

This Strategy requires policy changes, including legislation, regulation, and funding structures to achieve the goals. Enhancing care models, modifying prescription processes, and implementing health records are just a few of the priority areas that will necessitate policy and legal framework changes involving all stakeholders.

Resilient consumer and clinician involvement and governance

To ensure that digital health is functioning inside the health system, it will be necessary to continue to apply collaborative, co-design, and co-production approaches. It's challenging to involve a diverse group of health professionals working in health and care. Any digital health effort that necessitates a shift in practice will require this level of clinical involvement to be successful.

Efficient leadership

The success of this strategy will rely heavily on strong leadership. No single institution can accomplish the necessary outcomes from digital health on its own.

Crucial Partnerships

There is a chance to accelerate the development in digital health by forging crucial collaborations between industry, healthcare consumers, and the research sector and by collaborating with international and regional partners to exchange lessons and insights.

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