Digital health action plan for the Eastern Mediterranean Region

(2024–2028)

World Health Organization
Eastern Mediterranean Region

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Executive summary

The *Digital health action plan for the Eastern Mediterranean Region, 2024–2028*, was developed by WHO following the 69th session of the WHO Regional Committee for the Eastern Mediterranean. This plan incorporates the latest global insights and best practices to leverage digital technologies to enhance health and well-being in the WHO Eastern Mediterranean Region. Development of the action plan was informed by input from various sources, including a literature review, a regional digital health survey, expert interviews and technical feedback from focal points.

The action plan characterizes countries/territories of the WHO Eastern Mediterranean Region into three categories in relation to digital health: emerging, developing and advanced. For each category, the plan presents a tailored list of objectives built around SMART (specific, measurable, achievable, relevant and time-bound) goals. These goals focus on improving digital health literacy, expanding access to digital health technologies and strengthening digital health governance and data security. The plan encourages an increase in the percentage of health care workers with a basic understanding of digital health technologies and calls for an increase in the proportion of households with internet access. It also aims to develop and implement national digital health policies in all countries/territories in the Region and improve access to health care for underserved populations in advanced category countries through digital health technologies.

The action plan recognizes the potential of digital health to strengthen and improve the accessibility, quality, efficiency and cost–effectiveness of national health systems. It acknowledges the challenges of implementing digital health solutions, including costs, weak and fragmented governance, data security, privacy and language barriers. The action plan calls for strategic direction to fully realize the potential of digital health in the Region.

Implementation of the action plan requires collaborative efforts from a range of stakeholders to achieve its objectives. These stakeholders include:

- Countries: Develop and implement effective national strategies for digital health. Strengthen governance and capacity for digital health innovations. Exchange knowledge and work together at the regional level to implement digital health solutions.
- WHO: Facilitate the adoption of digital health solutions and improve digital health governance in countries by supporting the development and evaluation of national policies, strategies and programmes.
- Private partners: Integrate personalized and reactive care models into digital health innovations. Collaborate with regulatory bodies to ensure the development of high-quality, safe and effective digital health technologies.
- Research and academic institutions: Synthesize national research and disseminate evidence on the contribution of digital health interventions to health system performance and the effects of digital health interventions on population health outcomes.

1. Introduction

Developing a successful action plan for the implementation of digital health initiatives, focusing on the unique needs of the WHO Eastern Mediterranean Region, necessitates a thorough, thoughtful and holistic approach that considers the Region's specific challenges and opportunities. This approach should consider such country- and Region-specific factors as the current state of health care infrastructure and technology, the availability of skilled personnel, cultural and social differences, and the potential impact of digital health interventions on patient outcomes and overall health care system efficiency *(1)*.

Digital health uses information and communications technology (ICT) to improve health outcomes. It includes many applications, such as telemedicine, mHealth ("mobile health") and eHealth. Digital health can improve health equity and access to quality health services, empower people to manage their health, and strengthen health systems (*2–5)*.

The Eastern Mediterranean Region faces challenges to achieving universal health coverage (UHC) that include conflict, environmental threats and natural disasters *(6)*. Digital health can help overcome some of these challenges and thereby improve people's health in the Region.

WHO is committed to supporting countries in developing and implementing national digital health strategies. The *Digital health action plan for the Eastern Mediterranean Region, 2024–2028*, outlines several critical actions that WHO will take to support countries in scaling up digital health in the Region.

This action plan focuses on the following four key areas:

- strengthening the governance and enabling environment for digital health *(7)*
- accelerating the adoption and use of digital health solutions
- building capacity for digital health *(8)*
- promoting innovation and research in digital health *(9)*.

The action plan is aligned with WHO's *Global strategy on digital health, 2020–2025,* and its regional strategy for fostering digital health (2023–2027) *(10,11)*. It also aligns with the Sustainable Development Goals (SDGs), particularly SDG 3 on good health and well-being.

WHO will work with countries, partners and stakeholders to implement the action plan and achieve its vision of improving health outcomes in the Region by developing and promoting digital health infrastructure and solutions that are linked to, and supportive of, health and public health priorities and the resources of countries.

The Region faces significant obstacles to achieving UHC, including ongoing conflicts, environmental threats and natural disasters. Digital health solutions offer a promising approach to address some of these challenges and enhance the health and well-being of the Region's population.

The need for a digital health action plan for the Eastern Mediterranean Region is based on the following factors:

- the growing potential of digital health interventions to address health challenges facing the Region;
- WHO's commitment to supporting countries in achieving UHC;
- the need for a coordinated and strategic approach to scaling up digital health in the Region.

The action plan will provide a framework for WHO to work with countries, partners and stakeholders to implement digital health solutions and achieve the following goals:

- improve access to quality health services for all
- empower people to manage their health and well-being
- strengthen health systems by making them more efficient and effective
- accelerate progress towards UHC and the SDGs.

2. Digital health landscape in the Eastern Mediterranean Region

Overview

The use of digital health tools is on the rise in the Region, with several countries currently developing related national strategies. Furthermore, many countries have already implemented legislation to safeguard health data. Nevertheless, there is still a requirement for regulatory and accreditation bodies that can facilitate the creation of digital health legislation and ensure adherence to these policies across all countries *(11)*.

Health care workers are a core component of successful digital health implementation and utilization; however, fewer than half of the countries/territories in the Region have reported workforce development strategies for digital health. Building a digital health workforce requires continual training and education to keep staff engaged and informed about the latest digital health best practices. To support countries' commitment to digital health, there is a critical need to regularly improve the skills and abilities of health care workers in the use of these technologies.

Most countries in the Region are committed to the digitalization of their health care systems, and approximately two thirds refer clearly to ICT in their health policies and strategies (Fig. 1). At the global level, WHO's *Global strategy on digital health, 2020–2025*, was discussed and approved by every Member State that participated in the World Health Assembly 2020 resolution. Most WHO regions have advocated implementing the global strategy through events, capacity-building and Regional Committee resolutions. The most recent development was the adoption of resolution EM/RC71/R.6 (Enhancement and digitalization of health information systems in the countries of the Eastern Mediterranean Region: a regional strategy, 2024–2028) *(12)* in 2024, and in 2022, resolution EM/RC69/R.6 (Regional strategy for fostering digital health in the Eastern Mediterranean Region (2023–2027)) by the WHO Regional Committee for the Eastern Mediterranean at its 69th session. Most barriers to implementing digital health plans can be attributed to a lack of qualified capacity and resources. Some advanced category countries in the Region still face challenges in adopting digital health solutions that positively impact public health and reflect quality medical services.

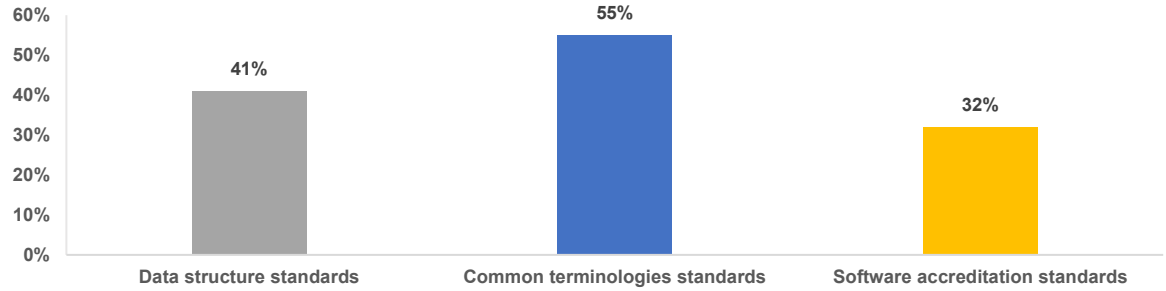

Fig. 1 Digital health-related standards implemented by countries/territories in the WHO Eastern Mediterranean Region

The current digital health status in the Region is mixed. Some countries have made significant progress in adopting and using digital health technologies; others are still in the early stages due to factors such as:

- limited access to digital infrastructure and devices
- low digital literacy
- underdeveloped governance and enabling environment
- limited investment in digital health.

However, there are several positive trends in the Region. Smartphone penetration is increasing rapidly *(13)*, and there is growing interest in digital health from governments and donors. Additionally, there is a growing digital health ecosystem in the Region, with several innovative startups and companies developing and deploying digital health solutions.

High-income countries have made significant progress in adopting and using digital health technologies. These countries have high internet and smartphone penetration levels, and their governments and health care systems are investing heavily in digital health. As a result, these countries have a wide range of digital health solutions in place, including telemedicine, mHealth and e-Health systems.

Middle-income countries are progressing in adopting and using digital health technologies. However, these countries face several challenges, such as limited access to digital infrastructure and devices, limitations in digital literacy and weak governance and enabling environments. Despite these challenges, several innovative digital health solutions are being deployed in developing category countries.

Low-income countries face the most significant challenges in adopting and using digital health technologies. These countries have low internet and smartphone penetration levels, and their governments and health care systems have limited resources to invest in digital health. As a result, the adoption and use of digital health technologies in low-income countries in the Region is still in its early stages. However, several promising digital health pilots and programmes are under way in these countries.

Table 1 summarizes the critical challenges and opportunities for digital health in countries based on their level of maturity in this area (advanced, developing or emerging).

Table 1. Key digital health challenges and opportunities by digital health maturity level of countries

Maturity level	Key challenges	Key opportunities
Advanced	Limited access to digital health solutions for underserved populations	Growing adoption of smartphones and other internet-connected devices
Developing	Limited access to digital infrastructure and devices, low digital literacy, weak governance and enabling environments	Growing interest in digital health from governments and donors, growing digital health ecosystem
Emerging	Low levels of internet and smartphone penetration, limited resources to invest in digital health	Innovative digital health solutions are being deployed, and promising digital health pilots and programmes are under way

Opportunities and challenges

The Region has made significant progress in using digital health technologies in recent years. However, there is still a considerable gap between the potential of digital health to improve health outcomes and the current state of adoption and use.

The following are some of the critical challenges and opportunities for digital health in the Region:

Opportunities:

- **Growing adoption of smartphones:** Smartphone penetration in the Region is increasing rapidly *(13)*, providing a significant opportunity to expand access to digital health services.
- **Growing interest from governments and donors:** There is increasing interest in digital health from governments and donors in the Region. This interest is providing new opportunities for investment and collaboration.
- **Burgeoning digital health ecosystem:** There is a growing digital health ecosystem in the Region, with several innovative startups and companies developing and deploying digital health solutions.

Challenges:

- **Limited access to digital infrastructure and devices:** A significant proportion of the population in the Region does not have access to reliable internet connectivity and smart devices, limiting their ability to use digital health services.
- **Low digital literacy:** Many people in the Region lack the digital literacy skills needed to use digital health services effectively.
- **Weak governance and enabling environment:** More robust governance and enabling frameworks for digital health are needed in the Region. Important work in this area will include developing national digital health strategies, establishing regulatory frameworks and building capacity for digital health governance.
- **Limited investment in digital health:** Increased investment is needed in digital health in the Region to provide funding for developing, implementing and evaluating digital health solutions.

Despite the challenges, there have been several critical achievements in digital health in the Region in recent years. These include:

- **Development of national digital health strategies:** Several countries have developed national digital health strategies. This is a positive step towards creating a more enabling environment for digital health.
- **Deployment of digital health solutions:** Digital health solutions have been deployed in areas such as noncommunicable diseases (NCDs), maternal and child health and infectious diseases.
- **Capacity-building:** Several capacity-building initiatives have been undertaken to train health workers in digital health and to develop digital health literacy among the population.
- **Innovation and research:** There is growing interest in digital health innovation and research in the Region. Several new digital health innovations have been developed and tested, and there is a growing body of research on the effectiveness and impact of digital health solutions.

3. Definitions and guiding principles

The WHO Global Digital Health Monitor (GDHM) is an interactive digital resource that tracks, monitors and evaluates the use of digital technology for health across countries *(14)*. It provides a comprehensive assessment of the digital health landscape in each country, using a set of indicators across eight dimensions.

This action plan closely aligns with the GDHM scoring rubric to assess each country's performance across these dimensions. Countries are classified into three categories based on their overall score:

Emerging (GDHM score ≤ 50):[1] Countries with a limited or nascent digital health infrastructure and capabilities.

- Definition: Emerging digital health maturity refers to countries having a developing or limited digital health infrastructure. These countries may have a low percentage of health facilities with access to the internet, few health workers with digital literacy training, and a low percentage of health facilities using electronic health records.
- Characteristics:
  - limited digital infrastructure and connectivity
  - low adoption of digital health technologies
  - weak data collection and analysis capabilities
  - limited capacity for digital health innovation.

Developing (50 < GDHM score ≤ 70): Countries making progress in developing their digital health infrastructure and capabilities.

- Definition: Developing digital health maturity refers to countries making progress in developing their digital health infrastructure and capabilities. These countries may have a growing percentage of health facilities with access to the internet, more health workers with digital literacy training, and an increasing number of health facilities using electronic health records.
- Characteristics:
  - expanding digital infrastructure and connectivity
  - growing adoption of digital health technologies
  - strengthening data collection and analysis capabilities
  - developing capacity for digital health innovation.

Advanced (GDHM score > 70): Countries with a well-developed digital health infrastructure and high digital health innovation.

- Definition: Advanced digital health maturity refers to countries having a well-developed digital health infrastructure and high digital health innovation. These countries may have a high percentage of health facilities with access to the internet, nearly all health workers with digital literacy training, and widespread adoption of electronic health records and other digital health technologies.
- Characteristics:
  - robust digital infrastructure and connectivity
  - widespread adoption of digital health technologies
  - strong data collection, analysis and interoperability
  - advanced capacity for digital health innovation.

WHO's digital health action plan for the Eastern Mediterranean Region is designed with the latest global thinking and best practices to harness the power of digital technologies to improve people's

[1] A score of 50 indicates that the country has made some progress in implementing digital health interventions and enablers, but there is still significant room for improvement. A score of 70 would indicate that a country is making significant progress in implementing digital health interventions and enablers. This score suggests that the country has a relatively strong foundation in areas such as leadership, strategy, legislation, workforce, infrastructure and services (https://digitalhealthmonitor.org).

health and well-being in the Region. The action plan was developed in close collaboration with countries to identify and prioritize the digital health interventions that will significantly impact health and well-being. The plan focuses on using digital technologies to reach underserved populations and to provide affordable and accessible health services to all, with a particular emphasis on promoting equity and inclusion. Additionally, the plan aligns with WHO's Global strategy on digital health and focuses on progress towards achieving UHC through digital technologies.

The guiding principles of the action plan are as follows:

- **Align with WHO's Global strategy on digital health**

The regional action plan should provide a framework for countries and regions to harness the power of digital technologies to improve health and well-being for all. It should align with the global strategy to ensure it also aligns with the latest global thinking and best practices.

- **Respond to regional and national health priorities**

The action plan should be tailored to the specific needs and priorities of the Region. It should be developed in close collaboration with countries to identify and prioritize the digital health interventions that will significantly impact health and well-being.

- **Focus on universal health coverage**

Digital technologies have the potential to play a significant role in expanding access to health services and achieving UHC. The action plan should focus on using digital technologies to reach underserved populations and to provide affordable and accessible health services to all.

- **Promote equity and inclusion**

Digital technologies must be used in a way that is equitable and inclusive. The action plan should promote that all people, regardless of their age, gender, income or location, have access to, and benefit from, digital health interventions.

- **Build on existing initiatives**

The action plan should build on existing relevant initiatives and avoid duplication of effort.

- **Foster innovation and partnerships**

The action plan should foster innovation and partnerships between the public and private sectors, academia and civil society. This will be essential to accelerating development and implementation of digital health solutions in the Region.

- **Ensure sustainability**

The action plan should be sustainable over the long term. This will require developing sustainable financing mechanisms and building capacity within countries to implement and maintain digital health interventions.

- **Protect privacy and security**

The action plan should ensure digital health interventions are implemented in a way that protects users' privacy and security. This will require developing robust data governance and security frameworks.

- **Monitor and evaluate progress**

The action plan should include a robust monitoring and evaluation framework to track progress and identify areas for improvement. This will ensure the plan is effective and achieves its desired outcomes.

4. Development process

The regional action plan has been developed in line with current digital health technologies in the Region and with best practices in the regional and global contexts and is aligned with WHO's *Global strategy on digital health, 2020–2025*, the regional strategy for fostering digital health (2023–2027), the WHO *Recommendations on digital interventions for health system strengthening (15)* and the National eHealth Strategy Toolkit by WHO and the International Telecommunication Union *(16)*.

A multilevel approach informed the development of the action plan. First, a literature review was conducted to assess the current status quo of digital health. The literature review included review and analysis of scientific publications, publicly available reports and national documents from countries. A further literature review was conducted on the global and regional digital health landscape across low-, middle- and high-income countries, particularly identifying the needs of countries experiencing emergencies and fragility.

Second, countries in the Region were then surveyed to assess their current progress on digital health. Third, key regional experts in digital health were interviewed to determine their perceptions about implementing and adopting digital health within the Region. Lastly, the action plan was circulated among directors and other WHO senior staff in the Region to solicit and integrate their feedback.

Nineteen semi-structured interviews were conducted with WHO regional experts in digital health. All interviews took place in person at the WHO Regional Office in Cairo, Egypt. The interviews aimed to characterize general perceptions around digital health and the facilitators and barriers to implementing digital health within the Region.

The notes for each interview were analysed by identifying themes relating to digital health facilitators and digital health barriers to reveal the common themes emerging from the interviews.

5. Strategic direction

The overall vision underpinning the regional action plan is to accelerate the adoption and use of digital health solutions to improve health outcomes in the Region.

To advance the field of digital health, it is essential to focus on several key areas. First, the governance and enabling environment needs to be strengthened. This can be achieved by developing policies and regulations that support the use of digital health solutions. Second, the adoption and use of digital health solutions needs to be accelerated. This can be achieved by increasing the awareness and education of health care providers and patients, as well as the infrastructure necessary to support these solutions. Third, capacity for digital health needs to be built to ensure that health care providers have the skills and knowledge they need to use these solutions effectively. Finally, innovation and research in digital health needs to be promoted to drive continued advancement and improvement.

These key areas are mirrored in the measures required to support the adoption and implementation of digital health solutions in the Region: strengthening digital health governance, norms and standards at regional, national and local levels; building digital health infrastructure and capacity; and supporting innovation and research in digital health. To ensure accountability and progress

towards digital health goals, it is essential to establish SMART (specific, measurable, achievable, relevant and time-bound) objectives. Ensuring equitable access to digital health services – to ensure that everyone in the Region can benefit from the advantages of digital health – is paramount.

Strategic objectives

The action plan aims to accelerate the adoption and use of digital health solutions to improve health outcomes in the Region. The four objectives of the plan are as follows:

1. **Strengthen digital health governance and the enabling environment for digital health norms and standards.** This objective seeks to create a regional digital health governance framework that ensures policies, regulations and standards are established in countries to guide the development and implementation of interoperable digital health solutions.
2. **Advocate for people-centred digital health systems, based on regional and national analysis.** This objective calls for the identification of interventions that will improve digital health literacy among the general population and health care providers and bridge the digital divide among communities in the Region, especially in relation to priority health areas such as communicable diseases, NCDs, mental health, immunization, maternal and child health, and emergency preparedness and response.
3. **Build capacity for digital health.** This objective focuses on national capacity-building for digital health and related innovations, aligning these efforts with country health and public health priorities to ensure effective implementation and utilization of digital health technologies. Such capacity-building includes training health workers in digital health, developing digital health literacy among the population and strengthening the digital infrastructure for health.
4. **Foster multilevel stakeholder partnerships to promote innovation and research in digital health.** This objective aims to encourage collaboration between the public and private sectors to drive innovation in digital health, ensuring that the Region benefits from the latest technological advancements.

Key stakeholders

The following are some of the Region's key stakeholders in digital health and the roles they can play in supporting the implementation of digital health solutions:

- **Governments** create the enabling environment for digital health: developing national digital health strategies, establishing regulatory frameworks and investing in digital health.
- **Ministries of health** are responsible for leading the implementation of digital health strategies and programmes. They also ensure that digital health solutions are integrated into the health system and are aligned with national health priorities.
- **Health care providers** adopt and use digital health solutions to improve patient care. They also provide feedback on digital health solutions and help identify areas for improvement.
- **Patients** are the ultimate users of digital health solutions. They also provide feedback on digital health solutions and help shape the future of digital health.
- **Payers**, such as insurance companies and governments, determine which digital health solutions are covered and reimbursed. This can significantly impact the adoption and use of digital health solutions.
- **Digital health companies** develop and deploy digital health solutions. They drive innovation in digital health.

- **Nongovernmental organizations** support the development and implementation of digital health solutions, particularly for emerging and developing category countries.
- **Academic institutions** are one of the key researchers of digital health and train the next generation of digital health professionals.

These stakeholders play complementary roles in the digital health ecosystem. By working together, they can accelerate the adoption and use of digital health solutions to improve health outcomes in the Region. The roles of these key stakeholders in implementing the action plan are presented in Annex 1.

6. Digital health action plan for the Eastern Mediterranean Region, 2024–2028

SMART goals and activities

SMART goals identify specific, measurable, achievable, relevant and time-bound objectives; they focus on what is essential and offer personal satisfaction when achieved. SMART goals help ensure that everyone involved is working towards the same objectives, that progress is being tracked and that the objectives are realistic and achievable. This can lead to improved outcomes for individuals, communities and countries. Below are the SMART goals[1] of the action plan for countries according to their categorization as emerging, developing or advanced; for countries in emergency situations; and for WHO. Annexes 2 and 3 present country-level and WHO regional digital health measurements, type of indicator and frequency of reporting.

*Digital health **emerging category** countries*

Goal 1: Strengthen digital health governance and data security

- **Specific target:** Develop and implement a national digital health policy at national level.
- **Measurable:** Existence of a national digital health policy.
- **Achievable:** This goal is achievable with the support of WHO and other international organizations.
- **Relevant:** Strong digital health governance through policy is essential for the protection of patient data and the effective use of digital health technologies.

Goal 2: Expand access to affordable and reliable digital health technologies

- **Specific target:** Increase the percentage of households with access to the internet from 30% to 60%.
- **Measurable:** Number of households with internet access.
- **Achievable:** This goal is achievable through investment in infrastructure and the development of low-cost technologies.
- **Relevant:** Access to the internet is essential for using many digital health technologies.

Goal 3: Enhance digital health literacy among health care workers and the general population

- **Specific target:** Increase the percentage of health care workers with a basic understanding of digital health technologies from 20% to 80%.
- **Measurable:** Number of health care workers who have completed digital health literacy training programmes.

[1] SMART goals and objectives are expected to be timebound. In this document, we have removed the time element from the goals and objectives to acknowledge differing national priorities, requirements and resources. However, the goals and objectives, when adjusted to a specific country context, will need to be timebound so that progress can be evaluated.

- **Achievable:** This goal is achievable with national commitment and the support of nongovernmental and international organizations.
- **Relevant:** Digital health literacy is essential for effectively using digital health technologies.

Goal 4: Promote the development and adoption of innovative digital health solutions

- **Specific target:** Increase the number of digital health startups in the Region by a minimum of 30% each year.
- **Measurable:** Number of digital health startups in the Region.
- **Achievable:** This goal is achievable with the support of incubators, accelerators and venture capitalists.
- **Relevant:** Innovation is essential for developing new and effective digital health solutions.

Goal 5: Evaluate the impact of digital health interventions on health outcomes

- **Specific target:** Conduct rigorous impact evaluations of digital health interventions in the Region.
- **Measurable:** Number of impact evaluations conducted.
- **Achievable:** This goal is achievable with the support of research institutions and funding agencies.
- **Relevant:** Evaluation is essential for understanding the effectiveness of digital health interventions.

*Digital health **developing category** countries*

Goal 1: Strengthen the governance and regulation of digital health

- **Specific target:** Strengthen the governance and regulation of digital health in developing category countries by developing and implementing comprehensive national digital health policies and regulations.
- **Measurable:** Track the development and implementation of national digital health policies and regulations through policy reviews and assessments.
- **Achievable:** This goal can be achieved by providing technical support to countries in the Region, developing model digital health policies and regulations and raising awareness of the importance of digital health governance.
- **Relevant:** Comprehensive national policies should ensure that digital health is used safely, ethically and effectively.

Goal 2: Increase access to essential digital health services

- **Specific target:** Increase the percentage of people in developing category countries with access to essential digital health services – such as telemedicine, mHealth and eHealth platforms – by 20% per year.
- **Measurable:** Track the percentage of people accessing essential digital health services through surveys, household data and health system data.
- **Achievable:** This goal can be achieved by investing in digital health infrastructure, developing affordable and accessible digital health solutions and raising awareness of the benefits of digital health.
- **Relevant:** Increased access to essential digital health services should lead to improved health outcomes and reduced health disparities in the Region.

Goal 3: Promote digital health literacy and empowerment

- **Specific target:** Increase digital health literacy and empowerment among people in developing category countries by providing them with the knowledge and skills they need to use digital health tools and services effectively.
- **Measurable:** Track the level of digital health literacy through surveys, focus groups and interviews.

- **Achievable:** This goal can be achieved by developing and implementing digital health literacy programmes, providing access to digital health resources and training community health workers to offer digital health education.
- **Relevant:** Increasing health literacy empowers people to take control of their health.

Goal 4: Improve the quality and effectiveness of digital health services

- **Specific target:** Improve the quality and effectiveness of digital health services in developing category countries by ensuring that all digital health services meet international standards based on evidence-based practices.
- **Measurable:** Track the quality and effectiveness of digital health services through surveys, patient outcomes data and provider feedback.
- **Achievable:** This goal can be achieved by developing and implementing national digital health standards, conducting rigorous research on the effectiveness of digital health interventions and providing ongoing training and support to digital health providers.
- **Relevant:** Meeting relevant international standards helps to ensure that people in the Region have access to high-quality, effective digital health services.

*Digital health **advanced category** countries*

Goal 1: Strengthen cybersecurity and data privacy protections

- **Specific target:**
  - Ensure the safety and security of patient information through strengthened cybersecurity and data privacy protections for digital health data.
  - Protect patient data from breaches, unauthorized access and misuse.
- **Measurable:** The number of cybersecurity incidents and data breaches involving digital health data can be tracked, as can the level of compliance with data privacy regulations.
- **Achievable:** This goal can be achieved by developing and implementing comprehensive cybersecurity and data privacy policies and procedures, conducting regular audits and raising awareness among providers and patients.
- **Relevant:** Strengthened protections bolster the privacy and security of patient information.

Goal 2: Improve the integration of digital health technologies into health care systems

- **Specific target:**
  - Achieve seamless and efficient coordination of care by integrating digital health technologies into health care systems.
  - Facilitate data sharing, improve communication and streamline patient journeys.
- **Measurable:** The level of integration of digital health technologies can be tracked through surveys, provider feedback and patient outcomes data.
- **Achievable:** This goal can be achieved by developing and implementing national interoperability standards, by training providers and by incentivizing adoption.
- **Relevant:** Effective integration of digital health technologies should improve the quality and efficiency of health care.

Goal 3: Increase access to personalized digital health services

- **Specific target:**
  - Increase the percentage of people in advanced category countries with access to personalized digital health services by 30%.
  - Increase the availability and affordability of precision medicine and artificial intelligence-powered diagnostics.

- **Measurable:** The percentage of people accessing personalized digital health services can be tracked through surveys, household data and health system data.
- **Achievable:** This goal is achievable through investments in research and development, affordable solutions and public awareness campaigns.
- **Relevant:** Increased access to personalized digital health services can support the improvement of health outcomes and the reduction of health disparities.

Goal 4: Promote the use of digital health technologies to address health disparities

- **Specific target:**
  - Improve access to health care for underserved populations in advanced category countries through digital health technologies.
  - Target digital health interventions to underserved populations, provide connectivity and infrastructure in underserved areas and train community health workers.
- **Measurable:** The use of digital health technologies to address health disparities can be tracked through surveys, focus groups and interviews with underserved populations.
- **Achievable:** This goal can be achieved by developing targeted interventions, providing digital health infrastructure and training local health workers.
- **Relevant:** This goal is relevant to the overall goal of achieving health equity.

Goal 5: Foster a culture of knowledge sharing and collaboration within the Region

- **Specific target:** Organize regional workshops, conferences and online forums to facilitate knowledge exchange and collaboration among countries.
- **Measurable:** Track the number of participants engaged in knowledge-sharing activities and the level of collaboration reported.
- **Achievable:** This goal can be achieved by leveraging existing platforms and partnerships within WHO's regional network to transfer knowledge to emerging and developing category countries.
- **Relevant:** Knowledge sharing and collaboration strengthens regional cooperation and promotes sustainable knowledge transfer mechanisms.
- This goal is ongoing for the duration of the action plan.

*Countries experiencing **emergency situations***

Goal 1: Enhance digital health communication and coordination for emergency response

- **Specific target:** Establish a regional integrated digital health emergency response management platform to facilitate real-time communication and coordination among emergency responders and stakeholders.
- **Measurable:**
  - Number of countries actively using the regional digital health emergency response platform.
  - Percentage of emergency response operations in countries that use the platform for communication and coordination.
- **Achievable:**
  - Develop and implement a secure and scalable digital health emergency response platform with user-friendly features and offline functionalities.
  - Conduct training and capacity-building workshops for emergency responders and stakeholders using the platform.
  - Promote the adoption and utilization of the platform through advocacy and outreach efforts.

- **Relevant:**
  - Effective communication and coordination among emergency responders is crucial for ensuring timely and effective disaster response and recovery.
  - A centralized digital health emergency response platform will facilitate the sharing of critical data, resources and expertise during emergencies.

Goal 2: Strengthen digital health surveillance and data management for emergency response

- **Specific target:** Develop and implement a regional digital health surveillance system to collect, analyse and visualize real-time health data during emergencies.
- **Measurable:**
  - Percentage of countries with integrated digital health surveillance systems linked to the regional system.
  - Availability of real-time health data dashboards and analytics for emergency responders and decision-makers.
- **Achievable:**
  - Establish standardized data collection and reporting protocols for digital health surveillance in emergency settings.
  - Develop and implement a secure and interoperable digital health surveillance system that can integrate data from diverse sources.
  - Provide training and technical support to countries on implementing and operating the surveillance system.
- **Relevant:**
  - Accurate and timely health data are essential for informing emergency response efforts, resource allocation and decision-making.
  - A robust digital health surveillance system will provide real-time insights into disease trends, population health needs and the effectiveness of interventions.

Goal 3: Enhance digital health infrastructure and access for emergency response

- **Specific target:**
  - Increase access to reliable and secure internet connectivity in emergency response zones across countries.
  - Provide essential digital health devices and technologies to emergency responders and health care facilities in emergency-affected areas.
- **Measurable:**
  - Percentage of emergency response zones with reliable and secure internet connectivity.
  - Number of emergency responders and health care facilities with essential digital health devices and technologies.
- **Achievable:** Collaborate with telecommunications providers to expand and strengthen internet connectivity in emergency-prone areas.
  - Procure and distribute essential digital health devices and technologies – such as laptops, tablets and mobile phones – to emergency responders and health care facilities.
  - Develop training and support programmes for emergency responders using digital health devices and technologies.

- **Relevant:**
  - Access to reliable and secure internet connectivity and essential digital health devices enables effective emergency response communication, coordination and data collection.
  - Equipping emergency responders and health care facilities with digital tools will enhance their ability to provide timely and effective care during emergencies.

WHO

Goal 1: Enhance digital health governance and leadership

- **Specific target**: Establish or promote a regional digital health governance framework and guidelines to support countries in developing and implementing effective digital health policies and strategies.
- **Measurable:**
  - Percentage of countries with a national digital health policy or strategy aligned with the WHO regional strategy for fostering digital health (2023–2027).
- **Achievable:**
  - Develop a comprehensive digital health governance framework based on best practices and experiences from other regions.
  - Provide technical assistance and support for capacity-building in relation to digital health policy development and implementation.
  - Collaborate with regional and international partners to promote and share best practices in digital health governance.
- **Relevant:**
  - Strengthened digital health governance is essential for ensuring the effective and sustainable implementation of digital health initiatives.
  - Clear and consistent policies and guidelines will help to create an enabling environment for digital health innovation and adoption.

Goal 2: Encourage the use of health data standards for effective and secure health information exchange and interoperability of health information

- **Specific target**:
  - Increase the use of health data standards in all counties to at least 95% of electronic medical records.
  - Promote the use of standards for health data interoperability in all countries.
- **Measurable:**
  - Percentage of integrated services with health data standards.
- **Achievable:**
  - Advocate for policies and investment in the use of health data standards.
  - Support the development of digital health exchange frameworks.
  - Promote the adoption of open-source digital health solutions to reduce costs; for example, open-source electronic medical records can help health care providers manage patient information, appointments and billing.
- **Relevant:**
  - The use of health data standards in electronic medical records ensures consistent, accurate and interoperable patient information, facilitating seamless sharing and collaboration among health care providers.

Goal 3: Strengthen digital health literacy and capacity

- **Specific target**:
  - Develop and implement national digital health literacy programmes for the general public in all countries.
- **Measurable:**
  - Percentage of health care workers with digital literacy skills.
  - Percentage of the public with digital health literacy skills.
- **Achievable:**
  - Develop and disseminate training materials and resources on digital health literacy for health care workers and the public.
  - Collaborate with educational institutions to integrate digital health literacy into curricula.
  - Promote public awareness and understanding of digital health through campaigns and community outreach initiatives.
- **Relevant:**
  - Digital health literacy is essential for ensuring the effective use of digital health technologies and optimizing their benefits for health.
  - A digitally literate workforce and population will be better equipped to participate in developing, implementing and evaluating digital health initiatives.

Goal 4: Foster innovation and development of locally relevant digital health solutions

- **Specific target**:
  - Support establishment of digital health innovation hubs in 10 countries.
  - Support the development and deployment of locally relevant digital health solutions across the Region.
- **Measurable:**
  - Number of regional digital health innovation hubs established and operational.
  - Number of locally relevant digital health solutions developed and deployed.
- **Achievable:**
  - Provide technical support to establish and operate regional digital health innovation hubs.
  - Promote collaboration between researchers, developers and entrepreneurs to develop innovative digital health solutions.
  - Facilitate the testing and evaluation of digital health solutions in real-world settings.
- **Relevant:**
  - Innovation and development of locally relevant digital health solutions are crucial for addressing countries' specific needs and challenges.
  - A vibrant digital health innovation ecosystem will contribute to the Region's economic growth and social development.

Goal 5: Conduct economic evaluation of digital health initiatives and generate investment cases

- **Specific target**:
  - Conduct comprehensive economic evaluations of three high-priority digital health initiatives implemented in three countries (one from each of the categories of emerging, developing and advanced), demonstrating the initiatives' cost–effectiveness and generating robust investment cases for broader adoption across the Region.
  - Conduct three cost–benefit analyses to generate investment cases.

- **Measurable:**
  - Number of countries with cost analysis, cost–effectiveness analysis, and return on investment analysis.[1]
- **Achievable:**
  - Assemble a team of qualified experts (internal and external) with expertise in economic evaluation, digital health and relevant regional contexts.
- **Relevant:**
  - Aligned with the relevant global and regional strategies.

WHO actions to support implementation and use of digital health solutions

Short-term actions

One of the key priorities for supporting the expanded use of digital health solutions across the Region is the development and implementation of national digital health strategies that can enhance the compatibility of various systems within a country and across different countries. This can be achieved through close collaboration between WHO and countries. To ensure the effective utilization of digital health technologies, countries should provide technical support to build the necessary skills and knowledge among health care professionals and other stakeholders. In addition, WHO support in fostering public-private partnerships in ICT research and development for health can drive innovation in digital health.

[1] Cost analysis: quantifying each initiative's total costs (initial investment, operational, maintenance). Cost–effectiveness analysis: measuring each initiative's cost per unit of health outcome achieved compared to the alternative interventions (e.g. cost per life saved, cost per disability-adjusted life-year averted). Return on investment analysis: estimating each initiative's generated financial returns (e.g. cost savings, revenue generation).

Table 2. Short-term actions for WHO to support implementation and use of digital health solutions

Goal	Objective	Activities	Outputs
Strengthen the enabling environment for digital health (Goal 1)	Develop and implement policies and regulations that support the development and use of digital health solutions	Conduct a policy and regulatory review to identify gaps and opportunities; develop and implement a regional policy framework for digital health; support the development and implementation of national digital health policies and regulations in countries	National digital health policies and regulations in place in all countries/territories in the Region
Promote the adoption and use of evidence-based digital health solutions (Goal 2)	Identify and scale up effective digital health solutions	Conduct a systematic review of evidence-based digital health solutions; develop a regional catalogue of evidence-based digital health solutions; support countries in adopting and scaling up effective digital health solutions	• Regional catalogue of evidence-based digital health solutions developed and disseminated • Countries adopting and scaling up effective digital health solutions
Strengthen digital health literacy and capacity (Goal 3)	Develop and disseminate engaging digital health literacy materials in local languages, train health care professionals on digital health skills and establish a regional digital health network and knowledge-sharing platform	• Conduct needs assessment to identify target audiences and knowledge gaps • Develop infographics, videos and interactive modules in local languages • Train health care workers at all levels	• Increased awareness and knowledge of digital health concepts and tools among target audiences • Improved quality and efficiency of health care delivery through digital tools • Enhanced collaboration and coordination among key stakeholders
Foster innovation and development of digital health (Goal 4)	Increase awareness and capacity for digital health innovation within the Region	• Conduct regional workshops and webinars on digital health trends and best practices for various stakeholders • Develop and disseminate case studies of successful digital health interventions in the Region, focusing on their local context and impact • Launch online platforms and resources for digital health knowledge sharing and collaboration	• Increased understanding and interest in digital health among key stakeholders • Improved communication and collaboration between different stakeholders in the regional digital health ecosystem • A growing repository of locally relevant digital health case studies and resources
Conduct an economic evaluation of digital health (Goal 5)	Build foundation for robust economic evaluation	• Establish stakeholder forum for engagement and collaboration • Conduct literature review and adapt digital health action plan to regional context • Develop and disseminate training materials and tools	• Regionalized economic evaluation framework and training resources • Stakeholder mapping and prioritized list of initiatives

Medium-term actions

To establish a robust framework for digital health, it is crucial to strengthen the Region's digital infrastructure, governance, norms and standards. This strengthening should include the development and implementation of policies, regulations and standards that guide the use of digital health

solutions. Additionally, promoting digital health solutions in health care delivery and systems can improve the Region's capacity for, and use of, digital health. However, it is essential to address the challenges to effective implementation of digital health solutions, such as implementation costs, weak and fragmented governance, data security and privacy concerns, lack of protection against improper use and language barriers. By addressing these concerns and promoting the use of digital health solutions, it is possible to create a more robust and effective health care system.

Table 3. Medium-term actions for WHO to support implementation and use of digital health solutions

Goal	Objective	Activities	Outputs
Strengthen the enabling environment for digital health (Goal 1)	Invest in digital infrastructure and capacity-building	Develop and implement a regional investment plan for digital health; support countries to invest in digital infrastructure and capacity-building	Regional investment plan for digital health developed and implemented; countries investing in digital infrastructure and capacity-building
Promote the adoption and use of evidence-based digital health solutions (Goal 2)	Develop and implement regional digital health strategies	Support countries to develop and implement national digital health strategies that are aligned with their national health priorities	National digital health strategies developed and implemented in all countries in the Region
Strengthen digital health literacy and capacity (Goal 3)	Develop and advocate for regional digital health policy frameworks, and conduct research and evaluation of digital health interventions for scale-up	• Support clear and comprehensive digital health policies across the Region • Support initiatives that can improve access to digital health technologies and services • Support evidence-based scaling up of effective digital health interventions	• Supportive policies and regulations to foster digital health solutions • Investment in broadband connectivity and digital infrastructure in underserved areas, both within and between countries • Use of digital health tools to measure and improve quality of care, patient satisfaction and health care outcomes
Foster innovation and development of digital health (Goal 4)	Accelerate the development and adoption of high-impact digital health solutions addressing priority health challenges	• Launch regional innovation challenges and hackathons focused on specific health priorities, encouraging local talent to develop relevant solutions • Support the pilot testing and evaluation of promising digital health interventions in diverse settings across the Region • Develop and implement robust monitoring and evaluation frameworks to track the impact and effectiveness of digital health initiatives	• A portfolio of high-impact digital health solutions tailored to regional health needs • Evidence-based best practices for scaling up and implementing digital health interventions effectively • Increased adoption and utilization of impactful digital health solutions by health care systems and communities
Conduct an economic evaluation of digital health (Goal 5)	Expand scope and impact of economic evaluations	• Evaluate diverse digital health initiatives across various health domains • Build a comprehensive database of evaluation reports and cost–benefit models	• Expanded database of economic evidence on regional digital health solutions • Best practice insights for maximizing impact and cost–effectiveness

Long-term actions

The primary objective of leveraging digital health is to improve the accessibility, quality, efficiency and cost–effectiveness of national health systems in the Region. Supporting capacity-building for digital health applications in countries is essential to achieve this goal. Additionally, the development and use of norms and standards plays a crucial role in ensuring the long-term sustainability and success of digital health initiatives in the Region.

To achieve the overall goal of enabling countries to have and use nationwide health care systems, continual monitoring and evaluation of the action plan is necessary. This will help adjust and improve the plan as needed to ensure effectiveness. By doing so, it can be ensured that digital health initiatives successfully achieve their intended goals.

Table 4. Long-term actions for WHO to support implementation and use of digital health solutions

Goal	Objective	Activities	Outputs
Strengthen the enabling environment for digital health (Goal 1)	Promote the development and adoption of open-source digital health solutions	Support the development and adoption of open-source digital health solutions that are affordable and accessible to everyone	Increased development and adoption of open-source digital health solutions in countries/territories in the Region
Promote the adoption and use of evidence-based digital health solutions (Goal 2)	Support the development and evaluation of new digital health technologies	Support the development and evaluation of new digital health technologies that have the potential to improve health outcomes	New digital health technologies developed and evaluated in countries/territories in the Region
Strengthen digital health literacy and capacity (Goal 3)	Empower individuals and communities to use digital health tools, establish a vibrant digital health innovation hub and share regional best practices and expertise	• Promote policies that encourage people to use digital health to improve their health • Back innovative projects that foster a robust digital health environment • Advocate for policies that position the Region as a global leader in digital health	• Improved health equity and access to quality health care through digital health • Sustainable and locally driven solutions to regional health challenges through digital health
Foster innovation and development of digital health (Goal 4)	Ensure equitable access and sustainable financing for regionally developed digital health solutions	• Develop and implement strategies to address digital inequalities and bridge the digital divide, focusing on underserved populations and communities • Advocate for sustainable financing mechanisms for digital health initiatives, exploring diverse models like public-private partnerships, innovative insurance schemes, and impact investment	• A thriving regional digital health ecosystem supportive of innovation, entrepreneurship and universal access to high-quality, affordable digital health services for all populations in the Region • Sustainable funding mechanisms for long-term digital health investments and advancements
Conduct an economic evaluation of digital health (Goal 5)	Integrate economic evaluation into decision-making and policy	• Advocate for economic evaluation to be incorporated into regional digital health policies and frameworks • Develop guidelines and standards for the use of economic evaluations in planning, implementation and scale up of digital health interventions	• Policy and regulatory frameworks prioritizing economic evaluation in digital health • National standards and standardized evaluation units

Change management and adoption

To effectively implement digital health in the Region, there are several crucial areas to focus on: engaging stakeholders to build support and consensus; providing training and capacity-building to health care workers and other stakeholders; developing clear policies and guidelines; making digital health solutions accessible and affordable; promoting the use of digital health through public awareness campaigns; and monitoring and evaluating implementation and impact. To ensure success, a culture of data use needs to be fostered and technologies and systems should focus on user-centred design.

To facilitate the change management and adoption of digital health strategies in the emerging, developing and advanced categories of countries, the following strategies can be employed:

Digital health emerging category countries:

- improve digital readiness by investing in infrastructure and capacity-building;
- build a forward-looking national strategy demonstrating the government's commitment to promoting digital health care;
- prioritize the application of success factors identified in other countries to accelerate the implementation of digital health care tools.

Digital health developing category countries:

- establish national digital architecture plans and use standards to achieve interoperability of systems;
- foster digital health innovations linked to available resources, emphasizing modern applications;
- involve all digital health stakeholders in developing national digital health strategies, architecture and action plans to ensure ownership, dissemination and implementation.

Digital health advanced category countries:

- translate the latest data, research and evidence into action by promoting interoperability and data-sharing standards and supporting digital solutions that contribute to informed decision-making;
- enhance knowledge through scientific communities of practice, enabled by new technologies and no longer limited by the need for physical meetings or hard-copy peer-reviewed journals;
- systematically assess and link country needs with the supply of innovations, promoting, co-developing and scaling innovations based on country needs.

7. Monitoring and evaluation framework

Indicators to measure progress and success in digital health are crucial. First, they enable the monitoring of progress towards achieving digital health goals. For instance, if the aim is to increase the percentage of the population using digital health interventions, indicators can be used to observe progress over time and assess if it is on track to meet the target.

Second, indicators can assist in identifying areas for improvement. If an indicator reveals that a particular population group is underrepresented in digital health interventions that information can be used to develop targeted interventions to reach this group.

Third, indicators can assist in making better decisions on how to allocate resources. If an indicator shows that a specific type of digital health intervention is particularly effective, it can channel greater resources into supporting that intervention.

Fourth, indicators can help build accountability and transparency. By publicly reporting on digital health progress, there is greater accountability to stakeholders and assurance that resources are used effectively.

Lastly, indicators enable us to learn from others. By comparing our digital health progress to that of other countries or regions, we can identify best practices and learn from the experiences of others.

Indicators for countries

Having indicators to measure digital health progress and success is imperative for ensuring that digital health solutions are used to achieve the best possible health outcomes for everyone. The indicators that should be used to measure digital health progress and success in countries – according to the emerging, developing and advanced categories – are as follows:

Digital health emerging category countries

- Percentage of the population with access to broadband internet
- Percentage of health care facilities with electronic health record systems
- Percentage of health care workers trained in the use of digital health tools and technologies
- Percentage of the population using digital health interventions
- Investment in digital health as a percentage of the health care budget
- Number of digital health solutions developed and implemented
- Number of people using digital health solutions
- Satisfaction of users with digital health solutions

Digital health developing category countries

In addition to the indicators listed above, developing category countries should also track the following:

- Impact of digital health solutions on health outcomes
- Impact of digital health solutions on health care costs
- Impact of digital health solutions on health equity.

Digital health advanced category countries

In addition to the indicators listed above, advanced category countries should also track the following:

- development and implementation of innovative digital health solutions;
- support for the development and adoption of open-source digital health solutions;
- promotion of the use of digital health solutions to empower people to manage their health and well-being;
- investment in research and development of new digital health technologies.

8. Maturity indicators

Sustained success with digital health care initiatives requires a country to meet certain metrics relating to its digital health maturity level (see Annex 4 which illustrates how digital health can improve health care in countries with an emerging digital health maturity level). The first metric is establishing a comprehensive and integrated digital health care strategy encompassing all health care stakeholders, including patients, providers and institutions. This strategy should prioritize the use of digital technologies and ensure proficiency in their use by health care providers and patients.

The second metric is the development of a vital ICT infrastructure that can support the deployment and use of digital health care solutions, even in remote and rural areas. This infrastructure should include high-speed internet connectivity, reliable power supply and secure data storage and transmission.

The third metric is the implementation of effective data governance policies and practices that protect patient privacy and ensure the accuracy and integrity of health care data. This includes adopting standards and protocols for data exchange and interoperability between health care systems.

Finally, it is essential to prioritize policy formulation and coordination among various health care stakeholders, including government agencies, health care providers and technology vendors. This includes seamlessly integrating digital health care solutions with existing health care systems and practices to ensure an efficient, sustainable and patient-centric digital health care ecosystem.

Table 6. Types of digital health maturity levels with the five types of digital health action

Maturity level	Policy and governance	Infrastructure and technology	Human resources and capacity	Applications and services	Impact and evaluation
Emerging	No national digital health strategy	Limited access to ICT	Limited digital health workforce	Limited range of digital health applications	No evidence of impact
Developing	National digital health strategy in place	Emerging digital health infrastructure	Some digital health professionals	Some digital health applications	Some evidence of impact
Advanced	Comprehensive national digital health strategy	Advanced digital health infrastructure	Sufficient supply of trained digital health professionals	Range of digital health applications	Evidence of impact

Table 7. Digital health maturity indicators for emerging category countries

Maturity indicator	Description
Connectivity infrastructure	The availability and accessibility of basic connectivity to support digital health interventions
Resource allocation	The allocation of resources and investment in digital health systems to support sustainability
Capacity-building	The progress in capacity-building efforts for digital health and related innovations
Interoperability	The level of interoperability to enable seamless data exchange and integration of digital health systems

Table 8. Digital health maturity indicators for developing category countries

Maturity indicator	Description
Policy development	The development and implementation of digital health policies, norms and standards
Data governance	The establishment of robust data governance frameworks to ensure secure and ethical use of health data
Integration with systems	The integration of digital health technologies into existing health care systems to enhance service delivery
Capacity strengthening	Efforts to strengthen national capacity for digital health and foster innovation aligned with health priorities

Table 9. Digital health maturity indicators for advanced category countries

Maturity indicator	Description
Innovation and research	The promotion of innovation and research in digital health to drive continual improvement and advancement
Data analytics	Leveraging of advanced data analytics for evidence-based decision-making and predictive health care interventions
Regulatory framework	The establishment of comprehensive regulatory frameworks to govern digital health technologies
Public-private partnerships	The collaboration between public and private sectors to drive digital health innovation and investment

9. Sustainability and scale-up

By adopting sustainable approaches, countries can boost the sustainability and expansion of their digital health initiatives, leading to better health outcomes for their populations. Implementing strategies to sustain and expand digital health interventions within the Region can guarantee long-term effectiveness and success. The following are critical digital health sustainability strategies:

- Addressing barriers and facilitators: Successful sustainability of digital health interventions depends on complex and interdependent factors influencing implementation and scale. Identifying and addressing barriers (e.g. lack of infrastructure or limited resources) and leveraging facilitators (e.g. solid partnerships or supportive policies) can contribute to the sustainability and scale-up of digital health interventions.
- Developing national digital health policies and strategies: National digital health policies and strategies provide a framework for developing and implementing digital health interventions. These policies and strategies should prioritize the integration of digital health solutions, ensure interoperability between different systems and support the achievement of national health goals.
- Strengthening digital health governance: Effective governance is essential for prioritizing and monitoring the outcomes of investments in digital health. This includes ensuring data quality, security, confidentiality and compliance with legislation and ethics. Strengthening digital health governance can contribute to the sustainability and scale-up of digital health interventions (see Annex 5).
- Building national capacity: Investing in the development of digital health skills and knowledge at the national level can support the sustainability and scale-up of digital health interventions. This includes training health care providers, policy-makers and other stakeholders on using and managing digital health solutions.
- Encouraging and supporting adoption: Encouraging and assisting countries in adopting digital health policies, strategies and architecture can contribute to the scale-up of digital health interventions. This can include providing technical support, sharing best practices and, where possible, injecting funding for digital health adoption.
- Emphasizing monitoring and evaluation: Regular monitoring and evaluation of digital health interventions can help identify areas for improvement, track progress towards goals and demonstrate the impact and value of these interventions. This can support the sustainability and scale-up of digital health initiatives.

In addition to these sustainability strategies, there are general strategies that WHO can adopt to support the sustainability and scale-up of digital health interventions in the Region:

- Continue to update the regional digital health strategy: WHO should continue to update the regional strategy for fostering digital health to reflect the fast-changing digital health environment, update the Region's vision for digital health and identify the key priorities for investment and support.
- Establish a regional digital health innovation fund: WHO could establish a regional digital health innovation fund to support the development and scaling of innovative digital health interventions.
- Provide training and technical support: WHO could provide training and technical support to countries to help them implement and scale up digital health interventions.
- Promote collaboration and knowledge sharing: WHO could promote collaboration and knowledge sharing between countries on digital health. This could be done through workshops, conferences and online platforms.

Identifying potential funding sources for digital health is crucial for countries to support the development and implementation of digital health strategies and initiatives. Possible sources of funding include:

- **Governments**: National governments can allocate resources from their health care budgets to support digital health initiatives. This may include funding for infrastructure development, capacity-building and the procurement of digital health solutions.
- **International organizations**: International organizations like WHO may provide funding and technical support for digital health projects. These organizations often have specific funding programmes or grants that countries can apply for.
- **Public-private partnerships**: Collaboration between the public and private sectors can be a valuable funding source for digital health initiatives. Private companies may invest in digital health projects in exchange for access to data, market opportunities or other benefits.
- **Philanthropic organizations**: Philanthropic organizations, foundations and nongovernmental organizations may fund digital health projects, particularly those focused on addressing specific health challenges or improving health care services.
- **Development banks**: Regional development banks may offer loans or grants for digital health projects that align with their development priorities.
- **Health insurance and social security funds**: In some countries, health insurance and social security funds can be a potential source of funding for digital health initiatives. These funds may be willing to invest in digital health solutions that can improve the efficiency and quality of health care services.

10. Conclusion

The *Digital health action plan for the Eastern Mediterranean Region, 2024–2028*, aims to facilitate the development and implementation of strategies and policies on digital health, providing a framework for action with impact targets, key policy options and a recommended set of actions by countries, WHO and partners *(10)*. The plan outlines WHO directives for promoting the appropriate use of digital health technologies, which will support the achievement of the health-related SDGs and accelerate progress towards UHC at all levels, from primary health to specialized care. Indicators are needed to measure digital health progress and success. These indicators can help assess the impact of digital health interventions on health system performance and effectiveness, as well as their contribution to achieving the health-related SDGs and UHC. Indicators can be used to monitor and evaluate the implementation of digital health strategies and policies, identify areas for improvement, and guide decision-making and resource allocation.

Call to action for stakeholders

The action plan calls for a collective effort from various stakeholders to achieve its objectives. The following are some of the key actions and responsibilities for stakeholders:

- **Countries**: Develop and implement effective national strategies and policies on digital health, focusing on achieving impact targets and critical policy options. Strengthen digital health governance and build national capacity to improve digital health innovations. Exchange knowledge and work together at the regional level to implement digital health solutions.
- **WHO**: Provide guidance and enable and accelerate the use of digital health solutions in the Region. Support and strengthen digital health governance in countries. Assess national digital health policies, strategies and programmes with the core objective of conceiving, developing and using national health care services management systems.
- **Partners**: Strengthen partnerships at the primary health care level and with hospital managers to integrate efforts and ensure measurable population health improvements. Support individual countries in digital health governance and assessment of local needs in relation to procuring and investing in different solutions.
- **Industry**: To remain relevant in regional markets, consider integrating personalized and reactive care models into offerings. Collaborate with regulatory bodies to ensure the development of high-quality, safe and effective digital health technologies.
- **Research and academic institutions**: Synthesize national research and disseminate evidence on the contribution of digital health interventions to health system performance and effects on population health outcomes.

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Annex 1. Key stakeholders and their responsibility towards digital health implementation

Key stakeholder	Digital health responsibility
WHO	• Provide technical support to countries • Create and disseminate digital health training and education
Governments	• Develop and implement national digital health strategies • Establish regulatory frameworks for digital health • Invest in digital health infrastructure
Ministries of health	• Lead the development and implementation of digital health programmes • Ensure that digital health solutions are integrated into the health system and aligned with national health priorities
Health care providers	• Adopt and use digital health solutions to improve patient care • Provide feedback on digital health solutions and help identify areas for improvement
Patients	• Engage with and use digital health solutions • Provide feedback on digital health solutions and help shape the future of digital health
Payers	• Determine which digital health solutions are covered and reimbursed
Digital health companies	• Develop and deploy innovative user-centred digital health solutions • Work with governments, ministries of health and health care providers to ensure that their solutions are adopted and used effectively
Nongovernmental organizations	• Support the development and implementation of digital health solutions, particularly in countries in the emerging and developing categories
Academic institutions	• Research digital health and train the next generation of digital health professionals • Integrate digital health into education curricula for a digitally prepared workforce

Annex 2. Country-level digital health measurements, type of indicator and frequency of reporting

Indicator	Type	Frequency of reporting
Percentage of the country's population with access to broadband internet	Quantitative	Annual
Percentage of health care facilities in the country with electronic health records systems	Quantitative	Annual
Percentage of health care workers in the country trained in the use of digital health tools and technologies	Quantitative	Annual
Percentage of the country's population using digital health interventions	Quantitative	Annual
Investment in digital health as a percentage of the country's health care budget	Quantitative	Annual
Number of digital health solutions developed and implemented in the country	Quantitative	Annual
Number of people in the country using digital health solutions	Quantitative	Annual
Satisfaction of users with digital health solutions in the country	Qualitative	Annual
Impact of digital health solutions on health outcomes in the country	Qualitative	Biennial
Impact of digital health solutions on health care costs in the country	Qualitative	Biennial
Impact of digital health solutions on health equity in the country	Qualitative	Biennial

Annex 3. WHO regional digital health measurements, type of indicator and frequency of reporting

Indicators	Type	Frequency of reporting
Number of countries in the Region with a national digital health strategy or plan	Quantitative	Annual
Percentage of countries in the Region with legislation on data security and citizen privacy	Quantitative	Annual
Percentage of countries in the Region with common digital health terminologies	Quantitative	Annual
Percentage of countries in the Region that have introduced electronic medical records systems	Quantitative	Annual
Number of digital health interventions implemented in the Region	Quantitative	Annual
Number of people using digital health services in the Region	Quantitative	Annual
Number of digital health apps that have been developed	Quantitative	Monthly
Percentage of people in the Region satisfied with digital health services	Qualitative	Annual
Impact of digital health interventions on health outcomes (e.g. reduced mortality rates, improved disease control, increased access to care) in the Region	Qualitative	Biennial
Percentage of WHO staff in the Region with the skills and knowledge to support digital health	Quantitative	Annual
WHO regional budget allocation for digital health	Quantitative	Annual
Number of digital health partnerships and collaborations established by WHO in the Region	Quantitative	Annual
Impact of WHO regional digital health initiatives on the Region (e.g. increased awareness of digital health, improved capacity to implement digital health interventions)	Qualitative	Biennial

Annex 4. Digital health use cases

The following use cases illustrate how digital health can improve health care in countries with an emerging digital health maturity level. When designing, implementing, evaluating and sustaining a digital health programme or intervention, it is essential to consider the following:

- the needs of the target population
- the availability of resources
- the technical infrastructure
- the political and regulatory environment
- the sustainability of the programme or intervention.

Use case	Structure	Process	Outcome
mHealth for maternal and child health	A mobile health (mHealth) platform is developed to deliver antenatal care, postnatal care and child health information and services to mothers and caregivers in emerging category countries.	The mHealth platform is deployed in a pilot study in a rural district of an emerging category country. Trained community health workers use the platform to educate and counsel pregnant women, mothers and caregivers. The platform also provides access to a remote consultation service with doctors and midwives.	The mHealth platform has improved maternal and child health outcomes in the pilot district. Pregnant women are more likely to attend antenatal care appointments, and mothers are more likely to receive postnatal care and immunizations for their children. Child mortality rates have decreased in the pilot district.
Telemedicine for NCDs	A telemedicine platform is developed to provide remote consultations and care management services for patients with NCDs in emerging category countries.	The telemedicine platform is deployed in a public hospital in an emerging category country. Trained doctors use the platform to provide consultations to patients with NCDs. The platform also provides access to patient education materials and a remote monitoring service for patients with chronic conditions.	The telemedicine platform has improved access to care for patients with NCDs in the emerging category country. Patients are more likely to receive regular check-ups and treatment, and their health outcomes improve.
eHealth for disease surveillance and outbreak response	An eHealth platform is developed to collect and analyse real-time data on infectious diseases in emerging category countries.	The eHealth platform is deployed in a national surveillance system in an emerging category country. Health workers use the platform to report cases of infectious diseases. The platform also provides data analysis tools to identify and track outbreaks.	The eHealth platform has improved disease surveillance and outbreak response in the emerging category country. Outbreaks of infectious diseases are detected and controlled more quickly.

Annex 5. Example of a digital health governance framework

The following is an example of a digital health governance framework that a country or health care organization could use.

Vision: To create a digital health ecosystem that enables everyone to access high-quality, affordable and equitable health care.

Principles:

- Patient-centredness: Digital health solutions are to be designed and implemented with the needs of patients and their families at the forefront.
- Data privacy and security: Digital health solutions must protect the privacy and security of patient data.
- Equity and inclusion: Digital health solutions must be accessible to everyone, regardless of income, location or other factors.

Stakeholders and roles:

- Government: Develop and enforce regulations, set standards and fund digital health initiatives.
- Health care providers: Implement digital health solutions in clinics and hospitals.
- Patients: Provide input on designing and implementing digital health solutions.
- Technology companies: Develop and implement digital health technologies.

Governance structure:

- Digital health steering committee: Oversee the implementation of the digital health strategy and make critical decisions about the use of digital health technologies.
- Digital health technical committee: Provide technical advice to the digital health steering committee and develop and implement technical standards for digital health.
- Digital health ethics committee: Review and advise on the ethical implications of digital health technologies.

Governance processes:

- Digital health policy development process: Define and develop digital health policies.
- Digital health investment process: Review and approve investments in digital health initiatives.
- Digital health risk management process: Identify, assess and manage risks associated with digital health technologies.

Monitoring and evaluation:

- Digital health monitoring and evaluation framework: Track critical indicators such as adoption of digital health technologies, impact on patient outcomes and the costs and benefits of digital health initiatives.

Continuous improvement:

- Digital health governance review process: Regularly review the digital health governance framework and update as needed.


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