



Regional digital health action plan for the WHO European Region 2023–2030

This draft regional digital health action plan for the WHO European Region 2023–2030 intends to support countries in leveraging and scaling up digital transformation for better health and in aligning digital technology investment decisions with their health system needs, while fully respecting the values of equity, solidarity and human rights.

The regional digital health action plan aims to contribute to (i) the achievement of the health-related Sustainable Development Goals, the WHO European Programme of Work, 2020–2025, and the WHO Thirteenth General Programme of Work, 2019–2025; and (ii) the operationalization of the WHO Global strategy on digital health 2020–2025.

The regional digital health action plan identifies four strategic priorities for the achievement of this vision: (i) setting norms and developing technical guidance; (ii) enhancing country capacities to better govern digital transformation in the health sector and advance digital health literacy; (iii) building networks and promoting dialogue and knowledge exchange; and (iv) conducting horizon-scanning and landscape analysis for patient-centred solutions that can be scaled up.

The draft regional action plan is submitted to the 72nd session of the WHO Regional Committee for Europe together with a draft resolution in September 2022.

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BACKGROUND

1. In February 2019, the WHO Symposium on the Future of Digital Health Systems in the European Region took place at the WHO Regional Office for Europe (WHO/Europe) in Copenhagen, Denmark. This was a key milestone for WHO/Europe to develop priorities for public health action, to accelerate the adoption of digital health in countries, and to help develop a European roadmap for the digitalization of national health systems by sharing country experiences and exploring how digital health and emerging innovations can be used to strengthen national health systems.
2. The WHO European Programme of Work, 2020–2025 (EPW), which was adopted by the WHO Regional Committee for Europe in September 2020, prioritized digital health as a promising accelerator of health systems transformation. By establishing the Empowerment through Digital Health flagship initiative, WHO/Europe wanted to provide technical and policy guidance and expertise on the safety and efficacy of digital health solutions for universal health coverage, while promoting and preserving equity, gender equality and human rights.
3. In November 2020, the Seventy-third World Health Assembly endorsed the WHO Global strategy on digital health 2020–2025 (in decision WHA73(28)),¹ the purpose of which is to strengthen health systems through the application of digital solutions to empower patients and work towards the vision of health for all. The strategy sets out a strategic framework for action and implementation to advance digital health, globally and at national and subnational levels. It gives the following definition of digital health: “The field of knowledge and practice associated with the development and use of digital technologies to improve health. Digital health expands the concept of eHealth to include digital consumers, with a wider range of smart devices and connected equipment”.² The following areas are commonly understood as being part of, or related to, digital health: artificial intelligence, big data, blockchain, health data, health information systems, infodemic, the Internet of Things, interoperability and telemedicine (see Annex for a definition of these terms).
4. A landscape analysis of how digital technologies were used by Member States in the WHO European Region during the COVID-19 pandemic and their associated risks and concerns was presented to the Regional Committee at its 71st session in the working document on health system transformation in the digital age during the COVID-19 pandemic (EUR/RC71/7).³
5. The role of digital health was also highlighted in the 2021 report of the Pan-European Commission on Health and Sustainable Development, Drawing light from the pandemic: a new strategy for health and sustainable development, which included a recommendation to prioritize investments in data-sharing and data interoperability platforms.⁴
6. The purpose of the new regional digital health action plan is to outline the strategic actions needed to promote digital health systems to improve health at scale in the Region. The action plan is intended to support countries in leveraging and scaling up digital transformation for better health and in aligning digital technology investments with health system needs, while fully respecting the values of equity, solidarity and human rights. The action plan is expected to contribute to the operationalization of the WHO Global strategy on digital health 2020–2025, by translating its strategic priorities into relevant actions at the European regional level. This will ensure synergies with partner organizations and alignment with global efforts to standardize digital health adoption and will leverage the development of global digital public health goods and promote access to digital health services among the vulnerable populations in European societies.

¹ See [https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73\(28\)-en.pdf](https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73(28)-en.pdf).

² See <https://apps.who.int/iris/handle/10665/344249>.

³ See <https://apps.who.int/iris/handle/10665/343164>.

⁴ See <https://www.who.int/europe/publications/m/item/drawing-light-from-the-pandemic--a-new-strategy-for-health-and-sustainable-development>.

CURRENT SITUATION ANALYSIS: CHALLENGES AND OPPORTUNITIES FOR DIGITAL HEALTH IN THE REGION

7. The Region is facing challenges and delays in achieving the core priorities of the EPW and the health-related Sustainable Development Goals due to the impact of the COVID-19 pandemic. Wider uptake of digital solutions has the potential to reduce some of the challenges countries face in ensuring that the core priorities are given due prominence in the short to medium term, and to assist in equalizing these differences over the longer term.

8. International cooperation will be critical to implementing this regional digital health action plan. For many years, the European Commission, through the eHealth Network,⁵ has played an important stewardship role by advancing a common agenda for digital health and data governance adoption in European Union Member States and Norway (observer), paving the way for the digitalization and increased sharing of health data in the European Health Data Space. Other international partners – such as the Organisation for Economic Co-operation and Development, the European Centre for Disease Prevention and Control, the United States Agency for International Development and the World Bank – continue to support digital health in Europe by developing principles for health data governance and a framework for digital public health goods and by strengthening country capacity for health information systems and digital health.

9. The 2015 WHO global survey on e-health⁶ provided evidence of an increasing appetite for e-health in the European Region and indicated that tangible progress has been made in mainstreaming technology solutions to improve public health and health service delivery. Since 2015, several challenges and opportunities have emerged in the health and digital domains, so it is now time to take stock and use the most up-to-date information to develop the regional digital health action plan and steer the agenda for innovation in digital health in the Region. For this purpose, a regional survey is being conducted.

GUIDING PRINCIPLES

10. Five guiding principles aim to orient the regional action plan towards the appropriate and sustainable adoption of digital health solutions within the context of national health sectors and health and digital transformation strategies:

- (a) **Place the individual at the centre of trustworthy care delivered digitally.** The successful uptake and use of digital technologies in health is contingent on a patient-centred approach. It requires public trust in the use of such technologies and in the protection of fundamental privacy rights covering the data that underpin them. Individuals, health workers and patients should be empowered through digital health to make informed choices that benefit the health and well-being of themselves, their families and their communities.
- (b) **Understand health system challenges, including health needs and trends, and acknowledge the needs and expectations of citizens and health workers.** Digital technologies, when used appropriately, can make a substantial contribution to advancing universal health coverage, aiding the work of health professionals, protecting the public in times of emergencies and enhancing health and well-being. Yet their inappropriate use can mean that the value of investments is not realized, particularly if (i) the innovation is not aligned with national health system priorities, the current health situation and trends, or the goal of improving citizens' health in an equitable manner that respects human rights, or (ii) the deployment of such technologies does not facilitate the patient's participation, the daily work of health workers, and the interactions between care providers and their patients.

⁵ See https://ec.europa.eu/health/ehealth-digital-health-and-care/eu-cooperation/ehealth-network_en.

⁶ See <https://apps.who.int/iris/handle/10665/326317>.

- (c) **Recognize the need for policy decision-making based on data, evidence and lessons learned while allowing for continuous learning, adaptation and innovation.** There are still gaps in the evidence base on digital health, and there is a role for WHO/Europe to work with other agencies, Member States, international organizations, academic institutions, civil society and the digital technology industry to learn from previous experiences and strengthen this evidence base. A comprehensive evidence base will help ensure that digital technologies contribute effectively to health outcomes, while minimizing potential risks, and that decisions and investments relating to digital health are sustainable, evidence informed and driven by needs and by lessons learned.
- (d) **Leverage digital transformation to reimagine the future of health systems.** As countries seek to build more resilient health systems within the context of socioeconomic recovery from the COVID-19 pandemic, national health plans and agendas are being reviewed and enhanced, new and innovative ways of working are being introduced, and significant investments are being made in digital technologies in consultation with stakeholders. It is therefore timely to work with countries to ensure that the innovation agenda, through the adoption of digital solutions, leaves no one behind, improves patient pathways and the delivery of care, and considers the current environment and the necessary changes in financial, infrastructural, human, organizational and cultural resources as part of the digital ecosystem.
- (e) **Recognize that institutionalization of digital health requires a long-term commitment and an integrated care approach.** Whether at the national, regional or local level, this action plan acknowledges that the institutionalization of digital health requires leadership and a long-term commitment by countries to achieve transformation of health systems and improvement in people's health and well-being.

VISION

11. The vision of the global strategy is to improve health outcomes for everyone, everywhere, by (i) accelerating the development and adoption of appropriate, accessible, affordable, scalable and sustainable person-centric digital health solutions to prevent, detect and respond to epidemics and pandemics, and (ii) developing infrastructure and applications that enable countries to use health data to promote health and well-being.
12. The action plan aims to contribute to the achievement of the health-related Sustainable Development Goals, the WHO Thirteenth General Programme of Work, 2019–2025, and the EPW, as part of the Empowerment through Digital Health flagship initiative.
13. By urging Member States to promote the digitalization of their health systems, the regional action plan provides a framework through which the following, among other things, can be achieved:
 - (a) recognizing digital technologies as a key determinant of health, both directly and through their interactions with traditional health determinants;
 - (b) developing guidance and building capacity for the digitalization of health systems;
 - (c) transforming health systems and strengthening prevention and well-being;
 - (d) promoting an appropriate enabling environment and foundations for digital health transformation, ensuring equity and building trust;
 - (e) engaging with key partners and leveraging regional networks to foster digital health development and innovation and promote knowledge-sharing; and
 - (f) promoting evidence-informed investments and facilitating the implementation, evaluation and scale up of digital solutions.

STRATEGIC ACTION FRAMEWORK: TRANSLATING THE GLOBAL VISION INTO CONCRETE REGIONAL ACTION

14. The regional digital health action plan identifies four strategic priorities towards the achievement of this vision:

- **Strategic Priority 1** – setting norms, developing evidence-based technical guidance and formulating direction to support decision-making in digital health.
- **Strategic Priority 2** – enhancing country capacities to better govern digital transformation in the health sector and advance digital health literacy.
- **Strategic Priority 3** – building networks and promoting dialogue and knowledge exchange to facilitate interaction between partners, stakeholders and the wider public to steer the agenda for innovation in digital health.
- **Strategic Priority 4** – conducting horizon-scanning and landscape analysis to identify solutions that are patient-centred and can be scaled up at country or regional level to help shape public health and health systems in the digital era.

15. The strategic priorities and their key regional focus areas (listed below) are intended for the period 2023–2030. Furthermore, for each strategic priority, a number of illustrative actions for the period 2022–2023 have been identified, which the WHO Secretariat, Member States and partners need to prioritize and agree on. Progress on the strategic priorities will be presented to Member States and partners every two years, or as deemed appropriate, and illustrative actions will be reviewed and updated as necessary.

Strategic Priority 1 – setting norms, developing evidence-based technical guidance and formulating direction to support decision-making in digital health

16. Key regional focus areas:

- Promote commitment to and awareness of digital health by sharing evidence and good practice.
- Conduct research and collect available evidence and good practices on the development, implementation and use of digital solutions in the health sector.
- Guide the development and adoption of digital technologies that facilitate the application of digital health to health priorities across the entire European Region.

Illustrative actions and expected impact at the country level for the period 2022–2023: Strategic Priority 1

Illustrative actions by the WHO Secretariat, Member States and partners:

- Develop a digital health strategic resource kit to articulate the elements required to deliver successful digital transformation of health systems.
- Establish a digital health research agenda that prioritizes health system needs and health priorities.
- Develop and/or update core technical guidance and evidence-informed technical documents in priority digital health areas in the context of moving towards universal health coverage, protecting against health emergencies and promoting health and well-being.
- Develop capacity-building plans to promote and support the digital transition in different health areas and contexts.

Expected impact at the country level:

- Evidence-building plan and research agenda on the contribution, opportunities and challenges of digital health in the context of the national health system's needs and health priorities is available to support decision-making.
- Guidance on priority digital health areas is developed and provided to Member States, and capacity is increased in these areas.

Strategic Priority 2 – enhancing country capacities to better govern digital transformation in the health sector and advance digital health literacy

17. Key regional focus areas:

- Support the enhancement or development of national digital health strategies and related governance frameworks to help achieve national health goals, improve health system performance and guide future digital health investments and transformation.
- Support countries' capacities to better govern digital transformation in the health sector.
- Increase countries' digital health capacities and foundations and their ability to identify and align solutions and prioritize procurement and investments with identified health needs.
- Strengthen health information systems and health data governance and use.
- Develop awareness and practical guidance in cybersecurity risk management and privacy-enhancing technologies.
- Foster innovation on predictive analytics for better health, through big data and artificial intelligence, with special attention to (i) how people approach health throughout life (birth, adolescence, adulthood, elder years), (ii) infodemic management, (iii) enhancement of financial protection, and (iv) detection of epidemics.
- Strengthen digital literacy skills and capacity-building in the general population, with special attention to the health workforce, for the use of digital health services and disease prevention and management.

Illustrative actions and expected impact at the country level for the period 2022–2023: Strategic Priority 2

Illustrative actions by the WHO Secretariat, Member States and partners:

- Develop guidance to support the development of digital health foundations, procurement and enhancement of governance structures and mechanisms on digital health.
- Promote and contribute to the assessment of infrastructural needs and the review of national laws and policies to drive successful digital transformation.
- Assess health information systems and their governance to strengthen countries' capacities to collect, analyse, integrate and use health information and data.
- Develop a European health data governance framework through a European health data governance charter.
- Address the infodemic in the Region and globally.
- Strengthen countries' capacities to leverage the full potential of big data and artificial intelligence, taking into account data privacy, security and ethical use.
- Identify core competencies of digital health literacy in the health workforce, and develop a framework to assess digital health literacy skills in the population.

Expected impact at the country level:

- Support and expert advice are provided to strengthen national digital health procurement and governance (including of financial, infrastructural, human, organizational and cultural resources).
- Technical assistance in adopting digital health solutions is tailored and provided at the national level based on country and health needs.
- National health information systems and data governance frameworks are assessed to enhance the use of health data for health-related public interest.
- Efforts are strengthened to develop a comprehensive roadmap for full implementation of health data standards for data interoperability within countries to facilitate integrated health information systems.
- Capacity is developed, according to country-specific contexts, for planning and implementing infodemic management.
- Capacity-building to leverage the potential of big data and artificial intelligence is provided through the Winter School of Impact Training for Big Data in Healthcare.
- A core competency framework of digital skills for the health workforce is developed and available for adoption at the national level.
- A standardized approach is proposed for measuring digital health literacy skills in the population at the national and regional levels.

Strategic Priority 3 – building networks and promoting dialogue and knowledge exchange to facilitate interaction between partners, stakeholders and the wider public to steer the agenda for innovation in digital health

18. Key regional focus areas:

- Facilitate advocacy and promote interregional, international and multisectoral collaboration.
- Promote and facilitate the dissemination and exchange of good practices and lessons learned in digital health among Member States.
- Establish a platform for dialogue with non-State actors to better align technology ideation with health system bottlenecks.

Illustrative actions and expected impact at the country level for the period 2022–2023: Strategic Priority 3

Illustrative actions by the WHO Secretariat, Member States and partners:

- Analyse the landscape of digital health networks and cross-sectoral partnerships in the Region.
- Promote alignment with the European Union (such as through the eHealth Network), the Organisation for Economic Co-operation and Development, and other international organizations to leverage the full potential and expertise of regional and international partners.
- Establish a digital health network in the Region, and contribute to other regional and global digital health networks.
- Develop a methodology for knowledge-sharing in digital health, and build a repository for good practices, lessons learned and country vignettes.
- Establish a digital health partnership council as a policy dialogue platform.

Expected impact at the country level:

- National digital health networks and cross-sectoral partnerships are promoted, and their visibility is increased at the regional level.
- International coordination and cooperation is enhanced for the benefit of Member States.
- Knowledge exchange in digital health at the regional and global levels is facilitated by sharing national good practices and learning from others.
- An independent forum for Member States is established to increase understanding of the available technologies and implementation approaches.

Strategic Priority 4 – conducting horizon-scanning and landscape analysis to identify solutions that are patient-centred and can be scaled up at country or regional level to help shape public health and health systems in the digital era

19. Key regional focus areas:

- Monitor developments and trends in emergent digital solutions with the potential to enhance health systems and improve the population's health.
- Ensure that a people-centred approach is considered so as to build trust and facilitate adoption.

- Strengthen gender equality and health equity approaches as part of countries' own aims to promote inclusive digital societies.
- Enhance the development of digital approaches to the management of health at the population level, with the aim of moving health and well-being from reactive care models to active community-based and disease prevention models.
- Facilitate implementation, evaluation and scale up of digital technologies in the health sector in Member States.

Illustrative actions and expected impact at the country level for the period 2022–2023: Strategic Priority 4

Illustrative actions by the WHO Secretariat, Member States and partners:

- Develop a measurement framework to monitor digital health in the Region.
- Update or develop country profiles or case studies on digital health.
- Identify and examine the main impacts that gender and equity present in the adoption and scaling of digital health solutions in the Region.
- Identify opportunities for (i) engaging professional and patient associations in digital health development, (ii) promoting the engagement of end users and beneficiary populations using digital health services, and (iii) improving disease prevention and management.
- Develop a catalogue of business cases of national investment in digital infrastructure and technologies to support advancing universal health coverage, protecting the public in times of emergencies and enhancing health and well-being.

Expected impact at the country level:

- A standardized approach to monitoring digital health at the national and regional levels is proposed, including for the monitoring of end user experience and preferences.
- Digital health country profiles and/or case studies are developed and available to facilitate regional comparability.
- Approaches are identified to empower end users and beneficiary populations using digital health services.
- Technical support is provided to develop business cases for national investment in digital infrastructure and technologies to leverage health at scale.

MONITORING AND EVALUATION: MEASURES OF SUCCESS

20. In the EPW measurement framework (EUR/RC71/CONF./4; EUR/RC71/INF./2),⁷ digital health was one of 20 indicator areas deemed highly relevant for the Region but currently lacking either suitable internationally agreed measures or adequate data availability at the international and regional level. Measures of success will be integrated into the EPW measurement framework through the adoption of a monitoring and evaluation framework.

21. Progress on the strategic priorities will be presented to Member States and partners every two years, or as deemed appropriate, and illustrative actions will be reviewed and updated as necessary.

⁷ See <https://apps.who.int/iris/handle/10665/343314>.

ANNEX. DEFINITIONS OF RELATED DIGITAL CONCEPTS AND TERMS⁸

- **Artificial intelligence:** An area of computer science that emphasizes the simulation of human intelligence processes by machines that work and react like human beings.
- **Big data:** Rapidly collected, complex data in such quantities that terabytes (10^{12} bytes), petabytes (10^{15} bytes) or even zettabytes (10^{21} bytes) of storage may be required. The unique properties of big data are defined by four dimensions: volume, velocity, variety and veracity. As more information accrues at an accelerating pace, both volume and velocity increase.
- **Blockchain:** A digital database containing information (such as records of financial transactions) that can be simultaneously used and shared within a large decentralized, publicly accessible network.
- **Digital health:** The field of knowledge and practice associated with the development and use of digital technologies to improve health. Digital health expands the concept of e-health to include digital consumers, with a wider range of smart devices and connected equipment. It also encompasses other uses of digital technologies for health, such as the Internet of Things, artificial intelligence, big data and robotics.
- **e-Health:** The cost-effective and secure use of information and communications technologies in support of health and health-related fields, including health care services, health surveillance, health literature, and health education, knowledge and research.
- **Health:** A state of complete physical, mental and social well-being, not merely the absence of disease or infirmity.
- **Health data:**⁹ The systematic application of information and communications technologies, computer science, and data to support informed decision-making by individuals, the health workforce and health systems with the aim of strengthening resilience to disease and improving health and wellness. The term includes all data that reveal information relating to the past, current or future physical or mental health status of a data subject. This includes information about the natural person collected in the course of registration for, or provision of, health care services to that person; a number, symbol or particular assigned to a natural person to uniquely identify them for health purposes.
- **Health information system:** a system that integrates data collection, processing, reporting and use to improve health service effectiveness and efficiency through better management at all levels.
- **Infodemic:** An infodemic is an acute outpouring of information, including potentially misleading or inaccurate information, that in a digital, hyperconnected society such as the present one, is likely to accompany every epidemic or acute health crisis.
- **Internet of Things:** A system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.
- **Interoperability:** The ability of different applications to access, exchange, integrate and cooperatively use data in a coordinated manner through shared application interfaces and standards, and within and across organizational, regional and national boundaries, to provide seamless portability of information and optimize health outcomes.

⁸ All definitions are taken from the Global strategy on digital health 2020–2025. See <https://www.who.int/docs/default-source/documents/g4dhd2a9f352b0445bafbc79ca799dce4d.pdf>.

⁹ See <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012PC0011>.

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- **Telemedicine:** The delivery of health care services where distance is a critical factor by health care professionals using information and communications technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and the continuing education of health care workers, with the aim of advancing the health of individuals and communities.
 - **Universal health coverage:** A system under which all individuals and communities receive the health services they need without suffering financial hardship. It includes the full spectrum of essential, quality health services, from health promotion to prevention, treatment, rehabilitation and palliative care across the life course. The concept emphasizes not only what services are covered but also how they are funded, managed and delivered.

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