

PLAN OF ACTION FOR STRENGTHENING INFORMATION SYSTEMS FOR HEALTH 2024–2030

Introduction

1. Under the Plan of Action for Strengthening Information Systems for Health 2019–2023 (1), the Region of the Americas has made significant progress toward enhancing information systems for health and digitizing health data. The COVID-19 pandemic, beginning midway through the plan, accelerated the adoption of digital solutions intended to promote critical data capture and timely data analysis by decision makers in the health sector. At the same time, the pandemic highlighted the need to rapidly advance the digital transformation of the health sector with an emphasis on real-time data dashboards, open and secure digital solutions, and tailored platforms. In the post-pandemic era, when integration of interoperable systems and platforms is crucial for effective data management, challenges remain with respect to ensuring data quality, reliability, security, and timeliness. In particular, there is a need to improve the interoperability of systems and platforms that provide information on social determinants of health, such as sociodemographic, climate, and built environment data, to support efforts to address health inequities and emerging health and climate challenges in the Region.

2. This new plan of action, covering the period 2024–2030, builds on the previous one in order to expand and strengthen information systems for health (IS4H) at national and subnational levels. It focuses on implementing strategies for effective data management and evidence-based decision-making, adopting cost-effective emerging digital health solutions, and improving standards, legislation, and human competencies for the digital transformation of the health sector. Digital health is a key component of the plan, covering information subsystems like immunizations, epidemiological surveillance, communicable and noncommunicable diseases, and other programmatic health areas. This plan is expected to significantly improve the effectiveness, comprehensiveness, and responsiveness of health systems, prioritizing the first level of care, which is crucial for efficient patient care and disease prevention.

Background

3. This plan of action is fully aligned with recommendations by Member States of the Pan American Health Organization (PAHO) at the Regional Event on Digital Transformation in the Health Sector held in Panama City in November 2022. Its content also reflects the recent consultation with PAHO Member States at RELACSIS 4.0: Information Systems & Digital Health in the Americas, a regional meeting held in São Paulo, Brazil, in November 2023. The plan responds to PAHO's call to action for the digital transformation of the health sector in the Region, including implementation of the Pan-American Highway for Digital Health, an initiative led by PAHO and the Inter-American Development Bank (IDB).

4. This plan of action will contribute to the fulfillment of important mandates of the Organization. These include: *a)* Roadmap for the Digital Transformation of the Health Sector in the Region of the Americas (Resolution CD59.R1) (2); *b)* Policy on the Application of Data Science in Public Health Using Artificial Intelligence and Other Emerging Technologies (Resolution CD59.R2) (3); *c)* Strategy for Universal Access to Health and Universal Health Coverage (Resolution CD53.R14) (4); and *d)* Policy for Recovering Progress toward the Sustainable Development Goals with Equity through Action on the Social Determinants of Health and Intersectoral Work (Resolution CSP30.R2) (5). Additionally, this plan aims to support the Sustainable Health Agenda for the Americas 2018–2030: A call to action for health and well-being in the Region (6) and the Open Government Partnership,¹ currently signed by 18 PAHO Member States.

Situation Analysis

5. Inefficient health information systems, compromised by poor interoperability and lack of standards, limit the Region's capacity to detect and respond to health challenges. They also lead to inadequate patient care, inefficient resource use, and weak data security. These issues undermine trust in health systems and increase health care costs while impeding the development of effective health policies and efforts to address health inequalities.

6. A regional maturity assessment of IS4H was carried out by PAHO in all countries of the Region between 2016 and 2023. It examined the strategic domains of data management and information technologies, management and governance, knowledge management and sharing, and innovation.² The assessment revealed uneven progress. In the Region, 42.8% of countries have the lowest maturity level, level 1. Countries at this level are building awareness and are early in the process of adopting health information systems, using mostly analogue data, with an urgent need for digitalization. These countries struggle to generate regular programmatic and core health indicators and address data quality, and digital health investments are hindered by gaps in access to electricity, connectivity, planning, and financing. Another 34.7% of countries are at level 2, implementing best practices with systems that can manage data from various sources. Challenges at this level include developing comprehensive indicators, institutionalizing data exchange, and implementing data standards and communication strategies. About a fifth of the countries (18.4%), have reached level 3, marked by standardization and continuous improvement. They show policy and strategy advances and high-quality data use for decision-making. Only 4.1% of countries are at level 4, with highly integrated systems that are aligned with national and international standards. No country in the Region has attained level 5, the peak of the IS4H maturity assessment, indicating complete deployment of all model components and continuous innovation.

¹ Available at: <https://www.opengovpartnership.org/>.

² The publication Maturity Assessment Levels: Information Systems for Health is available at: <https://iris.paho.org/handle/10665.2/54962>. Results of the recent Region-wide assessment are available in internal PAHO documents but have not been published.

Proposal

7. In a rapidly changing public health environment, this plan of action sets a direction toward more digitally advanced and interconnected health systems for the countries of the Region. Four strategic lines of action are designed to enhance the capacity of health systems to achieve better health outcomes through development and use of IS4H. These strategic lines focus on improved leadership and decision-making within health organizations; advancement of information technology and data management capabilities, including adoption of electronic health records; improvement of data collection and analysis for timely and accurate health information to support evidence-based decisions and policies; and promotion of innovation through the integration of digital health technologies like artificial intelligence, telehealth, and electronic health records platforms.

Strategic Line of Action 1: Strengthen management and governance of information systems

8. Strengthening the management and governance of information systems for health is essential to ensure efficient, accurate, ethical, and secure management of health data. This line of action is designed to enhance national leadership and coordination in support of decision-making processes, increase the quality and reliability of data sources and health information, and ensure adherence to legal and ethical standards. The objective is to establish a more cohesive and responsive mechanism for information system governance within health systems. This, in turn, supports improved patient care, facilitates more informed public health interventions, and enhances the overall effectiveness of the health system.

Objective 1.1: Strengthen the management and governance mechanisms of information systems for health		
Indicator	Baseline (2023)	Target (2030)
1.1.1 Number of countries and territories that have implemented a governance mechanism (policy, plan of action, or strategy) for interconnected and interoperable information systems for health supported by a national interoperability bus	15	35
1.1.2 Number of countries and territories that have a regulatory framework that supports the use, management, and exchange of data and information through electronic media and addresses the aspects of dissemination, access, privacy, ethics, interoperability, and domain or property	10	30
1.1.3 Number of countries and territories that have adopted a regulatory framework that considers the development and use of artificial intelligence in health	4	30
1.1.4 Number of countries and territories that have implemented technical frameworks and data dictionaries for promoting health data disaggregation at national and subnational levels	5	30
1.1.5 Number of countries and territories that have adopted a national rapid response strategy for health sector cybersecurity incidents	7	15

Strategic Line of Action 2: Strengthen data management and information technologies

9. Strengthening of data management and information technologies in the health sector is needed to harness the full potential of digital transformation. This line of action is designed to achieve better integration and utilization of health-related multisectoral data sources, including those related to social and environmental determinants of health, enabling accurate, disaggregated, and timely data guaranteeing the protection and security of personal health data. By enhancing data-driven decisions at all levels, this strategic line contributes to the broader objective of making national information systems more resilient, adaptable, and capable of addressing contemporary health challenges.

Objective 2.1: Enhance the standardization and interoperability of information systems for health to allow subnational, national, and regional cross-border data exchange and disaggregation		
Indicator	Baseline (2023)	Target (2030)
2.1.1 Number of countries with regulatory frameworks mandating open access to health-related data within open government initiatives	12	30
2.1.2 Number of countries and territories that have adopted standards to facilitate the interoperable exchange of data (e.g., Fast Healthcare Interoperability Resources)	12	35
2.1.3 Number of countries and territories that have adopted national policies for the use of open-source technologies that are based on international standards for interoperability in public health data	5	30
2.1.4 Number of countries and territories that have adopted cross-border data exchange agreements in the context of the Global Digital Health Certification Network and the PAHO-IDB Pan-American Highway for Digital Health	3	30
2.1.5 Number of countries and territories that have adopted ICD-11 as the main standard for ensuring semantic interoperability with electronic health record platforms	5	30

Strategic Line of Action 3: Strengthen information and knowledge management

10. Stronger information and knowledge management in the health sector is needed to optimize the use and dissemination of health-related data. This line of action is designed to facilitate a better-informed decision-making process in the health sector, ensuring that decisions at all levels are based on quality, accurate, current, and comprehensive health information. It also aims to enhance public health surveillance, enable effective response to health crises, and foster evidence-based policymaking. The overall aim is to improve health outcomes and health equity by ensuring that health care providers, policymakers, and the public have access to the information and knowledge they need to make well-informed choices about health and health care services.

Objective 3.1: Promote the implementation of strategies and mechanisms that ensure timely and appropriate open access to data, information, and knowledge across the health sector		
Indicator	Baseline (2023)	Target (2030)
3.1.1 Number of countries and territories implementing methodologies for documenting and sharing lessons learned, experiences, and best practices in implementation of information systems for health	10	35
3.1.2 Number of countries and territories that have implemented interoperable public health surveillance information systems for enhanced disease monitoring and rapid detection of outbreaks	10	35
3.1.3 Number of countries and territories that have established an information architecture, ensuring secure and interoperable implementation across various health-related subsystems, modules, applications, and databases	5	30
3.1.4 Number of countries and territories that have implemented behavioral insights and infodemic management units or programs of work within ministries of health	2	15

Strategic Line of Action 4: Foster innovation and digital health

11. This line of action is designed to integrate digital solutions such as electronic health records platforms, telehealth, mobile health applications, artificial intelligence, and advanced data analytics, among others, into the health system. Its aims are to increase health care accessibility, especially in remote or underserved areas, improve the efficiency of health care services, and personalize patient care. Steps should be taken to ensure ethical use of emerging and innovative technologies in order to guarantee equitable access and nondiscriminatory use of these technologies.

Objective 4.1: Implement a comprehensive national roadmap and strategy for the digital transformation of the health sector by 2030		
Indicator	Baseline (2023)	Target (2030)
4.1.1 Number of countries and territories implementing a national roadmap and strategy for the digital transformation of the health sector	3	30
4.1.2 Number of countries and territories implementing virtual models of care supported by national telehealth programs	5	30
4.1.3 Number of countries and territories that have adopted bandwidth and connectivity as digital determinants and key elements within national public health policies ensuring equitable access to digital health	10	30
4.1.4 Number of countries and territories participating in regional digital literacy initiatives led by PAHO	5	35

Monitoring and Evaluation

12. The baseline for this plan of action is established through a recent maturity assessment, which examined over 240 indicators. Monitoring and evaluation tools for telehealth, critical data collection, and connectivity infrastructure, developed with Member States and partners, will also be used. Progress will be tracked periodically through communities of practice for each strategic line of action, with the Latin American and the Caribbean Network for Strengthening Health Information Systems (RELAC SIS) network serving as the main regional support mechanism for implementation. The Governing Bodies of PAHO will be informed of progress made and challenges faced in the implementation of the plan of action through a midterm review in 2027 and a final report in 2031.

Financial Implications

13. It is expected that Member States will prioritize the allocation of resources toward the implementation of this plan of action, as appropriate. It will be critical to have a multisectoral and multidisciplinary approach that also includes the private sector, academia, research institutes, and patient organizations, as well as donors and financial institutions. Annex B provides detailed information on the financial resources required, already programmed in the work plan, to implement this plan of action and to provide technical cooperation to Member States.

Action by the Directing Council

14. The Directing Council is invited to review the information presented in this document, provide any comments it deems pertinent, and consider approving the proposed resolution presented in Annex A.

Annexes

References

1. Pan American Health Organization. Plan of action for strengthening information systems for health 2019–2023 [Document CD57/9, Rev. 1]. 57th PAHO Directing Council, 71st Session of the Regional Committee of WHO for the Americas; 30 September – 4 October 2019. Washington, D.C.: PAHO; 2019. Available from: <https://iris.paho.org/handle/10665.2/51617>.
2. Pan American Health Organization. Roadmap for the digital transformation of the health sector in the Region of the Americas [Resolution CD59.R1]. 59th PAHO Directing Council, 73rd Session of the Regional Committee of WHO for the Americas; 20–24 September 2021; virtual session. Washington, D.C.: PAHO; 2021. Available from: <https://iris.paho.org/handle/10665.2/58259>.
3. Pan American Health Organization. Policy on the application of data science in public health using artificial intelligence and other emerging technologies [Resolution CD59.R2]. 59th PAHO Directing Council, 73rd Session of the Regional Committee of WHO for the Americas; 20–24 September 2021; virtual session. Washington, D.C.: PAHO; 2021. Available from: <https://iris.paho.org/handle/10665.2/58262>.

4. Pan American Health Organization. Strategy for universal access to health and universal health coverage [Resolution CD53.R14]. 53rd Directing Council, 66th Session of the Regional Committee of WHO for the Americas; 29 September – 3 October 2014. Washington, D.C.: PAHO; 2014. Available from: <https://iris.paho.org/handle/10665.2/7652>.
5. Pan American Health Organization. Policy for recovering progress toward the Sustainable Development Goals with equity through action on the social determinants of health and intersectoral work [Resolution CSP30.R2]. 30th Pan American Sanitary Conference, 74th Session of the Regional Committee of WHO for the Americas; 26–30 September 2022. Washington, D.C.: PAHO; 2022. Available from: https://www.paho.org/sites/default/files/csp30-r2-e-policy-sustainable-development-goals_0.pdf.
6. Pan American Health Organization. Sustainable Health Agenda for the Americas 2018–2030: A call to action for health and well-being in the Region [Document CSP29/6, Rev. 3]. 29th Pan American Sanitary Conference, 69th Session of the Regional Committee of WHO for the Americas; 25–29 September 2017. Washington, D.C.: PAHO; 2017. Available from: <https://iris.paho.org/handle/10665.2/49170>.

Proposed Resolution

PLAN OF ACTION FOR STRENGTHENING INFORMATION SYSTEMS FOR HEALTH 2024–2030

The 61st Directing Council,

(PP1) Having reviewed the *Plan of Action for Strengthening Information Systems for Health 2024–2030* (Document CD61/7);

(PP2) Recognizing the urgent need to continue strengthening information systems for health and to advance the digital transformation of the health sector as key elements of support for universal, equitable, and resilient health systems;

(PP3) Considering that action by Member States is required to strengthen leadership, stewardship, and governance through a renewed emphasis on digital transformation;

(PP4) Noting that institutional capacities to enable the implementation of interoperable information systems for health must be strengthened, given that these systems are a central component of the primary health care approach,

Resolves:

(OP)1. To approve the *Plan of Action for Strengthening Information Systems for Health 2024–2030* (Document CD61/7).

(OP)2. To urge all Member States, considering their contexts, needs, vulnerabilities, and priorities, to:

- a) promote the implementation of the lines of action contained in the *Plan of Action for Strengthening Information Systems for Health 2024–2030*;
- b) strengthen the management and governance of information systems for health within the framework of the digital transformation of government initiatives;
- c) build the necessary infrastructure for supporting the implementation of national and subnational information systems for health and data management frameworks;
- d) establish regulatory frameworks for enhancing the management of health-related data platforms and digital health solutions;
- e) ensure that human resources have the necessary competencies to effectively implement digital health solutions at all levels of care.

(OP)3. To request the Director to:

- a) provide technical cooperation to Member States to strengthen capacities that contribute to the implementation of the plan of action and the achievement of its objectives;
- b) report periodically to the Governing Bodies of the Pan American Health Organization on the progress made and challenges faced in the implementation of the plan of action through a midterm review in 2027 and a final report in 2031.

Analytical Form: Programmatic and Financial Implications

1. Agenda item: 4.4 - Plan of Action for Strengthening Information Systems for Health 2024–2030
2. Responsible unit: Information Systems and Digital Health, Department of Evidence and Intelligence for Action in Health
3. Preparing officers: Sebastián García Saisó and Marcelo D’Agostino
4. List of collaborating centers and national institutions linked to this Agenda item: <ul style="list-style-type: none">• Inter-American Development Bank• Italian Hospital of Buenos Aires, Argentina• Continental University, Peru• Federal University of São Paulo, Brazil• Secretariat of Information and Digital Health, Ministry of Health, Brazil• Association of Schools and Programs of Public Health• Harvard Medical School, United States of America• Centre for Health Economics of the University of the West Indies, Trinidad and Tobago• Telemedicine University Network, Brazil• Mexican Center for Disease Classification, Mexico
5. Link between Agenda item and the Sustainable Health Agenda for the Americas 2018–2030: <p>Goal 6: Strengthen information systems for health to support the development of evidence-based policies and decision-making</p> <p>Goal 7: Develop capacity for the generation, transfer, and use of evidence and knowledge in health, promoting research, innovation, and the use of technology</p>
6. Link between Agenda item and the Strategic Plan of the Pan American Health Organization 2020–2025: <ul style="list-style-type: none">• Outcome 20. Integrated information systems for health• Outcome 21. Data, information, knowledge, and evidence• Outcome 22. Research, ethics, and innovation for health

7. Time frame for implementation and evaluation: This plan of action covers the period 2024–2030.

8. Financial implications:

- a) **Total estimated cost for implementation over the life cycle of the resolution (including staff and activities):**

Area	Estimated cost (US\$)
Human resources	6 000 000
Training	1 500 000
Consultants/service contracts	1 500 000
Travel and meetings	1 000 000
Publications	500 000
Supplies and other expenses	2 000 000
Total	12 500 000

- b) **Estimated cost for the 2024–2025 biennium (including staff and activities):** US\$ 2 500 000.
- c) **Of the estimated cost noted in b) above, what can be subsumed under existing programmed activities?** All costs can be subsumed under existing programmed activities.