Editorial

Towards 2030: ministerial agreements on information systems and digital transformation for resilient health systems

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The landscape of public health in the Region of the Americas has been transformed substantially, with many advances driven by strategic ministerial agreements and collective decisions. The Directing Council of the Pan American Health Organization (PAHO), a crucial platform for collaboration among ministries of health, has been instrumental in this transformation. The approval of key resolutions at the 2024 session of the 61st Directing Council (1), which included the 2024-2030 Plan of Action for Strengthening Information Systems for Health (IS4H) (2) underscores the regional commitment to achieving resilience and equity through digital transformation. This editorial reflects on the final report of the 2019-2023 Plan of Action for Strengthening Information Systems for Health(3), the midterm analysis of the Roadmap for the Digital Transformation of the Health Sector in the Region of the Americas (4), and the strategic direction set towards 2030.

PROGRESS FROM 2019-2023: BUILDING THE FOUNDATION OF IS4H

The 2019-2023 Plan of Action for IS4H marked a major advance in digital health across the Region of the Americas. Through this period, many countries made significant progress in governance, data management, and the adoption of digital tools such as electronic health records and telehealth platforms. A regional maturity assessment revealed that 42.8% of countries were at level 1 (building awareness), with mostly analogue data systems. However, 34.7% had reached level 2, implementing best practices for managing data and information systems,

while 18.4% achieved level 3, reflecting improvements in data quality and decision-making capabilities. Efforts toward data interoperability were central to these advancements. Seventeen countries adopted standards such as Fast Healthcare Interoperability Resources (Health Level Seven International) and the *International Classification of Diseases*, 11th Revision (*ICD-11*), fostering improved data sharing and standardization. However, substantial infrastructure gaps—including outdated information technology systems, limited connectivity, and inconsistent governance—remain obstacles. Investments were made to address these challenges, but progress was uneven, with only 4.1% of countries reaching level 4 maturity in 2023.

The COVID-19 pandemic accelerated digital health initiatives, highlighting the importance of real-time data systems, interoperability, and telehealth. PAHO's telehealth platforms, along with the adoption of digital tools such as vaccine certification systems, were critical milestones (2).

MIDTERM INSIGHTS FROM THE DIGITAL TRANSFORMATION ROADMAP

The Digital Transformation Roadmap, approved by the PAHO Directing Council in 2021, served as a cornerstone for aligning digital health initiatives with global strategies such as the United Nations Roadmap for Digital Cooperation. The midterm report of the roadmap highlights that Member States have made remarkable headway in areas such as universal connectivity, with efforts targeting rural and underserved areas through enhanced bandwidth and telehealth services.

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Digital public goods were developed, including vaccination certification platforms in 17 countries and the All-in-One Telehealth Platform implemented as the first level of care. Interoperability remains a priority, with 14 countries transitioning to *ICD-11*, ensuring that health data systems are equipped for cross-border data exchange.

Despite these advancements, challenges persist. Legal frameworks for digital health governance, cybersecurity, and ethical data use require more robust development. Furthermore, human resources capacity continues to lag, with many countries lacking skilled professionals to fully implement digital health solutions (4).

STRATEGIC VISION FOR 2024–2030: BUILDING RESILIENCE THROUGH DIGITAL HEALTH

The newly approved 2024-2030 Plan of Action for IS4H builds on these accomplishments, outlining a strategic vision to address the gaps identified during the previous period. The plan focuses on enhancing management and governance mechanisms, scaling up data management systems and promoting the adoption of emerging technologies such as artificial intelligence and advanced telehealth solutions.

The vision for 2024-2030 emphasizes the integration of digital innovations to strengthen health systems, particularly in primary care. The goal is to increase interoperability, connectivity, and real-time data access, while ensuring that digital health systems are resilient, scalable, and can respond effectively to future public health crises. Additionally, efforts will be made to address data security concerns and develop a comprehensive digital literacy program across the Region (2).

PATH FORWARD: A CALL TO ACTION

As the Region of the Americas moves forward with the 2024-2030 IS4H Plan, it is crucial that policymakers and health leaders focus on several key priorities:

Strengthening governance mechanisms Robust governance is essential for managing information systems effectively and ensuring the ethical use of health data. Legislative frameworks must be updated to support digital health initiatives and secure data exchange. Ensuring a clear leadership role for national health authorities is imperative to providing the direction, path, and rhythm to these strengthening governance mechanisms.

Investing in infrastructure Outdated information technology systems and limited connectivity hinder progress. Investment in digital infrastructure, particularly in rural areas, is critical for delivering equitable health services across the Region.

Enhancing data-driven decision-making Digital health systems must provide timely, accurate, and actionable data to improve public health outcomes. Investments in data management systems will be essential.

Building national and cross-border interoperability National and cross-border data exchange must be prioritized to improve patient care, health system efficiency, and crisis response. Countries should continue adopting standards (e.g., Fast Healthcare Interoperability Resources, *ICD-11*, and Systematized Nomenclature of Medicine Clinical Terms) to ensure smooth interoperability. Achieving true interoperability requires not only national efforts but also seamless cross-border data exchange. Countries must actively participate in regional initiatives such as the Pan American Highway for Digital Health, a PAHO-Inter-American Development Bank collaboration that promotes harmonized standards for data sharing across borders. This initiative is vital to improving patient care coordination, especially for migrants and border populations, and enhancing collective responses to public health crises. Strengthening these collaborations will ensure that the Region of the Americas is better prepared for future health challenges.

Promoting human resources development Digital literacy programs are necessary to ensure that health care workers are equipped to utilize emerging technologies effectively. Collaboration with the education sector can bridge the skills gap in digital health.

CONCLUSIONS

The 2024-2030 Plan of Action for IS4H fully aligns with PAHO's broader vision of advancing universal health in the Region of the Americas. Digital health innovations, such as IS4H and telemedicine, are critical for ensuring equitable access to care, particularly for vulnerable populations. The integration of new technologies into national health policies enables countries to strengthen health systems and make them more resilient, adaptable, and prepared for future public health challenges. As stated by the Director of PAHO, Jarbas Barbosa da Silva Jr.:

"…It is critical to build resilient national health systems based on renewed and strengthened primary health care… It is urgent that we prepare primary health care to face the challenges posed by a complex epidemiological context and an aging population… Such action requires the development and implementation of strategies to ensure adequate financing for the health sector, training and retention of human resources, improvement of information systems, the use of technologies such as telemedicine, and digital transformation" (5).

This is essential to achieving PAHO's goal of overcoming health inequalities and building stronger, more inclusive health systems.

The 2024-2030 Plan of Action for IS4H (2) provides a clear roadmap for harnessing the full potential of digital health in the Americas. It outlines a strategic path for advancing health systems in the Americas by focusing on governance, data interoperability, and human resource development. The future holds immense potential with information systems and digital health innovations revolutionizing health, improving outcomes, and promoting health equity for all. By concentrating on governance, health workforce capacity, interoperability, and infrastructure, the Region of the Americas will help create resilient, inclusive, and more equitable public health that leaves no one behind.

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