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ROADMAP FOR THE DIGITAL TRANSFORMATION OF THE HEALTH SECTOR IN THE REGION OF THE AMERICAS: PROGRESS REPORT

Background

1.   The primary goal of this progress report is to provide an update on the Roadmap for the Digital Transformation of the Health Sector in the Region of the Americas (Document CD59/6 and Resolution CD59.R1) *(1, 2)*. It focuses on the priority actions taken by the Members States and the Pan American Sanitary Bureau (PASB) in support of the digital transformation of the Region's health sector *(3)*, and highlights the coordinated, multisectoral efforts over the past 2 years as well as reflecting on future priorities. In particular, it looks at the development of human capital and infrastructure, particularly for connectivity and bandwidth, to enable inclusive, ethical, and secure use of digital technologies.

2.   The COVID-19 pandemic highlighted digital solutions as vital for universal health care access and continuity of care, transforming how governments, institutions, and the public view health service delivery. Digital transformation in health is now a top priority, crucial for improving accessibility, efficiency, and quality of health care. Since 2016, PASB has worked with Member States to create a renewed framework for information systems for health. This framework includes guidelines, tools, training, and a regional action plan with a focus on digital transformation of the health sector.

3.   The policy this progress report refers to also aligns with global initiatives such as the road map for digital cooperation of the Secretary-General of the United Nations *(4)* and the Global Strategy on Digital Health of the World Health Organization *(5)*, recognizing the necessity of integrating the digital transformation of health into broader governmental digital plans.

Analysis of Progress Achieved

4.   Since the adoption of Resolution CD59.R1 in 2021, Member States have made notable progress in implementing this roadmap for the digital transformation of the health sector in the Region. Key achievements are set out below.

Alignment with United Nations Digital Transformation

5.   Following the eight priority actions for the Region, aligned with the areas of collaboration for strengthening technical cooperation in the age of digital interdependence defined by the United Nations, and based on the recommendations of the High-level Panel on Digital Cooperation *(4)*, progress has been made in the following areas:

a) *Universal connectivity*: *Achieve universal connectivity in the health sector by 2030 (6).*
    Twelve countries have strengthened information systems and digital health strategies to
    enhance connectivity and bandwidth. Most of these initiatives mainly target rural areas to
    bridge the digital divide and expand telehealth services at the first level of care. Actions have
    included investing in information technology infrastructure to ensure reliable internet access
    and bandwidth for ensuring teleconsultations. Additionally, Member States have focused on
    training health care workers in these areas to efficiently use digital tools, enhancing the
    quality of telehealth services and patient engagement.

b) *Digital public goods*: *Co-create digital public health goods for a more equitable world (7).*
    In response to the COVID-19 pandemic, 17 countries have made significant progress in
    digitalizing vaccination certification processes. The digitalization includes creating secure,
    accessible digital platforms for issuing and verifying COVID-19 vaccination certificates. This not
    only streamlines the process but also helps to combat the production of fraudulent
    vaccination certificates. Seven countries are implementing the Pan American Health
    Organization's (PAHO) All-in-ONE Telehealth Platform at the first level of care.

c) *Inclusive digital health*: *Accelerate progress toward inclusive digital health, with emphasis on
    the most vulnerable populations (8).* Thirty-three countries and territories are engaged in a
    debate on the importance of data for equity during the Connectathon and Regional Meeting
    on Digital Transformation of the Health Sector: Positioning public health in the age of digital
    interdependence, held in Santiago, Chile, from 28 May to 2 June 2022. They have committed
    to reinforcing data governance mechanisms across the health sector, aiming to achieve the
    highest and smartest possible level of data disaggregation. This commitment is a critical step
    towards the overarching goal of inclusive digital health, encapsulated in the principle of
    "leaving no one behind." Additionally, there is a consensus among Member States on the
    importance of maintaining high-quality data to reduce or eliminate biases in artificial
    intelligence algorithms, ensuring that these technologies serve all segments of the population
    fairly and effectively.

d) *Interoperability*: *Implement open, sustainable, interoperable digital information and health
    systems (9).* Ten countries have established national committees on health information
    systems for standardization; 18 countries are transitioning from the International Statistical
    Classification of Diseases and Related Health Problems 10th Revision (ICD-10) to ICD-11.
    Fourteen of them are from the Caribbean and are making significant progress not only in the
    adoption of the ICD-11, but also its integration with electronic health record platforms. Twelve
    countries are adopting the Systematized Nomenclature of Medicine Clinical Terms (SNOMED)
    for semantic interoperability, an important factor for ensuring convergence and coordination
    between SNOMED and ICD-11. Seventeen countries are actively participating in developing
    technological infrastructure for cross-border data exchange and interoperability.

e) *Human rights*: *Mainstream human rights across all areas of digital transformation in health (10).*
    Six countries are undertaking a thorough review of their legal and regulatory frameworks, along
    with normative instruments that have a direct or indirect impact on the digital transformation of
    the health sector. This review is guided by a newly developed maturity assessment tool for legal
    documents, rooted in PAHO's eight guiding principles for the digital transformation of the health
    sector *(3)*. The tool evaluates various aspects, including whether current regulatory frameworks

are equitable and unbiased. It specifically checks for any potential biases related to geography, culture, politics, religion, education, sexual orientation, gender identity, or gender. This analysis is crucial to ensuring that the digital transformation, especially in the health sector, is carried out in a way that is fair and just.

f) *Artificial intelligence*: *Participate in global cooperation on artificial intelligence and any emerging technology (11).* Thirteen countries in the Region have actively engaged in discussions on the role of artificial intelligence (AI) in public health. Discussions focused on several key objectives: *i)* assessing the impact of the COVID-19 pandemic on integrating AI into the digitalization of health care services and examining current advancements in this field; *ii)* sharing knowledge and identifying support needs concerning governance and ethical aspects of AI; *iii)* understanding the crucial elements of effectively applying AI and other subfields of AI such as machine learning and natural-language processing, including the use of generative AI solutions in public health; and *iv)* presenting the PAHO and WHO action framework for AI application in public health. These ongoing efforts are fully integrated with current actions related to the digital transformation of the health sector in the Region.

g) *Information security*: *Establish mechanisms for ensuring the confidentiality, integrity and security of information in the digital public health setting (12).* Countries are making great progress on strengthening cybersecurity measures across the health sector. Actions so far have included establishing more robust security protocols, implementing advanced encryption methods, and conducting regular cybersecurity audits and ethical hacking to safeguard against data breaches and cyberattacks. Training was prioritized for ministry of health staff in cybersecurity. Additionally, there was a focus on analyzing rapid response strategies to address security incidents effectively, minimizing risks and ensuring the continuity of healthcare services and the protection of sensitive health-related data.

h) *Public health architecture*: *Design public health architecture for the age of digital interdependence within the framework of a digital governance agenda (13).* Countries are making considerable progress in discussions about integrating the digital transformation of the health sector within the broader digital transformation of governments. This integration is enhancing coordination across various government areas, optimizing strategic planning, and improving resource management and allocation across sectors. A central aspect of this approach is the emphasis on adopting standards and procedures that go beyond public health, focusing on critical areas such as connectivity, bandwidth, unique identifiers, and cybersecurity. These actions have led to more cohesive public health strategies and effective resource utilization, ensuring that investments in health infrastructure have a wider societal impact. Recently, Member States have reaffirmed their commitment to integrated and efficient governance mechanisms, incorporating public health into the larger digital and societal framework. They agreed to explore new opportunities for the development of primary health care in the context of the new Alliance for Primary Health Care in the Americas by PAHO, the Inter-American Development Bank (IDB) and the International Bank for Reconstruction and Development (World Bank) *(14).*

Promotion of Policy Action

6.   Seventeen countries have made great progress in this area. Substantial efforts have been made to address the need for an interdisciplinary and multi-stakeholder approach to implement the roadmap effectively, especially in integrating the health sector within e-government initiatives. Comprehensive assessments have been carried out in Member States to incorporate internationally agreed or recognized standards into national policies or digital health agendas. This process has facilitated the rapid adoption of digital solutions, ensuring the achievement of interoperability and data management in a more secure, ethical and disaggregated manner. Concerted efforts have also been made to review, adapt and implement existing policies as a result of national maturity assessments and workshops supported by PAHO. Additionally, much progress has been made in five countries in reviewing the regulatory and legal instruments associated with digital transformation processes in the health sector. This included activities with the health commissions of parliaments and other stakeholders.

Strategic Partnerships and Knowledge Sharing

7.   Progress was made in strengthening the Latin American and the Caribbean Network for Strengthening Health Information Systems (RELACSIS), expanding collaboration and the co-creation of tools that are part of the sector's digital transformation toolkit coordinated by PASB. Additionally, networks were expanded with support from the IDB for adopting international guidelines for the digital documentation of vaccine certificates. New support partners have joined the Information Systems for Health (IS4H) initiative, highlighting the United States Centers for Disease Control and Prevention (CDC), which joins efforts with existing partners such as the U. S. Agency for International Development (USAID), the Spanish Agency for International Development Cooperation (AECID), the IDB, and the World Bank.

Capacity Development at All Levels

8.   A Regional Digital Literacy Program is being implemented in collaboration with the Association of Schools and Programs of Public Health, and with contributions from collaborating centers and specialized academic institutions. This program targets institutional staff, health workers, and the general public, all of whom stand to gain from digital health solutions. Member States have been actively engaging with courses offered through the PAHO Virtual Campus for Public Health, focusing on telehealth, information systems, and digital transformation. These efforts are aimed at ensuring the integration of emerging technologies, such as artificial intelligence, which are critical for enhancing health sector operations. Additionally, progress has been made in reviewing and updating health personnel competencies in many countries, ensuring that health workers are equipped to navigate and operate effectively in the digital age.

Action Needed to Improve the Situation

9.   Strategic measures recommended to improve and accelerate the digital transformation of the health sector in the Region should be focused on the main following areas:

a)   *Infrastructure development*: Enhance digital infrastructure to ensure widespread access to health technologies across diverse geographical and socio-economic groups, especially on connectivity and bandwidth as new determinants of health.

b)   *Interoperability standards*: Implement standardized protocols for data sharing and integration across various health systems and platforms. Special focus should be placed on cross-border interoperability.

c)   *Capacity-building*: Implement digital health literacy programs at all levels, targeting institutional personnel, health workers, and members of the general public who can benefit from digital solutions.

d)   *Policy and regulatory frameworks*: Establish renewed and robust policies and regulations that address data privacy, security, and ethical considerations in digital health.

e)   *Public-private partnerships*: Encourage collaborations between public health authorities and private tech companies to innovate and implement digital health solutions.

f)   *Sustainable innovation*: Promote continuous innovation in the adoption of digital health solutions and interoperable information systems for health while ensuring long-term sustainability.

g)   *Personalized care*: Leverage digital solutions such as AI, blockchain, internet of things, and big data to move toward more personalized public health.

h)   *Equity and accessibility*: Prioritize the reduction of digital divides, ensuring that vulnerable and underserved communities have equal access to digital health services and resources.

i)   *Global collaboration*: Foster international cooperation for sharing best practices, resources, and knowledge in digital health advancements.

Action by the Directing Council

10.   The Directing Council is invited to take note of this report and provide any comments it deems pertinent.

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