Connectivity and Bandwidth: Key Areas for Improving Public Health

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Is there regional or global political commitment to promoting technology to improve public health?

Yes, at the highest level. At the 2018 Global Conference on Primary Health Care: From Alma-Ata towards Universal Health Coverage and the Sustainable Development Goals, delegates expressed commitment to the digital transformation of the health sector (*1*). At the conference held in Astana, Kazakhstan 25–26 October 2018, delegates committed to "support broadening and extending access to a range of health care services through the use of high-quality, safe, effective and affordable medicines, including, as appropriate, traditional medicines, vaccines, diagnostics and other technologies."

Previously, in May 2018, all Member States of the World Health Organization (WHO) passed a resolution on digital health whose vision is "to improve health for everyone, everywhere by 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, developing infrastructure and applications that enable countries to use health data to promote health and well-being, and to achieve the health-related Sustainable Development Goals and the triple billion targets of WHO's Thirteenth General Programme of Work, 2019–2023" (*2*).

Later, in 2019, Member States of the Region of the Americas agreed to advance a Regional Plan of Action for the Strengthening of Information Systems for Health "to strengthen the activities of Member States aimed at upgrading health systems through the use of interconnected and interoperable information systems" (*3*).

Why should connectivity and bandwidth be part of the public health agenda?

Connectivity and bandwidth are critical for success, especially if vulnerable individuals, families, and communities in situations of vulnerabilities are to improve access to health care and reduce inequities. Digital connectivity for all can enrich health service delivery, improve the quality of service and patient safety, and increase the efficiency and coordination of care. Through digital solutions, governments and health-related institutions can expand the possibility of individuals to playing an active role in maintaining their own health and well-being.

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Why connectivity and bandwidth are key for addressing the health needs of individuals, communities, and service providers

There is an increase in the use of various information and communication technologies for the provision of health services and to manage priorities in public health and to reduce inequities in the social determinants of health. People with adequate broadband and connectivity are increasingly making use of these technologies to manage aspects of their lives related to health, well-being, and other areas. Therefore, both connectivity and bandwidth are extremely important to ensure an adequate and sustainable flow of services, to meet the supply and demand requirements in public health.

Would "stay at home" mandates be 100% effective without connectivity and bandwidth for all?

The short answer is no. Frequently, those who need the most from the health system are those who have least access. In digital health this is amplified, as vulnerability of the population frequently accompanies the lack of connectivity. A non equitable approach could end pushing vulnerable populations into even more precarious situations.
This presents a great challenge for public health policies across the Americas, which must solidify the promise of digital transformation to reduce disparities in health, social, economic, and digital capital among people in the region.

Could connectivity and bandwidth generate new forms of inequities in access to health services?

Yes. Unmet health needs can be addressed virtually by using information technologies to both adapt and adopt health technologies to move towards a people-centered health approach. However, without connectivity and appropriate bandwidth, this cannot be properly done. Furthermore, by facilitating access to health services, digital transformation could foster greater equity in access to timely medical care, if it facilitates the assessment, diagnosis, and management of health problems in an effective manner that also minimizing potential risks. Leaving no one behind in the digital age requires reaching populations in conditions of greater social, economic, geographic, or cultural vulnerability, and those who are not digitally literate.

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From the perspective of access to health services, is having a working cell phone the same as being connected?

No. This is very important since many times the statistics of "people with cell phones" generates the false impression that all of them could access health services remotely. Although there are applications and projects that work on "non-smart" cell phones, the majority of these services have been text messages for monitoring treatments, medication reminders, pregnant women, and others. However, when considering "access" to health services that can be provided via telemedicine, it is necessary to have smart phones and faster digital connectivity.

In various situations cell phones may not be ideal in cases where a tablet, desktop computer or other wireless technology could be more suitable for the procedure or required health service. In addition, the variation in cell phone functionalities could impose limitations depending on the characteristics of the device.

Some ways cell phones can be used in health care and public health:
- Guiding and evaluating COVID-19 response (*4*);
- Improving community health workers performance (*5*);
- Supporting smoking cessation (*6*);
- Increasing adherence to treatments in chronic diseases (*7*).

From the perspective of access to health services, what exactly does it mean to be digitally connected?

The answer seems simple. "Be remotely connected to health services with good bandwidth." However, there are some other variables such as understanding how to use of digital health applications, knowing which services are accessible remotely. These high-demand health services are sometimes not offered in the local language or in a way that is culturally acceptable.

Is the Region of the Americas ready for the age of digital interdependence?

Not yet. In fact, no region of the world is ready. However, there is significant commitment. The October 2021 review and approval of a regional policy by the Member States of the Pan American Health Organization (PAHO) support the digital transformation of the health sector throughout the continent. Although significant progress has been made towards recognizing the need for digital transformation in health, there is still a need for renewed policies, modern legislation, guidelines for ensuring the

ethical use of data, interoperability and cybersecurity, mechanisms for secure, ethical, and unbiased adoption of modern technologies such as artificial intelligence, big data, and blockchain.

How this relates to the Information Systems for Health (IS4H) Initiative

Alignment. PAHO has been actively participating in formulating and implementing the Global Strategy on Digital Health. This has included exchange of information, empirical knowledge and lessons learned in the Region of the Americas since the start of the initiative.

Background information. PAHO[1] and the Caribbean leaders in health met in Kingston, Jamaica, in 2016, to cocreate a vision, a subregional plan, and a strategic framework for advancing IS4H in the Americas. Based on discussion and collaboration with the Caribbean countries, a high-level meeting was held in 2017 with the Central American countries and in 2018 with the South American countries. Subsequently, the Plan of Action for the strengthening of IS4H was approved at the 2019 PAHO Directing Council. The Fourth Council of Ministers of the Eastern Caribbean States endorsed a resolution for the same purpose. Since 2016, the IS4H framework and the IS4H Maturity Assessment Tool have been implemented and applied across the Americas.

Vision. The IS4H initiative was created with the vision of implementing universal access to health and universal health coverage in the region through the strengthening of interconnected and interoperable information systems that provide access to open and quality data, strategic information, and digital health tools for decision-making and well-being.

How this relates to the Eight Principles for Digital Transformation of Public Health launched by PAHO in February 2021

In mid-2020, the United Nations presented eight areas of collaboration based on recommendations from a high-level panel to make technical cooperation operational in the age of digital interdependence. Based on the discussions at the two preparatory meetings, and experience accumulated over the previous four years under the IS4H initiative, PAHO adopted those eight principles to reflect the imperatives of the Digital Transformation of the Health Sector that are fully aligned with the Global Strategy on Digital Health.

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[1] Two-minute videos of the PAHO Director and Ministers launching the IS4H Initiative (videos 1 – Video 2).

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1	Universal connectivity	**Ensure** universal connectivity in the health sector by 2030
2	Digital public goods	**Co-create** digital public health goods for a more equitable world
3	Inclusive digital health	**Accelerate** towards inclusive digital health with an emphasis on the most vulnerable
4	Interoperability	**Implement** interoperable, open, and sustainable digital health and information systems
5	Human rights	**Mainstream** human rights in all areas of digital transformation in health
6	Artificial intelligence	**Participate** in global cooperation on artificial intelligence and any emerging technology
7	Information security	**Establish** mechanisms for trust and information security in the digital environment of public health
8	Public health architecture	**Design** public healthcare architecture in the era of digital interdependence

Eight Principles for the Digital Transformation of the Health Sector

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Further Reading

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PAHO/EIH/IS/21-020