



Role of PAHO/WHO in eHealth Capacity Building in the Americas: Analysis of the 2011–2015 period*

David Novillo-Ortiz,¹ Marcelo D'Agostino,¹ and Francisco Becerra-Posada¹

Suggested Citation (original article)

Novillo-Ortiz D, D'Agostino M, Becerra-Posada F. El rol de la OPS/OMS en el desarrollo de capacidad en eSalud en las Américas: análisis del período 2011-2015. *Rev Panam Salud Publica*. 2016;40(2):85–89.

ABSTRACT

Political will and adoption of measures toward the use of eHealth have been steadily increasing, facilitating mobilization of resources necessary to adopt and implement digital services that will make it possible to improve access, expand coverage, and increase financial efficiency of health care systems.

Adoption of the Strategy and Plan of Action on eHealth of the Pan American Health Organization (PAHO) in 2011 by all Member States in the Region of the Americas has led the Region to major progress in this regard, including the following: creation of knowledge networks and development of information sources, establishment of eHealth sustainability models, support for development of electronic health records, promotion of standards on health data and related technologies that ensure exchange of information, use of mobile devices to improve health, and improvement in quality of care through telemedicine.

This article details the main actions carried out by PAHO with regard to eHealth, specifically by the office of Knowledge Management, Bioethics, and Research in the 2011-2015 period (first period of implementation of the PAHO eHealth strategy and plan of action), which include research and capacity-building activities, development of technical guidelines, and formation of knowledge networks.

Key words

Health policies; information technology; telemedicine; Pan American Health Organization; Americas.

In May 2005, the 58th World Health Assembly of the World Health Organization (WHO) adopted Resolution WHA58.28 on cyberhealth or *eHealth*, the first on this subject (1). Inspired by this, in September 2011, the 51st Directing Council of PAHO, through Resolution CD51.R5, adopted the first Strategy and Plan of Action on eHealth, to contribute to the sustainable development of health systems in the Member States (2). In response to the need to facilitate the processing and transmission of digital

information related to health services delivery worldwide, in May 2013 WHO adopted Resolution WHA66.24 on eHealth standardization and interoperability (3), while in September of that same year PAHO established its 2014–2016 Program and Budget (*Official Document 346*), which included an outcome indicator to promote the implementation of the Regional Strategy and Plan of Action on eHealth in the Member States (4). This article details the main actions carried out by PAHO in this area, which include research and capacity-building activities, development of technical guidelines, and formation of knowledge networks.

UPDATE ON eHEALTH PROGRESS AND CHALLENGES IN THE AMERICAS

Since adoption of PAHO's Strategy and Plan of Action of eHealth in 2011, political will and adoption of measures on the use of eHealth have been steadily increasing, facilitating the mobilization of resources necessary to adopt and implement digital services that will make it possible to improve access, expand coverage, and increase financial efficiency of health care systems. The Declaration by the 14th Ibero-American Conference of Ministers of Health (Mexico, 28 October 2014) also reflects this trend (5).

¹ Pan American Health Organization, Washington, D.C., United States of America. Send correspondence to David Novillo-Ortiz, email: novillod@paho.org

* Official English translation from the Spanish original article by the Pan American Health Organization. In case of any discrepancy the Spanish original shall prevail.

A study by WHO and the International Telecommunication Union (ITU) in which 75 countries participated, five of them in the Region (Bolivia, Guatemala, Haiti, Mexico, and Peru), identified four main obstacles to the implementation of eHealth (6): a lack of suitably qualified or experienced professionals to develop and implement eHealth projects; inadequate infrastructure to support programs; a lack of business models to support broad and sustainable eHealth delivery; and a lack of political commitment. Considering these aspects, the following is a breakdown of key measures adopted by PAHO to overcome these barriers and build eHealth capacity:

- a) **Create knowledge networks and develop information sources.** PAHO has supported integration and development of eHealth knowledge networks. Five specific, region-wide actions with a direct impact on Member States merit mention: creation of the PAHO Regional eHealth Observatory; the 9th Regional Congress on Health Sciences Information (CRICS9) on 22-24 October 2012, under the banner “eHealth: Getting Closer to Universal Access to Health”; publication of the project *eHealth Conversations: Using Information Management, Dialogue, and Knowledge Exchange to Move Toward Universal Access to Health* (in Spanish), which presents opinions from specialists, recommended readings, and successful eHealth experiences² (7); publication of a special issue of the *Pan American Journal of Public Health* on eHealth initiatives in Latin America and the Caribbean (8); and an online course on eHealth for managers and decision-makers.
- b) **Lay the foundation for an eHealth sustainability model.** With the intention of supporting Member States in developing eHealth governance models, WHO and ITU published a guide called the *National eHealth Strategy Toolkit* in 2012 (9). Furthermore, in coordination with the

Statistical Conference of the Americas (SCA-ECLAC), PAHO has led the development of *recommended methods for measuring eHealth access and use*, for the purpose of learning what progress the Region’s countries have made in eHealth, to improve effectiveness and efficiency of both public and private health systems (10). To support progress and facilitate knowledge transfer, in addition to field missions, four region-wide capacity-building actions were carried out, in which 23 Member States directly participated: a workshop on monitoring eHealth policies and strategies in Latin America (Colombia, August 2012); a regional technical meeting on eHealth (Guatemala, July 2013); a subregional workshop on development of national eHealth strategies (United States of America, June 2015); and a Subregional Workshop for Barbados and ECC on Electronic Medical Records in the Context of a National and Subregional eHealth Strategy (Barbados, September 2015). As a result of this effort, the eHealth Observatory reports that twelve countries (Brazil, Canada, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Jamaica, Panama, Peru, and the United States) are currently in the development, implementation, and execution phase of a national eHealth strategy.

- c) **Support development of record-keeping to follow patients in different levels of health care, through electronic health records.** In May 2014, as part of the Latin American and Caribbean Network for Strengthening of Health Information Systems (RELACIS), PAHO organized several virtual seminars with experts to learn about the current status of electronic health records (EHR) in the Region. It also convened a virtual forum to analyze the current situation and make region-wide recommendations on EHR, in which 200 people from 21 countries participated. Resulting from this forum, PAHO published the report “Electronic Medical Records in Latin America and the Caribbean: An Analysis of the current situation and recommendations for the Region” (11). Once the Region’s needs had been identified,

PAHO, in coordination with WHO, worked on developing strategic material. First, it led preparation of a manual on implementation of EHR for decision-makers (coming soon). Second, work began in March 2015 to develop WHO guidelines on electronic health records. Both documents will serve as reference points to support further development of these instruments in the Region, where ten countries (Canada, Chile, Costa Rica, El Salvador, Jamaica, Mexico, Panama, Paraguay, Peru, and Uruguay) already have a national electronic health records system that provides immediate and secure information to authorized users.

- d) **Promote compliance with standards on health data and related technologies that ensure compatibility and information sharing.** In 2012, WHO set up a world forum on health data standardization and interoperability, which met for the second time in 2014, bringing together public- and private-sector interlocutors to build capacity and promote adoption of standards at all levels of health systems. A total of ten of the Region’s countries (Argentina, Brazil, Canada, Chile, Costa Rica, Guatemala, Mexico, Panama, Uruguay, and the United States), in addition to the WHO eHealth Observatory, participated in the two meetings of this forum. In this same vein, PAHO organized a regional technical consultation meeting in Peru in April 2013 on eHealth data standardization and interoperability, at which seven countries (Barbados, Chile, Colombia, Costa Rica, Jamaica, Mexico, and Peru) shared experiences and challenges. Finally, PAHO prepared *eHealth in Latin America and the Caribbean: interoperability standards review*, the first systematic literature review on implementation and effective use of standards to attain interoperability in Latin America and Caribbean countries, which also provided recommendations to achieve this objective in the Region (12).
- e) **Use of mobile devices to improve health.** The high penetration of mobile devices in the Region of the Americas, with an average of 108.1 mobile telephone lines per 100 population and

² The issue addresses twelve subjects: infrastructure, information systems, telemedicine, access to information, policies, education, patient safety, electronic health records, interoperability standards, legal issues, e-government, and eHealth management.

1.066 billion people with access to mobile phone service in 2015, is an opportunity that is being taken advantage of for health (13). Specifically, in 2012, WHO and ITU implemented the *Be He@lthy, Be Mobile* initiative, which promotes use of mobile technology—in particular apps and text messages—to help WHO Member States fight the ever-growing burden of noncommunicable diseases. Currently being implemented in Costa Rica as a pilot project, the initiative will soon expand to other countries in the Region. WHO has prepared a technical document for the purpose of scaling up worthy projects: *The MAPS Toolkit: mHealth Assessment and Planning for Scale* (14).

- f) **Improving health service accessibility and quality of care through telemedicine.** Due to lack of a clear methodology to evaluate telemedicine services, PAHO organized a virtual forum in April 2015 to discuss proposed evaluation indicators for telemedicine projects, in which 52 people from 13 countries participated (15). In tandem, and to provide guidelines in this regard, PAHO prepared *Framework for the Implementation of a Telemedicine Service* (16), a technical document targeted to decision-makers involved in the application of telemedicine both in health services settings and in society in general. According to official data, 11 countries in the Region have a national telehealth policy or strategy (Argentina, Canada, Colombia, Costa Rica, Cuba, Dominican Republic, Jamaica, Paraguay, Peru, Uruguay, and the United States).

Based on the above, and on the results identified by PAHO in its midterm review of the Strategy and Plan of Action on eHealth (17) in June 2016, Table 1 lists the main progress and challenges regarding eHealth in the Region.

For the purpose of ensuring the continuity and sustainability of efforts made so far, and to address future challenges, interagency coordination efforts have been made with other key actors, such as the Organization of American States, the International Telecommunication Union, the Inter-American Development Bank, and the Statistical Conference of the Americas of the Economic Commission for Latin America and the Caribbean, as well as with other institutions with which PAHO has agreements, such as the Buenos Aires Italian Hospital, the National Center for Technological Excellence in Health of Mexico, Harvard University, the University of Illinois, and the Open University of Catalonia.

NEXT STEPS AND NECESSARY ACTIONS TO IMPROVE THE SITUATION

Based on the progress and challenges discussed, the following are some general measures that will support coming progress and that should be taken into account for the 2016-2017 period:

- Promote the formulation of national eHealth strategies in the countries that do not have them.
- Work to include new areas that have emerged since adoption of the Strategy and Plan of Action, and that were not initially included, such as the Internet of Things, open data, and big data, among others.

- Strengthen communication and institutional coordination between organizations, donors, and Member States, including key sectors other than the health sector, in order to ensure that strategic, technical, and budgetary components are coordinated and aligned with a single objective, focused on improving the quality of life of the population, and implemented so as to avoid duplication of effort.
- Promote the generation of evidence and development of guidelines on eHealth that favor decision-making and project development in a strategic and sustained manner.
- Establish a road map for the role of eHealth within the framework of the Sustainable Development Goals; specifically, Goal 3, “Ensure healthy life and promote well-being for all at all ages,” paying special attention to maternal and child health, HIV/AIDS infection, malaria, and chronic diseases.

The Region has made great strides with respect to eHealth, specifically with regard to forging national strategies and governance models, developing methodologies and guidelines, investing in infrastructure, and creating local and national legal frameworks. However, unique patient identification, the exchange of clinical data between systems, and a legal framework that facilitates the exchange of information at the regional level still constitute a challenge. Other subjects that will need additional research are aspects related to cybersecurity (data privacy and protection), as well as patient behavior in new health care scenarios where technology plays a key role.

TABLE 1. eHealth Progress and Challenges in the Region of the Americas

Progress	Challenges
<ul style="list-style-type: none"> • National partnerships forged as a key to mobilizing the necessary resources for the adoption of eHealth strategies. • Development of methodological documents to define political priorities with respect to eHealth. • Development of guidelines that serve as a baseline for a strategy to strengthen and determine basic organizational and technological infrastructure in health services. • Financing of eHealth projects with public funds at the local and national levels, especially involving telemedicine and electronic health records. • Enhancing legal frameworks supporting the use of eHealth and facilitating the exchange of clinical information at the national level. 	<ul style="list-style-type: none"> • Conduct additional research on the use of mobile technology in epidemiological surveillance services. • Develop a proposal for unique patient identification that incorporates all electronic services, including those beyond the health sector, and uses live birth records as a reference point. • Continue to invest in infrastructure to achieve significant progress with regard to big data and e-prescription projects. • Devise a common framework for a standard or minimum dataset to facilitate the exchange of information between systems. • Determine a legal framework that will promote the exchange of clinical information at the regional level.

REFERENCES

- World Health Organization. *eHealth* [Internet]. 58th World Health Assembly; 16-25 May 2005; Geneva, Switzerland. Geneva: WHO; 2005 (Resolution WHA58.28). Accessed 19 February 2016. Available at: <http://www.who.int/healthacademy/media/WHA58-28-en.pdf?ua=1>
- Pan American Health Organization. Strategy and Plan of Action on *eHealth* (2012-2017) [Internet]. 51st Directing Council of PAHO, 63rd session of the Regional Committee of WHO for the Americas; 26-30 September 2011; Washington, DC. Washington (DC): PAHO; 2011 (document CD51/13). Accessed 19 February 2016. Available at: <http://iris.paho.org/xmlui/bitstream/handle/123456789/7663/CD51-13-e.pdf?sequence=1&isAllowed=y>
- World Health Organization (WHO). *eHealth* standardization and interoperability [Internet]. 66th World Health Assembly; 20-27 May 2013; Geneva, Switzerland. Geneva: WHO; 2013 (Resolution WHA66.24). Accessed 19 February 2016. Available at: http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R24-en.pdf
- Pan American Health Organization (PAHO). Program and Budget of the Pan American Health Organization 2014-2015 [Internet]. 52nd Directing Council of PAHO, 65th session of the Regional Committee of WHO for the Americas; 30 September-4 October 2013; Washington, DC. Washington DC: PAHO; 2013 (document CD52-OD346). Accessed 19 February 2016. Available at: http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=22756&Itemid=270&lang=en
- Secretaría General Iberoamericana. Declaración de la XIV Conferencia Iberoamericana de Ministras y Ministros de Salud [Internet]. XIV Conferencia Iberoamericana de Ministras y Ministros de Salud; 28 October 2014; Veracruz, Mexico. Mexico City: SEGIB; 2014. Accessed 8 March 2016. Available at: <http://segib.org/wp-content/uploads/DCLRMS-XIV-SALUD-ESP.pdf>
- World Health Organization (WHO). *eHealth* and innovation in women's and children's health: A baseline review. Geneva, Switzerland: WHO; 2014. Accessed 19 February 2016. Available at: <http://www.who.int/goe/publications/baseline/en>
- Pan American Health Organization (PAHO). Conversaciones sobre eSalud: Gestión de información, diálogos e intercambio de conocimientos para acercarnos al acceso universal a la salud. Washington (DC): PAHO; 2014. Accessed 8 March 2016. Available at: <http://bit.ly/conversaciones-pdf>
- Pan American Health Organization (PAHO). Special Issue on *eHealth* in the Americas. Rev Panam Salud Publica. 2014;35(5/6). Accessed 8 March 2016. Available at: http://www.paho.org/journal/index.php?option=com_content&view=article&id=145&Itemid=259&lang=en
- World Health Organization (WHO). International Telecommunication Union (ITU): National *eHealth* Strategy Toolkit [Internet]. Geneva: WHO, ITU; 2012. Accessed 8 March 2016. Available at: <http://www.who.int/ehealth/publications/overview.pdf>
- Conferencia Estadística de las Américas (CEA) de la Comisión Económica para América Latina y el Caribe (CEPAL), Grupo de Trabajo sobre Medición de las Tecnologías de la Información y las Comunicaciones (TIC). Recomendaciones metodológicas para la medición de acceso y uso de las tecnologías de la información y las comunicaciones (TIC) en el sector salud [Internet]. Chile: CEA-CEPAL; 2014. Accessed 8 March 2016. Available at: <http://www.cepal.org/deype/noticias/paginas/7/53767/ModuloTIC-Salud2014-metodologia.pdf>
- Pan American Health Organization (PAHO). Electronic Medical Records in Latin America and the Caribbean: An Analysis of the current situation and recommendations for the Region. Washington DC: PAHO; 2016. Accessed 8 March 2016. Available at: <http://iris.paho.org/xmlui/handle/123456789/28210>
- Pan American Health Organization (PAHO). *eHealth* in Latin America and the Caribbean: interoperability standards review. Washington DC: PAHO; 2016. Accessed 8 March 2016. Available at: <http://iris.paho.org/xmlui/handle/123456789/28189>
- International Telecommunication Union. Key 2005-2015 ICT data for the world, by geographic regions and by level of development, for the following indicators [Internet]. Geneva: ITU; 2015. Accessed 8 March 2016. Available at: www.itu.int/en/ITU-D/Statistics/Documents/statistics/2015/ITU_Key_2005-2015_ICT_data.xls
- World Health Organization (WHO). The MAPS Toolkit: mHealth Assessment and planning for scale [Internet]. Geneva: WHO; 2015. Accessed 8 March 2016. Available at: <http://www.who.int/reproductivehealth/publications/mhealth/maps/en>
- Novillo-Ortiz D (ed.). Defining evaluation indicators for telemedicine as a tool for reducing health inequities: Study and results of a community of practice [Internet]. Washington, DC: Pan American Health Organization; 2016. Accessed 20 July 2016. Available at: <http://iris.paho.org/xmlui/bitstream/handle/123456789/28562/PAHOKBR16006-eng?sequence=5>
- Novillo-Ortiz D (ed.). Framework for the Implementation of a Telemedicine Service [Internet]. Washington, DC: Pan American Health Organization; 2016. Accessed 20 July 2016. Available at: http://iris.paho.org/xmlui/bitstream/handle/123456789/28414/9789275119037_eng.pdf?sequence=5
- Pan American Health Organization (PAHO). Strategy and Plan of Action on *eHealth*: Midterm Review [Internet]. 158th Session of the Executive Committee of PAHO; 20-24 June 2016; Washington, DC. Washington (DC): PAHO; 2016 (document CE158/INF/13). Accessed 1 July 2016. Available at: http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=34599&Itemid=270&lang=en

RESUMEN**El rol de la OPS/OMS en el desarrollo de capacidad en eSalud en las Américas: análisis del período 2011-2015**

La voluntad política y la adopción de medidas en relación con el uso de la *eSalud* han ido en aumento de forma constante, favoreciendo la movilización de los recursos necesarios a fin de adoptar y poner en marcha servicios digitales que permitan mejorar el acceso, ampliar la cobertura y aumentar la eficiencia financiera de los sistemas de atención de salud.

Con la aprobación de la Estrategia y Plan de Acción de eSalud de la Organización Panamericana de la Salud (OPS) en 2011 por todos los Estados Miembros de la Región de las Américas, se han realizado importantes avances a este respecto en la Región, entre los que se destacan: la creación de redes de conocimiento y desarrollo de fuentes de información, el establecimiento de modelos de sostenibilidad en materia de eSalud, el apoyo al desarrollo de los registros electrónicos de salud, la promoción de normas sobre datos de salud y tecnologías conexas que garanticen el intercambio de información, la utilización de los dispositivos móviles para mejorar la salud y la mejora de la calidad asistencial por medio de la telemedicina.

El presente artículo detalla las principales acciones ejecutadas por la OPS en eSalud, específicamente por la Oficina de Gestión del Conocimiento, Bioética e Investigación en el período comprendido entre 2011 y 2015 (primer período de implementación de la estrategia y plan de acción de eSalud de la OPS), entre las que se encuentran actividades de investigación y desarrollo de capacidad, la creación de lineamientos técnicos y la construcción de redes de conocimiento.

Palabras clave

Políticas de salud; tecnología de la información; telemedicine; Organización Panamericana de la Salud; Américas.