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REVIEW

Persisting Barriers to the Adoption of Telemedicine in Latin America After the COVID-19 Pandemic

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Abstract

The pandemic spurred a rapid uptake of telemedicine by sidelining or overcoming the various challenges of implementing remote patient-care solutions, identified in numerous studies. Although the pandemic was the major factor driving adoption of telemedicine and telehealth, there are still several barriers that health systems need to address. However, health care administrators can rely on this modality of care as evidence largely shows that it is safe, effective, and widely accepted. This technical report gives a broad-strokes update on the development of telemedicine after the COVID pandemic in Chile, Brazil, Mexico and Colombia—the four countries that made the greatest strides in the field of telemedicine and telehealth in Latin America, identifying which barriers still persist to its full integration into the health system.

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In Latin America, various countries have made significant progress since 2010 in implementing telemedicine and telehealth systems. While it is difficult to name a particular country that has now achieved widespread use of telemedicine across all health specialties, some countries stand out as having pushed more than others to adopt telemedicine in their health systems. Chile, Brazil, Mexico, Colombia, and Argentina made the most advances in the field of telemedicine and telehealth in Latin America.

Progress Latin American Countries Since Covid-19

Listed here (Table 1) are four countries that made the greatest strides in telemedicine and telehealth in Latin America: Brazil, Chile, Columbia, and Mexico.

Brazil implemented telemedicine programs in several health areas, including primary and specialized care. Telehealth has been used to improve access to medical care in rural and remote areas, including among indigenous communities. Brazil also has specific legislation that regulates telemedicine.

Chile has numerous telemedicine and telehealth programs and platforms, particularly for use in rural and remote areas. It has promoted the implementation of information and communication technologies in medical care, such as teleconsultation and telemonitoring, through government programs like "*Salud Conectada*" (Connected Health) and "*Telesalud*" (Telehealth).

Mexico implemented telemedicine and telehealth to enhance medical care and accessibility. One of its programs, "Médico en tu casa" (Doctor in Your Home), employs telemedicine to provide medical assistance to individuals facing difficulties in accessing traditional health services.

Colombia had regulations in place for telemedicine care prior to the pandemic. However, the use of this discipline significantly increased during the pandemic with over 127 million virtual visits through teleconferences and teleconsultations. This information was published on the Ministry of Health website in Colombia, which associates the rise in the adoption of telemedicine as a response to the impact of COVID-19.

In addition, Colombia developed policies and regulations to promote telemedicine and telehealth. It implemented programs like "*Mi Doctor*" (My Doctor), which provides virtual medical consultations through mobile applications.

Columbia made numerous efforts to promote interoperability and the exchange of clinical information in the health system. According to Fernando Portilla,* "Colombia has been exploring the use of telemedicine for just over a decade. Various telemedicine initiatives have resulted in important

Table 1. Rankings for download and upload speeds among the countries discussed in the report

Country	Average internet speed (Mbps)	Ranked in the World (*n*)	Median internet speed (Mbps)	Ranked in the world
Brazil	172.2	35	97.52	30
Chile	298.5	3	216.46	1
Columbia	125.86	51	89.61	39
Mexico	77.07	82	49.91	78
For comparison				
United States	256.03	12	189.48	6

Source: Wisevoter. "Internet Speed by Country": URL https://wisevoter.com/country-rankings/internet-speed-by-country/#brazil
Mbps: "Megabits per second." A commonly used unit to measure download and upload speeds.

experiences gained by academia, service providers, and stakeholders who focused on providing specific services in certain regions of the country. The experiences allowed us to identify the benefits of this way of providing remote services, especially in rural and faraway areas of the country, given the conditions relating to health service supply and demand in these areas. The country has used these initial experiences to draft regulations for telemedicine use as part of the healthcare model.

In comparison, states Mr. Portilla, "Prior to the COVID-19 pandemic, adoption within the Colombian health services model was negligible. It was only the needs and conditions of healthcare arising from the pandemic that made it a valuable alternative and meant that it would be used more intensively at the national level, representing a valuable tool for patients, professionals, and organizations in the sector to meet the challenges of the pandemic, which also meant introducing regulatory flexibility."[1]

Existing Barriers

Significant progress has been made in facilitating infrastructure and opportunities for telemedicine and telehealth adoption in Latin America. However, the full potential for telemedicine in the region is still limited by the original barriers,[1] which are detailed below:

Limited Connectivity Infrastructure

The availability of a reliable, stable, and rapid internet connection is essential for conducting virtual medical consultations and transmitting medical data. The lack of a reliable, quality connectivity infrastructure in some rural or remote areas can hinder access to telemedicine services. An Inter-American Development Bank (IDB) report entitled "Rural Connectivity in Latin America and the Caribbean—A Bridge to Sustainable Development in Times of Pandemic," found that in 2020 at least 77 million people were without access to a quality internet connection in rural areas.[2]

While 71% of the urban population of Latin America and the Caribbean (LAC) have connectivity options, this contrasts with the less than 37% who have them in rural areas—a gap of 34%—which compromises the enormous social, economic, and productive potential. In total, 32% of the population of LAC—some 244 million people—do not use online services. The connectivity gap is more pronounced when the distinction is made between urban and rural populations, reaching a difference of 40% in some cases. Among the total number of people without internet access in the region, 46 million live in rural areas.[3]

The Digital Divide and Unequal Access to Technology

In addition to the connectivity gap, inequality between vulnerable and well-off populations in Latin America is seen in the digital divide that exists in terms of both technological tools and knowledge. This factor can be a challenge to the widespread adoption of telemedicine. In countries with high poverty rates in their population, access to technological devices like smartphones, computers, or tablets is limited, which is key to participating in virtual consultations. Moreover, some demographic groups, such as the elderly or people on low incomes, may have difficulty adapting to new technologies.

Regulations and Legal Frameworks

In some Latin American countries, regulations, and legal frameworks regarding telemedicine may be inconsistent or vague. A lack of clear regulations can create uncertainty for healthcare providers and patients and hinder the widespread adoption of telemedicine.

A study by the Inter-American Development Bank in LAC shows how far regulatory frameworks facilitating the implementation and use of digital solutions are developed.[3] The study identifies key aspects that regulatory frameworks need to include to advance the adoption of electronic medical record (EMR) systems and analyzes the legal progress and areas for improvement in 26 countries in the region. Based on an analysis of 115 legal texts,[4] the study looks at the achievements and pending items in the region with regard to legislation for the

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implementation of EMRs, data protection, the conduct of health professionals, patient rights, interoperability, and the use of standards. Using a scale of 1 to 5 to gauge the level of regulatory maturity, classified from lowest to highest as basic, developmental, advanced, optimal, and consolidated, the evaluation instrument applied to these countries drew the following results.

Resistance to Change and Preference for Traditional Medical Care

Some people may have an entrenched preference for traditional medical care, involving a physical visit to a doctor's office. A lack of awareness about the benefits of telemedicine and telehealth, as well as a lack of confidence in the quality of virtual care, may be barriers to adoption.

Data Privacy and Security

Concerns about the privacy and security of medical data are important in any healthcare context, telemedicine included. Mistrust in how personal and medical information is protected may be an obstacle for people to share their data through telemedicine platforms.

Reimbursements and Payment Models

In some Latin American countries, health systems and health insurance may not be suited to properly covering or providing reimbursement for telemedicine services. The absence of a clear payment model and reimbursement structure can deter healthcare providers from adopting telemedicine as a common practice.

Lessons Learned: Have Barriers Been Overcome?

As Juan Pablo Uribe, Global Director for Health, Nutrition, and Population at the World Bank, noted, "The pandemic has shown that health systems need to be well funded and able to deal with shocks and surges." In this respect, we concur with his assessment that many countries in LAC implemented effective and innovative measures, including expanding remote health and telemedicine services during the pandemic.[5] They increased the use of data in decision-making processes and established new public–private partnerships that expanded access to healthcare during peaks in the pandemic. These innovations can be harnessed and utilized to push forward broader and more lasting reforms to achieve greater resilience in the health sector. In telemedicine and telehealth, the lessons learned left some promising upsides.

Plenty of Experiences Implemented—with Many Documented

These may serve as a foundation and reference to guide current or future processes toward sustainability and cost-effectiveness. Knowledge can come from internal or external sources by developing or acquiring it. This is never the product of the activity of one organization working in isolation.[6]

Open-source Solutions

To lower the costs of developing solutions and to promote interoperability among them (the ability to dialogue with each other, exchanging data such as patients' EMRs), open-source solutions that are free and cloud based are being used more and more by telemedicine and e-health developers. The advantages of free software over proprietary software are reduced dependence on vendors of proprietary code, access to more tools, the ability to test the software before buying or renting (demos), support from a community of users, access to the code and the ability to adapt it to the medical center's needs, no excessive or useless features, installation of necessary components only, more security and faster troubleshooting, and application updates.

One example of a solution that is open source and free for countries is the Pan American Health Organization's development of a digital platform to bring telehealth services to remote populations in LAC, making telemedicine the "new normal" for medical staff and for patients with chronic diseases, also known as NCDs or "non-communicable diseases."[7]

Open-source or "free" software does not mean that everything is free (implementation of this type of application is complex and expensive). However, it is still usually less costly than proprietary software as there are no initial or recurring license costs.

Greater Cooperation and Collaboration Between Institutions and Professionals Involved in Implementation, Whether Results are Positive or Negative

The lessons learned through collaborative work are a great legacy of the pandemic. Teamwork, cooperation among institutions in flexible models, and the possibilities of virtual work make the exchange and distribution of knowledge a priority.

Assistance, inter-consultations among professionals, and virtual-format medical training began to be viewed as a permanent complementary option for health services to offer. They also need support from laws, budgets, regulations, and professional association ethics codes and become part of individual and clinical healthcare decisions.

Communication of Medical Knowledge

Technology made it possible to discover and connect people with the technical knowledge to make institutional improvements. While technology is no replacement for the value of tacit knowledge exchanged through direct human contact, it does help people locate the knowledge they need and network with each other. Telemedicine facilitates seeking second opinions, remote training for specialists, continuous medical training, case presentations, and many other instances of communicating and exchanging medical knowledge.[8]

Patients Became More Active in Managing Their Health

It has become increasingly possible for patients to assume a more active role in their health stewardship, thus avoiding the treatment disruptions caused by social-distancing measures. In addition, the patient's involvement has become essential to enable evaluation of what our user population is like, what resources they have, and what communication channels they usually use—making patient empowerment part of the new normal.

Formation of Interdisciplinary Teams and Collaborative Work

Creating a permanent space for exchange is essential to influence high-level decisions between public or private health sector institutions, professional associations, health professionals, scientific associations and societies, and civil society.

Advances in Regulatory Frameworks

The laws and regulations governing the practice and use of telemedicine vary in each Latin American country. According to the IDB study cited above, only 13 of the countries studied have regulations in force that specifically relate to the use of telemedicine. In the case of Uruguay, it has Act 19,869, while Panama has Act 203.

Conclusions

In Argentina, before the pandemic, National Mental Health Act No. 26,657 already recognized telemedicine as a valid tool in mental healthcare. Argentina's Ministry of Health has also issued specific resolutions to regulate telemedicine in the country. There is also Act 27,706 of 2020, establishing the Unified Federal Program for Computerization and Digitalization of Medical Records of the Argentine Republic, Act 27,553, and Decree 98/2023 of 2023, establishing new regulations on Digital Medical Prescriptions and Telecare.[9]

In Brazil, telemedicine is regulated by the Federal Council of Medicine (CFM by its initials in Portuguese). In 2018, CFM Resolution No. 2,227 was issued, setting out the ethical and technical standards for practicing telemedicine. During the pandemic, the country regulated the use of chat and video calls as channels for medical consultation. Regarding the use of WhatsApp, during COVID, Act 13,989 on Telemedicine authorized the use of telemedicine for the duration of the crisis caused by the coronavirus (SARS-CoV-2).[10]

In Chile, Act No. 20,584 regulates the rights and duties of patients and establishes rules for telemedicine. The Ministry of Health has also issued regulations and technical guides for the implementation of telemedicine there.

In Colombia, Act No. 1438 of 2011 and Decree No. 538 of 2015 establish rules for telemedicine implementation. In addition, the Ministry of Health and Social Protection has issued specific guides and guidelines for practicing telemedicine in the country.[11]

Finally, in Mexico, the General Health Council issued Official Mexican Standard NOM-024-SSA3-2019 in 2020, regulating the use of information and communication technologies to provide health services. The standard includes provisions for telemedicine and teleconsultation.[12]

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The author is responsible for writing and revisions of this article.

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References

1. Ministerio de Salud de Colombia. Dos Años de Posicionamiento de La Telemedicina En Colombia. Minsalud.gov.co; 2019 [cited 2023 Mat 29]. Available from: www.minsalud.gov.co/Paginas/Dos-anos-de-posicionamiento-de-la-telemedicina-en-Colombia.aspx#:~:text=Telemedicina%20en%20el%20covid%2D19.
2. DOF—Diario Oficial de La Federación. Dof.gob.mx; 2023 [cited 2023 May 28]. Available from: dof.gob.mx/nota_detalle.php?codigo=5280847&fecha=30/11/2012
3. Marco Normativo Para La Salud Digital En América Latina Y El Caribe: El Caso de Las Historias Clínicas Electrónicas: Avances Y Tareas Pendientes. Publications.iadb.org; 2022 [cited 2023 May 29]. Available from: publications.iadb.org/es/marco-normativo-para-la-salud-digital-en-america-latina-y-el-caribe-el-caso-de-las-historias
4. Ftouni R, AlJardali B, Hamdanieh M, Ftouni L, Salem N. Challenges of telemedicine during the COVID-19 pandemic: a systematic review. BMC Med Inform Decis Mak. 2022;22(1):207. doi: 10.1186/s12911-022-01952-0
5. Kruse C, Heinemann K. Facilitators and barriers to the adoption of telemedicine during the first year of COVID-19: a systematic review (Preprint). J Med Internet Res. 2022;24(1):e31752. doi: 10.2196/31752
6. Saigí-Rubió F. Promoting telemedicine in Latin America in light of COVID-19. Rev Panam Salud Pública. 2023;47:e17. doi: 10.26633/rpsp.2023.17
7. Garcia Saiso S, Marti MC, Malek Pascha V, Pacheco A, Luna D, Plazzotta F, et al. Barreras Y Facilitadores a La Implementación de La Telemedicina En Las Américas. Rev Panam Salud Pública. 2021;45:1. doi: 10.26633/rpsp.2021.131
8. Construyendo Sistemas de Salud Resilientes En América Latina Y El Caribe: Lecciones Aprendidas de La Pandemia de COVID-19 (December 2022)—World | ReliefWeb. Reliefweb.int;

2023 [cited 2023 May 29]. Available from: reliefweb.int/report/world/construyendo-sistemas-de-salud-resilientes-en-america-latina-y-el-caribe-lecciones-aprendidas-de-la-pandemia-de-covid-19-diciembre-2022
9. Chueke, D. What the pandemic left us: regulatory advances for telemedicine and telehealth in Argentina. Telehealth Med Today. 2023;8(3). doi: 10.30953/thmt.v8.413
10. Brasil | SOCIAL DIGITAL. Socialdigital.iadb.org. [cited 2023 May 29]. Available from: socialdigital.iadb.org/es/node/19135
11. Salud Digital | El Avance de La Salud Digital En El Sistema de Salud En Chile. Salud Digital; 2021 [cited 2023 May 29]. Available from: saluddigital.com/es/noticias/el-avance-de-la-salud-digital-en-el-sistema-de-salud-en-chile/
12. Salud, Centro Nacional de Excelencia Tecnológica en. Cédula de Instrumentos Jurídicos Aplicables a La Práctica de La Telesalud En México. Gob.mx. [cited 2023 May 29]. Available from: www.gob.mx/salud/cenetec/documentos/cedula-de-instrumentos-juridicos-aplicables-a-la-practica-de-la-telesalud-en-mexico