



## Telehealth in Latin America: Progress, Challenges, and Opportunities in the Face of COVID-19

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*The COVID-19 pandemic has accelerated the use and importance of telehealth and telemedicine globally. In industrialized countries, stay-at-home measures and changes to government regulations regarding telehealth resulted in an over 100-fold increase in demand within weeks. The COVID-19 has raged across Latin America for most of 2020, with associated high rates of illness and death. The objective of this article is to review some of the successes and challenges of telehealth in Latin America and highlight opportunities for action within the context of COVID-19.*

*We identify several positive trends in telehealth adoption across the region as well as some promising case studies on the use of telehealth platforms for delivering care when needed. We also identify barriers that have limited the scale of telehealth in Latin America during the*

*current phase of the pandemic. Limiting factors include inadequacies in long-term evolution telecommunication availability and access to digital trainings for healthcare workers. In addition, political commitment, legislation, and regulation have yet to catch up with demand.*

*Finally, we present opportunities to more effectively scale these technologies, across Latin America for the current emergency, as well as reducing or controlling healthcare costs, addressing health disparities, and providing improved health care, especially in rural areas.*

### COVID-19 IN LATIN AMERICA

From March to August 2020, COVID-19 spreads rapidly across Latin America with associated high rates of illness and death. As of November 1, 2020, there were over 11.3 million confirmed COVID-19 cases in Latin America and the

Caribbean. Brazil and Mexico have been affected particularly hard, with over 6 million cases between these two countries. Brazil and Mexico rank second and fourth, respectively, in countries with the highest number of deaths from COVID-19 worldwide.<sup>1</sup> As with the rest of the world, efforts have been made to limit the spread and consequences of the pandemic throughout the region, including the widespread use of stay-at-home and quarantine measures.<sup>2</sup>

### **ACCELERATED INNOVATION FROM COVID-19**

The disruption of COVID-19 has accelerated technological innovation and pushed forward policy changes related to telehealth in Latin America. The tele-monitoring segment accounted for 25% of the Latin America telemedicine market share in 2019. Additionally, the call centers segment represented 40%.<sup>3</sup>

Several elements are required for telehealth innovations to take hold and scale, including adequate connectivity and technology infrastructure, supportive policy frameworks, reimbursement measures, adequate security, a technology-savvy workforce, and protection of personal health information. We examine these factors in the context of Latin America later.

### **REGIONAL INTERNET CONNECTIVITY**

Reliable digital connectivity is a requisite for telehealth expansion. Approximately 60.8% of the people in the region actively use the Internet.<sup>4</sup> Table 1 outlines the Internet usage as a percentage of the population by Latin American country in 2016.

While Internet usage is high, long-term evolution (LTE) telecommunication capabilities for wireless broadband communication for mobile devices are not uniform throughout Latin America, which poses a challenge to telehealth

scalability. On average, LTE represented 8.9% of all lines in 2015. Differences between markets ranged from 48.9% in Uruguay to 0.11% in Nicaragua.

This restricted access in some countries is detrimental to telehealth. The Pan American Health Organization recommends that any online interactions between a clinician and a patient for the purpose of providing diagnostic or therapeutic advice through electronic means should be conducted over fast and stable Internet and broadband connections, including asymmetric digital subscriber line, fiber optic, cable, or 4G, with at least 1 MB/300 kb.<sup>7</sup>

### **MATURING POLICY AND REGULATORY CLARITY**

Legislation and regulation have the ability to significantly advance or impede telehealth services. Political commitment is key to realizing the full potential of telehealth through the sustainable, appropriate, and integrated implementation of initiatives, whether on telehealth, standards, interoperability, electronic medical records, digital literacy, or use of mobile devices for health.<sup>4</sup> Some examples from the region are presented later.

On January 31, 2020, for example, the Congress of Colombia enacted Law 2015, which created an interoperable electronic medical records system that grants medical professionals online access to relevant clinical data. Under the new law, healthcare providers are required to fill out and manage medical data, documents, and records on an interoperable platform established by the government. The law places the Ministry of Health and Social Protection (MHSP) in charge of defining and implementing the mechanisms and requirements for the interoperability of the medical records. The law stipulates that the

Table 1. Internet usage by Latin American country in 2016

Country	Population <sup>5</sup>	Internet usage (%) <sup>6</sup>
Barbados	294,560	80
Bahamas	337,721	80
Chile	18,186,770	75
Argentina	45,479,118	73
Trinidad and Tobago	1,208,789	73
Antigua and Barbuda	98,179	73
Brazil	211,715,973	69
Uruguay	3,387,605	66
Costa Rica	5,097,988	66
Colombia	49,084,841	64
Mexico	128,649,565	62
Dominican Republic	10,499,707	61
Venezuela	28,644,603	60
Peru	31,914,989	57
Ecuador	16,904,867	54
Panama	3,894,082	54
Paraguay	7,191,685	51
Jamaica	2,808,570	45
Bolivia	11,639,909	40
Cuba	11,059,062	39
Guyana	750,204	36
Guatemala	17,153,288	35
Honduras	9,235,340	30
El Salvador	6,481,102	29
Nicaragua	6,203,441	25
Haiti	11,067,777	12

implementation of this platform must be completed countrywide by 2025.<sup>8</sup>

As a response to the COVID-19 pandemic, the Brazilian Ministry of Health temporarily allowed telemedicine through Ordinance No. 467, issued on March 23, 2020. Such Ordinance provides for the possibility of telemedicine in both public and private health system during the coronavirus pandemic in Brazil. Under the provisions of Ordinance No. 467, medical appointments must

be made directly between the healthcare provider and the patient through an online system that ensures the integrity, security, and confidentiality of patient information. E-prescriptions are also temporarily permitted under the condition that digital certifications and keys are issued by the government-approved e-signature organization.<sup>9</sup>

In Puerto Rico, Governor Wanda Vázquez Garced signed Joint Resolution 491 on March 20, 2020, which makes the territory's telehealth

laws more flexible by easing the requirements for medical professionals to conduct telehealth sessions during the pandemic.<sup>10</sup>

Internationally, there have been calls for legislation that would facilitate telehealth services between nations in order to combat the COVID-19 pandemic. The global health community is turning to digital technologies, data, and cross-border e-health interactions to share evidence and experience to detect, prevent, respond to, and recover from COVID-19. This requires a sound digital framework to support the free flow of data, protect privacy and security, and overall provide a trusted environment for digital exchanges.<sup>11</sup>

#### **PAYMENT AND REIMBURSEMENT CONSIDERATIONS**

In many Western countries, federal governments passed emergency legislation to permit telehealth payments and reimbursement of providers. In the United States, for example, the Centers for Medicare & Medicaid Services is expanding this benefit on a provisional basis under the 1135 Waiver Authority and Coronavirus Preparedness and Response Supplemental Appropriations Act. Under this waiver, Medicare began paying for office, hospital, and other visits furnished via telehealth, including an inpatient's place of residence, starting in March 2020. Prior to this waiver, Medicare would only pay for telehealth on a limited basis. A recipient of the service had to reside in a designated rural area and was required to travel to a clinic, hospital, or another medical facility for the service.<sup>12</sup>

Insurance companies and healthcare payers in Latin America have encountered and had to contend with ambiguous and irregular telehealth policies and e-health legal frameworks over the years. As of November 1, 2020, Chile, Colombia, Costa Rica, Peru, and Uruguay clearly define

medical jurisdiction, liability, or reimbursement of telehealth services, while Argentina, Guatemala, Mexico, and Panama do not.<sup>13</sup> Financial models and incentives for healthcare providers and insurances can be refined further to accelerate its usage and reap its benefits. The financial sustainability of such models and incentives has been one of the main challenges, where reimbursement has been and continues to focus more on paying for care processes that occur within healthcare facilities and in-person rather than care processes that affect patient outcomes.<sup>14</sup>

#### **DIGITAL TRAINING AND A TECHNOLOGY-SAVVY WORKFORCE**

A well-trained and technology-savvy workforce is the key to telehealth expansion. Telehealth training and research programs in Latin America are relatively scarce and generally poorly documented.<sup>15</sup> One of the most common challenges with medical to consumers telehealth is user-adherence.<sup>16</sup> In addition, system professionals, services providers, and project teams must have advance skills and experience in the field, which are unfortunately lacking in the region.<sup>17</sup>

A workforce adequately trained in telehealth will strengthen health systems overall and ensure suitable service delivery. Training programs should be designed to meet the needs of the locality by considering local economic, social, cultural, and organizational factors. Training programs should also promote exposure to and collaboration with established digital health centers around the world. The outcomes of these collaborations could be research projects, shared best practices, and internships among other opportunities.<sup>15</sup>

#### **PLATFORMS DEMONSTRATING EARLY SUCCESS**

This spirit of digital innovation during COVID-19 has been visible in addressing novel

challenges. Between March 16 and July 1, 2020, at least 400 digital democratic innovations were created across 18 countries in Latin America with the specific aim of handling the crisis and mitigating its impact.<sup>18</sup>

With fully established telehealth programs incorporating and disrupting all aspects of clinical care, several platforms in the region have emerged and demonstrated rapid growth. For example, the Colombian telehealth company 1Doc3 is aggressively addressing the issue of access to healthcare in Latin America with its all-in-one telemedicine platform. It is currently Latin America's largest telemedicine provider. Since the onset of COVID-19, its platform has experienced a seven-fold increase in consultations, serving 300,000 patients in May 2020 and projecting a 50% growth in demand in June 2020.<sup>19</sup>

Similarly, the Peruvian startup Smart Doctor recently announced its partnership with the Peruvian government's Ministry of Health. As part of their collaboration, the startup has agreed to offer remote triage, consulting, and monitoring of patients infected with COVID-19. Its most prominent contribution is to oversee the self-isolation of confirmed COVID-19 patients. The startup is currently in talks with foreign government agencies, universities, and businesses to explore the other ways its platform can contribute to the fight against COVID-19.<sup>20</sup>

Another Colombian telehealth company, doc-doc, aims to improve the physician well-being, while emergency departments operate at 4× capacity. For patients, doc-doc provides affordable access to specialists via smartphone. Patients can subscribe to doc-doc for \$6 a month and gain unlimited access to chat with 18 types of specialists, from pediatricians (the most popular) to cardiologists. Founder and CEO

Gabriel Castillo modeled doc-doc's user experience on WhatsApps as the messaging app owned by Facebook is ubiquitous in Latin America.<sup>21</sup>

## SUMMARY AND CONCLUSIONS

In this paper, we reviewed the current successes and challenges of telehealth growth in Latin America and highlight some of the opportunities for action within the context of the COVID-19 pandemic.

We found that while a large percentage of the Latin American populace has access to and avails the Internet, the percentage of LTE communication is substantially lower and varies across the region. Legislation related to telehealth continues to evolve with substantial changes in Brazil, Colombia, and other Latin American nations during the COVID-19 pandemic. Despite these advancements, insurance companies and healthcare payers face ambiguous and irregular telehealth frameworks and reimbursement policies. Moreover, digital health training and research programs in the region tend to be fragmented and have room for improvement. A health workforce trained in digital health is essential to well-functioning telehealth initiatives aimed at strengthening health systems and ensuring adequate service delivery.

Building a successful telehealth program requires incorporating comprehensive clinical aspects of a health system such as workflows, scheduling, and paramedic capabilities. Additionally, functionalities which improve the user experience for the clinician and the patient, including the ability to switch between audio and video during a consultation, can further encourage user adoption.

Finally, there is a danger that the advances in the use of telehealth in Latin America will recede



once the COVID-19 pandemic softens. A broad, multinational research agenda can provide a uniform framework for identifying and rapidly replicating successful practices while simultaneously fostering global collaboration in the development and rigorous testing of new and emerging telehealth technologies.<sup>14</sup> We encourage both private and public sections in the regions to take a long-term view to sustain these efforts.<sup>13</sup>

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### CONFLICTS OF INTEREST

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### CONTRIBUTORS

To fulfil all of the criteria for authorship, every author of the manuscript has made substantial contributions to all of the work and participated sufficiently in the work to take public responsibility.

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