# The value of technology applied in the field of telemedicine in times of covid-19

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## Abstract

The impact of the use of technology in telemedicine during the last 18 months is significant, but they must be considered as the first steps of an important journey for medical care in the future. For this, the sustainability of the use of technologies must be ensured.

*Keywords:* Telemedicine, ICTs; COVID19.

## Resumen

El valor de la tecnología aplicada en el campo de la telemedicina en tiempos de Covid-19.
El impacto del uso de la tecnología en torno a la telemedicina durante los últimos 18 meses es significativo, pero deben considerarse como los primeros pasos de un importante viaje para la atención médica en el futuro y para esto se debe asegurar la sostenibilidad del uso de tecnologías.
Palabras clave: Telemedicina: TICs;COVID19.

## Resumo

A importância da tecnologia aplicada no campo da telemedicina em tempos de COVID-19
O impacto do uso da tecnologia em torno da telemedicina nos últimos 18 meses é significativo, mas deve ser considerado como os primeiros passos de uma importante jornada para a assistência médica no futuro e para isso a sustentabilidade do uso das tecnologias deve ser assegurada.

*Palavras-chave:* Telemedicina, TICs, COVID19.

## Introduction

On December 31, 2019, the Chinese health authorities informed the World Health Organization (WHO) about a conglomerate of 27 cases of pneumonia of unknown etiology that affected people linked to a market for marine products and for sale of animals, in the city of Wuhan, Hubei province, China. On January 30, 2020, the Emergency Committee for the International Health Regulations of the World Health Organization declared the outbreak of "COVID-19" as a "Public Health Emergency of International Importance (PHEII)", and it was declared a pandemic by the World Health Organization on March 11, 2020.

Thus, we need to highlight that since the beginning of the COVID-19 pandemic, health services at the national level were interrupted and reorganized, and many stopped providing care in outpatient consultations for care by stages of life (pregnant, child, adolescent, youth, adult and older adult), focusing on urgent and emergency care, which is why various public health problems are increasing such as: maternal mortality, anemia, malnutrition, communicable and non-communicable diseases, among others. For this reason, many national governments, in cooperation with other social sectors, have joined efforts to implement strategies to improve the quality of care in health services and contribute to reducing the socioeconomic impact of the COVID-19 pandemic, as is the case of Telemedicine.

## Method

As is well known, the recent COVID-19 pandemic has caused a global public health emergency. Providing adequate medical care from the start of this situation has become a real challenge, considering the risks of infection, reliance on protective equipment, quarantine, and limited spaces within the health system. In order to better mitigate and manage this situation, telemedicine, understood as the use of information and communications technology (ICT) to support and promote long-distance medical care, has re-emerged in an essential role. Through virtual care services,

health professionals can perform linear and continuous follow-up of their patients, provide health education promoting social distancing, improve long waiting times and the risk of spreading the disease, and help to protect the health of the doctor by reducing exposure to the virus.

Although it is true that telemedicine is a good strategy to provide health continuity in times of the COVID-19 pandemic, the question is: have we been prepared to face such a radical digital transformation from one moment to the next? What kind of technologies have they had to force themselves to learn to really take advantage of it? Well, to all these questions, the answer is simple. We have not been prepared and all professionals, whether they are health or technology professionals. They have had to learn very quickly and in a forced way. It is also key to highlight that throughout this process of the new virtual care modality, patients should learn to use technology and above all feel satisfied in the aspect of practical use, simplicity and value that gives them good attention as if it were in person.

The different health establishments, whether in the public and/or private sector, were forced to open new care channels due to the pandemic. For example, many people are currently assisted through services that are available through web pages, mobile applications, cloud computing, chatbots, video calls, even by phone calls.

In the different countries of Latin America, technology has advanced by leaps and bounds during the coronavirus pandemic and in the health sector, it is where it has been most noticeable. However, all this momentum has not been easy at all since the adaptation of technology by health professionals, especially those who are older than 50 years old on average, has been frustrating on many occasions since the management of technology as part of their work in the development of care was not part of their experiences. Something interesting that I can share about telemedicine care in times of pandemic was that health professionals were forced to work remotely from their homes since many of them had comorbidity factors but at the same time they needed to continue their care in a virtual way, that is, using telemedicine, so that working hours are recognized and paid. In this regard, I had the opportunity to observe in many cases that the absence of knowledge from the most basic in office automation was a great headache for health professionals. For this reason, digital literacy had to be strongly promoted to these health professionals and above all, provide constant support in the management of basic technological tools that allowed them to provide care to patients. On many occasions, I have had to talk by phone with their children, including grandchildren to explain some technical details that were difficult to explain it over the phone but that were not difficult to understand for the new generations that are already adapted to the use of technologies.

## Discussion

Currently, the use of telemedicine in Latin America has been mainly in public hospitals. Regarding access, telemedicine is allowing doctors to have a presence in places that are difficult to access (such as rural areas) or places where patients are not allowed to leave (such as prisons). Thus, suspected cases can be inspected from a distance and, as the person must not move, possible contagion is avoided. Thus, patients who are in the middle of a treatment unrelated to the coronavirus can continue it from home.

On the other hand, the productivity of health personnel has increased as it is a tool that "adds to traditional medicine and does not replace it". For example, doctors, through telemedicine, have reduced physical contact with patients, which is equivalent to less probability of contagion, generating better results, mainly because the transmission of the virus occurs more slowly by not having to travel to a hospital. Also, through this tool, significant trends can be found among patients, since all the information from all the hospitals enters the same system, which has to be integrated into the Electronic Medical Record.

As for the country where the professional in the sample carries out his main activity, the results obtained indicate a statistically significant relationship with the uses of international telemedicine. The following figure shows the association between the uses of international telemedicine and the countries where the healthcare professionals carry out their main activity, for those countries where the sample of professionals guarantees a minimum robustness to cross-analysis (more than 20 professionals): Argentina, Bolivia, Colombia, Ecuador, Mexico, Peru and Uruguay. Comparing the results by country, some significant differences can be seen that are worth highlighting. In the first place, and regarding the effective uses of international telemedicine, it is worth noting that Uruguay (with 25.6% of professionals over the national total) is confirmed as a health system where the percentages of use of international telemedicine are significantly higher than the sample mean. In no other country in the sample there is a significant presence (neither positive nor negative) of professionals using international telemedicine systems. Second, the results obtained for intention to use and readiness to use international telemedicine are much richer. Bolivia (with 31.1% of the national total of professionals) stands out for its predisposition towards the use and preparation of international telemedicine, while, at the opposite pole, with significant and lower than expected participation, Argentina (17.8% of the total) and Mexico (17.4%). In third place, and in the lack of knowledge and non-use of international telemedicine systems, it is worth noting a higher than expected presence of Argentina (65.3%), Ecuador (63.5%) and Mexico (68.0 %), while, at the opposite pole, with significantly below expectations, are Bolivia (55.2%), Peru (49.1%) and Uruguay (52.3%).

Figure 1:  Uses of international telemedicine (ITM) by country of development of the main activity of the health professional
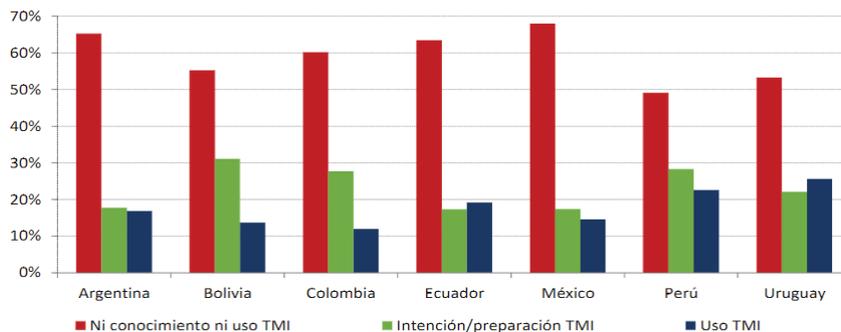


Fuente: BID

## Conclusion

*What factors would be missing so that we can use all kinds of technology in telemedicine that we have been developing in Latin America?*

Faced with this question and according to my observation, I can state that to strengthen telemedicine we still need:

- Closing the digital gap to bring telemedicine to the most remote areas, especially in places in the Amazon.

- - Promotion of interoperability between the different telemedicine information systems and the Electronic Medical Record systems.

- Strengthen information security in the different processes of telemedicine.

- Digital, light, and safe tools for the use of telemedicine.

- Greater diversity of suppliers that supply biomedical devices that the patients can use and that allow them to monitor remotely.

- Modernization of the technological infrastructure of the different health establishments and/or hospitals.

- Continue training more health and information technology professionals in the different experiences of telemedicine.

- Data governance in the field of Telemedicine.

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