

Current status of telemedicine in Equator: advances and challenges

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Abstract

Introduction: This work aims to show an analysis of the current situation of telemedicine in Ecuador, emphasizing the advances and future challenges of these technologies. **Method:** The methodology applied for the present work is of a bibliographic nature, through the review of scientific articles of conferences and magazines of high impact, being the main reference the National Telehealth Program of Ecuador. **Results:** On telemedicine in Ecuador, connectivity is the greatest limitation, this due to the geographical conditions of the regions of the country that have so far not allowed all health establishments in the rural sector to access the internet, which prevents being considered for the implementation of these technologies.
Keywords: Telemedicine; Digital Health.

Resumen

Estado actual de telemedicina en Ecuador: avances y desafíos.
Introducción: Este trabajo tiene como objetivo mostrar un análisis de la situación actual de la telemedicina en Ecuador, haciendo énfasis en los avances y desafíos futuros de estas tecnologías. **Método:** La metodología aplicada para el presente trabajo es de carácter bibliográfico, a través de la revisión de artículos científicos de conferencias y revistas de alto impacto, siendo la referencia principal el Programa Nacional de Telesalud del Ecuador. **Resultados:** Sobre la Telemedicina y Salud Digital en Ecuador, la conectividad es la mayor limitación, esto debido a las condiciones geográficas propias de las regiones del país que hasta el momento no han permitido que todos los establecimientos de salud del sector rural tengan acceso a internet, lo que impide ser considerados para la implementación de estas tecnologías.
Palabras-clave: Telemedicina; Salud Digital.

Resumo

Estado atual da telemedicina no Equador: avanços e desafios.
Introdução: Este trabalho tem como objetivo mostrar uma análise da situação atual da telemedicina no Equador, enfatizando os avanços e os desafios futuros dessas tecnologias. **Método:** A metodologia aplicada para o presente trabalho é de natureza bibliográfica, através da revisão de artigos científicos de conferências e revistas de alto impacto, sendo a principal referência o Programa Nacional de Telessaúde do Equador. **Resultados:** Em telemedicina e saúde digital no Equador, a conectividade é a maior limitação, devido às condições geográficas das regiões do país que até agora não permitiram que todos os estabelecimentos de saúde do setor rural acessem a Internet, o que evita ser considerado para a implementação dessas tecnologias.
Palavras-chave: Telemedicina; Saúde Digital.

INTRODUCTION

Health in Equator is a universal right enshrined in the Constitution of the Republic, which states in article 32:

“Health is a right guaranteed by the State, the realization of which is linked to the exercise of other rights, including the right to water, food, education, physical culture, work, social security, healthy environments and others that support good living”¹.

The health governing body in Equator is the Ministry of Public Health, whose mission is to exercise stewardship, regulation, planning, coordination, control and management of Equatorian public health through governance, surveillance, provision of services, prevention of diseases and promotion of health and equality, in addition to promoting research and development of science and technology in the health sector. In this sense, it has been the pioneer in encouraging Telemedicine and Digital Health projects in Equatorian territory².

The National Telemedicine Program in Ecuador was born with the objective of strengthening the Integrated Health Care Model in force in the country, improving the flow of care at all levels, from first-level care to referral and counter-referral in second and third level health facilities, through the use of technological tools to reach the last corners of the country. For them, teleconsultations are considered, where specialists can give their opinion on specific diagnoses, which often because of distance and geographical location is very complex for the patient to attend personally, as well as in the case of emerging consultations where a second opinion is required³.

Digital Health in Ecuador is an area that is under development, as mentioned by WHO and according to Dr. Tedros Adhanom Ghebreyesus, Director General of WHO:

“It is essential to take advantage of the potential of digital technologies to achieve universal health coverage. After all, these technologies are not an end in themselves, but essential tools for promoting health, preserving global security and serving vulnerable populations”⁴.

In this context, the following work is presented, which aims to show an analysis of the current situation of telemedicine in Ecuador, with an emphasis on the progress and future challenges of these technologies. It aims to determine the current situation of telemedicine, through the identification of variables, actors and results that allow to know the limitations of its implementation in an integral way throughout the Ecuadorian territory.

METHOD

The methodology applied for this work is a bibliographic review, identifying scientific articles from high-impact conferences and magazines, published in the last ten years³⁻⁶. The following descriptors were used: telemedicine, telehealth, network structuring, connectivity referring to Ecuador. These articles will allow you to learn about the reality of telemedicine in Ecuador.

The article was structured considering the following aspects: the characteristics of the National Telehealth Program in Ecuador, its scope, the main services offered, as well as a WHO systematization of the main guidelines for digital health. The main problems reported in the articles analyzed were listed below, as well as their potential.

RESULTS AND DISCUSSION

Among the main documents on which this research is based, we have the following:

National Telemedicine/Telehealth Program – Ecuador³

The work developed by (reference telemedicine) and published by the Latin American Journal of Telehealth, makes an extensive analysis of the implementation phases, components, telemedicine services planned at the beginning of the program, among the main aspects selected. Below is a brief description of each of them.

Phases of Implementation: in the work the Amazon region of Ecuador has been contemplated for the beginning of the program, which is totally understandable since it is possibly the geographic area of the country with the greatest difficulty of access. The implementation was planned in three phases: first, the provinces of Morona Santiago, Pastaza and Napo were considered, connecting rural points with specialized health facilities. In the second phase, the provinces of Sucumbíos, Orellana, Zamora and Galápagos were considered; in the third phase, the expansion of the program at the national level was sought.

Telemedicine Components: The following components have been considered:

- Consulting Centers: basic hospitals, health centers and posts, patients, first-level doctors.
- Consulting Centers: second and third level hospitals, family doctors and specialists.
- Telecommunications network refers to the network that will make possible connectivity between the different points, which must consider certain technical aspects such as bandwidth, type of sharing, last mile, number of users.
- Equipment: Interoperability standards must be met by both medical equipment and telecommunications equipment.
- Manager: in charge of the management, coordination and direction of the program.
- Support: computer, telecommunications and biomedical equipment.
- Support: in charge of the administrative part.

Telemedicine services planned at the beginning of the program: In order to determine the scope of the program, certain services have been planned at the beginning, which are:

- Teleconsultation: between doctors from rural areas and specialists from general hospitals.

Deferred consultation: by e-mail.

Teleconsultation in real time: both programmed and unprogrammed, through videoconferences.

- Medical and health telecare: teleconsultation and tele-diagnosis in the areas of radiology, surgery, dermatology, monitoring and surveillance.

- Telemedicine: for citizen information services.
- Management of patients and appointments.
- Teleducation: training and education for health professionals.
- Research.

WHO Guidelines on Digital Health Interventions⁴

The World Health Organization (WHO)⁴ has published recommendations on 10 ways to improve people's health and basic services through digital technologies. After two years of systematic review of available empirical data on digital technologies and consultation with experts from around the world on the main ways to use technology to have maximum impact on health systems and the health of the population.

It is essential to consider that health systems must respond effectively to the increasing visibility and availability of information. Another critical aspect is to assure users that their data will be handled securely and that access to personal data, such as sexual and reproductive health, will not pose risks in the future.

Another of the WHO guidelines addresses the importance of training, the importance of resolving infrastructure instability, implementing policies to protect people's privacy, and ensuring governance and coordination in order to avoid fragmentation of these instruments in the health system is also considered.

Within the guidelines they also make recommendations on telemedicine; for WHO, telemedicine is a useful complement to face-to-face interaction, but it does not completely replace it.

Challenges for structuring the National Telehealth Program of Ecuador.

Telemedicine in Ecuador is an area that still require a lot of work and research, this could be evidenced with the bibliographic review carried out for this work, where some works were analyzed to understand the state of their current situation.

In Telemedicine, although there is a program dedicated to this topic, it is important to coordinate the work between the Ministry of Public Health, the Ministry of Telecommunications and the Secretariat of Planning and Development (SENPLADES), among all entities the feasibility of reaching new rural points should be analyzed so that the penetration of this solution is greater.

As for Digital Health, no work was found dedicated to its study, although there are several works developed individually, there is no public policy to protect it and promote its implementation and research.

On the critical nodes for Telemedicine and Digital Health in Ecuador, it is named as the main limitation to connectivity, due to the geographical conditions of the regions of the country that so far have not allowed all health facilities in the rural sector to have access to the Internet, which prevents them from being considered for the implementation of these technologies.

The work to be done is extensive, especially in terms of training health professionals and equipment necessary for Telemedicine to function properly, as for Digital Health it is necessary to promote the use of Information and Communication Technologies in favor of the health of the population⁷.

CONCLUSION

The National Telehealth Program in Ecuador is structured with very clear definitions about the scope, the services offered and the articulation with the national health policy. However, national reflections on its concrete implementation and the results achieved are not yet observed in the literature.

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