English

Telehealth to strengthen the public health system of the Province of Santa Elena: an opinion article

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Abstract

This article makes a brief analysis of the way in which the use of Information and Communication Technologies helps to improve the provision of health services, guaranteeing access to quality services through the use of The Tics. In the investigative process, the gaps and barriers existing in Latin America were evidenced, in terms of the use of ICTs in Health, among which we can detail the barriers of an economic, technical and legal nature, which makes it difficult to strengthen a telehealth project.
Keywords: *Information Technology and Health Communication; Telemedicine; Telehealth.*

Resumen

Telesalud para fortalecer el sistema de salud pública de la Provincia de Santa Elena: un artículo de opinion.
En el presente artículo se hace un breve análisis sobre la manera en que el uso de las Tecnologías de la Información y Comunicaciones, ayuda a mejorar la prestación de los servicios en salud, garantizando el acceso a servicios de calidad mediante el uso de las Tics. En el proceso investigativo se pudo evidenciar las brechas y barreras existentes en América Latina, en cuanto al uso de las TICS en la Salud, entre las cuales podemos detallar, las barreras de carácter económico, técnico y jurídico, lo que dificulta el poder afianzar un proyecto de telesalud.
Palabras-clave: Tecnologías de la Información y la Comunicación en Salud; Telemedicina; Telesalud.

Resumo

Telessaúde para fortalecer o sistema de saúde pública da Província de Santa Elena: um artigo de opinião.
Este artigo analisa brevemente como o uso das Tecnologias da Informação e Comunicação ajuda a melhorar a prestação de serviços de saúde, garantindo acesso a serviços de qualidade por meio do uso de TICs. No processo investigativo, foram evidenciadas as lacunas e barreiras existentes na América Latina, em termos do uso das TICs em Saúde, entre as quais podemos detalhar as barreiras de natureza econômica, técnica e jurídica, o que dificulta o fortalecimento de um projeto de telessaúde.
Palavras-chave: *Tecnologia da informação e comunicação em saúde; Telemedicina; Telessaúde.*

INTRODUCTION

The use of Information and Communication Technologies in health care has accelerated considerably in Latin America y give to us better results in the quality of life of the general population.

We must consider that for the strengthening of a telehealth project, a national approach is needed, establishing strategic plans to develop the use of ICTs in health. To achieve the establishment of a telehealth project, the government must define laws and regulations that allow the adoption of the use of ICTs in health. Likewise, the continuous training of health professionals is a fundamental part of a telehealth project, being necessary to promote the use of tools that facilitate the training of these professionals, in terms of the use of social networks, digital magazines and other resources as learning media.

Telehealth also implies the inclusion of society in the management of technologies, which leads us to the need to create training sources on their management, generating a digital training in the tools that can be used to improve the quality of health services.

For this purpose, the use of teleducation is proposed, allowing to strengthen the knowledge and learning to the health workers of the Province of Santa Elena, with the purpose of which the medical personnel receive training through videoconferences by experts that are in other remote places to this province, likewise to offer training to professionals of other centers of health of the Province of Santa Elena.

This article is a opinion article and aims to describe the use of telehealth resources in the Province of Santa Elena in Ecuador, considering the challenges and benefits of this use for the improvement of health workers qualification and also health care qualification.

METHOD

The following article was developed based on research through Internet which generated the analysis of several sites with scientific articles and publications on the subject of telehealth in Latin America, focusing the search for websites with scientific publications related to the use of Information and Communication Technologies in health care or telehealth, specifically those in teleducation, gathering as much information as possible on the subject, with the aim of discerning the causes and effects involving the implementation of a teleeducación project in the Province Santa Elena.

As part of the research process, the existing gaps and barriers in Latin America regarding the use of ICTs in Health were highlighted. Among these, we can detail the economic, technical and legal barriers, which make it difficult to strengthen a telehealth project.

The information gathered was used to establish strategies for the analysis and selection of the same, which allows to verify the advantages of the use of ICTs in health.

The incorporation of the ICTs in Ecuador and the incorporation of telehealth resources in the Province of Santa Elena are presented in this paper as follow: (i) description of the antecedents; (ii) status of the incorporation of these resources in the reference hospital and also in the care units; (iii) analyze the factors that may contribute to better services

RESULTS AND DISCUSSION

Initially, the process of incorporation ICTs in the health area of Ecuador will be presents and finally the situation in the Province of Santa Elena.

Infrastructure

When we discuss the issue of infrastructure, we talk about the combination of hardware, software and connectivity, which serves to support an information system, in this case a health computer system, we can then deduce that for a telehealth project to work, there must be the necessary means to support it, talking about infrastructure.

In Equator, as far as the Ministry of Public Health is concerned, there is a *Technological Restructuring Project*, a project that for several years has been providing technological equipment, as well as connectivity in all health centers in the country, which to date has helped to improve health services in the country. All this with the objective of technologically preparing these establishments for the implementation of a Health IT platform.

We must consider that the cost of investment in infrastructure is high, which can be considered as a gap. The Pan American Health Organization (PAHO) says that having an adequate infrastructure is the first step to integrate the various systems (inherited or new). Thus, we can consider that in order to guarantee the continuity of health services in Ecuador we must improve the technology infrastructure as a first step.

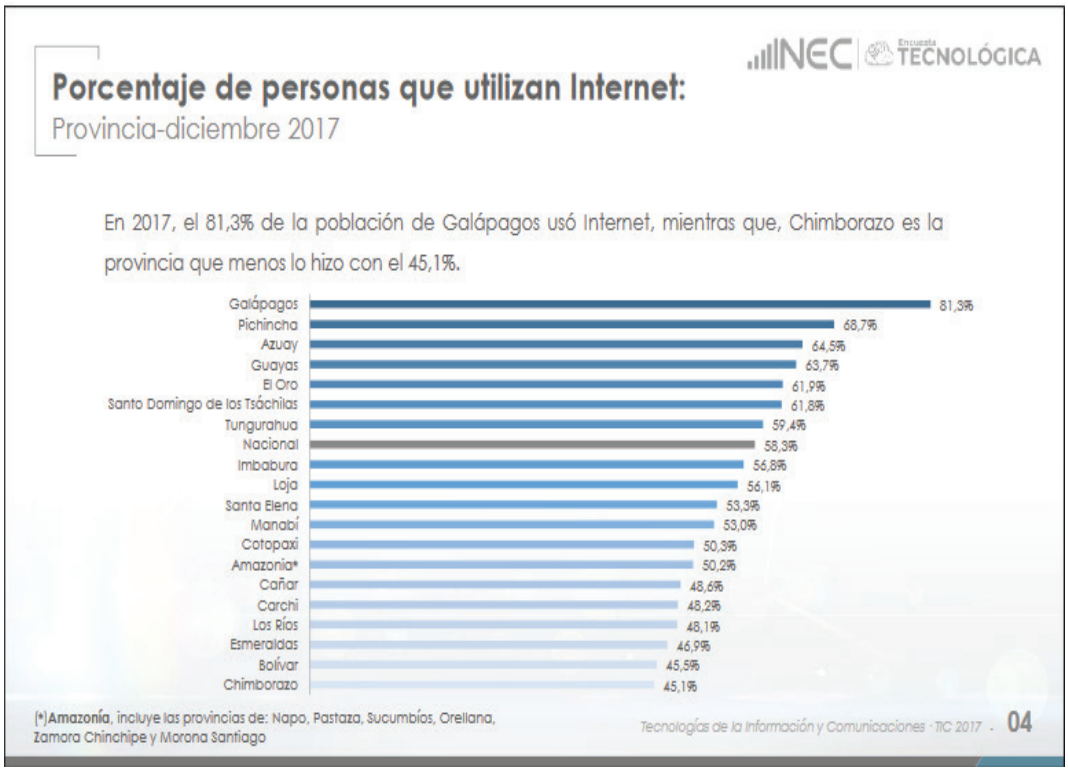
Electronic Medical Record System (EMRs)

According to the Pan American Health Organization (PAHO), through the Latin American and Caribbean Network for Health Systems Strengthening (RELACSIS), it defines Electronic Medical Records (EMR) as the electronic format of historical medical records on paper. The U.S. Institute of Medicine defines EMRs as the electronic support of medical records, but they also have functions to assist health personnel during the care of patients.

In essence, this definition is intimately related to the fundamental theorem of health informatics, published by Friedman, which establishes that health decision making can be improved by the use of technology and that it will ultimately have a positive impact on health care.

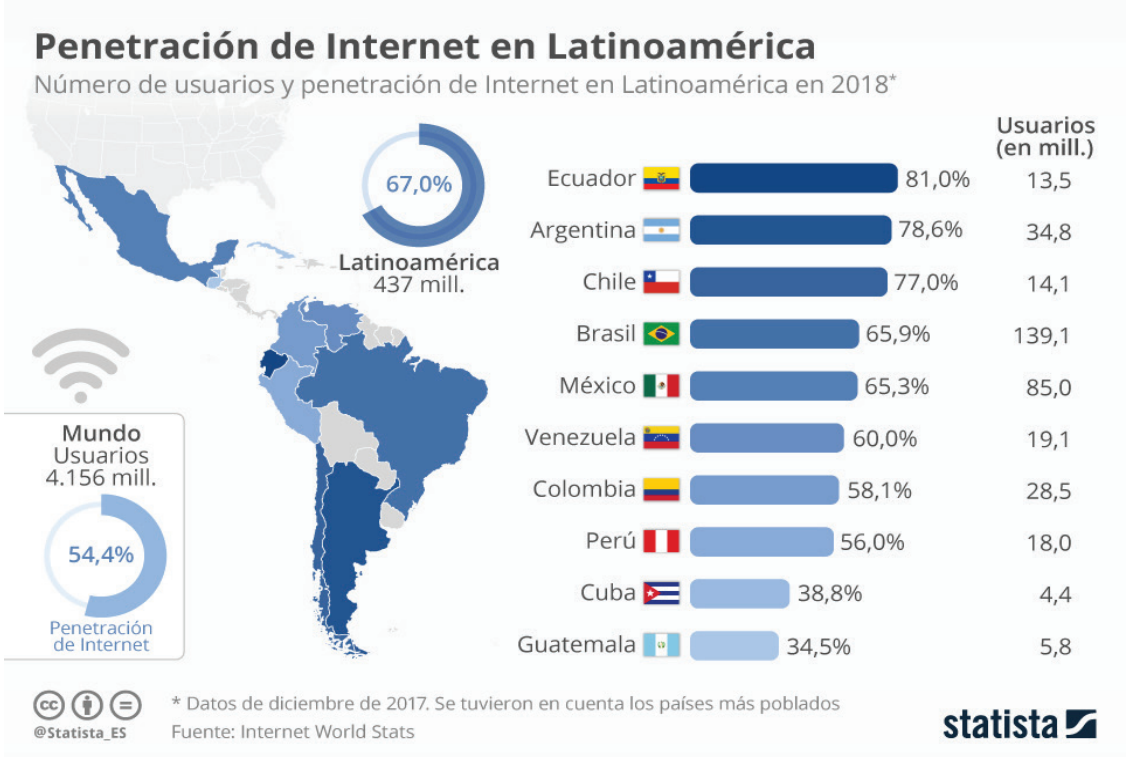
One of the great challenge of the health institutions, for the implementation of a telehealth project, is the lack of a computer system for the registration of medical records, however, Ecuador already has a National project to develop electronic medical records.

In graph 1 taken from the National Institute of Statistics and Censuses of Ecuador, we can observe the increase in the use of the Internet by the provinces of Ecuador, which is relevant to the increase in access to this service in the Province of Santa Elena.



Source: National Institute of Statistics and Censuses of Ecuador, 2017

In addition, the following image (graph 2) shows the use of the Internet in Latin America, placing Ecuador as one of the countries with the greatest access growth.



Source: Tecnologías de la Información y Comuncaciones. (TIC 2017)

Backgroud

The General Hospital of Santa Elena Dr. Liborio Panchana Sotomayor, through the Ministry of Public Health, is a second level hospital that covers the most complex medical care of the entire Province of Santa Elena. It is the second public hospital at national and Latin American level to receive an international accreditation, on December 19, 2014, by Accreditation Canada International (ACI).

Thus, being a reference Hospital at the national level, the possibility of applying teleducation is considered, to reach in a regional way all the health professionals of other first level Hospital Units, as well as health centers and sub-centers, with training programs, bibliographic consultation, promotion and prevention, to guarantee the principles of equity and quality of the national health system, through the use of ICTS in health at the Provincial level.

The modality of distance learning is increasingly accessible, through the use of technologies, video conference trainings are common in many countries where telehealth is in greater growth, therefore based on the positive experiences of those countries, we take as an example the use of these technological tools for training.

For this purpose, it is intended to establish a program of continuing education, for the perennial interaction of health professionals, through the use of video conferences.

The use of the Internet in the Province of Santa Elena has increased over the years, most households already have access to the Internet through fiber optics, as well as public institutions, also have access to the Internet through fiber, with compression 1 to 1, which is of great relevance to the target, since video conferences consume a large amount of broadband resources.

The General Dr. Liborio Panchana Sotomayor Hospital has good technological infrastructure, access to the internet with fiber optics and as a ICT unit, a hospital management system has been developed for the registration of electronic medical records that cover 95% of the services. With the implementation of the computer system for recording electronic medical records, access to the patient clinical information has been improved, as well as the quality and security of the information.

At the same time, the implementation of this sytem allowed us to integrate with other helath information system such as Clinical Laboratory System ou LIS (Laboratory Information System), a system with which interoperability is managed ,guaranteeing the security of laboratory sampling.

Application of ICTs in the training of health professionals

Currently, the use of the Internet in education and learning is advancing in our country, the offers of distance education (online) are increasingly accessible, providing an overview of the future of distance education. teleducation as a means to improve the quality of health services, gives us the opportunity to generate distance training projects for health professionals, the use of the Internet at the level of Operating Units of the Ministry of Public Health, has increased over the years, currently there is connectivity in all hospitals and health centers of the Province of Santa Elena, which facilitates the flow of information and access to tools with learning content.

The distance learning modality proposed in this article is videoconferencing, a tool that is easy to access, since there are several sites that offer this type of service at no cost.

In addition to videoconferences, the use of the Hospital's Virtual Library, a tool that is currently being developed and will be located on the institutional website (hglpsalud.gob.ec), is also proposed as a complement to videoconferences, with the objective of facilitating scientific research in areas of interest to health professionals.

Health operating units of the Province of Santa Elena

The follow list contains the details of the Operating Units of the two Districts of the Province of St. Helena, able to adhere to the distance training plan through videoconferencing, for this purpose they have the Technology and Internet access.

OPERATING UNITS PROVINCE OF SANTA ELENA	HEALTH DISTRICT TO WHICH IT BELONGS
ATAHUALPA	24D01
AYANGUE	24D01
BAJADA DE CHANDUY	24D01
BALLENITA	24D01
BAMBIL DESECHO	24D01
CHANDUY	24D01
COLONCHE	24D01
JUAN MONTALVO	24D01
JULIO MORENO	24D01
MANANTIAL DE GUANGALA	24D01
MONTEVERDE	24D01

OLON	24D01
PECHICHE	24D01
PUERTO CHANDUY	24D01
SAN ANTONIO	24D01
SAN JOSE DE ANCON	24D01
SAN MARCOS	24D01
SAN PABLO	24D01
SAN PEDRO	24D01
SANTA ELENA	24D01
SINCHAL	24D01
VALDIVIA	24D01
ZAPOTAL	24D01
HOSPITAL BASICO MANGLARALTO	24D01
PS. 5 DE JUNIO	24D02
CS ENRIQUEZ GALLO	24D02
CSC VENUS DE VALDIVIA	24D02
HOSPITAL BASICO "DR. JOSE GARCES RODRIGUEZ	24D02
C.S VIRGEN DEL CARMEN	24D02
CS SANTA ROSA	24D02
PS VELASCO IBARRA	24D02
CENTRO DE SALUD JOSE LUIS TAMAYO	24D02
CENTRO DE SALUD ANCONCITO	24D02
CENTRO DE SALUD SAN JUDAS TADEO	24D02
HOSPITAL BÁSICO LA LIBERTAD	24D02
SEDE DISTRITAL	24D02

Tools used for videoconferencing

The correct choice of the tools to be used for videoconferences is of utmost importance, which will be of great relevance for the correct development and use of the trainings, which should be uninterrupted and should enjoy good image quality, therefore, for the choice of the same, information on the technological equipment of each Operating Unit should be taken into account.

There are several tools that currently provide access to videoconferences, tools that are easily accessible on the Internet, among which have been chosen 3 tools that according to tests made to the functionalities of the services, would simplify the work to be done.

Skype: Platform that allows communication through HD videos, as well as through chats.
https://www.skype.com/es/

Cisco Jabber: Cloud communications application combining voice and video
https://www.cisco.com/c/en/us/products/unified-communications/jabber/index.html

Zoom: It's a cloud video conferencing tool, it's a conference room solution that allows simple online meetings.
https://zoom.us/es-es/meetings.html

Although the increase in the use of the internet has been increased in Ecuador, as well as the access to mobile devices, there are still barriers that do not allow access to digital health, among them, we can name the costs that represent the investment in infrastructure, the development of interoperable systems and other aspects that should be take into consideration for this purpose.

CONCLUSION

Based on the research carried out on all the documents and scientific articles that formed part of this work, it has been demonstrated that in order to carry out a telehealth project, much depends on the political environment of each country, since for this purpose the government must define laws and norms that allow the adoption of the use of Tics in Health.

The scarce technological infrastructure, electronic medical records systems, as well as the lack of human resources and geographical areas of difficult access, make it impossible to strengthen a telehealth project in some Latin American countries, as well as in Ecuador.

The adoption of the use of Information and Communication Technologies, in the provision of health services, offers the advantages of improvements in the quality and warmth of the services provided.

To date, the Central Government, through the Ministry of Public Health and the Ministry of telecommunications and the Information Society, are through the SiSalud project, providing technological equipment and Internet access to all Health Units in Equator, which will serve to develop a telehealth project that will allow us to have regulatory frameworks and standards, as well as interoperable systems and technological infrastructure that will allow access to education systems for the training of health professionals.

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