

Telemedicine in Ecuador

Mario Paredes-Suárez
Carlos Torres Serrano
Ramiro López Pulles

Coordinator of Pan Amazon Network of Science Technology and Innovation in Health (CT&IS), Ecuador
Health Science and Technology Process, Ecuador
Health Science and Technology Process, Ecuador

Abstract

Due to the need of extending health services coverage for populations scattered in remote areas of the Amazon region of Ecuador, the Ministry of Public Health together with several public and private institutions have prepared the National Telehealth/Telemedicine Program. Its goal is to offer specialized health care to people living in remote areas, using modern computer based and communication tools that will enable data, voice and image transmission, as well as the development of continuous education programs and permanent training for health care basic teams and for communities. In order to gain experience in executing the program, two phases had been programmed and will be gradually implemented in other regions of the country.

Key words: Telemedicine, Telehealth, Connectivity, Data, Image.

Resumen

La Telemedicina en Ecuador

En la necesidad de ampliar la cobertura de los servicios de salud en poblaciones dispersas y remotas de la región amazónica del Ecuador, el Ministerio de Salud Pública con la colaboración y participación de varias instituciones públicas y privadas ha elaborado el Programa Nacional de Telesalud/Telemedicina con el objetivo de brindar una atención especializada a distancia, utilizando las modernas herramientas informáticas y de comunicación que permitan la transmisión de datos, voz e imagen así como el desarrollo de programas de educación continua, capacitación permanente al equipo básico de salud y a la comunidad. A fin de alcanzar experiencia en la ejecución del programa se han programado dos fases que progresivamente serán ampliadas a otras regiones del país.

Palabras clave: Telemedicina, Telesalud, Conectividad, Datos, Imagen.

Resumo

Telemedicina no Equador

Devido a necessidade de ampliar a cobertura dos serviços de saúde em populações dispersas e remotas da região amazônica do Equador, o Ministério de Saúde Pública com a colaboração e participação de várias instituições públicas e privadas preparou o Programa Nacional de Telessaúde/Telemedicina com o objetivo de oferecer uma atenção especializada a distância, utilizando as modernas ferramentas informáticas e de comunicação que permitam a transmissão de dados, voz e imagens, assim como o desenvolvimento de programas de educação continuada, treinamento permanente da equipe básica de saúde e da comunidade. Para conseguir obter experiência na execução do programa, foram programadas duas fases que gradativamente serão ampliadas para outras regiões do país.

Palavras-chaves: Telemedicina, Telessaúde, Conectividade, Dados, Imagem.

BACKGROUND

The National Telehealth/Telemedicine Program is a result of the need to increase the quality of medical care in remote rural communities and borderland areas of the country, where there are not specialized medical professionals, depriving this population of one of the most important human right: health. On the other hand, the difficult access to remote rural areas also makes impossible to offer an adequate and timely care to its inhabitants, most of them living in extreme poverty.

Therefore with the use of Information and Communication Technology (ICTs), the idea is to reach these areas not only with general medicine but also offering specialized medical care through the use of computer based tools.

The current National Program is the result of the many and valuable efforts made by several universities in Ecuador and by the Ministry of Public Health as the leading institution in the sector, with the participation of the National Planning Secretariat (SENPLADES), the Pro-Tempore Secretariat of the V Spatial Conference of the Americas, Ecuador Air Force, the National Telecommunication Board (CONATEL/SENATEL) and other institutions. These collaboration efforts had enabled to reach a consensus on common interests and to translate them into this unified National Program with national and regional benefits.

In order to achieve the established goals, some agreements had been signed with several educational institutions, such as Private Technical University, the University of Azuay, Equinox Technical University of Loja for the support needed for reference centers and for the management of networks. Also with CONATEL-SENATEL for the required connectivity and with SENPLADES the planning institution at the national level that has contributed to the project for the electronic government.

Another strategy used to meet the objectives of the Ministry of Public Health of Ecuador was to establish strategic partnerships with all agencies and institutions with different types of activities that may contribute to the implementation of the National Telehealth and Telemedicine Program.

Thus, the National Commission on Telehealth was established according to what had been decided on the National Connectivity Agenda and to the agreement made by the V Spatial Conference of the Americas Technical Committee, made up of the following institutions: Ministry of Public Health, Foreign Affairs Ministry, Pro Tempore Secretariat (V CEA), Equinox Technological University, Loja Private Technical University, University of Azuay, National

Telecommunication Board (CONATEL), Armed Forces, Ecuador Air Force, National Telecommunication Secretariat (SENATEL-FODETEL), Army Polytechnic School (ESPE), National Planning Secretariat (SENPLADES), with the Ministry of Public Health as the institution in charge under the direction of the Science and Technology Process.

PURPOSE

To make good use and develop electronic information instruments and current satellite communication technologies in order to give clinical technical support to health professionals; to favor an adequate health care, coverage and access to people living in remote places and to promote a real improvement on the quality of life of national and regional communities.

First Phase Sucumbíos and Orellana Provinces

The first phase of the National Telehealth/Telemedicine Program focuses its activities on the Provinces of Sucumbíos and Orellana, located in the north of the Amazon Region of Ecuador. It takes place at two levels: the receiving centers and the reference centers located in Quito, Cuenca and Loja (Specialized Hospitals); and the transmitting remote places located at the Ecuador borders with Peru and Colombia (Health Sub-centers and Provincial Hospitals).

Additionally, the activities carried out at health care centers in Nuevo Rocafuerte, Puerto Morona, el Pangui, Tutupali and in San Cristóbal in the province of Galapagos, will be strengthened.

Second Phase Morona and Pastaza Provinces

This phase complements the first one of the National Program with the Telehealth/Telemedicine implementation in the Provinces of Morona Santiago and Pastaza sponsored by SENPLADES and United Nations Development Program (UNDP).

COVERAGE AREAS

The National Telemedicine Program covers the provinces of the Amazon region and Galapagos, although the idea is to implement it in the whole country.

General objectives

To incorporate connectivity technologies and applications into the Telehealth/Telemedicine Program via satellite in order to contribute to national and regional capability for diagnosis and treatment of patients in remote areas of the country with the participation of health, research and academic institutions.

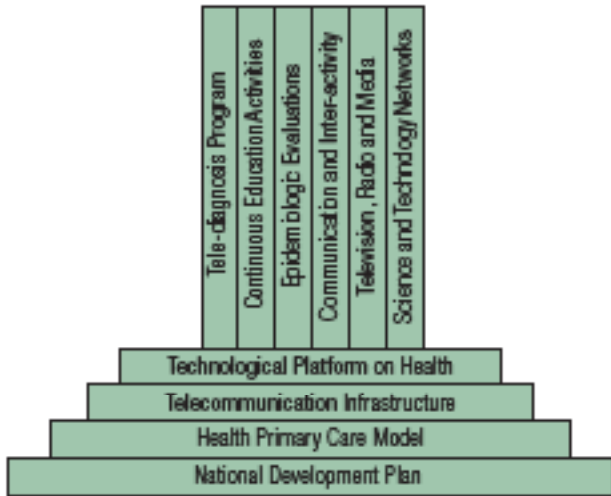


Figure 01 - Telemedicine Proposal.

Specific objectives

- To contribute to the organization of research, dissemination, diagnosis and reference centers as a part of the National Telemedicine Network that may offer added value services in Telehealth;
- To develop a National Telehealth/Telemedicine Program that will enable distance diagnosis through image, voice and data transmission, with continuous and permanent education components; via satellite among different units of a same province, between provinces and with national and international reference centers;
- To develop the National Telehealth Program under a permanent process of research and technology incorporation with formal assistance to medical specialties, in a systematic and continuous program with constant community participation;
- To disseminate spatial technology applications on health care as a nation-wide interdisciplinary and systematized process.
- To reach agreements on specific programs on telehealth/telemedicine among institutions dealing with health care, ecology and human development nationally.



Figure 02 - Geo-referenced scheme of the national program.

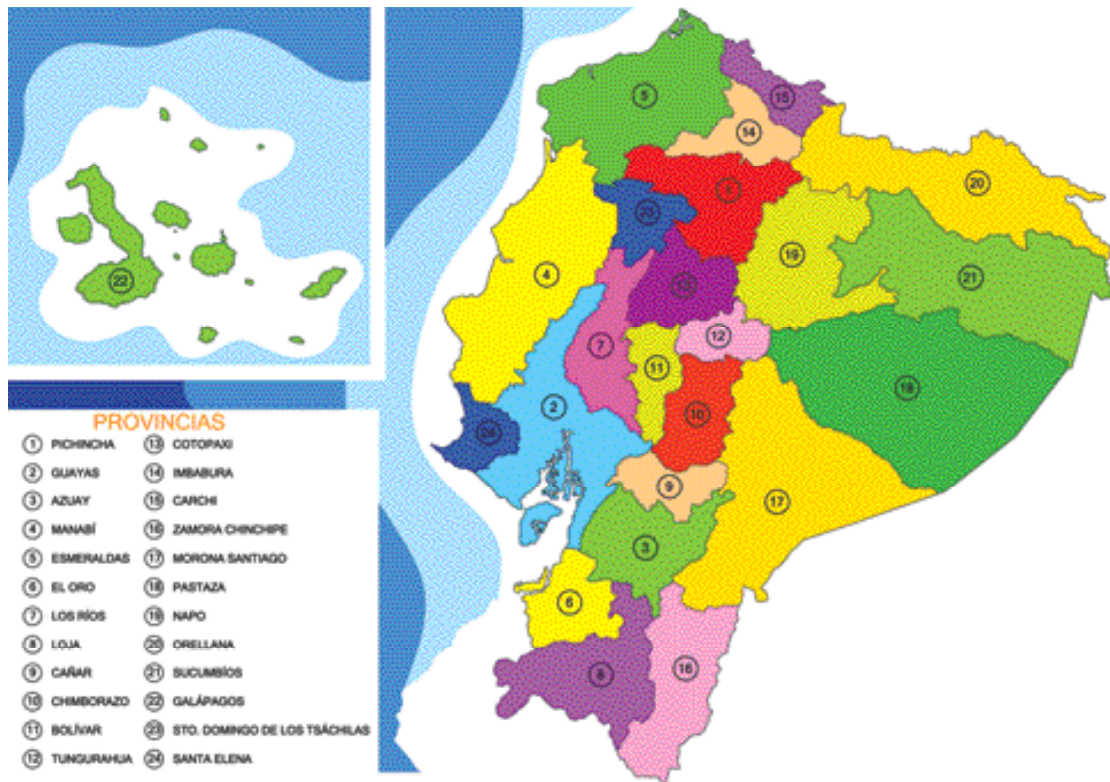


Figura 03 - Mapa Político del Ecuador.



Figure 04 - Mapa de la Región Amazónica.

REFERENCES

1. V Conferencia Espacial de las Américas. Secretaría Pro Témproe. Ministerio de Relaciones Exteriores, Comercio e Integración. Quito, julio 2006.
2. Agenda Nacional de Conectividad. Consejo Nacional de Telecomunicaciones. Quito, 2006.
3. Ministerio de Salud Pública. Lineamientos Estratégicos 2007-2011. Quito, 2007.
4. Ministerio de Salud Pública. Programación anual 2008-2009. Quito, junio 2007.
5. SENPLADES/PNUD/EHAS. Programa de Telemedicina Morona-Pastaza, Quito, 2006.