

Regional Program on Telehealth and Telemedicine – Amazon region

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BACKGROUND

At the II International Meeting held in July 17th, 2007 in the city of Belem with the support and representatives from seven Amazon countries (Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru and Venezuela), and the Pan Amazon Network of Science, Technology and Health Innovation, the Intergovernmental Committee on Science, Technology and Health Innovation was created. The Committee is a political-strategic entity from and for the Amazon Region with the fundamental goal of supporting the development of regional Science, Technology and Health Innovation and the networking initiatives for this purpose.

During the above mentioned event the Pro-Pan Amazon Network Managing Committee of Science, Technology and Health Innovation was organized with the following members: the Amazon Cooperation Treaty Organization (ACTO), the Pan American Health Organization/ World Health Organization (PAHO/WHO), the Presidency of the Intergovernmental Committee and Fiocruz, which is the managing unit until mid 2010, as agreed in this event. Its main function is to support projects and actions which goals are focused on the development of regional Science, Technology and Health Innovation, as well as encouraging the incorporation of research centers and science, technology and human resources development institutions that strengthen the countries response ability contributing to reduce asymmetries within and among countries, supported by the political definitions of the Intergovernmental Committee.

The Network will reflect the acknowledgement of its importance in looking for common solutions and in the

need to use resources that make easier the execution of the activities proposed in the Action Plan. This Action Plan will be carried out by Amazon Public Health Ministries and Science, Technology and Health Innovation institutions.

The III Meeting of the Science, Technology and Health Innovation Intergovernmental Committee was held in the city of Quito in August 21st and 22nd, 2008. Besides having the support of governance instruments, such as the Regulation established for the Science, Technology and Health Innovation Intergovernmental Committee, this meeting defined the execution of the Action Plan, identifying priorities such as the possibilities and eventual contributions of countries promoting knowledge management among participants of the Pan Amazon Network and the current and potential sub-networks. The idea is to contribute to equity, social inclusion, reduction of inequalities and poverty, as well as improving the quality of life and health of the communities of the region. During this III Meeting, the Presidency of the Intergovernmental Committee, was taken over by Ecuador and the Vice-presidency was taken over by Peru.

The Charter of Belem establishes the conceptual and operational basis of the Committee; the structure of the Action Plan which initial text was discussed and analyzed with the participation of the countries of the region and Science, Technology and Health Innovation institutions, as it appears in the resolutions approved at the II Meeting of the Science, Technology and Health Innovation Amazon Intergovernmental Committee held in Brasilia in November 23rd and 24th, 2007.

Finally, the meeting in Manaus held in June 19th and 20th, 2008 approved the agenda for the meeting in Quito, focusing in some criteria and adjusting itself to current circumstances of the Intergovernmental Committee, the Action Plan of the Amazon Cooperation Treaty Organization, the Managing Committee and to the Pro-Pan Amazon Network proposal, as well as to the current situation of PAHO/WHO.

During the III International Meeting of the Pan Amazon Network and the Science, Technology and Health Innovation Committee that took place in the city of Quito in August 2008, the definition of working areas and the organization of the Action Plan was a fundamental topic.

In the basis of the resolutions approved in the above mentioned meeting, several issues of regional common interest were highlighted and were included in the respective documents. Among other topics, the proposal to prepare a Regional Program on Telehealth/Telemedicine was accepted based on the experiences of Amazon countries and on the criteria that alternative solutions must be incorporated in order to improve the level of service of the Amazon Health Care Centers, also enabling a better access to specialty consultations in remote locations without adequate communication means.

In December 2008, the Managing Committee met in Brasilia to define several aspects included in the Action Plan for this entity and for the Intergovernmental Committee.

As it has been previously agreed upon, a meeting of the Managing Committee and the Intergovernmental Committee is being organized to specify the responsibilities of each member country of the Committee and thus, starting to execute the plans in order to achieve the agreed goals.

This meeting took place in the city of Loja in March 17th and 19th, 2009. Its main topic was to review the progress made in the Telehealth Telemedicine Plan and come to an agreement on the presentation of the Regional Program during the IV Meeting of the Network and the Committee in the city of Lima, Peru, in November 2009.

In order to reach a basic goal, several strategies had been defined as result of these activities:

“Strengthening the development of national and regional capabilities on health-related research, technology and innovation, training and learning, in order to contribute to improving health and life conditions of the Amazon community, identifying priority areas in controlling the main endemic and neglected diseases. Also strengthening and organizing the Pan Amazon Network of Science, Technology and Health Innovation involving Science, Technology

and Health Innovation institutions to better achieve the proposed objectives”.

Among the resolutions accepted by the Intergovernmental Committee and the Pan Amazon Network of Science, Technology and Health Innovation, one of the topics of interest that was approved was the organization of a telehealth telemedicine program for the region.

With this criteria the following specific strategies were defined:

- Defining the activities of the Intergovernmental Committee and Network Working Plan, together with its local and regional people in charge of the area of telehealth and telemedicine;
- Analyzing the proposal for the Regional Program on Telehealth/Telemedicine;
- Elaborating a Telehealth/Telemedicine model for the region;
- Preparing the proposal to be presented at the IV Meeting in Lima.

JUSTIFICATION

Telehealth represents a valuable tool for overcoming access barriers to good quality health services mainly in rural areas or in those places with limited resolution capability, because it enables promotion, prevention, education and rehabilitation.

Similarly to what it happens in other developing countries, in the Amazon region there are problems with understaffed medical services, especially in remote health care units or in those far away from specialized units, where there is lack of specialists and resources and service is highly centralized. Other problems of the region are its large diversity and geographical extension, the isolation of remote health care units and difficulties for internal communication. Telehealth and telemedicine provide solution to these problems.

Telehealth is a health care model that uses modern and current information and communication technologies with the purpose of offering medical assistance to those requiring these services in remote places. On the other hand, the possibility of having access to a second opinion or to high specialty in metropolitan centers, creates a positive expectation on the use of telehealth and telemedicine. Besides, it offers more access to medical education and research, mainly for students and physicians in remote regions and also for the community.

Aware of these circumstances, the III Meeting of the Amazon Intergovernmental Committee and the Pan Amazon Network of Science, Technology and Health Innovation held in Quito in August 2009, established the application of new communication technology alternatives on health care for protecting health in the region and for building the Pan Amazon Network on Telehealth and Telemedicine.

The Regional Program on Telehealth/Telemedicine arises from the need to increase the quality of health care in remote rural communities and locations and in borderland areas of Amazon countries that do not have specialized medical professionals, depriving them of one of the most important human rights: the right to health. On the other hand, the difficult access to these remote rural areas also makes impossible an adequate and timely health service for its inhabitants.

Therefore, through Information and Communication Technologies (ICTs) the purpose is to have access to these locations not only with general medicine but also offering specialized medical care through computing tools.

All countries in the Amazon region had prepared plans and programs on telehealth and telemedicine and some of them are highly developed, as it is the case of Brazil. However, due to different reasons there are countries which had not had the opportunity to incorporate this component as the basis for its health care models in remote places without the current infrastructure to enhance the quality of health care, increasing its coverage and having access to second opinions by specialists. Collaboration among these countries of the region will provide the opportunity to unify criteria, having the help and cooperation of those who already have the adequate expertise. Thus, it will be possible to have a joint program that allows everyone to reach goals, that otherwise could not be achieved individually.

GOAL

Using and developing electronic information instruments and current satellite communication technologies to provide health professionals of the Amazon region with clinical technical support; favoring an adequate care, coverage, access and health service for patients living in remote places and promoting a real quality of life in the regional community.

OBJECTIVES

General objectives

Implementing current technologies and applications on telehealth and telemedicine based on satellite connectivity, in order to assist with regional capacity of diagnosis and treatment of patients in remote places, with the participation of health, research and academic institutions and international collaboration.

Specific objectives

- Contributing to organize health care, research, dissemination, diagnosis and reference centers as part of the Regional Network on Telemedicine that may offer value added services to telehealth;
- Developing a Regional Program on Telehealth/Telemedicine that enables distance diagnosis through image, voice and data transmission with an important component of ongoing and continuing education; via satellite among different units of a province or country, between provinces and to national and international reference centers;
- Developing the Regional Program on Telehealth/Telemedicine within a formal, systemic and continuous research and assistance process of specialties;
- Disseminating the applications of spatial technology on health care as an interdisciplinary and systematized process at regional level, such as tele-epidemiology;
- Reaching a consensus on programs and models at a regional level for telehealth and telemedicine that may contribute to the improvement of health and living conditions of Amazon communities;
- Developing joint programs on research, training and permanent learning for the health care team and for the community, using the advantages and opportunities offered by ICTs;
- Promoting the development of exchange and technology & knowledge transfer programs among the countries of the region;
- Looking for international cooperation for developing its activities.

STRATEGIES

- To elaborate a Telehealth/Telemedicine Project using the development and capabilities of the Amazon region countries on telehealth/telemedicine with emphasis on borderland regions;
- To identify people responsible for national telehealth and telemedicine programs (Focal Points) and get their commitment to participate;
- To carry out a survey (base line) of Telehealth/Telemedicine programs of the countries participating in the Intergovernmental Committee of Science, Technology and Health Innovation;
- To point out the support and collaboration of ACTO, Oswaldo Cruz Foundation (Fiocruz), the Pan American Health Organization and the Association of Universities of the Amazon Region (UNAMAZ) and to request their collaboration for carrying out this project;
- To establish the Telehealth and Telemedicine Model on borderland areas of Amazon countries with emphasis on the Primary Care Model;
- To elaborate a component of continuous education, permanent learning and Information among the participating countries using the infrastructure of Health Virtual Libraries of the region;
- To use the successful experiences of countries and to detect the expertise areas of each one of them in order to establish intergovernmental leadership and cooperation lines in the region;
- To elaborate a training program for those in charge of Telehealth and Telemedicine Programs in the countries in order to unify criteria and models;
- To establish an area dedicated to telehealth and telemedicine in the Amazon region, within the Pan Amazon Network of Science, Technology and Health Innovation;
- To try to secure financial and technical support from International Cooperation Agencies led by regional OPSD/WHO.

COVERAGE AREA

The Regional Program on Telehealth/Telemedicine covers the Amazon region that includes the eight countries of the Amazon basin with relevance of those areas needing the services and advantages provided by the system.

EXPECTED BENEFITS

On services:

- Integration of remote communities into better quality medical assistance and benefits offered by communication systems;
- Improvement of the quality of life and health of Amazon communities;
- Exchange of successful experiences and using the expertise of the countries of the region;
- Benefits for the remote places can be divided into indirectly measured benefits: *Transport*, since an active remote site will enable people to save money and time with travels, because they will need fewer visits to urban centers for their medical consultations and it will be possible to use their digital clinical records;
- There is also the benefit for those people who currently use cell phones and will be able to replace phone calls for e-mails, since it will be possible to have consultations directly from the patient to the consultation centers;
- Significant reduction of medical and indirect costs. Roughly speaking, we can say that a telemedicine program can save up to US\$ 38,5 million for the health care service per year;
- Higher productivity benefits of services due to better access to information and new technologies for different productive processes;
- Benefits due to fewer direct and indirect medical hazards since complications are avoided and there is a better access to specialized consultation and medical procedures;
- Access of the health care team to permanent scientific information thanks to the availability of Virtual Libraries of the region and to health-related training, updating and research programs, as well as the possibility of having updated medical technology (tele-diagnosis, data, voice and image equipments);
- However, the main benefit comes from the time reduction of medical diagnosis and disease detection thanks to a better coordination of the medical service available through the remote site.

On the administrative area the benefits are as follows:

- Increases time available for patients leading to better medical care and assistance by health professionals;
- Patient information and administrative data are available and obtained in a few seconds at any place and time;

- Increases data capture in an easy and accurate manner. Substantial Improvement of Health Information Systems;
- Significant time saving for not having to collect data manually;
- Improves doctor's mobility for not compromising data accessibility. It reduces the number of errors made by physicians and other health professionals, mainly on medication and dosage and also errors related to incomplete or deficient data;
- Timely and accurate decision making becomes easier when caring for the patient (large storage capacity of data and information).

PANORAMIC TELE-EPIDEMIOLOGY

Panoramic Epidemiology implies the study of geographical areas and environments where diseases are transmitted. This is a holistic approach that takes into account relationships and interactions among the elements of physical and cultural environments. The theory behind the Panoramic Epidemiology is that knowing the requested conditions for a specific pathogen agent to be in nature, such as ecological, climate, vegetation and geological conditions among others, it is possible to use satellite information to evaluate spatial and time distribution of disease risk.

Technological development has enabled an amazing change in medicine; its progress has made possible to know countless processes that explain the cause of many diseases, events that take place in the human body and the consequences of its relationship with the environment.

In Ecuador, the study (Spatial and Time Dissemination of Hepatitis B in Western Ecuador), was carried out in cooperation with CONAE from Argentina and the Ecuador Air Force.

CONCLUSIONS

- There is an increasing relationship between deforestation and the higher rate of hepatitis B;
- Risk predictors for hepatitis B were identified: deforestation level, socio-economic situation and the rate of sex workers in the places where the study was done;
- It is necessary to implement an epidemiology surveillance program using the possibilities offered by satellite connectivity systems, incorporating Geographic Information Systems and the monitoring of migration parameters from space;
- It is also necessary to train multidisciplinary staff to better use these satellite surveillance systems.

PARTNERS INSTITUTIONS

- Ministries of Public Health of the Amazon Region
- Foreign Affairs Ministries of the Amazon Region
- Amazon Cooperation Treaty Organization (ACTO)
- Oswaldo Cruz Foundation (Fiocruz)
- Pan American Health Organization (PAHO/WHO)
- Intergovernmental Committee of Science, Technology and Health Innovation
- Pan Amazon Network of Science, Technology and Health Innovation
- Association of Universities of the Amazon Region (UNAMAZ)

Programa Regional de Telesalud y Telemedicina – region Amazonica



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ANTECEDENTES

Con ocasión del II Encuentro Internacional, realizado el 17 de julio de 2007 en la ciudad de Belem, con el apoyo y asistencia de siete de los países amazónicos (Bolivia, Brasil, Colombia, Ecuador, Guyana, Perú y Venezuela), y de la Red Pan-Amazónica de Ciencia, Tecnología y Innovación en Salud (CT&IS), se conformó el Comité Intergubernamental de Ciencia, Tecnología e Innovación en Salud, que se constituye en una instancia de carácter político-estratégico de y para la Región Amazónica, y que tiene como propósito fundamental apoyar el desarrollo de la CT&IS regional y las iniciativas en red para este mismo fin.

En el mencionado evento se procedió a la organización del Comité Gestor Pro-Red Pan Amazónica de CT&IS conformada por la Organización del Tratado de Cooperación Amazónica (OTCA), la Organización Panamericana de la Salud/ Organización Mundial de la Salud (OPS/OMS), la Presidencia del Comité Intergubernamental y por la Fio-cruz, que es la unidad gestora hasta mediados del 2010, conforme lo acordado en el referido encuentro. Su función es apoyar los proyectos y acciones cuyos objetivos se orienten al desarrollo de la CT&IS regional, así como estimular la incorporación de instituciones de investigación, del desarrollo de la ciencia, la tecnología y de recursos humanos que fortalezcan la capacidad de respuesta de los estados y contribuyan a la disminución de las asimetrías dentro de los países y entre países, apoyado por las definiciones políticas del Comité Intergubernamental.

La Red reflejará el reconocimiento de la importancia que tiene, en la búsqueda de soluciones comunes y de la

necesidad de movilizar recursos que faciliten la ejecución de las actividades propuestas en el Plan de Acción que será elaborado por los Ministerios de Salud Pública y las instituciones de CT&IS amazónicos.

La III Reunión del Comité Intergubernamental de Ciencia, Tecnología e Innovación en Salud, en la ciudad de Quito, entre el 21 y 22 de agosto de 2008, además de tener el soporte de instrumentos de gobernanza, como el Reglamento establecido para el Comité Intergubernamental de Ciencia, Tecnología e Innovación en Salud, definió la ejecución del Plan de Acción, identificando las prioridades así como las posibilidades y contribuciones posibles de los países promocionando la gestión del conocimiento entre los participantes de la Red Pan Amazónica y las sub-redes actuales y potenciales, para contribuir al logro de la equidad, la inclusión social, la disminución de las desigualdades y la pobreza, así como al mejoramiento de la calidad de vida y de salud de las comunidades de la región. En esta III Reunión la presidencia del Comité Intergubernamental, fue asumida por Ecuador, y la vicepresidencia por el Perú.

La Carta de Belem sienta las bases conceptuales y operativas del Comité; la estructura del Plan de Acción; cuyo texto inicial fue discutido y analizado con la participación de los países de la región y las instituciones de CT&IS, tal como consta en las resoluciones adoptadas en la II Reunión del Comité Intergubernamental Amazónico de Ciencia, Tecnología e Innovación en Salud, realizada en Brasilia, entre el 23 y 24 de noviembre de 2007.

Finalmente, la reunión de Manaus, realizada entre el 19 y 20 de junio de 2008, aprobó la Agenda para la re-