Conclusions and recommendations

II Regional Seminar on e-Health and Telemedicine in Latin America and the Caribbean: Innovation Practices and Standards
Caracas, Venezuela
26 and 27 July 2011
SP/ II-SR-SeTALC:Pie CR-11

Conclusions and recommendations

A. Conclusions

Throughout five (5) panels, 27 lectures were delivered on the topics of innovation practices, public policies, standards and best practices in electronic Health (e-Health) and Telemedicine in Latin America and the Caribbean. Participants – specialists in medicine, telecommunications and Information and Communication Technologies (ICTs) from both public and private sectors and from different countries of the region – discussed about the aforementioned topics and highlighted, among others, the following aspects related to the development of e-Health and Telemedicine, particularly in Latin America and the Caribbean (LAC):

1) Participants recognized and welcomed the efforts and contributions made by SELA to continue the work started at the *I Regional Seminar on e-Health and Telemedicine: Connection and access for social well-being* (Caracas, 22 and 23 October 2009) and continued at this *II Regional Seminar on e-Health and Telemedicine in Latin America and the Caribbean: Innovation practices and standards,* developed as part of the Project "Integration and Convergence for Health in Latin America and the Caribbean (INCOSALC)". This project is being promoted by SELA with the support of the Pan American Health Organization (PAHO/WHO) and the Economic Commission for Latin America and the Caribbean (ECLAC), contributing thereby to the proper environment for discussions on key issues to foster e-Health and Telemedicine in the region.

2) The convergence of regional stakeholders in areas of interaction, such as the two regional seminars organized by SELA, is useful to convince decision-makers with tangible evidence of the impacts of e-Health and Telemedicine. This serves as the initial step towards the development of public policies and, consequently, the allocation of financial resources required for the development of ICT-supported health management systems.

3) In Latin America and the Caribbean, access to health services remains a major challenge for countries in the region, many of which have severe inequalities in their populations' access to such services. In general, cultural, social, economic, organizational and geographic boundaries, expressed in terms of scarce public resources, reduced family income, (physical and cultural) distance between the supply of health care and the demanding population, prevent millions of households from accessing prompt and quality health care, which represents a marked imbalance in the availability of medical care, particularly in rural areas.

4) Health care centres in the region face serious limitations that adversely affect the quality of health services, particularly the development of e-Health and Telemedicine as a strategy for providing these services with higher levels of efficiency and effectiveness. Among those limitations are: i) difficulty in registering and searching for records; ii) the patient personal and medical information is not readily available; iii) severe limitations on access to diagnostic imaging and results; iv) difficulty in scheduling consultations; v) difficulty and delay in obtaining statistics; and vi) lack of control mechanisms in meeting schedules, inventories and resources of centres.

5) E-Health and Telemedicine represent a strategy for managing the physician-patient relationship, which is the result of the following factors: i) advances in technology; ii) the increasing life expectancy of the population; iii) the lack or poor distribution of medical personnel; and iv) demands of communities for democratization of health care services. Many of these communities are located in remote areas with limited access, and therefore their population cannot receive effective health care, and Telemedicine represents not an option but the single option for them. In addition, Telemedicine enables: i) the rural medical staff to overcome the sense of isolation; ii) physicians to reach more people; iii) provision of health care for disadvantaged patients in their geographic area of origin; and iv) higher levels of social inclusion.

6) The development of e-Health and Telemedicine in LAC faces, among others, the following challenges: i) inadequate availability of ICT services and telecommunications to facilitate public access to electronic health records; ii) urgent need to substantially increase the required levels of interoperability to efficiently and effectively exchange computer interpretable data with human interpretable information and knowledge; iii) resistance by the staff involved in medical care services to participate in ICT-mediated work processes iv) very low levels of information security and privacy; v) need for a systematic and sustained effort for human resource training, including both medical and paramedical personnel, and the patient; vi) a strategic cost restructuring to allow for the deployment of more and better facilities to provide ICT-supported medical care services; vii) public policies that support and provide sustainability to the efforts and initiatives undertaken in this field; viii) aging population, which is likely to translate into a significant increase in demand for medical care in the coming years; ix) changing patterns of morbidity and mortality; x) shortage of professionals in some disciplines; xi) large and growing health and social spending; xii) high demand for health services.

7) The region has been implementing a wide variety of Telehealth projects for several years. Some of these projects have become models of good practices. However, quite a few perform well only to the extend they receive appropriate funding – sometimes from private sources – which results in a compelling and urgent need to design and implement public policies that guarantee the validity of such projects and to exploit the potentialities present in our continent.

8) Advances in the field of Biomedical Engineering have led to the development of increasingly accurate equipment to acquire and measure vital parameters, but most Telemedicine equipment developed in recent years carry some degree of heterogeneity that prevents them from integrating with each other or makes them incompatible with existing applications, which negatively impacts the efficiency and effectiveness of health management systems in the countries of the region.

9) Telemedicine systems allows for patient progress monitoring through shared access to the medical history of the patient at the various levels of health care, thus facilitating not only the monitoring of patient treatment, but also the behaviour of the patient, so it is possible to observe and assess the incidence of the patient's habits in national epidemiological profiles.

10) Technology interoperability should be viewed as an essential attribute of information systems. Three levels of interoperability can be distinguished: i) "basic" interoperability, in which messages are exchanged between systems without

interpretation of such messages; ii) "functional" interoperability, in which messages are exchanged between systems, data context is interpreted and fields have a common structural definition; and iii) "semantic" interoperability, in which messages are exchanged between systems, data meaning and context is interpreted, and contents of data fields are retrieved by using a common code.

11) Technology Interoperability is a prerequisite in exchanging information and resources across heterogeneous platforms and software. Technology mediation in the management of health care and health prevention services is limited when circumscribed to geographical areas lacking proper management practices, where it is quite possibly that information assets are dispersed and connected networks can become overloaded due to saturation of services or, conversely, underused because of the lack of contents and transactions.

12) Technology Interoperability creates the conditions to overcome the heterogeneity of computer system solutions produced by different manufactures and based on different protocols, thus enabling interconnection and transit of information and knowledge assets as well as future compatibility among such solutions, without access or implementation restrictions.

13) Standards are the tool through the use of which sustainable computer systems can be implemented. They are essential for interoperability while also allowing for the harmonization of processes. Nevertheless, they should be chosen very carefully to solve the challenges that each system poses.

14) Three global digital trends of particular significance have been recognized which are impacting the provision of ICT-mediated medical care services: i) global electronic traffic is moving rapidly towards a fully digital format; ii) technological means are becoming increasingly ubiquitous and neutral with respect to suppliers; and iii) end-user technology is becoming more and more multifunctional and portable, as is the case with mobile phones, which have already become a tool for medical practice.

15) The collaborative work of decision-makers and management in the Health area requires that they share their resources and at the same time standardize the criteria for determining how to share them. In the field of health services, integration of management structures, and the resulting increased responsiveness, entails an organizational transformation or Organizational Interoperability which deals with people, procedures and organizational structure itself, based at all times on the underlying and organizing precepts of collaborative work, an essential condition for the building of health management systems which are truly efficient and effective.

16) It is necessary to keep on advocating for technology-mediated health schemes which are able to respond to current epidemiological, demographic and nutritional transitions in the region.

17) Emphasis is placed on the importance of international organizations' support to press for the continued discussion of and interest in the issue of e-Health, Telehealth and Telemedicine in the regional scenario.

B. Recommendations

As an outgrowth of the discussions raised and conclusions reached, participants made the following recommendations:

1) To contribute to reducing inequalities in health in Latin America and the Caribbean, acting on their determinants, through the concerted action of different economic and social sectors in the context of regional integration and cooperation, by strengthening spaces for intersectoral dialogue within the framework of cooperation and integration processes in LAC, thereby promoting policies, measures and actions aimed at improving access of the population, particularly the most vulnerable groups, to those goods and services which are essential for both health protection and comprehensive health care.

2) The Permanent Secretariat of SELA is recommended to continue its efforts in this area in synergy with other regional bodies working on the topic, and to promote a more efficient health management in the region based on the intensive incorporation of ICTs for the development of e-Health and Telemedicine. The goal is to strengthen and support regional capacity both for the diagnosis and treatment of patients located in remote locations and for continuing education with the participation of health, research and academic institutions as well as international collaboration. Additionally, it is suggested that the Permanent Secretariat of SELA should be actively involved in promoting all efforts and initiatives aimed at the adoption of regional public policy protocols for e-Health, Telehealth and Telemedicine, and contribute to the analysis and dissemination of such efforts and initiatives through the organization of the III Regional Seminar on e-Health and Telemedicine in Latin America and the Caribbean.

3) To promote the adoption of a new health-care model, universal in its coverage and access, more connected and sustainable, and based on principles of: equality, to ensure access both to health care and to a healthy environment; quality, to ensure the effectiveness of the model in terms of optimization and rational use of resources while offering the highest possible quality and causing a positive impact on the solution of the medical-care problems of the population; and sustainability, to ensure the exercise of the human right to health by the people.

4) To move towards interoperability with an initial set of agreements intended to help develop a national electronic system which allows for clear and unique identification and registration of all health system actors, including health care institutions (both public and private), health professionals and end-users of health services. The most important thing in an Interoperability project is the level of understanding and commitment from all actors, which is consistent with the organizational context of a project of this nature. It is always best to implement a Pilot Project, either at regional or national level, to address questions and concerns about the interoperability capability of a country.

5) To identify protocols which enable interoperability across telemedicine equipment and applications and particularly across solutions from different vendors while facilitating the evaluation of new products and devices to be purchased by local health institutions in order to assess their safety and effectiveness, as well as national standards for the procurement and manufacturing of technology-based medical devices.

6) To develop an Interoperability Pilot Project at the regional level in Latin America and the Caribbean, taking advantage of the favourable circumstances created by the provision of a regional forum for dialogue on the subject, as is the II Regional Seminar on e-Health and Telemedicine in Latin America and the Caribbean: Innovation practices and standards.

7) To create a set of harmonized and agreed upon regional public policy protocols on e-Health and Telemedicine-related goods and services.

8) To promote the development of regulatory frameworks granting medical and legal validity both to electronic medical records and to medical actions performed by means of Telemedicine.

9) To help increase the attendance of health sector delegates at the different regional and sub-regional forums for debate, participation, integration, and collaboration.

10) To design policies and strategies which take into account certain trends that are already beginning to affect the structure of demand in health care, such as an aging population, overlapping epidemiological profiles, and spatial distribution of population.

11) To promote the systematic and ongoing training of all stakeholders, including doctors, paramedics and patients from the private and public sectors, involved in the processes leading to the implementation of ICT-mediated health management systems as an essential element to contribute to the efficiency and effectiveness of such systems. Relevant public policies should be in place to ensure the viability and sustainability of this effort and to provide incentives in terms of recognition, positioning and compensation of all personnel involved in the development of such systems.

12) To develop ICT tools aimed at enabling the continuous recording and management of medical data and examinations based on the use of hardware, connectivity and the development of the required applications. These tools would also foster a closer doctor-patient relationship by providing the doctor and the institution with as much patient information as possible, thus helping humanize health care as a citizens' right in terms of its social impact.

13) To promote a smart strategic partnership among various stakeholders within each country in the region aimed at realizing a synergistic action for the development of efficiently and effectively ICT-supported health management systems offering high quality to both operators and end-users, with the relevant stakeholders including: i) State and government, to provide policies, guidelines for action, adequate and timely legislation, best practices, coordination and financial resources, in terms of infrastructure and institutional capacity; ii) the academy, to provide research, easy and timely access to updated information, knowledge, technological innovation, human resources, and training; iii) civil society, to encourage the active cooperation of the population; iv) the private sector, to provide applied research, computer and telecommunication equipment and devices, investment and financial and infrastructure resources; and v) international cooperation, to provide project financing, advice, expertise and training.

14) As regards the above suggested partnership, health authorities are encouraged to assume a leadership role to coordinate all stakeholders, build consensus and act proactively in relation to regional and sub-regional initiatives for cooperation and integration.

15) To establish a Regional Committee on e-Health and Telemedicine. This group should be comprised of institutions that have already developed plans and programmes in this area so that they, in synergy with relevant national and regional bodies, can help drive and coordinate the development of e-Health and Telemedicine in LAC. Such an entity would have a web portal from which the most significant events aimed at developing e-Health and Telemedicine in the region can be analyzed and disseminated while also serving as a dynamic repository of knowledge generated in this field, including the results from the efforts and projects carried out in the region to promote the development of ICT-supported health management systems.

16) To promote the development of integrated networks of health services, epidemiological surveillance systems and early warning and response systems for health-related events. At the same time, it is necessary to: i) protect the most vulnerable groups, ii) safeguard the gains achieved in terms of increased public spending on health; iii) advocate that the Official Development Assistance for Health do not subside; iv) promote and expand South-South cooperation in health; and v) strengthen intersectoral partnerships and promote integration processes in Latin America and the Caribbean.

17) To boost and accelerate the process of information systematization in the field of e-Health and Telemedicine so that the different actors and stakeholders can have timely access to relevant, validated and reliable information that can be effectively used as input into all research, training and decision-making processes as well as in daily practice, while also promoting the use and enrichment of the collection of documents maintained by the Regional Health Library and the creation of National Health Libraries.

18) To encourage greater efficiency in public spending on health through the use of ICTs, as regards both the management of the health management system at large and the particular management of each medical-care centre, in order to achieve an optimal use of resources and increase population coverage as well as the number of available services and professional staffing, all of which would result in a system with a higher degree of equality and social inclusion.

19) To specify priorities in Telemedicine and health management applications, depending on contextual factors at national level, such us technology capacity and infrastructure; interoperability; epidemiological and demographic profiles; fragmentation/segmentation of the health system.

20) To depart from the market paradigm that has traditionally dominated the creation of e-Health and Telemedicine systems and replace it with an approach giving priority to those people with the most urgent health needs and demands.

21) To harness the potential of social networks to support the development of ICT-mediated health management systems.

22) To promote technology investment in order to support health management systems with specific public policies designed to encourage the synergy of public and private sectors, including the participation of civil society, through joint projects.

23) To promote the conversion of the universities in the region into developers of innovative technology solutions for the health sector aimed at strengthening health management systems in the different countries. They should be encouraged to develop projects in the areas of Clinical Engineering, Biomedical Engineering, Biophysics and Medical Physics, in an integrated and coordinated manner, for the purpose of creating comprehensive and innovative technology solutions to foster the continuous optimization of health management systems in LAC.

24) To promote the sustained provision of adequate financial resources for training people responsible for technology-based management of e-Health and Telemedicine systems on the related standards, especially network administrators and support staff at hospitals and other health institutions.

25) To report promptly to governmental decision-makers on e-Health and Telemedicine projects and their expected impacts on National Health Systems. This is necessary to identify the sources of funding that will ensure project sustainability, and to measure government's help in covering the costs associated with the design, implementation and sustainability of these projects over time.

26) To promote the creation of integrated service-oriented e-Health and Telemedicine systems in terms of technology and organization.