# Current Status of e-Health in Peru

Lady Murrugarra

Head Computer Center, Instituto de Medicina Tropical Alexander von Humboldt – UPCH Lima, Peru.

## Abstract

The revolution in science and technology has caused deep changes in human development and its values, with positive and negative impacts on all spheres of society, particularly on human health. Latin America is faced with several development challenges, chief among them are public health epidemics, environmental degradation, vulnerability of rampant poverty, geopolitical climate, impediments towards expansion of education and social services and limited trade competitiveness. Today the threat of infectious diseases like pneumonia, tuberculosis, diarrheal diseases, malaria, measles and HIV/AIDS have assumed global proportions and is threatening hardwon gains in health and life expectancy. The threat is hanging over the civilization like a Damocles Sword. Contagious diseases like AIDS are now the world's biggest killer of children and young adults. In Peru it has been heartening to see the establishment of strategic alliances between public institutions and civil society organizations, through the various collaboration methods using ICTs. The community effect is reflected in the promotion of greater familiarization with the use of the Internet and assisting medical team's involvement and access with the activities of the community. One sees with capacity building activities through knowledge and experience sharing plus skills building of relevant healthcare personnel, the quality of proper and trusted healthcare for all those living in developing countries is reinforced. ICTs can be of much help and the axis of e-Health is the greater power acquiring by patient or user. Health information technology is transforming and will continue to transform health and healthcare in Latin America. It is essential to build human networks, with the support of ICT, that motivate and harness, in dynamic and systematic form, the interaction between people, thereby strengthening the generation, dissemination and exchange of information and knowledge based on their professional, institutional and social objectives.

Key words: Telemedicine; Health Services Accessibility; Technological Development; Information Technology; Peru.

### Estado actual de la salud electrónica en Perú

La revolución en la ciencia y tecnología ha causado profundos cambios en el desarrollo humano y sus valores, con impactos positivos y negativos en todas las esferas de la sociedad, especialmente en la salud humana. América Latina enfrenta varios retos provocados por el desarrollo, el principal es el relacionado con epidemias de salud pública, degradación ambiental, vulnerabilidad de la pobreza descontrolada, clima geo-político, impedimentos hacia la expansión de la educación y servicios sociales, y una competitividad restringida en los negocios. Hoy en día la amenaza de enfermedades infecciosas como la neumonía, tuberculosis, enfermedades diarreicas, malaria, sarampión y VIH/SIDA han tomado proporciones globales y amenazan conquistas que han costado mucho en el campo de la salud y en el aumento de la esperanza de vida. La amenaza pesa sobre la civilización como la espada de Damocles. Enfermedades contagiosas como el SIDA son las principales causas de muerte entre niños y jóvenes adultos. En Perú ha sido alentador ver el establecimiento de alianzas entre instituciones públicas y organizaciones de la sociedad civil, a través de los diferentes métodos de colaboración utilizando las Tecnologías de la Información y Comunicación (TICs). El efecto de la comunidad se refleja en la promoción de más familiarización con el uso de la Internet, auxiliando en la participación y acceso del equipo médico en las actividades de la comunidad. A través de actividades de construcción de capacidades donde se comparte conocimiento y experiencias es posible ver como los profesionales sanitarios adquieren más destrezas, reforzando así la calidad de una atención sanitaria adecuada y confiable para todos los habitantes de los países en desarrollo. Las TICs pueden ser de gran ayuda y el eje de la salud electrónica es el gran poder adquirido por el paciente o usuario. La Tecnología de Información en Salud está transformando y continuará transformando la salud y la atención sanitaria en América Latina. Es esencial construir redes humanas, con el apoyo de las TICs, que motiven y ayuden de forma dinámica y sistemática en la interacción entre las personas, fortaleciendo así la generación, divulgación e intercambio de información y conocimiento basados en sus objetivos profesionales, institucionales y sociales.

Palabras clave: Telemedicina; Accesibilidad a los Servicios de Salud; Desarrollo Tecnológico; Tecnología de la Información; Perú.

Resumo

### Estado atual da saúde eletrônica no Peru

*A revolução na ciência e na tecnologia tem causado mudanças profundas no desenvolvimento humano e seus valores, com impactos positivos e negativos em todas as esferas da sociedade, em especial na saúde humana. América Latina se defronta com diversos desafios de desenvolvimento, o principal deles em saúde pública são as epidemias, a degradação ambiental, a vulnerabilidade da pobreza galopante, o clima geopolítico, os impedimentos para a expansão da educação e serviços sociais, comércio e competitividade limitados. Hoje, a ameaça das doenças infecciosas, como pneumonia, tuberculose, doenças diarreicas, malária, sarampo e HIV/AIDS têm assumido proporções globais e está ameaçando ganhos conquistados com muito esforço em saúde e expectativa de vida. A ameaça paira sobre a civilização como uma espada de Dâmocles. Doenças contagiosas como a AIDS são hoje as que mais matam crianças e adultos jovens. No Peru, tem sido gratificante ver o estabelecimento de parcerias estratégicas entre instituições públicas e organizações da sociedade civil, através dos métodos de colaboração diversos utilizando as TICs. O efeito da comunidade reflete-se na promoção de uma maior familiarização com o uso da Internet, contribuindo para o envolvimento da equipe médica e de acesso às atividades da comunidade. Vê-se com as atividades de capacitação através do conhecimento e da partilha de experiências na construção de habilidades relevantes para os profissionais da saúde, reforçando assim a qualidade de um atendimento adequado e confiável para todos os que vivem nos países em desenvolvimento. As TICs podem ser de grande ajuda e o eixo da saúde eletrônica é o maior poder de aquisição do paciente ou usuário. A tecnologia da informação está se transformando e vai continuar transformando a atenção em saúde na América Latina. É essencial para construir redes humanas, com o apoio das TIC, que motivam e aproveitam, de forma dinâmica e sistemática, a interação entre as pessoas, fortalecendo assim a geração, disseminação e intercâmbio de informações e conhecimentos com base em seus objetivos profissionais, institucionais e sociais.*

Palavras-chave: *Telemedicina; Acesso aos Serviços de Saúde; Tecnologia da Informação; Desenvolvimento Tecnológico; Peru.*

## INTRODUCTION

The globalization and the global health are not unidirectional but to a large extent it involves policy processes and is quite heterogeneous. It must has the capacity to adapt to commit ourselves to recreate, and to even reject, what is not beneficial to the health of the population of the country.

The development of telehealth in Peru has the following objectives: to build the capacity of service-providing organizations, particularly in rural and urban areas, facilitate best-practice sharing and collaborations using ICTs; to improve the working conditions of sanitary personnel – the telecomunication infraestructure of health establishments specially those without telephone lines and services; to provide health information services; access to specialized health information and access to distance learning courses; access to consultation with expert health personnel; improvement of the epidemiologic surveillance system; create contents and software development.

## COMMUNICATION

In Peru there are several needs for structuring a process to incorporate telehealth resources. There is an important cultural and linguistic diversity together with geographical barriers. The healthcare system is structured with several providers and institutions that are not yet integrated and without functioning structured processes, with a high prevalence of contagious diseases on the epidemiological profile, such as diarrhea, pneumonia and TB. Economic resources for investment are scarce and not everybody has access to a connectivity structure with internet connection and ICT resources.

This process creates a situation where healthcare providers and the population are not familiar with the use of internet and they face difficulties for developing an integrated work; however, the benefits coming from a process to incorporate telehealth resources could be highly promising, particularly for people living in remote areas, such as the Andean regions of the country. Therefore, the challenges for structuring a telehealth project in Peru are many: 43% of



Figure 01 - Education in e-health.

the population is of indigenous origin with a significant poverty level and living mainly in rural areas, with a very limited infrastructure and an inadequate healthcare services.

The establishement of a process to incorporate telehealth resources could bring new opportunities for: more accountability of governmental officials; safety for communities and possibilities of innovative processes; access to research on the field of ICTs, involving training of people; information and technology processes in addition to contributing to structuring a more shared care. This would also enable to take the structuring of the system to other relevant fields.

This process is expected to establish the basis for a strategic partnership between government institutions and civil society institutions, generating specific actions on the process of knowledge production on the field of ICTs.

## PROPOSAL TO FUTURE

- It is urgent to have public policy and aggressive actions, in the access of the ICTs and effective use;
- It is essential to try to conform human networks, with the support of the ICTs The interaction among population to fortify the new generation;
- Provide access to health services for consumers in the urban and rural areas;
- Targeted to all the health personnel in rural areas of developing countries;
- Appropriate low cost technologies;
- Support the delivery of health services when the parcipants are in different locations;
- Training in those communities in spanish language.

## ACKNOWLEDGMENTS

## REFERENCES

1. Chocobar M, Gotuzzo E, Gozzer E, Jiménez F, Murrugarra L, Zubko A, edtores. Perú y América Latina en la Era Digital: transformando la sociedad.. Lima: Universidad Peruana CayetanoHeredia; 2007. [Cited 2010 Mar. 30]. Available from: http://www.upch.edu.pe/tropicales/LIBRO2007.htm

2. Comisión Multisectorial para el Desarrollo de la Sociedad de la Información (CODESI). Plan de Desarrollo de la Sociedad de la Información en el Perú: La Agenda Digital Peruana[Development Plan of the Information Society in Peru: The Peruvian Digital Agenda]. Lima: Oficina Nacional de Gobierno Electrónico e Informática – PCM; 2005.

3. Enlace Hispano Americano de Salud-EHAS. Proyecto EHAS: servicios de telemedicina. [Cited 2008 June 20]. Available from: http://www.ehas.org/ index.php?page=servicios-telemedicina&hl=es_ES

4. Instituto Nacional de Estadistica e Informática-INEI. Estimaciones de población. Bol Especial Demográfico. 2009; 16:1. [Cited 2010 Mar. 30] Available from: http: inei.gob.pe/

5. Murrugarra L, Calvo F, Gotuzzo E. Teledermatology in Cusco. J Essalud; -Spain. 2005; p.128-9. [Cited 2008 June 20]. Available from: http://www.revistaesalud.com/index.php/revistaesalud/article/view/23/22.

6. Murrugarra L, Canales M, Tanner E, Salizzoni F, Lopez de Castilla D, Gildeston S. Stop Aids: Keep the promise. India: Information For Development; Dec. 2006. p. 14-15. [Cited 2010 Mar. 30] Available from: http://www.i4donline.net/dec05/youth_awareness.asp

7. Murrugarra L, Guerra H, Peinado J: Telemedicina en Perú. In: Chocobar M, Gotuzzo E, Gozzer E, Jiménez F, Murrugarra L, Zubko A, edtores. Perú y América Latina en la Era Digital: Transformando la Sociedad. Universidad Peruana CayetanoHeredia. Lima, 2007. p.388-399. [Cited 2010 mar. 30]. Available from: http://www.upch.edu.pe/tropicales/LIBRO2007.htm

8. Peru. Ministerio de Salud. Dirección General de Epidemiología. Análisis de la Situación de Salud del Perú – 2005/Analysis of the Health Status of Peru – 2005. Lima: MINSA–DGE; 2006.

9. Vexter I. El Analfabetismo en Cifras. Ministerio de Salud del Perú. Huascaran. 2007. [Cited 2008 June 20]. Available from: http://www.oei.es/quipu/peru/ibeperu.pdf

10. Word Health Organization. ICD-10. International statistical classification of diseases and related health problems. Geneva: WHO; 1992.