

Awareness raising strategies for implementing telehealth projects

Patricia Verónica González G

Villie Morocho

Lecturer – Private Technical University of Loja – Coordinator of the “Telesalud UTPL Tutupaly”, Quito – Ecuador

Executive Director Cedia, Quito – Ecuador

Abstract

This article aims to describe the main strategies aimed at raising awareness among professionals, that should be used for the implementation of telehealth projects that have a participative characteristic. These strategies are divided into: A) Introduction strategies, considering: initial contact and motivation of the community, meetings with government and health authorities; diagnosis of needs expressed by the community and survey studies; community organization; creation of an organizational infrastructure of education and training of beneficiaries and implementation and monitoring committees. B) For training strategies, the following aspects are detailed: develop educational materials for dissemination of telehealth project training programs (brochures, flyers, posters, etc.); designing training programs and develop educational materials; have the web platform for the dissemination of training programs; and design and develop a manual of rules, processes and protocols. C) As for the maintenance and replication strategies the following aspects are developed: humanly sustainable; to have community acceptance; . economically stable; acceptable by users; to have characteristics for everyday use; to provide equitable services; technologically sustainable; politically independent; to be simple and to have protocolized and to have permanent evaluation. It is concluded that the awareness process part of a complex set of dimensions that must be observed.

Key-Words: Telehealth, Implementation, Training, Awareness.

Resumen

Estrategias de sensibilización para la ejecución de proyectos de telesalud

Este artículo busca sensibilizar profesionales y pretende describir las principales estrategias que deben utilizarse para el proceso de implementación de proyectos de telesalud con característica participativa. Estas estrategias se dividen en: A) Estrategias de Introducción, contemplando: contacto inicial y motivación de la comunidad, reuniones con autoridades gubernamentales y de salud; diagnóstico sobre necesidades expresadas por la comunidad y estudios de sondeo; organización comunitaria; creación de una infraestructura organizacional, capacitación y entrenamiento a beneficiarios y comités de ejecución y monitoreo. B) Para las estrategias de capacitación, se detallan los siguientes aspectos: elaborar el material educativo para difusión de los programas de capacitación del proyecto de telesalud (trípticos, hojas volantes, carteles, etc.); diseñar los programas de capacitación y elaborar el material didáctico; contar con la plataforma web donde se difundirán los programas de capacitación; diseño y elaboración de un manual de normas, procesos y protocolos. C) En cuanto a las estrategias de Mantenimiento y Replicabilidad se desarrollan los aspectos: humanamente sostenible; tener aceptación de la comunidad; económicamente estable; aceptable por los usuarios; tener características de uso cotidiano; brindar los servicios con equidad; tecnológicamente sostenible; políticamente independiente; sencillo y protocolizado y tener evaluación permanente. Se concluye que el proceso de sensibilización parte de un conjunto complejo de dimensiones que deben ser respetadas.

Palabras-clave: Telesalud, Implementación, Capacitación, Sensibilización.

Estratégias de sensibilização para a execução de projetos de telessaúde

Este artigo pretende descrever as principais estratégias visando à sensibilização dos profissionais, as quais devem ser utilizadas para um processo de implementação de projetos de telessaúde que tenham uma característica participativa. Estas estratégias são divididas em: A) Estratégias de Introdução, contemplando: contato inicial e motivação da comunidade, reuniões com autoridades governamentais e de saúde; diagnóstico sobre necessidades expressas pela comunidade e estudos de sondagem; organização comunitária; criação de uma infraestrutura organizacional, capacitação e treinamento de usuários e de comitês de execução e monitoramento. B) Para as estratégias de capacitação, são detalhados os seguintes aspectos: elaborar o material educativo para divulgação dos programas de capacitação do projeto de telessaúde (brochuras, folhetos, cartazes, etc.); desenhar os programas de capacitação e elaborar o material didático; contar com a plataforma web onde serão divulgados os programas de capacitação; desenho e elaboração de um manual de normas, processos e protocolos. C) Quanto às estratégias de Manutenção e Replicabilidade são desenvolvidos os seguintes aspectos: humanamente sustentável; ser aceito pela comunidade; economicamente estável; aceito pelos usuários; ter características de uso diário; prestar serviços de forma eqüitativa; tecnologicamente sustentável; politicamente independente; simples, protocolizado e ter avaliação permanente. Conclui-se que o processo de sensibilização parte de um conjunto complexo de dimensões que precisam ser observadas.

Palavras-chave: Telessaúde, Implementação, Treinamento, Sensibilização.

INTRODUCTION

Telehealth programs and projects are being widely implemented around the world due to its use potential in improving clinical management and health service provision, as well as reducing diagnosis variability with the aim of improving access, quality, efficiency and cost-effectiveness. Telehealth is particularly important in helping traditionally marginalized communities (people living in remote or rural areas with very few health services and healthcare professionals), because it overcomes distance and time barriers between medical care providers and patients.

In addition, evidence shows that telehealth provides patients, their families, healthcare professionals and system with important social-economic benefits, promoting a better communication between the patient and the healthcare provider and generating educational opportunities. Despite all this, telehealth application has reached different success levels and in developing countries such as ours, telemedicine has not yet been used systematically at the healthcare system on daily services. Thus, any telehealth project must include a set of planned actions to be developed throughout time in order to be able to provide healthcare services through Information and Communication Technology (ICTs) tools. These actions will be strategies that guarantee the introduction, training, maintenance and reproducibility of the project.

These strategies must be planned if participants and beneficiaries are to be directly aware and influenced by the project. They also need to train others and will have to notice the value or the importance of this new model of medical care. This is why planning must be a participatory action with interrelated and coordinated activities in order to meet

the specific goals taking into account budget restraints, with a previously defined quality and time interval.

The specific goals of a telehealth project must be defined and planned bearing in mind the issues raised in a participatory health diagnosis, previously done in the area to be addressed where the issues to be solved will be established. Thus, it is important to know the meaning of telehealth, since it is a term that integrates any telematic application, including medical informatics and healthcare aspects.

To better understand this idea, health telematics is defined as the activities, services and systems carried out from a distance through information and communication technologies with the aim of promoting health globally, disease control and healthcare, as well as healthcare education, management and research. Therefore, it covers telematics on health research and management as well as specific applications of telemedicine and health tele-education.

Telehealth includes the following:

- Issuing or confirming a diagnosis;
- Surveillance, epidemiology;
- Management;
- Clinical and research information;
- Bibliographic search and references;
- Health and well-being;
- Content on health;
- Medical education.

The experience of many countries show the several challenges and efforts that need to be overcome during the implementation and development of Telehealth projects and that must be taken into account to avoid repeating the same mistakes.

- One of them is a group of human and cultural factors.
 - Some patients and healthcare professionals resist adopting service models different from traditional and indigenous practices and approaches;
 - Some healthcare workers lack training on ICTs to use telemedicine effectively;
 - Language and cultural differences between patients and healthcare providers are even harder.
- Another challenge is the small number of studies on the economic benefits and profitability of telemedicine.

There is the need of showing sound business cases to convince politicians and decision makers to use and invest in telemedicine, in order to avoid infrastructure deficiency and lack of funding for the programs.

- Legal issues are an important barrier for telemedicine. These are:
 - The lack of an international legal framework that regulates the work of healthcare professionals in different jurisdictions and countries;
 - The lack of policies that rule patient privacy and confidentiality of clinical information on data transfer, storage and sharing among healthcare professionals and jurisdictions;
 - Identification of the healthcare professional requested to offer a health service, specially on uses including emails;
 - Medical responsibility risk for healthcare professionals offering telemedicine services.

The lack of a legal framework related to technological challenges with complex systems and possible operational problems can lead to a hardware or software failure increasing the morbidity or mortality of patients and the responsibility of healthcare providers. In order to avoid facing problems with these challenges posed by telemedicine, they all must be taken into account during the planning phase with the definition of guidelines that will be widely applied. At the same time, legal rules on confidentiality, privacy and access and ethic responsibility must be also considered. Therefore, the implementation of telehealth projects requests planning the use of the following:

- a. Participatory strategies and developing specific instruments for the project;
- b. A list of indicators to measure and determining the effective use, sustainability and reproducibility of the project;

- c. An assessment and monitoring methodology on the use of technological tools.

The participatory strategies used must be those which had been successfully implemented in other telehealth projects with a positive outcome. Once the telehealth project has started, the strategies will be strengthened and enhanced according to the evaluation process used.

The result of the strategies used and developed can be analyzed according to three areas of interest:

- Introduction strategies
- Training strategies
- Maintenance and reproducibility strategies

INTRODUCTION STRATEGIES

1. Initial contact and community motivation, meetings with government and health officials;
2. Diagnosis of needs expressed by the community and survey;
3. Community organization;
4. To establish an organizational infrastructure;
5. Capacity building and training of beneficiaries and committees;
6. Execution and monitoring.

TRAINING STRATEGIES

1. Preparation of training material for disseminating capacity building projects on telehealth (flyers, brochures, posters, etc.);
2. Elaboration of training programs and teaching material;
3. A web platform where training programs will be shown;
4. Design and preparation of a guide with standards, processes and rules.

MAINTENANCE AND REPRODUCIBILITY STRATEGIES

1. Humanly sustainable;
2. Accepted by the community;
3. Economically stable;
4. Acceptable by users;
5. Features for dialy use;
6. Providing services with equity;
7. Technologically sustainable;
8. Politically independent;
9. Simple and with previously established rules.

A. INTRODUCTION STRATEGIES

1. Initial contact and community motivation, government and health officials.

Interviews should be carried out with formal and informal leaders with the aim of defining leadership groups in the communities; interviews with local and provincial officials in order to identify key people who allow the introduction of a healthcare model with telehealth. Once leaders and key players are identified, informal meetings should be held to explain the telehealth project and its goals. Once the project is accepted, they will be in charge of having a meeting with the community and authorities.

The goal of this first meeting and those that will follow is to give information on the project and its scope as well as the responsibilities and benefits they will have when participating on its development. The techniques and instruments can include: using posters at the meetings with images to explain telehealth, the goals of the project and why their participation will be needed (setting the rules of the game).

2. Diagnosis on the needs expressed by the community and survey.

Two types of diagnosis will be carried out. One has a more "traditional" approach and it is a questionnaire to know and determine the social-economic situation of the communities as well as the technical conditions of the place, that is to say, the infrastructure needed for telemedicine. Most data collected will be reinforced and extended through diagnosis workshops done with children, young people, men and women using different techniques. One of them is to draw the main health issues they face in their community, group discussions and stating together the main health-related problems in the community. At the same time they will be asked to state some possible solutions to the problems indicated and how they and the working team may face some of these problems.

Another diagnosis will be carried out by local authorities and it will request statistic information on health indicators and social-economic situation and the infrastructure of the area where interventions will be done.

3. Organizing the human team to implement a telehealth project:

As a result of the above, key players will be identified to define their roles and tasks. Work plans will be developed to establish priorities and needs, management and organization, problem solving attempts, possibilities and restraints.

4. To establish an organizational infrastructure

- Once the work plans and the human team are organized, a meeting will be held to choose a health committee made of health champions to be the counterpart that will jointly assess the project. This committee needs to have the consensus of the community. One aspect to be taken into account during the organization phase is the staff members at the Telecenter that will be located at a reference hospital
- A project director;
- A medical coordinator who will be in charge of receiving and forwarding consultations, inter-consultations, etc;
- Specialist physicians who will be consulted;
- A person trained in computers and telecommunication.

Tele-consultation office:

- Consulting primary care physicians;
- Consulting nurses and paramedical staff;
- A person trained in computers and telecommunication to carry out the maintenance of the equipments.

5. Training and capacity building of beneficiaries and committees

Committees will be trained on health promotion and prevention, as well as on the use of telehealth standards and processes; technology handling, repair and maintenance (this topic will be covered in the following section because it is another strategy used). Beneficiaries will be mainly trained on having healthy life habits and hygiene. Other activities can be carried out with beneficiaries and the community, such as health weeks, talks, theater plays, etc. For example formal education activities must be based on the main health issues identified. The following activities can be carried out remotely, among others:

- Talks using videoconference with audiovisual aid;
- Radio programs dealing with topics related to health issues identified;
- School education with videos (health and hygiene topics);
- Role plays (on health and hygiene topics);
- Writing, drawing and "slogan" creation contests targeting school children, young and adults with specific topics, regarding the importance of healthy life habits. Participants would post their works on the web.

Another type of training that has to be done is for health teams since they will need to handle the tools and know the benefits and services that can be provided.

Thus, distance training programs will be prepared on primary care and telemedicine; besides having a continuous medical education program via videoconferences. During the preparation of the material, some design strategies must be taken into account for the teaching material. Variety is a key word in tele-education. Experience shows that a learner at a tele-training setting loses concentration after 20 minutes, therefore the teaching strategy must change at every 20 minutes with the mini-modules.

- Reading, questions and answers;
- Teaching, case studies and demonstrations;
- Reflection and group work exercises.

Slides used in distance learning:

- Simple and light colored background;
- Letter size: 18 to 24, for normal screens;
- Text, use capital letter to emphasize. It should not be bigger than $\frac{3}{4}$ of the screen width;
- Tables;
- Graphs: a well designed graph can use universal language;
- Lineal graphs;
- Diagrams.
- Images: use static images whenever possible.

6. Execution and monitoring:

Two levels of monitoring will be established from the beginning:

- a. One will be periodically within the work team to measure progress regarding deadlines, discussions and establish techniques, standards, processes and guidelines used for service provision and quality. It is important to notice that the assessment of the system for inscription, transfer, storage and use of information will lead to good practices in telehealth as result; as well as the evaluation of the previously set indicators;
- b. At a different level there is the assessment with the health committee that will be done informally to discuss the progress of the project regarding what had been planned and the levels of benefits reached by the community on its health and social-economic impacts, mainly regarding the reduction of transfers.

In practice, introduction strategies must be developed following closely whatever was established. Also, from time to time the actions taken and the players who participated

can be mentioned, with some specific activities addressing the goals and objectives of the project. The basic principle of this type of work is to raise awareness among the key players so that they can propose answers when facing the difficulties that appear during its implementation. It is essential that everyone understands exactly their responsibility, including:

- Community;
- Health officials;
- The human team of the project.

Responsibilities of the community:

- Participation in workshops and meetings;
- Respect procedures and recommendations delivered during training regarding healthy life habits and knowledge replication;
- Make sure the goals set are met.

Responsibilities of health officials:

- Provide facilities for executing the project.

Support the telemedicine team showing national health officials justifications to create a network and the implementation of a national telehealth program with the adequate legislation.

Responsibilities of the human team of the project:

- Training of beneficiaries;
- To see to it that the project is developed according to planning, so that all requests will be met;
- Organizing workshops, seminars, continuous medical education program, etc;
- Adopting good practices and international standards for the telehealth services provided;
- Check that the different players carry out their activities;
- Carry out biannual reports including the development and progress of the project according to the deadline and results of the evaluation of the indicators established;
- Look for and show to state owned organizations, NGO and international bodies research projects in order to get funds to guarantee the future of the program.

B. TRAINING STRATEGIES

It is at this level that university always plays an important role in creating training programs and organizing the continuous medical education programs, as well as awarding the academic certification for the training done by both health teams and the community:

In order to provide telehealth training the following requirements have to be met:

1. Preparation of teaching material for disseminating training programs of the telehealth project (flyers, brochures, posters, etc.);
2. Design of training programs and preparation of teaching material according to the teaching methodology, that will be partially used remotely and/or semi-face to face;
3. Having a web platform to disseminate training programs to allow participants online access to educational material, as well as downloading it into text, audio and video files to review at any time. In addition, the tasks that will be evaluated by the teaching staff can be uploaded into the web. This will allow participants to receive a certification as proof of their training.
4. Design and preparation of a guide with standards, processes and rules.

The project must develop the building capacity, mainly of the health team and two sectors of the population:

HEALTH TEAM TRAINING:

With the organization of distance courses on topics such as the use of ICT tools, Telemedicine and Telehealth and Primary healthcare, other topics to address can be legislation, medical update, epidemiology, technology and maintenance. Certificates awarded by the university can be the incentive to take these courses, allowing participants to be aware of the benefits of the project ensuring the appropriate use, maintenance and care of telehealth tools and services.

It is important to plan programs to promote and guide processes and actions of epidemiological and clinical research, as well as formulating, executing and developing policies, initiatives and actions that may contribute towards equity in prevention and healthcare. They also should contribute to implement an information system and the establishment of indicators on the health situation at the community.

With regard to the methodology used on the training programs for professionals, they should have a mixture of theory and practice so participants can immediately use the ICT tools to provide telehealth services.

COMMUNITY TRAINING

The outcome of the training should be the identification of a group of leaders willing to act as health promoters and to undertake health promotion and prevention activities.

Another sector of the population will include specific population groups such as schoolchildren, young people, adult women and men. The methodology used will develop education programs via videoconferencing on topics such as: healthy life styles and hygiene, among others.

Community training must be planned and organized considering its important multiplier effect. Also health promoters training will bring sustainability into the project, since they are able to contribute and participate as a directly interested group. Even more important is the fact that they feel and receive the support and trust by those in charge of the project.

Another important element to be considered regarding the participatory strategy has to do with the topics developed during the training programs:

- For health teams (Telehealth, Primary healthcare and use of ICT Tools); and for the community (Healthy life habits). Those receive the training must have as a result adequate skills to intervene in the project, promoting the right conditions to share responsibilities and developing the capability to actively participate in essential actions for telehealth services. They range from the offer of services to the appropriate maintenance, care and use of technology; as well as securing economic resources for its continuity.

An important indicator that measures the involvement of health teams will be the use rate and how they take care of the tools used to provide services. This will be reflected on the stored files that will have information on the number of users benefitting from the service.

At the end of each training program, it is very important to organize a workshop with the health team to evaluate the knowledge acquired because the measurement of this effect on educational processes will help us re-think the content of the material, the dissemination method and the assessment for the certificates. This must be established in the impact indicators.

C. MAINTENANCE AND REPRODUCIBILITY STRATEGIES

All the process described above shows there is a capability generated in the health teams and in those responsible for the project to make it sustainable. It also makes possible to develop new ideas on the need to “reproduce” this experience in other regions and areas of the country, creating a telemedicine network nationally and using the experience generated in the pilot project. Some

important elements within maintenance and reproducibility strategies are as follow:

- Humanly sustainable: The different features of people with enthusiasm, determination or apathy have the ability to promote or inhibit the idea of adopting a telemedicine system. Also, it is not possible to work in telemedicine without having some basic knowledge. Therefore staff training is key for the success and sustainability of telemedicine initiatives.
- Community knowledge. The acceptance by users and a good understanding of the human and social factors, available resources, needs, strengths and weaknesses is critical for establishing a successful telemedicine system.
- Economically stable: many telemedicine programs start with funds from research projects but they require the involvement of public administration if the goal is to have sufficient and stable financing in order to keep human and technical resources in the long run to carry out the activity. Besides, the budget needs to include enough funds for the evaluation of the different aspects related to each telemedicine program.
- Acceptable for users: If patients are aware of the benefits provided by the project, they will be asking for the services.
- Features for daily use: Introducing ICT tools in the daily services and activities of the staff so they can become used to them. During the adaptation process a change of culture and work organization may be necessary.
- Providing services with equity: An important aspect that has to be taken into account when considering reproducing the system is meeting some minimum technical and equipment requirements so that all services can really reach all remote areas.
- Technologically sustainable: Compatibility between the system and the equipment connection must be verified, as well as ensuring their maintenance and replacement.
- Politically independent: the project must have the support of the administration, regardless any eventual political change that may happen with time.
- Simple and with previously established rules: the degree of complexity of any telemedicine service and the deficiencies in planning the design or the establishment of rules for its execution, have been

acknowledged as barriers for the implementation of telemedicine programs. In this regard, it is recommended to adapt the rules to the context, using simple solutions for the specific needs of a clinical context or community in order to optimize the profitability and minimize the complexity of change management.

- Evaluation is essential to scalability, transferability and continuous improvement of telemedicine quality and it should include documentation, analysis and dissemination and results.

REFERENCES

1. Burgwal Gerrit, J. C. (2001). *Planificación estratégica y operativa*. Quito, Ecuador: Abya Yala.
2. Chugani Vinita., e. a. (2009). Implantación de programas de telemedicina en la sanidad pública de España: experiencia desde la perspectiva de clínicos y decisores. *Gaceta Sanitaria, Publicado por Elsevier España*, 223-229.
3. Elaine Tomasi., e. a. (2004). Health Information Technology in primary health care in developing countries: a literature review. *Bulletin of the World Health Organization*, 867 a 873.
4. Ferrer Roca, O. (2001). *Telemedicina*. España: Médica Panamericana S.A.
5. Galvan P., C. M. (2008). Implementación de un sistema de telmedicina/Telesalud en el instituto de investigaciones en Ciencias de la Salud (IICS). Estudio Piloto. *Mem. Inst. Investig. Cienc. Salud*, 20 - 26.
6. González Martín, O. S. (2007). *Comportamiento Organizacional*. México: Grupo Editorial Patria.
7. Martinez, A., & al., e. (2005). Analysis of Information and Communication Needs in Rural Primary Health Care in Developing Countries. *IEEE Transactions on Information Technology in Biomedicine*, 9 (1), 66 - 71.
8. Monteagudo, J. L. (2005). Telemedicina: ¿Ciencia o ficción? *An. Sist. Sanit. Navarra*, 28 (3), 309 - 323.
9. Ortúzar, M. G. (2009). Igualdad de acceso a la telesanidad en zonas rurales y aisladas: propuesta de un marco ético normativo integral de acceso y distribución. *Revista Latinoamericana de Bioética*, 76 a 92.
10. Ruiz Ibáñez, C. (2007). Telemedicina: Introducción, aplicación y principios de desarrollo. *Revista, CES Medicina*, 21 (1), 77 - 93.
11. Sanjiv N., e. a. (2008). Perspectives on Medical Outsourcing and Telemedicine - Rough Edges in a Flat World? *The New England Journal of Medicine*: 358;15,, 1622 a 1626.
12. Schermerhorn, J. (2004). *Administración*. México: Limusa.
13. Shriberg A., e. a. (2007). *Liderazgo práctico*. México: Grupo Editorial Patria.

14. Tomasi, E. (2004). Health information technology in primary health care in developing countries: a literature review. *Bulletin of the World Health Organization*, 82 (11).
15. Vergeles, J. M. (2010). *La Telemedicina. Desarrollo, ventajas y dudas*. Recuperado el 02 de 2011, de Búsqueda Bibliográfica, Internet y las nuevas Tecnologías.
16. World Health Organization. (2010). Telemedicine. Opportunities and developments in Member States. *Global Observatory for eHealth series*, 2