

# The future of the professional health telemedicine

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**Enes Hafizi, Gazmore Bardhi**Department of Radiotherapy, Mother Teresa University Hospital  
Tirana, Europe**Correspondence:** Gazmore Bardhi, Radiotherapy Institute  
of Oncology QKUK, Prishtine, Kosova, Mati I Objekti, C15/18  
K-V-N22, Europe, Tel 38949893366,  
Email gazmore@hotmail.com**Received:** February 16, 2014 | **Published:** June 02, 2016

The Telemedicine means "Distance". It is the provision of medical services distantly. At present in the field of the Telemedicine, two areas of work are used:

1. The Clinical Practice
2. The Promotion and Prevention

## Clinical practice

Inside the Clinical Practice there are the following forms:

- i. Telediagnosis
- ii. Teleconsultation
- iii. Remote monitoring
- iv. Meetings you medicate to obtain the second opinions (Teleconference)
- v. Digital storage of information or clinical histories

## Promotion and prevention

Inside the educational area, one emphasizes the classes distantly inside the medical centers (and - learning by means of video, it confers).

The Telemedicine rests on the telecommunications and the IT sciences that are capable of transmitting audio, video, images and documents by means of diverse systems of communications. Inside the market there are many exclusive companies that they dedicate time and resources for the development of implements capable of supporting the labors you medicate distantly creating new.

Telemedicine's system produces basically from a hospitable center in a people distant place of the capital, which is characterized for being small and having professionals' lack of the health in different areas, this center is represented by one of major importance which has specialists and the time necessary for the attention of the patients of a remote way who are physically in the hospitable rural center in the people. The benefits of the Telemedicine are wide not only for the professional of the health who has a flexible time to connect but there is saving of time and money for the patients who live in rural distant zones of the capital and in addition, it improves the management and attention in health of the centers of health mass isolated.

This system to be able to work well must possess the following elements:

- Equipments capable of communicating (preferably videoconference)
- Way of communication (Satelital, Internet of high resolution)
- Standards and protocols of interoperability of information (HL7 and DICOM)
- The Hospital or Clinic of support that must manage the necessary

resources: infrastructure, time and specialists to give the medical services.

On having spoken about Telemedicine as way of digital storage, this one appears as a way of supporting the professionals of the health to obtain information of a rapid way and efficient, allowing the manipulation of the same one to be able to take records or clinical updated histories and need of being necessary the second opinion in a form mas easy. You prop on having supported digital records or cards there increases the aptitude to handle major volumes of information in minor physical space, which allows the expediting of internal processes what gives like proved an improvement in the management of the service.

The Telemedicine is applicable to all the medical fields including robotic surgery, wearables or devices that allow to measure different parameters of our organism with the aim to control and improve the health. One of the topics that arose from the evolution of the Technologies of Information (YOU) and that are listened now is the Big Data, which says to the systems that they handle big quantities of information and handles concepts as petabytes and exabytes that refer to all the information that cannot be processed or analyzed by traditional tools. The Big Data is widely used in Telemedicine.

The Robotic or Automated Surgery: It is the surgery that uses robot (Robot: reprogrammable multifunctional Manipulator designed to change place materials, pieces, tools or devices specialized by means of variables of movements programmed to improve the performance of variety of tasks). It is a technology under which surgical procedures can realize with the advanced more available technology of today. The use of this technology allows to the surgeon to realize the procedure of a form more precise.

In this the advances are outlined in the surgery to remote control and the invasive minimal surgery. Between the advantages of the

automated surgery they are: the precision, his miniaturization, minor incisions, reduction of the pain, reduction of blood losses and time of minor recovery of the patient, good ergonomic increase for the surgeon. Other one of the fundamental advantages of the robotic surgery in the area of otorhinolaryngology is to avoid external scars in face and in the neck, to avoid the major number of tracheotomies, to improve functional aspects of the speech, swallowing and voice.

The Robotic Surgery in Surgery of Head and Neck, called TORS (Trans Oral Robotic Surgery) is a procedure focused in the treatment of tumors, specifically of tonsils, base of the language, space parapharyngeal and subglottal larynx and in the treatment of Apnea Obstructive Syndrome of the Dream, Base Surgery of Cranium, Surgery of Ear. It is considered to be a minimally invasive surgery by boarding that is realized across the mouth. One handles also pathology of cancer of head and neck, especially in the treatment endoscopy and robotic by means of the surgery transoral of the same one. As pathology of thyroid and parathyroid by means of the minimally invasive surgery and robotic surgery. The surgical system DaVinci or Robot Davinci was introduced on the market in the year of 1999, receiving this name in honor to Leonardo Vinci Gives and approved by the FDA in the United States for the accomplishment of Robotic Surgery Transoral in surgery of head and neck. The surgical robotic system wide Davinci the capacity of the surgeon to produce the interior of the human body, not actua of autonomous form not independent but he answers to scale and in form it needs the movements that the surgeon does in the console of control.

In fact in Telemedicine (Robotic Surgery) the system consists of three principal parts:

- a. The console of the surgeon
- b. Surgical robot
- c. System of Vision

Then the operating room is going to prepare of: surgeon, auxiliary surgeon, nurse, anesthesiologist, patient, console of the surgeon, car of the patient and car of vision. The console of the surgeon consists of a display screen that presents images 3D obtained from the chamber endoscopic that this inside the body of the patient. The term “manipulation owner - slave” refers wing console of the surgeon, equipped with manipulators “owners” who control.

- a. The movements of the manipulators corresponding (“manipulative slave”) who supports the surgical instruments Endo Wrist that a major the movement multidegree of freedom that imitates and improves the articulation of hand of the surgeon as for the increase of the skill
- b. The manipulator of the chamber endoscopic during the procedure.

Telemedicine in Audiology: It is given by Audiologists specialists in Telemedicine. It is practiced in hospitals and institutions of the condition by institutions of reference to realize programs of promotion

and auditory prevention using resources of multimedia, didactic systematically organized with different supports, using technologies of information and communication with the aim to exchange information you validate for diagnoses audiology and treatment to continuing. Dispersed populations are attended visualizing his individual condition of agreement to the ethical beginning established by the ASHA protecting the confidentiality and privacy of the clinical history of every patient. The communication is facilitated between audiologists specialists in Telemedicine improving the results of the adjustment and control of headphones and the education for his managing with every patient. The audiologist specialist in Telemedicine uses several applications like Audiometry Tonal (audiometry virtual), emissions otoacustics, amplification and programming hearing aids in software, logoaudiometry impedanciometry with connections of high resolution and Internet speed. Computers are in use formed with teleaudiometry compared with a system of audiometry conventional sending stimuli with a minor mistake of 2.3 Db SPL (program de EAD) giving attention to the different virtual patients. All the advances in technologies of videoconference and networks of communication offer opportunities to the audiologist subspecialist in telemedicine. In audiology, also models use 3D, Model of graphical computation, royal movement’s human body with the aim to facilitate the transmission and knowledge. The audiologist attends 61 % of the population by sub specialization in Telemedicine to whom it corresponds to develop the treatment adapted for every patient. Is very important for the audiologist the education in the patient for example: Eight things untreated Hearing Loss can Impact:

- i. Vocabulary
- ii. Voice
- iii. Enjoying Music and Movies
- iv. Conversation in Noise
- v. Work Performance
- vi. Love and Friendships
- vii. Cognitive health
- viii. Safety are wonderful advances in science for all health professionals

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