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eHealth Today
eHealth Is Already an Integral Part of Public Health

From eHealth to Personal Well-being

eHealth Promises Prove to be True

- Quick, timely high quality affordable healthcare for all, everywhere, at any time
- Overcoming shortage of healthcare staff and funding
- Optimization of patient care
- Optimization of the work of medical staff
- Enhancing preventive care
- Protecting human rights
- Educating and thus empowering citizens
-...

- In 2005, the World Health Assembly recognized eHealth as the way to achieve cost-effective and secure use of information and communication technologies (ICT) for health and related fields, and urged its Member States to consider drawing up long-term strategic plans for developing and implementing eHealth services and infrastructure in their health sectors
Digital Health Statistics and Trends as per 2012

• How **Physicians** Utilize Digital Media
  - Physicians spend an average of 11 hours online for professional purposes per week
  - Two-thirds of physicians use online video to learn and keep up to date with clinical information ...
• Nearly half of **Consumers** say they would buy mobile health tech to
  - Monitor fitness & wellbeing - 20%
  - Allow a physician to remotely monitor a condition - 18%
  - Allow a physician to remotely continue to monitor a previous condition - 11% ...

Source: e-Health Reporter Latin America, [http://www.ehealthreporter.com](http://www.ehealthreporter.com)


What?
eHealth - Changing the 3 Main Aspects of Healthcare

- Prevention
- Treatment of diseases
- Facilitating healthy lifestyle & educating citizens

Nowadays eHealth is everywhere, influencing the Entire Healthcare System! It is able to provide healthcare everywhere and reach those that are in need on land, at sea or in the air.

Solutions for remote areas, Russia
Supporting wound care
Virtual education
Telehabilitation of articulation disorders of children

Web and SMS-servers for safe motherhood program and in-house training of personnel - Philippines, Pakistan, Indonesia
VR and treatment of phobias

All Illustrations are from Med-e-Tel, www.medetel.eu
eHealth Mobile Clinics Reach Those in Need

Mobile Telemedical Unit (UNICAT GmbH, Germany) intended for emergence situations. The Unit is mounted on the Mercedes-Benz, high-speed satellite system, the mobile x-ray ..., 2 beds for hard injured, [http://www.unicat.com](http://www.unicat.com)

ISRO’s Ophthalmologic Mobile clinic (India) connected with ophthalmologic clinic Sankara Nethralaya, [www.isro.org](http://www.isro.org)

TANA Telemedicine unit (Russia) - emergency, tuberculosis, malaria, prophylactic examinations ..., [www.tana.ru](http://www.tana.ru)

Media Lab Asia (India), telemedicine van urgent help, focus: tuberculosis, a diabetes, pre-natal complications, [www.medialabasia.in](http://www.medialabasia.in)


Where?

eHealth Applications Everywhere
Algeria
- Telemonitoring of patients with chronic digestive diseases

Angola
- Training on Telecardiology
- Promoting telehealth

Egypt
- Intelligent technologies for medical knowledge engineering

Kenya
- Anti Retroviral Treatment (ART) Provision
- Diagnostic and Treatment Expert System for Hypertension in Pregnancy

Nigeria
- Continuous Medical Education
- Telenursing
- mHealth

Tanzania
- Open source platform for medical records system

Afghanistan
- From emergency care to protection of pregnancy & mental health

Bangladesh
- SMS for motherhood support

Bhutan
- Health Help Center

China
- Telemedicine from A to Z - from scientific research and development of systems to manufacturing of equipment – diagnosis, second opinion, education, etc. SUNPA is serving >500 hospitals
- Wireless hospitals, synchronous Teleconsultation

India
- >500 Telemedicine units in suburban and rural India
- Mobile eHealth Program
- National Telemedicine Advisory Council
- National Institute of Medical Informatics & Telemedicine

New Zealand (97%) and Australia (95%) – world leaders in application of EPRs
• Israel
  • Homecare systems
  • Chronic care & rehabilitation
  • Mobile health systems
  • Wireless personal alarm systems
  • Tele-consultation
• Japan
  • Various eHealth apps – from speech rehabilitation to mHealth & maternal care
• Pakistan and Philippines
  • Online TB diagnosis
  • Report of pregnancy by SMS
  • Support of healthcare professionals in rural and remote areas
• Singapore
  • Started the implement of National Electronic Health Record with $176 million

• Austria
  • From Telemonitoring and homecare to mobile Teleworkplaces for radiologist and emergency medicine
• Czech Republic
  • EPRs for dental care & cancer screening
• Finland
  • Mobile control of diabetes, hypertension, etc.
  • Education
• Germany
  • Chronic disease management
  • Virtual clinics, emergency care…
• Russia
  • From mobile hospitals (trains) and Tele-nursing to Tele-education, homecare and portable telemedicine systems for emergency situations
  • …
Argentina
Mobile health & eLearning

Ecuador
Mobile surgery

Brazil
eHealth for the Amazon Region - assisting urban and Indian populations with skin and mouth lesion complaints in the region of Jiparana City, Rondonia
Enhancing Education and Training via 3D Modeling and Computer Graphics Animation
Tele-psychiatry

Peru
m-Learning

USA
Tele-pediatrics - children make up 27% of all emergency departments visits, but only 6% of EDs in the US have all of the necessary supplies for pediatric emergencies
Tele-nursing - Trend > 600% increase 5 years in USA
Smart Home Labs
Tele-trauma & Telesurgery ...

Estromini et al. Telepsychiatry: A New Tool for the modeling Mental Health Assistance in South Brazil, Med-e-Tel 2013

Alkmim et al. 1,000,000 Electrocardiograms by Distance ..., Med-e-Tel 2013


Murrugarra et al. e-Learning: Education in the Prevention in AIDS/ITS in the Andean Region and Caribbean, Med-e-Tel 2010

How Much?
FAQ:
Is it possible a priori to evaluate the cost effect of eHealth implementation?

The Answer – eHealth Economics

- Assesses the costs benefits of an eHealth initiative over time and for several stakeholders, including citizens, patients, carers, health professionals and other health workers, healthcare provider organization’s and payers
Preliminary Evaluation of Cost Effect
(after Figueira et al., 2012)

• The cost \( C \) for transferring the patient and the distance \( D \) is
  \[ C = a \cdot D \]
  where “\( a \)” represents transportation cost per kilometer.

• Savings \( S \) have to be calculated as
  \[ S = \eta \cdot C = \eta \cdot a \cdot D \]
  where “\( \eta \)” is the eHealth activity efficiency or this is the percentage of avoided referrals caused by the use of eHealth in relation to the total number of referrals.

• In order an eHealth activity \( X \) to be economically efficient its cost has to be at least equal to the saving \( S \) or
  \[ X = \eta \cdot a \cdot D \]

• Based on this simple equation, the minimum distance for cost effectiveness has to be
  \[ D_{\text{min}} = \frac{X}{\eta \cdot a} \]

• Or, if the referral distance for a specific city/medical practice/municipality, is \( >D_{\text{min}} \) the implementation of eHealth distant consultation system will result in savings for that particular city/medical practice/municipality.

In Sum:

eHealth implementation is successful and highly beneficial for citizens if it:
• Is based on knowledge, confidence and credibility
• Meets the needs of the community
• Respects local traditions, culture, business development, avoids copy-cat-approach, etc.
• Uses the already developed healthcare system

Never forget
“Wisdom lies neither in fixity nor in change, but in the dialectic between the two”

Octavio Paz (1914-1968)
from Others

- Learning from others is one of the best ways to grow
- There is always something new to learn and someone there to learn from!
- Especially important is for developing countries not to underestimate the exchange knowledge, expertise and ideas between themselves, as their goals, problems and resources are similar

The way forward is networking and partnership in order to make the benefits of science, information and technology, available to all

A major international forum helps bringing experts and stakeholders together
Mission Statement

“ISfTeH exists to facilitate the international dissemination of knowledge and experience in Telemedicine and eHealth and to provide access to recognized experts in the field worldwide”
Main Activities

• **Promoting & Supporting** Telemedicine/eHealth activities around the globe
• **Incubating & Assisting** the start-up of new national organizations
• **Networking & Scientific Platform**
• **Annual International Events**
• **Supporting** member countries in the field of Telemedicine/eHealth
• **Strategy & Policies**
• **Regulations & Standards**
• **Business Model & Reimbursement**
• **Education & Training**
• ...

Worldwide Membership
(82 countries – November 2013)

International Relations

[Logo of World Health Organization]

[Logos of various international organizations]
Communication Tools

- Website www.isfteh.org
- Discussion Forum (on the website)
- ISfTeH Newsletter (quarterly)
- ISfTeH e-Journal
- National eHealth Strategies
  - Australia
  - Ghana
  - Kenya
  - Rwanda
  - Scotland
  - South Africa
  - Sweden

ISfTeH Working Groups

- Education and e-Journal
- eHealth Economics
- Medical- and Bio-Informatics
- Open Source
- Students
- Junior Doctors
- Chronic Disease Management
- Tele-Nursing
- Tele-Odontology
- Tele-Ophthalmology
- Women and eHealth – WoW
- Good Practice Models
- e-Portuguese
- e-Hispanic
Annual Event: Med-e-Tel

The International Educational and Networking Forum for eHealth, Telemedicine and Health ICT, [www.medetel.eu](http://www.medetel.eu)

**Med-e-Tel 2014: Abstract submission deadline – December 22, 2013!**

Knowledge Resource Center

>3700 abstracts, papers and PPT

Download for free!
• ISfTeH has proved that networking and collaboration are essential!
• Knowledge of what is globally going on in the field of Telemedicine/eHealth supports professionals in:
  • Building up a common level of understanding and knowledge
  • Influencing local policy where the role of Telemedicine/eHealth in the Health care sector is concerned
  • Building public awareness about Telemedicine/eHealth and its potentials
  • Having constructive and meaningful dialogues and building multi-stakeholder consensus on principles, policies, and strategies related to effective, technologically appropriate and culturally sensitive eHealth implementation

Sometimes, it is just as important to know where to go for available information as to receive the exact information itself

• There is no way back!
• The future of eHealth does not evolve between two parallel lines. It evolves between two permanently enlarging axes, meaning that, as we speak, the scope becomes broader and the potential increases day by day.
• Let’s hope that eHealth will grow in such a controlled way that, maybe within the 10-20-50 years, there will be no more need to talk about it, as it will have melted entirely in the common practice of medicine and health policies!
• But never forget: it is all about the Patient/Citizen!

Past

Present and Future
Thank You!