

ARTIGO

Med-e-Tel and ISfTeH – Making the Telemedicine/eHealth together

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INTRODUCTION

Terminology: Telemedicine and eHealth

The term “Telemedicine” is used to describe the application of information and communication technologies (ICT) in healthcare. Defined as an application of ICT to provide and support healthcare and exchange healthcare information when a distance separates the participants, it is a combination of two Greek words *τήλε* = tele - meaning “at a distance” and “*medicina*” or “*ars medicina*” meaning “healing”. The introduction of the word telemedicine is ascribed to Thomas Bird, who in late 1960’s had used it in order to illustrate health care delivery, where physicians examine patients at a distance through the use of telecommunications technologies. In 1980’s and 1990’s multiple working definitions of telemedicine were introduced. Some of them are very wide such as “something to do with computers, people and health”, others – extremely narrow e.g. “the healthcare industry’s component of business over the Internet”.

With more involvement of the electronic communication systems, the major International Organizations (WHO), European Union (EU), International Telecommunication Union (ITU) and European Space Agency (ESA) - have officially adopted the denomination “eHealth”. “eHealth refers to the use of modern information and communication technologies to meet the needs of citizens, patients, healthcare professionals, healthcare providers, as well as policy makers”¹.

In 2005, the World Health Assembly recognized eHealth as the way to achieve cost-effective and secure use of ICTs for health and related fields, and urged its Member States to consider drawing up long-term strategic plans for developing and implementing e-health services and infrastructure in their health sectors.

What is the correct terminology? Unfortunately, to this very moment, the terminology has neither been agreed in Europe nor at worldwide level. Paradoxically even between and within the countries from EU different terms are used to describe one and the same service. Positions differ and the preferences are usually influenced by individual experience, personal and professional viewpoints. Thus for some authors telemedicine and eHealth are synonyms. Others accept that eHealth is a broader term and includes telemedicine. A third group separate the terms, accepting that telemedicine incorporates telecardiology, teleradiology, telepathology, tele-ophthalmology, teledermatology, tele-surgery, tele-nursing, etc, while eHealth comprises of e-Santé, Information and Communication Technologies in health (ICT-Health), all types of health communication services, PACS, patient information systems, e-education, e-prescription, etc. In this text both terms will be used.

Global Implementation

No doubt, Telemedicine/eHealth is now a global topic. But what is the current situation regarding its implementation worldwide?

One of the most extensive surveys performed recently is the WHO Global eHealth Observatory^{2,3}. It outlines the Telemedicine/eHealth development among its Member States. The results from 114 countries covering 81% of the world's population revealed that 4 areas of Telemedicine/eHealth are implemented with a priority - teleradiology, telepathology, teledermatology and telepsychiatry. The provision of these 4 services is far less advanced in upper-middle, lower-middle and low-income countries than in high-income countries. The African and Eastern Mediterranean Regions generally had the lowest proportion of countries with established telemedicine services. As far as applications of mobile health technologies (mHealth) are concerned, the four most frequently applied services are: health call centers (59%), emergency toll-free telephone services (55%), managing emergencies and disasters (54%),

and mobile telemedicine (49%). Consistent with Telemedicine/eHealth general trends, higher-income countries are more active in implementation of mHealth than lower-income countries. Countries in the European Region are, as per fall 2009, the most active and those in the African Region the least active.

In sum, despite of the significant funds and efforts dedicated to the development of Telemedicine/eHealth services they are not as widely implemented as it must be expected. And this is not because these services are not needed. Time proved that telemedicine/eHealth can help solving the healthcare dilemmas or at least offering the means to do so. The increasing acceptance of Telemedicine/eHealth applications in various areas of health care such as chronic heart failure, wound care, psychiatry, psychology, surgery, chronic disease and care for elderly and house bound patients, mobile eHealth solutions, etc. Experts admit that Telemedicine/eHealth has a vast and still unrealized potential. The question then is what hinders the wide implementation of Telemedicine/eHealth.

Experimental data and literature reviews support that the 10 most common barriers to implementation of telemedicine services are as follows: cost, legal and cultural issues, lack of infrastructure, lack of demand for such services, lack of adequate policy at national level, low or no priority for Telemedicine in healthcare development as well as lack of knowledge, experts and standards^{2,4}. While there is an agreement that these are the main obstacles, for the different communities the rank of the barriers differs. Developing countries are more likely to consider financial issues such as high costs of equipment or running the service, the inadequate infrastructure and the lack of technical expertise to be the most significant. Developed countries are more likely to consider legal issues, data privacy and confidentiality as the most important. While for the African countries the 4 top barriers are the perception that costs of telemedicine are too high, the lack of infrastructure and organizational culture and national policy in telemedicine, for the European countries the top 4 obstructions are

missing legislation, costs, insufficient organization culture and missing standards. Thus, the future of Telemedicine/eHealth depends on overcoming the various challenges such as license, legislation, ethics and standards.

Having in mind the above, cooperation, networking and learning from the experience of the others are the best way to overcome the barriers in Telemedicine/eHealth implementation, to speed up its development and save money and time. Put in another way, within the world of Telemedicine/eHealth, it is crucial for all the players to be aware what is globally going on instead of reinventing the wheel.

Let's concentrate on two international initiatives facilitating the international cooperation and networking – the International Society for Telemedicine and eHealth and Med-e-Tel.

The International Society for Telemedicine and eHealth

The International Society for Telemedicine and eHealth (ISfTeH, www.isfteh.org, Fig. 1) is a not-for profit membership organization of national, regional, international associations and others, institutions, organizations,



Fig 1. ISfTeH home page

corporations, individuals, students and nurses, established under Swiss law. ISfTeH is the international representative body of national and international Telemedicine and eHealth organizations and is dedicated to broadly promoting Telemedicine/eHealth around the world. ISfTeH supports the startup of National Associations or Societies and facilitates their international contacts. Its aim is to disseminate knowledge, information and experience and to provide access to recognized experts in the eHealth field worldwide. Initiatives focused on widely implementation of Telemedicine/eHealth are:

1. *The Global eHealth Ambassadors Program (GeHAP)*. Its start up is supported by the Rockefeller Foundation, the Gulbenkian Foundation and Microsoft. The purpose of the program is to raise the profile of eHealth worldwide, through advocacy activities. Advocacy plays a particularly important role within the broad framework of using information and communication technology (ICT) to strengthen health systems, especially in the Global South. Chaired by Archbishop Desmond Tutu, the eHealth Ambassadors are globally recognized personalities who serve as high-level advocates for eHealth. They articulate consistent, ethical and evidence-based policy and advocacy positions with regard to the use of ICT in health, promote the development of integrated eHealth systems in countries; and advocate a higher profile for eHealth in health development activities, country budgets, bi-, and multi-lateral partnerships, and aid and development programs. The ISfTeH provides the scientific and technical support to the program. As per fall of 2011 the eHealth Ambassadors are: Archbishop Emeritus Desmond Tutu; Prof. Fernando Henrique Cardoso, Former President of Brazil; Dr. Emilio Rui Vilar, President of the Gulbenkian Foundation; Lord Nigel Crisp, former CEO of the NHS, UK; Peter Gabriel, Eminent musician and Strive Masiyiwa, Founder and CEO, Econet Wireless Group.

2. As part of ISfTeH educational activity, a *Working Group "Education"* is also functioning. The mission of this Committee chaired by Prof. M. Mars from South Africa is to list existing programs on eHealth; to establish basic eHealth templates for fundamental training programs; to coordinate eHealth educational efforts around the Globe; to assist the setup of new courses in eHealth and to define the needs of universities and specialists for basic and continuous education.

3. The ISfTeH *Students' Working Group* aims to promote a free of charge participation of students (up to MSc degree) in Telemedicine and eHealth conferences and other related initiatives, as well as providing access to recognized experts in the field worldwide. The involvement of a new generation of professionals is considered a key component towards a successful implementation of new technologies in health assistance and education.

Since 2008, thanks to a partnership established between the ISfTeH and Blackboard (former Elluminate®), a free of charge license allows the ISfTeH Students' Working Group to organize live web conferencing sessions for its student members. The sessions comprises of pre-selected 5 students' presentations (around 10min, with 5-10 power-point slides), made via Blackboard. The session is part of the program of Med-e-Tel as will be mentioned below. A Jury, composed of distinguished and honorable eHealth professionals, traditionally elects the best students' presentation. In order to promote the participation of students from different countries ISfTeH offers an award of US\$1,000 for the best web conferencing presentation. Through Blackboard Live Multiseat Vroom, all participating students and both a local and a virtual audience (up to 100 seats) could virtually join in the session taking advantage of full audio and video Blackboard facilities. The objective is to have full interactivity and dynamic discussions even in low bandwidth circumstances, giving emphasis to the participation of students from all countries, including those regions with limited technological facilities. All presentations participating in students' sessions are available for free at <http://www.medetel.eu>.

4. The goal of the ISfTeH *Telenursing Working Group* is to provide a forum for exchange of knowledge and experiences of nurses and others nurses supporters using eHealth applications. The Group advocates for increased use and evaluation of telehealth services by nurses and stimulates innovative ideas and promotes initiatives for further development of eHealth. It also supports the advance nurses' knowledge and skills in telehealth through dissemination of research findings, practice guidelines and education programs including virtual education sessions, advocates ethical use of telehealth services. The Telenursing Working Group collaborates closely with the American Telemedicine Association Telehealth Nursing Special Interest Group, with the International Council of Nurses, Telenursing Network and with the South African Telemedicine Association Telehealth Nursing Special Interest Group.

ISfTeH *Telenursing Working Group* is planning to organize 4 virtual sessions per year applying Blackboard Live Multiseat Vroom thus allowing up to 100 virtual participants to take part in the session and benefit from the discussions. Two of these sessions were already organized early in 2012 and the presentations are available for free at http://www.isfteh.org/working_groups/category/telenursing.

5. *Collaborative Care Team in Open Source* is another working group. Its main objectives are to support multidisciplinary collaborations between the care provider in charge of the same patient, across distances and organizational barriers as well as to share technical know-how about software including source code, i.e. in Open Source. *Collaborative Care Team* actively advocates and implements multidisciplinary medical collaborations in healthcare across Internet. More about this initiative and its projects is accessible at http://www.isfteh.org/working_groups/category/collaborative_care_team_in_open_source

Additional information about ISfTeH activities is available at <http://www.isfteh.org>.

eHealth science, practice and market need a meeting place. Such a place is Med-e-Tel (The International eHealth, Telemedicine and Health ICT Forum

for Education, Networking and Business, www.medetel.eu, Fig. 2), the yearly official event of the ISfTeH.



Fig 2. Med-e-Tel home page

6. *eHealth Economics Working Group* is in the process of shaping up. The Group will include experts and will be focused on the assessment of the costs and benefits of eHealth initiatives over time and for several stakeholders, including citizens, patients, carers, health professionals and other health workers, healthcare provider organization's and payers. Professor Masatsugu Tsuji, Professor of Economics at Hyogo University and council member of the Japanese Telemedicine and Telecare Association is the leader of the Group.

The International eHealth, Telemedicine and Health ICT Forum for Education, Networking and Business (Med-e-Tel)

The name Med-e-Tel summarizes what the event is about, i.e.:

- The “Med” in Med-e-Tel stands for healthcare services (institutional and home based care, prevention and education) and for medical products and

equipment (medical imaging equipment, monitoring devices, electronic health records, etc.).

- The “e” stands for the electronic and IT industry and services (hard- & software, internet, e-mail, etc.), while
- The “Tel” stands for telecommunications (whether it is POTS, mobile, satellite, videoconferencing, VoIP, or other).

HISTORY

The event has started out in 2002 under the name “Telemedicine & Telecare International Trade Fair” and gradually grew out to become the most international Telemedicine and eHealth networking event around the world. Within 10 years the number of attending countries has increased almost 2,5 times, while the number of presentation grew 6 times (Fig. 3).

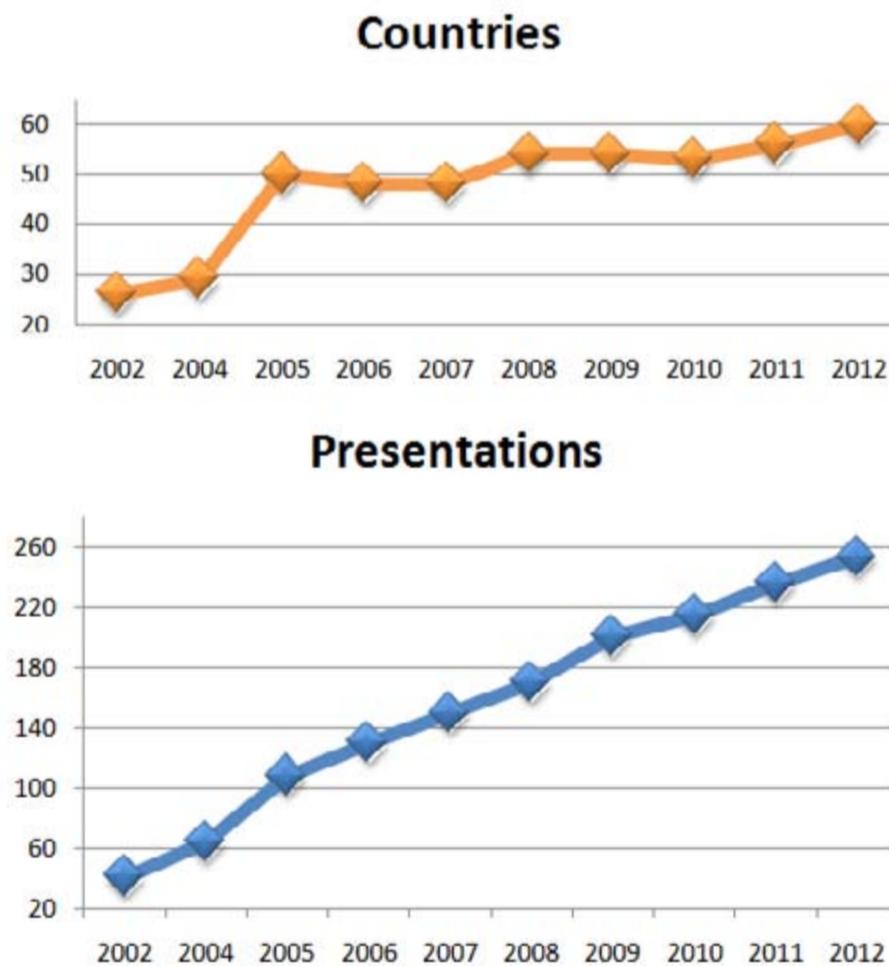


Fig. 3

OBJECTIVES

Med-e-Tel is a highly specialized event that brings suppliers of specific equipment and service providers together with buyers, healthcare professionals, decision makers and policy makers from many countries around the globe and provides them with hands-on experience and knowledge about currently available products, technologies and applications. This is the forum where state-of-the-art products, ideas, projects, etc. are presented and discussed. Year after year Med-e-Tel is becoming a nesting place for new co-operations and partnerships between scientific groups and institutions, small, medium and large size enterprises, from all over the world. It facilitates worldwide eHealth implementation via networking, education, business.

BUSINESS

The forum creates opportunities for the representatives of research organizations, academia and healthcare providers (hospital managers, hospital department heads, general practitioners, health authorities, homecare service organizations) from many countries around the globe to meet and to contact with the industry involved in the supply or the implementation of Telemedicine/eHealth products and systems and see the solutions and technology at work in the expo area. Non-stop demonstrations at the exhibition give a better view on the potential behind Telemedicine/eHealth tools and services.

EDUCATION

In addition to the business-to-business aspect Med-e-Tel is also focused on an extensive educational program. The program is organized around plenary and parallel sessions, workshops and satellite symposia, project meetings. Combining over 250 oral and poster presentations the program presents

current applications and best practice examples in the field of Telemedicine/eHealth and provides a glimpse of future trends in the field. Attendees are learning from the experience built up by experts from around the world; discuss their effects on the healthcare system as a whole and are update on new developments allowing more effective and efficient use of technologies to improve quality of health, medical and social care.

Specific aspects of Med-e-Tel educational program are the sessions dedicated to nurses and students as already mentioned when the ISfTeH working groups “Students” and “Nurses” were presented.

Med-e-Tel provides the right resources to help today’s busy physicians meet their professional needs providing them an opportunity to receive Continuous Medical Education (CME) credits. The system for CME is aimed to assure the high level of theoretic and clinical competence throughout the working life of medical specialists. Doctors are faced with an exploding amount of literature and new technologies as well as a concern about escalating medical costs with a great emphasis on efficacy. CME provides educational activities, which allow one to maintain, develop and increase medical knowledge and skill and to improve the professional performance to ensure better and safer treatment for the patient. Since 2007 Med-e-Tel is accredited by the European Accreditation Council for Continuing Medical Education (EACCME) to provide CME activity for medical specialists. Depending on its annual program Med-e-Tel is designated to provide up to 18 European CME credits (ECMEC). EACCME credits are also recognized by the Royal College of Physicians and Surgeons of Canada and by the American Medical Association towards the Physician’s Recognition Award (Fig. 4).

Another educational activity that is worth mentioning is the Global eHealth Strategies Symposium. It aims to provide an intercultural and multidisciplinary framework in order to promote policy dialogue on how eHealth can address health issues and challenges in developing countries, as well as analyze transferability of evidence, identify barriers and determine factors

for a useful deployment of eHealth. The European Commission (DG Information Society and Media) is a partner of the Global eHealth Strategies symposium. In order to promote participation of developing countries and to promote eHealth research and implementation, the Directorate-General Information Society and Media of the European Commission is providing grants to 3 selected speakers from developing countries to present their projects or initiatives at Med-e-Tel at the Global eHealth Strategies symposium.



Fig. 4 Example of Med-e-Tel 2012 UEMS/EACCME certificate

Med-e-Tel is publishing Electronic proceedings since 2006 and the series “Global telemedicine/eHealth Updates: Knowledge Resources” since 2008. Both publications present a collective experience of experts from different continents all over the world. Papers reveal various national and cultural points of view on how to develop and implement Telemedicine/eHealth solutions for the treatment of patients and wellbeing of citizens. Year after year the series “Global Telemedicine and eHealth Updates: Knowledge Resources” provide a glimpse and summarize the most recent practical achievements, existing solutions and experiences in the area of Telemedicine/eHealth. Both publications offer ideas and valuable knowledge to those who are preparing to update or start introducing Telemedicine/eHealth in their regions or countries and allow them to rely on the experience of others, make them aware of the benefits and problems that were encountered during and after implementation of systems or services, and as such help them to avoid mistakes and reduce po-

tential problems. Publications from 2006, 2007, 2008 and 2009 can be downloaded from <http://www.medetel.eu/index.php?rub=proceedings&page=info> for free. Hard copies can also still be purchased. Proceedings from 2010 till 2012 are currently only available for purchase from the website.

One of the most important educational initiatives of Med-e-Tel is the creation of the Knowledge Resource section (http://www.medetel.eu/index.php?rub=knowledge_resources&page=info). This is a database, available for free, that provides copies of all abstracts and presentations that have been made at Med-e-Tel throughout the past years (2002-2012). It is a comprehensive listing providing an overview of Telemedicine and eHealth research, technology, practical experiences and information from around the world, which is updated year after year with new titles and links.

The information is sorted per year, per topic and per country, and also includes a list of Evidence Based Telemedicine/Telehealth experiences. The “Year” refers to the year the presentation was made at Med-e-Tel. The “Topic” section lists the presentations per general topic (such as telecardiology, homecare, developing countries, etc.), while “Country” refers to the country of the authors. Although this classification per country is not as relevant for all presentations (as some cover regional or global issues, or non-country specific data or experiences), it is highly relevant for some of them and allows to search for country specific Telemedicine and eHealth programs or data.

The “Evidence Based Telemedicine/Telehealth” section provides an overview of presentations that offer evidence of Telemedicine/Telehealth outcomes, i.e. providing an insight into clinical and/or economic effectiveness and efficiency of Telemedicine/Telehealth applications (Fig. 5).

If summarize– with more than 3000 abstracts, presentations and papers, Med-e-Tel is offering an extraordinary virtual free library, a fantastic educational tool for all engaged in the field of Telemedicine/eHealth.

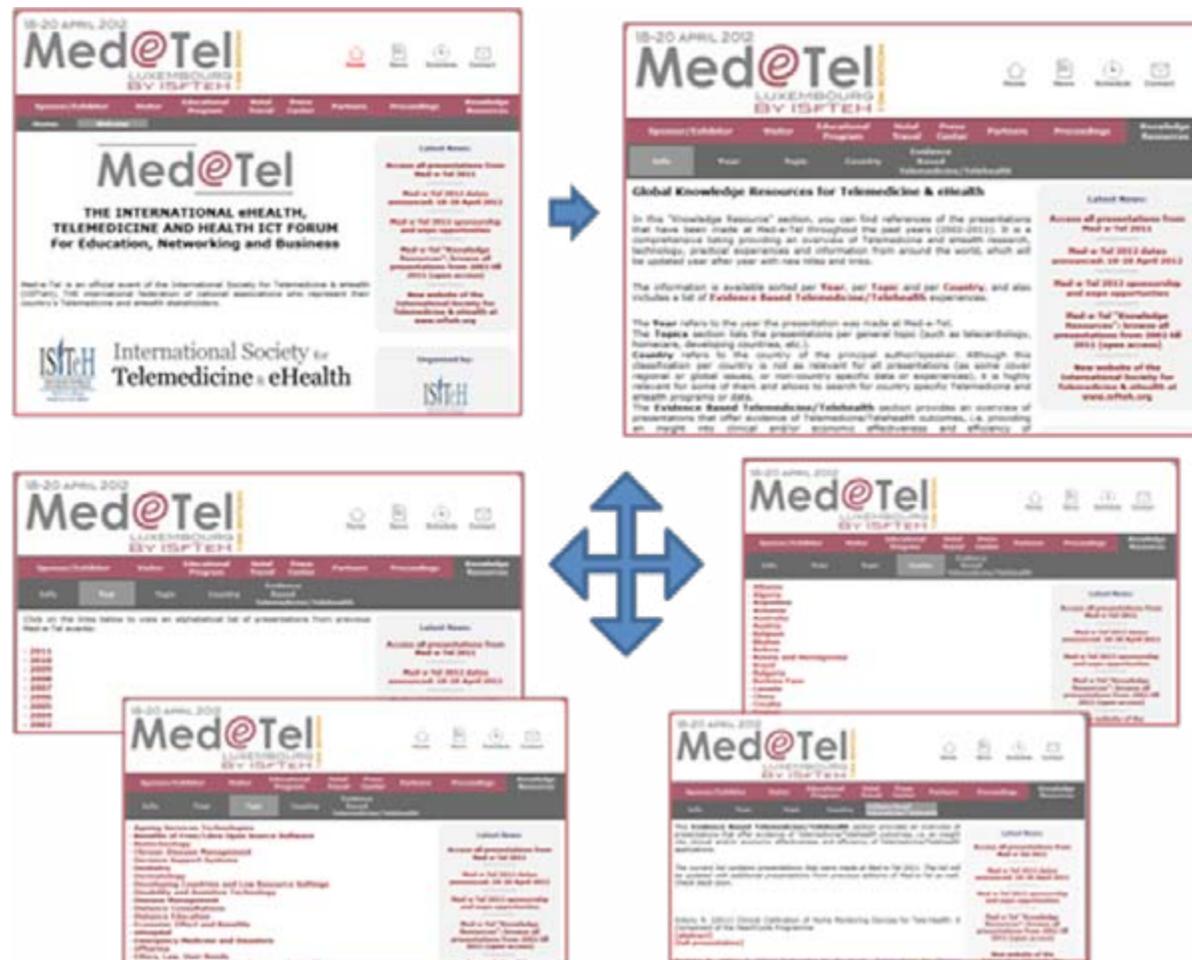


Fig. 5 Knowledge Resource Section

Networking

Med-e-Tel takes place in Luxembourg in April and follows a standard format including exhibition, education and scientific program and media corner. Its annual editions usually called together participant from over 55 countries. World Health Organization, European Commission, European Space Agency, International Telecommunication Union are only part of the major players that take part in the event. Year after year it turns to be the best networking place for actors in the world of eHealth. Med-e-Tel encourages healthcare providers, medical practitioners, nursing professionals, government officials, researchers, educators, and industry representatives to cooperate and exchange ideas, provide evidence for the efficiency, effectiveness and user acceptance of telemedicine and eHealth applications, as well as to demonstrate successful business cases, project results, national and international policy guidelines, service and technology standards, etc.

Attendees' Attitude

To increase the success of Med-e-Tel after each edition, attendees are kindly asked to fill in evaluation questionnaires. With the questionnaires the organizers are trying to evaluate the satisfaction rate of visitors and their opinion concerning Med-e-Tel in general. The feedback helps to adapt Med-e-Tel. Participants filled in the questionnaires voluntarily and anonymously. A summary of the results is published on Med-e-Tel website.

Two surveys are performed: an online one, opened to all attendees, and another one, on the spot, focused exclusively on medical professionals who had applied for CME. Total number of respondents vary between 25 and up to 33% of all attendees. Fig. 6 and 7 reveal some of the results after Med-e-Tel 2012.

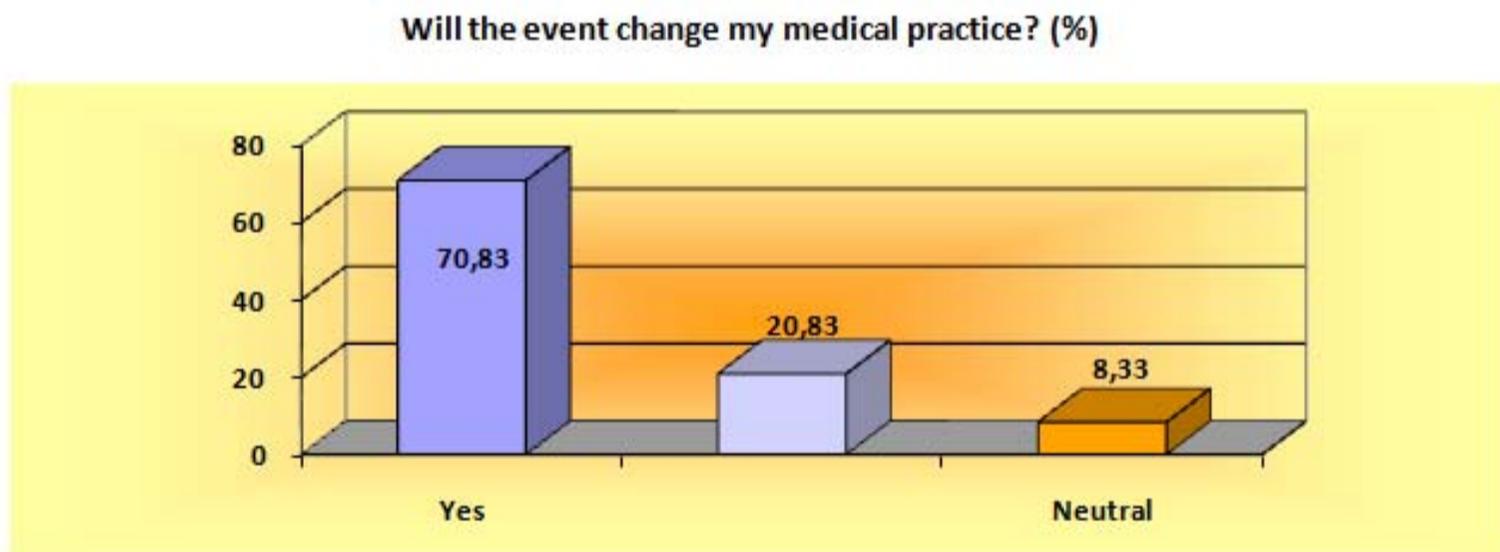


Fig. 6A

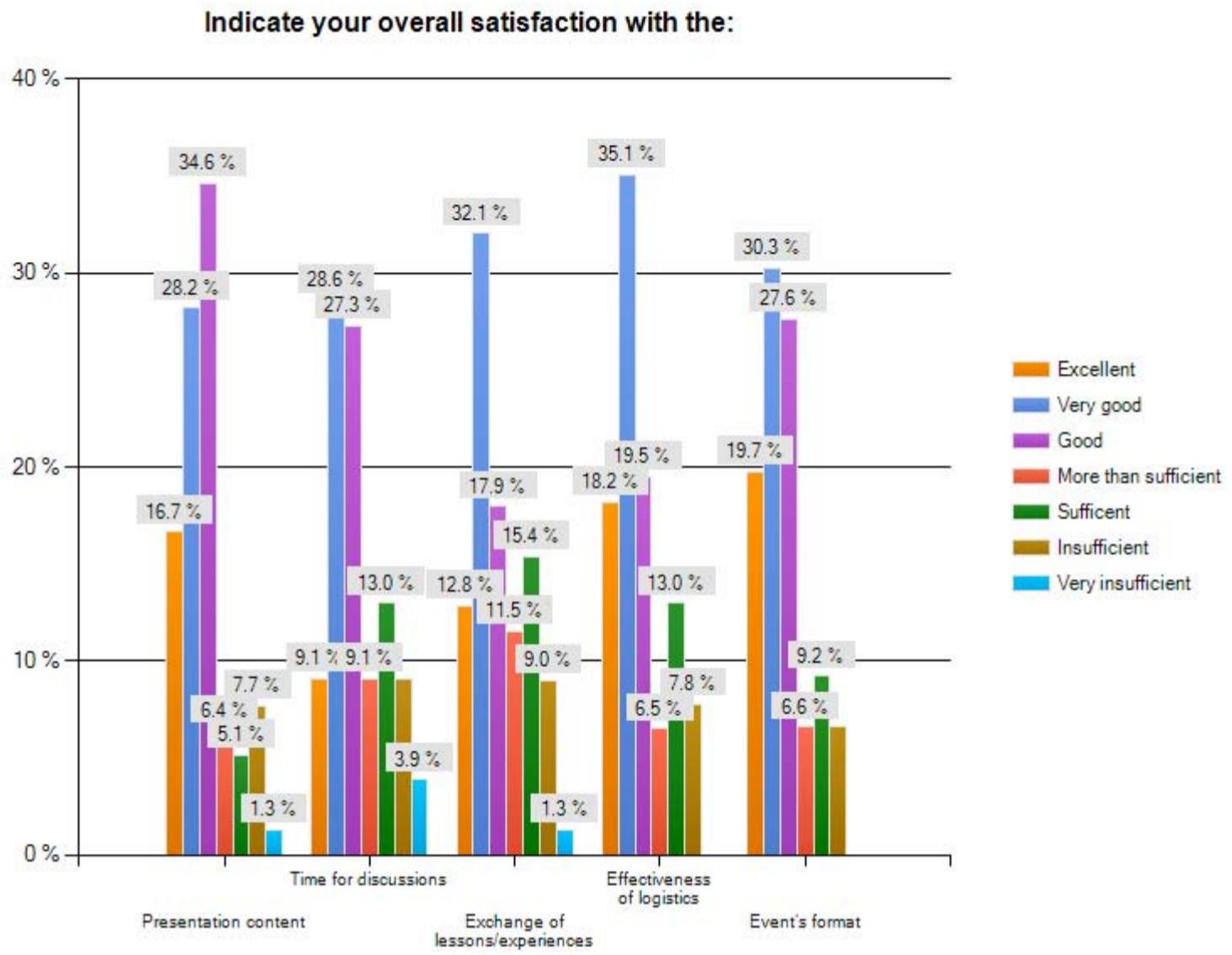


Fig. 6B

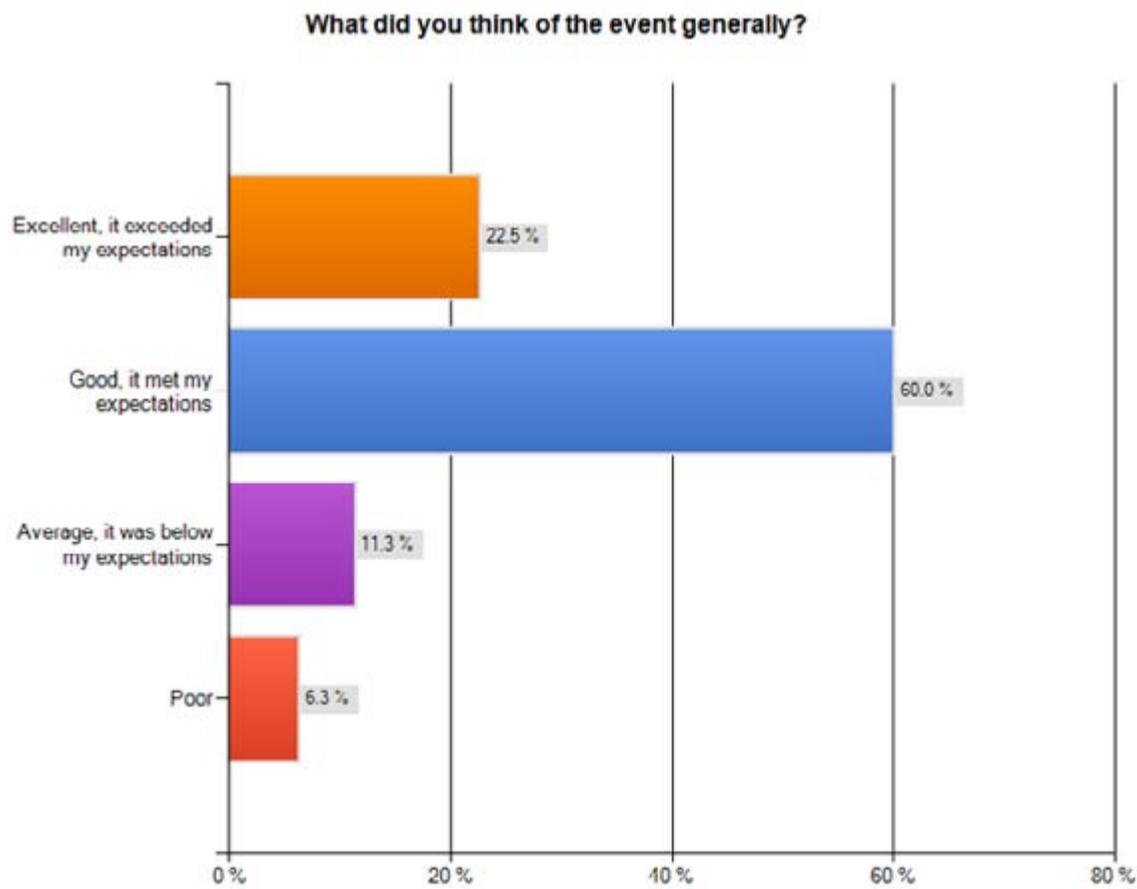


Fig. 7

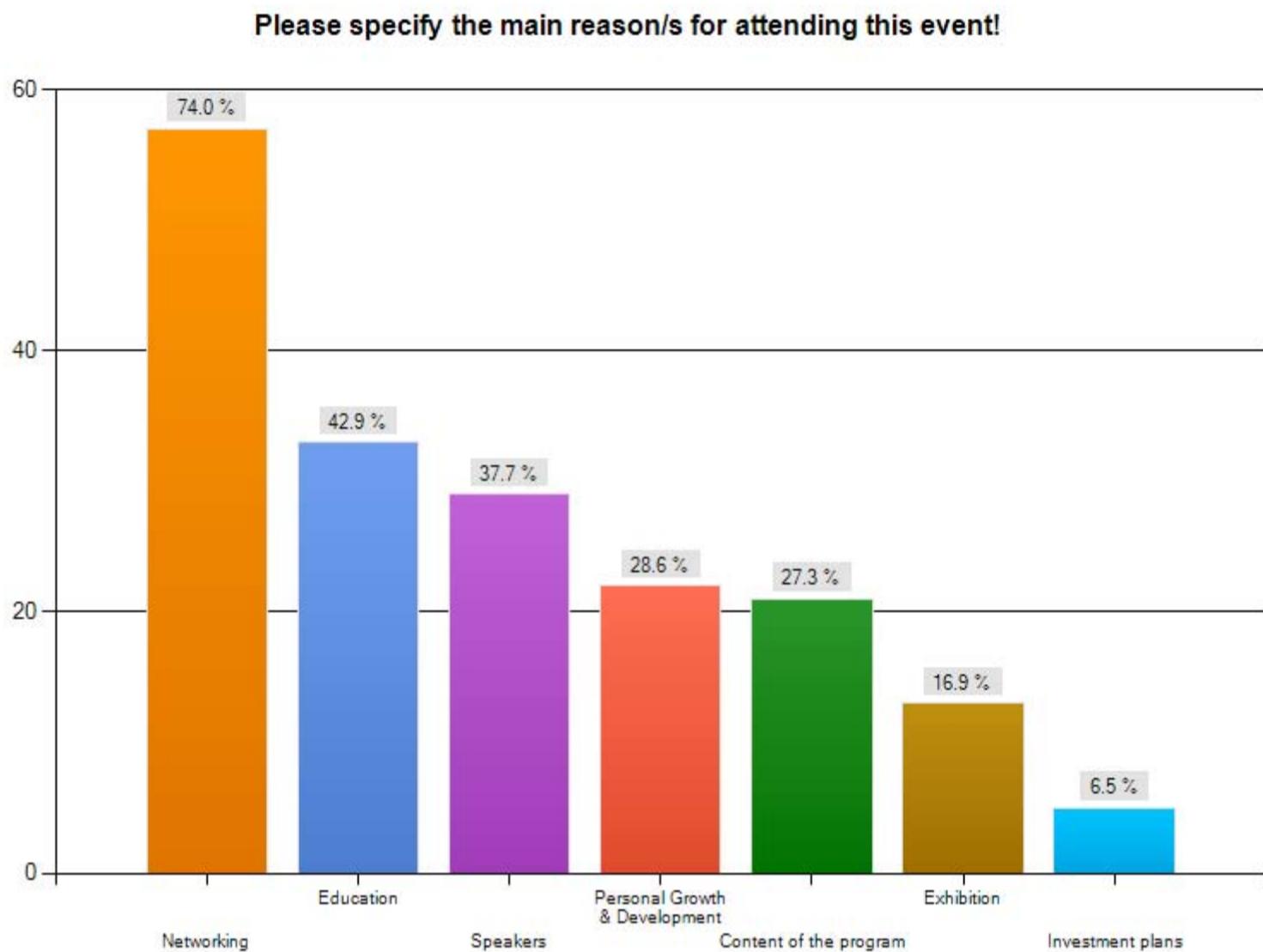


Fig. 7B. Note: the question presented at b) allows more than 1 answer

CONCLUSION

ISfTeH and Med-e-Tel are the two side of the coin. They facilitate telemedicine/eHealth implementation all over the world via a series of activities such as:

- Creation and updating of the Global Knowledge Resources Centre for Telemedicine & eHealth – free access high quality database including not only books but over 3000 abstracts, PowerPoint presentations and papers, searchable by year, country and topic, and also including specific section for evidence based telemedicine/Telehealth;

- Organization of basic training courses in Telemedicine/eHealth;

- Publication of an Electronic Telemedicine/eHealth Journal – starting autumn 2012;

- Assisting networking and supporting events all over the world and enabling the participants to access practical information at first hand;
- Organizing high quality continuous medical education for medical specialist;
- Supporting the education and contacts of students via virtual sessions and student working group;
- Assisting the professional career of nurses via virtual sessions and tele-nursing working group;
- Promoting research and participation on eHealth in developing countries via award grants in cooperation with EC;
- Disseminating Open source applications in health and many more.

Thus both ISfTeH and Med-e-Tel lead the way from needs to practical applications, highlight quantitative numbers and results, serve networking – meeting and dealing with real people, real business, real achievements, real products, real problems, provide education for business , science, practitioners and citizens. ISfTeH and especially Med-e-Tel are the perfect organizations to follow-up on what is globally going on and what the new trends in the area of eHealth are.

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