Telemedicine: International Cooperation and the Regional Approach

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SUMMARY. The paper focuses on the impact of telemedicine for enhancing healthcare services at regional level. The essential role of international cooperation is underlined. Examples of successful initiatives are presented in brief and cost effect is discussed.

Keywords: regional approach, networking, ISfTeH, Med-e-Tel

1. INTRODUCTION

Brought to life by contemporary changes of our world, telemedicine is believed to be the panacea that can help solving critical issues of rising healthcare costs, care for ageing and housebound population, staff shortage, etc. During last decades telemedicine proves to be a feasible tool to provide optimal routine as well as specialized healthcare. It has the potential to improve both the access to and the standard of care.

This brief article is focused on one, often underestimated, aspect of telemedicine implementation – the regional approach. No matter whether a region in one country or region including several countries is considered, regions are not only a geographical term. Apart from geography regions also share some common characteristics – financial, cultural, religious, etc., that may have a crucial effect on telemedicine realization.

2. WHY REGIONAL APPROACH?

The reasons are many just to list some of them:
- Copy–past approach is not always beneficial. Most of the regions have different disease burden that results in different needs for optimizing healthcare service;
- Regions vary in income, resp. the funds that are dedicated for healthcare are different (Figure 1). The differences are so drastic that it is worth considering what and how to implement from the experience of the pioneers in the field;
- Regions’ infrastructure (in broadest aspect) is different;
- Cultural acceptance of telemedicine applications must always be a “Conditio sine qua non”.

3. HOW TO IMPLEMENT ONE AND THE SAME TECHNOLOGY WITH A MAXIMUM EFFICIENCY – LESSONS LEARNED

Let’s concentrate on two regional characteristics – difference in available funds and cultural /religion traditions and demonstrate the effect of regional approach in telemedicine via two applications.

As shown on Figure 1, healthcare funds may be quite different. Yet, one and the same technology may be applied in low and high income regions with adequate adaptation. Example is the application of SMS (Short Message Serve) for management of chronic diseases.

SMS system was introduced in Saratov Railway Clinic, Russia. The country has a total expenditure on health 5.2% of GDP for 2005. This clinic has 534 beds and is the main hospital in Volga Region – area of > 250000 km2, population >6 million. SMS are used to control the daily schedule of patients with chronic diseases, to remind them about appointments for preventive treatment in the rehabilitative center and schedule for visiting doctors. In addition, via SMS nurses received info about patients health status priorly patients hospital visits (1).

Another success story is the “On Cue” 2002 project in South Africa, sending SMS reminders to patients with tuberculosis for drug regimen compliance. SMS were sent out every half-hour within a chosen time-frame to remind patients to take medicine. As of January 2003, the city of Cape Town has paid only $16/patient/year for SMS reminders. Only 1 patient out of 138 was non-compliant (99.3% compliance rate)! This is something worth trying!

In the high income regions as Stuttgart, Germany (country’s total expenditure on health is 10.7% of GDP for 2005), SMS was also applied for management of chronic diseases. The Centre for Psychotherapy Research in the town developed SMS system for after-treatment of...
patient with Bulimia Nervosa. The intervention consists of weekly SMS to and from patients. This proved to be a winning strategy and results indicate that the program is technically feasible, well-accepted by patients and helps them to readjust to everyday life after finishing inpatient treatment (2).

Sweden (total expenditure on health 9.2% of GDP for 2005) goes even further, developing a project for 24-hours anonymous teledermatology consultations via MMS (Multimedia Message Services). Citizens took a digital image of the skin, which was of medical concern, included text that could give more information and sent the MMS to a given number. Within 24 hours they received a MMS with medical information: probable diagnosis, short explanatory text, treatment advice and if necessary – advise to consult a doctor face to face. The average time of answering range from 8 minutes to 25 minutes and users were extremely satisfied (3).

SMS is well accepted in various cultures, too. While in Europe, where the traditions and culture are shaped by the dominance of Christianity, SMS is applicable to manage chronically ill patients and support behavioral problems; in Asia it gives a fantastic opportunity to improve maternal care. A project including Philippines, Pakistan and Indonesia has started applying SMS serves to increase the proportion of clients accessing health information, to provide remote consultation and education both to women and local healthcare staff (4,5). These are relative-ly low-income countries with a total expenditure on health between 3.2 and 2.1% of GDP for 2005 and their culture is shaped by predominance of Muslim religion with its specific attitude towards naked bodies and even undressing in front of a male medical specialist. The project will have an enormous impact on healthcare services without overloading health budgets.

This is a brilliant example how, if carefully applied, one and the same telemedicine solution may answer the needs of specific region.

Application of mobile devices is another example how regional approach in telemedicine implementation may end with fantastic results. Remote regions all over the world are an extreme challenge for healthcare systems, especially if these are hard to reach regions or areas with severe climatic conditions.

To solve the problem with healthcare delivery in Far East hospitals trains are equipped in Russia. Using well developed railway infrastructure, these trains travel nonstop East-West and North-South. Hospital trains have all necessary devices, satellite communication with Moscow medical centers and living quarters for the personal (6).

In Ecuador and Brazil, boats are used for the same purpose (7,8) thus using all the channels and feeders of Amazon river. In India, medical vans are circulating within hard to reach jungle areas (9). The connection is via satellites thus the country is using it own set of satellites. In South Africa a mobile pathology lab is developed (10). With the potential to perform not only pathology but also microbiology, hematology, allergy, dermatology, etc quick tests. With its built-in electrical power unit and the possibility to recycle water, this lab is applicable even in dry and semi desert regions.

But telemedicine is not only an application of technical achievements in healthcare. It is a fantastic challenge but it requires networking and planning, readiness to learn from the others. It is necessity always to be aware about what is globally going on through international networking initiatives! Let’s mention just two of the leading international initiatives:

Networking

The International Society for Telemedicine and eHealth (ISfTeH, www.isfteh.net) is a not-for profit membership organization of national, regional, international associations, institutions, organizations, corporations, individuals and students, established under Swiss law. ISfTeH is the international representative body of national and international Telemedicine and eHealth organizations and is dedicated to broadly promoting eHealth around the world. It supports the start up of National Associations or Societies and facilitates their international contacts. Its aim is to disseminate knowledge, information and experience and to provide access to worldwide recognized experts.

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.medeteleu). This is 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. Med-e-Tel is a forum where state-of-the-art products, ideas, projects, etc are presented and discussed. Year after year it becomes a nesting place for new co-operation and partnerships between scienc-

Figure 1. Public expenditure on health as % of GDP for 2004 in several regions. Regions are are based on UN geoscheme, source: UNDP Human Development report 2007/2008
scientific groups and institutions, small, medium and large size enterprises, etc from all over the world. Annual editions called together participant from over 50 countries. WHO, EC, ESA, ITU, UNOOSA, are only part of the major players that took part in the event. Med-e-Tel provides lots of educational opportunities through its extensive program of presentations, panel discussions, workshops and satellite symposia. It is accredited by the European Accreditation Council for Continuing Medical Education (EACCME) to provide European external CME credits for medical specialists. EACCME credits are recognized by the American Medical Association as well as by some countries in Asia and Middle East. This is the highest possible recognition of the extreme value of Med-e-Tel’s Educational program.

ISfTeH and Med-e-Tel are working together. They are as the two sides of a coin. They both lead the way from needs to practical applications, highlights quantitative numbers and results, serve networking – meeting real people, real business, real achievements, real products, discussing real problems, and education for business, science, practitioners and citizens. ISfTeH and especially Med-e-Tel are the perfect organizations for following what globally is going on and what are the new trends in the area of eHealth. Of course there are many other events covering this field. In fact, there are hundreds each year!

4. CONCLUSION

Telemedicine is no more an optional choice. The service is more and more advancing and acceptable both by citizens and medical professionals. The main challenge now is to be sure that available options are used optimally and in a coordinated manner to ascertain that the desired effects do come through and those resources are indeed not diverted away from basic needs. Networking and more focused regional approach are tools to achieve optimal goals.

REFERENCES


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