Empowering Citizens through pHealth – the EU Agenda[1]

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Abstract

Empowering Citizens through pHealth – the EU Agenda[1]
In der alternden Gesellschaft Europas, in der immer mehr Bürger an chronischen Krankheiten leiden, kann die Telemedizin einen entscheidenden Beitrag zur Bewältigung der globalen Herausforderung leisten, vor der das Gesundheitswesen aufgrund der zunehmenden Belastung durch die steigende Nachfrage nach Leistungen steht. Die Europäische Kommission ist sich dieses Potentials bewusst und beabsichtigt, eine führende Rolle bei der Förderung des Einsatzes von Telemedizinanwendungen in großem Maßstab zu übernehmen. Innerhalb des strukturierten Rahmens mehrerer politischer Initiativen, die 2004 mit dem eHealth-Aktionsplan (KOM(2004) 356) begannen, hat die Kommission vor kurzem in ihrer Mitteilung über die Telemedizin (KOM(2008) 689) die zahlreichen Hindernisse angesprochen, die es zu überwinden gilt, um eine stärkere Verbreitung zu erleichtern. Der Schwerpunkt dieses Beitrags liegt auf individuellen Gesundheitssystemen (personal health systems – PHS) und der Patientenfernüberwachung (remote patient monitoring – RPM) zur wirksameren Behandlung chronischer Krankheiten bei gleichzeitiger Nutzung knapper personeller Ressourcen mit maximaler Effizienz. Die Pläne der EU zu diesem Thema werden vorgestellt, wobei besonders auf das bevorstehende breit angelegte telemedizinische Pilotprojekt eingegangen wird, in dem die bisher größte multizentrische klinische Studie zu RPM mit dem Ziel aufgebaut wird, hochspezifische wissenschaftliche Belege für die Auswirkungen eines weitreichenden Einsatzes von pHealth zu sammeln.

1) The views presented are those of the authors and do not necessarily represent the official view of the European Commission on the subject.

Introduction

Novel methods for the delivery of quality healthcare can increase the effectiveness of disease management while containing costs and using scarce human resources to maximum effect. Interest in telemedicine as a way of providing care was originally stimulated by the rising costs of hospital treatment, rapid advances in technology and the wider availability of low-cost, patient-friendly equipment. Nowadays, in the face of a rapidly ageing European society, the progressively extended life expectancy has been resulting in a growing prevalence of chronic diseases, inducing an increasingly heavy burden of demand on health systems. The European Commission (EC) believes that eHealth in general, and telemedicine in particular, can help to make the difference in facing such a global challenge.

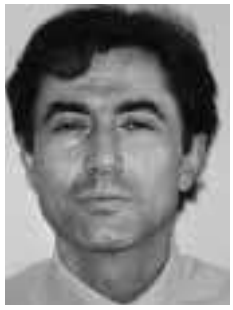
pHealth

»pHealth« – that is the use of Personal Health Systems (PHS) for Remote Patient Monitoring (RPM) – allows the evaluation of individual patients' vital signs on a daily basis and provides diagnostic information that can be transmitted to health professionals for monitoring or early diagnosis purposes. pHealth has the potential to involve patients more in their own care, assist the titration of medications (such as Vitamin K antagonist), improve compliance and help care providers identify early signs of worsening pathologies and their precipitating factors. pHealth contributes to implementing the concept of health services centred around the patient.

In Remote Patient Monitoring patients are equipped with devices (Personal Health Systems) that measure physiological variables such as blood pressure, pulse rate, blood oxygen level or weight, and transmit the data to health professionals. Other devices are used for messaging, i.e. gathering information from patients on their symptoms and behaviours, and sending them back information and advice[2]. Remote Patient Monitoring can either be home-based or mobile, depending on the portability of the devices and the type of telecom networks used. In both cases, the devices feed the collected data into intelligent systems that can check for abnormal ranges and alert the health professionals, who may then take appropriate action, such as calling the patient to schedule a clinical appointment, offer prompt advice or activate an emergency service.

Rationale of Remote Patient Monitoring for diabetes

People with diabetes can benefit from self-monitoring of blood glucose[3, 4]. Better overall blood sugar level control, avoidance of hypoglycaemia and increased quality of life are among the main expected benefits. These benefits are more tangible when individuals are prepared to adjust their dietary choices, physical activity and medication in response to measured blood glucose values[5, 6]. In order to be effective, patients need to learn how to interpret self-monitoring results and what appropriate changes to make. Strategies that employ patient empowerment and behaviour change theory may be the most effective in supporting the incorporation of self-monitoring of blood glucose into the diabetes management routine[5].



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Rationale of Remote Patient Monitoring for chronic heart failure

Chronic heart failure constitutes a major public health problem and it is the leading cause of morbidity and mortality in most developed countries. Hobbs[7] states that 5 years after diagnosis less than 50% of these patients are still alive. It has been speculated that many of the three million hospitalisations that occur in the EU each year[8] could be prevented by improved evaluation and care. Chronic heart failure is a condition for which the main treatment is medication, diet and other lifestyle change. Surgery may be needed in only 10% of the cases. Yet, one in five hospital admissions for chronic heart failure are due to patients' non-compliance to diet and medication (according to AHCPR[9] guidelines).

Remote Patient Monitoring for chronic heart failure can effectively help to improve patients' compliance to medication and lifestyle, enforcing the concept of continuity in patient care[10].

Rationale of Remote Patient Monitoring for chronic obstructive pulmonary disease

By 2020, chronic obstructive pulmonary disease (COPD) is expected to be the third most common cause of death worldwide[11]. Appropriate long-term management of COPD, including pharmacotherapy, patient education and pulmonary rehabilitation, combined with early recognition of exacerbations and timely treatment, can reduce morbidity and utilisation of acute health-service[12]. Unfortunately, inadequate patient education, patient non adherence to medication regimens and the failure to detect early symptoms of exacerbation are common problems[13, 14]. It has been recognised that interventions that enhance symptom self-monitoring by COPD patients and increase their understanding of COPD therapy may reduce the occurrence of COPD-related hospitalisations as well as the use of other acute health-care services[15].

Key challenges to deployment

Despite the potential benefits that Remote Patient Monitoring can provide, its use is still limited in most parts of the European Union (EU). RPM is today often used in the framework of pilot or trial projects which do not necessarily have a fixed payment model or are not integrated into existing reimbursement schemes. There are few telemedicine applications embedded into sustainable care management programs where ICT-based healthcare[16] is offered on such a regular basis as is face-to-face care and where costs are systematically accounted for.

The European Commission, by issuing a Communication on Telemedicine for the Benefit of Patients, Healthcare Systems and Society[17] in November 2008, has identified the main barriers that need to be overcome in order to facilitate greater deployment. Three key issues are highlighted as follows:

1. Increasing confidence and acceptance of telemedicine services
Increasing user awareness – health professionals first and foremost – of the benefits of telemedicine is a crucial success factor. Only the buy-in of users will allow a seamless integration of telemedicine into the mainstream of health care delivery.

2. Gaining legal clarity
Right of establishment, accreditation and authorisation schemes for the provision of telemedicine services, as well as issues regarding liability, recognition of professional qualifications and health data protection, are among the areas which require legal clarity, both at EU and at national level.

3. Overcoming technical issues and supporting market development
Although technical obstacles to telemedicine are diminishing fast, some major challenges remain, such as ensuring interoperability between devices and other clinical systems, as well as enabling full connectivity in all areas, ranging from urban, densely populated communities to remote, rural, sparsely populated areas.

The role of the European Commission

For twenty years the European Commission has funded research on eHealth systems and tools, including telemedicine. Since the adoption of the eHealth Action Plan[18] in 2004, the Commission's role has broadened to include policy support for the deployment of eHealth, recognised as a key factor in achieving better quality, safer and more efficient health systems.

The European Commission intends to exercise leadership in providing Member States with guidance on telemedicine-related matters, encouraging coordination of efforts and addressing legal and other problems of cross-border care[19]. The EC recognises that telemedicine can help Member States cut the cost of care, extend healthcare to more patients and improve the quality of care, especially for chronically ill patients. The EC also recognises the business opportunities that telemedicine offers to European companies, the

eHealth sector having been recognised as one of the »lead markets«[20] in the EU, potentially capable of catalysing the need for innovation felt by health systems into large scale deployment of new business models.

The above Communication on Telemedicine is the result of an extensive consultation conducted between 2007 and 2008 with Member States, health professionals, patients' associations and industry representatives – all parties involved strongly support the initiative, which is aimed at supporting Member States in large-scale deployment of telemedicine applications and to encourage them to address the barriers currently hindering such a huge potential.

A large scale pilot on Remote Patient Monitoring

In line with the action points envisaged in the Communication on Telemedicine, the i2010 Flagship Initiative on Ageing Well[21], the eInclusion initiatives[22] and the Lead Market Initiative for eHealth[20], the European Commission has allocated funds (7 million euros) and issued a call for proposals within the Competitiveness and Innovation Framework Programme (CIP ICT-PSP[23]) for the deployment of a large-scale pilot »(...) to validate in real life settings the use of existing PHS for innovative types of telemedicine services and to prepare for their wider deployment«. The pilot will focus on three chronic conditions: diabetes, cardiovascular diseases and COPD, ensuring that a statistically significant sample size of the population will be monitored for each disease. The same methodology will be used in all testing sites. The call for proposals – which closed on June 2, 2009 – targeted a consortium of six to eight regional healthcare authorities or local healthcare organisations directly responsible for the deployment of existing or planned telemedicine services. Operations are expected to start in January 2010 and run for a duration of three years. The initiative is expected to build up the largest multi-centre clinical trial ever deployed in Europe on Remote Patient Monitoring to measure the effectiveness and cost effectiveness of telemedicine solutions. ■

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