

e-Health development policies in new Member States in Central Europe

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Abstract

The paper brings insights on the process of e-health development in countries of Central and Eastern Europe, which joined European Union in 2004 years. The main part of the activities resulting in this review were carried out within the eHealth European Research Area (eHealth ERA) project established under the EU 6. Framework Programme. The research team involved in the project activities in the Centre of Innovation, Technology Transfer and University Development, Jagiellonian University focused the inquiries on the six countries: Poland, Czech Republic, Slovakia, Hungary, Lithuania and Latvia. The tool for data collection elaborated by the STAKES, Finland was applied. The main areas covered within the analysis included: health system characteristics, e-health policies definition process and deployment, specific activities in e-health subdomain as well as research and development programmes held in European countries.

It seems that general background and intensive process of system and economy transformation was key factor influencing greatly the perception and status of the e-health domain in these countries. The opportunities related to the inclusion in the European Union was another essential factor bringing additional important impact on the e-health formation. All these countries started painful reform in early 90s after the fall of the communist governments. The health care system in general was not the prime benefactors of these changes.

The vision of benefits, which are offered by e-health domain to modern health care systems, is a main motive behind the efforts to establish national and regional roadmaps for e-health development and deployment. The messages from recent reports indicate that e-health will be the most progressive area in health care industry through next five years in Europe. The potential for decrease of expenses through e-health implementation could be particularly important for those member states, which joined European Union in last years, and their GDP is still far lower than old member states.^{4,11}

The assessment of the status of e-health landscape formation in the countries from Central Europe which joined European Union in May 2004, presented in this paper, is mainly the result of the activities conducted by the Centre of Innovation, Technology Transfer and University Development, Jagiellonian University in Krakow, Poland during the eHealth European Research Area Project (eHealth ERA) carried out in the range of six Framework Programme (Priority 2 Information Society Technologies).⁷ The project followed the formula of coordination action and was conducted by the consortium of six partners representing Germany, Finland, Italy, Spain, UK and Poland from April

2005 to June 2007. Its main objectives were support to Member States in the area e-health strategy development, identification of the opportunities for multilateral activities and promotion of further integration of e-health activities across countries. The structure of the information collection tool which was used throughout the project to assess the aspects of e-health related activities in European countries was prepared by the researchers from *Sosiaali-Ja Terveysalan Tutkimus Ja Kehittaemiskeskus* (STAKES) from Finland. Project partners were assigned the clusters of countries with the aim of the information collection and analysis. Jagiellonian University team was focusing their activities on the six countries from Central part of Europe including Poland, Hungary, Czech Republic, Slovakia, Latvia and Lithuania. These six countries will be further referred as cluster countries in order to present summary view of e-health progress resulting from the assessment delivered through eHealth ERA project.

The status of health care systems

The countries included in the analysis underwent radical political and economic reforms in the end of 1980s and in the beginning of the 1990s. The process of economy

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transformation was conducted with varying intensity in all cluster countries and the shift from centrally-planned to market-based economy was maintained in all of them. In May 2004 ten new countries joined European Union, including most of the countries from the Central Europe. The accession was additional boost for the transformation process and intensive efforts were undertaken to use effectively the resulting opportunities, among them the availability of structural funds.⁵

The changes in the economy occurring in Central Europe were not easily transferred to the sphere of social and health care. Moreover, unfavourable trends were observed in these societies, from which high unemployment or exclusion of some groups from the benefits of the economy transformation were the most visible ones. The reform of the health care system was generally lagging behind the main stream of changes, as it remained obviously the greatest challenge for the political elite. Even now some of the countries in Central Europe face essential problems related to the unsolved issues of appropriate resources sharing and efficient services provision within available funding.

The provision of the health services is regulated in cluster countries by the relevant legal act accepted or amended in 1990s, e.g. The Universal Health Insurance Act from 1997 in Poland or The Health Insurance Law from 1996 in Lithuania. The care model based on the key role of the general practitioner was introduced gradually in these countries and nowadays, it is the main role of the GP to be a gatekeeper in health care system there. The health care facilities having public status remain main players in health market in the area of in-patient care. The provision of the health care services delivered both by public and private providers is carried out through the contracts with health funds.

The policies focused on e-health development

The status of the health care system in general exerts considerable influence on the prospects of the e-health domain establishment and development in specific countries. The situation of the prolonged difficulties in

establishment of efficient model for funding health care services has pronounced adverse effect on the introduction of e-health solutions, especially if they do not bring direct financial benefits to health care providers. On the other hand, the obligation of the reporting of the services delivered to patients to insurance institutions greatly enhances the interest of health care managers on the IT applications enabling efficient data storage, analysis and transfer.

In nearly all cluster countries discussed here, the main institution responsible for the definition of the e-health policy on national level was the Ministry of Health. The first mature documents revealing the main pillars of the e-health development and implementation were issued in the years 2002-2003. Primarily, e-health was usually included in the broader policies of Information Society development, in next phase independent document focused on e-health domain support were formulated, at least in part of the countries covered by the analysis. There are considerable differences in the status of the policy documents issued in consecutive countries; in part of them there is still only mentioning of the e-health field in general document on information society (Czech Republic). In other countries the policy document on e-health were issued by the Ministry of Health and approved by the Government (Hungary, Lithuania).^{8,9} In some countries, the e-health strategy remained the internal policy document of the Ministry of Health (Poland).

The key role in formulating e-health policies was most frequently assigned to the Ministry of Health, however in most countries other ministries were also engaged, especially those responsible for the development of global information society-related policy. In part of the countries, specialised centres were established which remained responsible for the e-health policies definition and implementation.^{1,8,18} It may be seen that specific actions undertaken by the European Commission in the area of harmonization and stimulating development of the national e-health plans resulted in more intensive activities in member countries, especially in those which neglected e-health domain in 1990s.

Conditions supporting e-health deployment

Funding opportunities

There is considerable interest within member states from Central Europe in using the structural funds for information society development both through general activities, e.g. building the infrastructure of broadband Internet and within specific fields like e-health or e-inclusion.

The activities focused on the development of IT infrastructure for health care were conducted from late 1990s. Initially, the funding from programmes aiming the countries aspiring to join European Union were used (PHARE Fund). The World Bank funding was used by the most of six countries for IT infrastructure development in health care facilities.³ The basic elements of the hospital information systems were established with this type of support in Poland and Hungary. The resources from the World Bank were utilised in Lithuania for the analysis and

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determination of the key areas of e-health programme. In Latvia, the project of establishment of Health Information Management System for the Health Compulsory State Insurance Agency was also funded with the loan from the World Bank.^{11,12}

With the structural funds available for new member states, the initiatives related to e-health domain became also visible. The broadband fiberoptic network was established in Kujawsko-Pomorskie Voivodship in Poland within the programme supported from structural fund. The infrastructure became the basis for the ambitious telemedicine programme connecting main hospitals in the biggest cities of the region and establishing the teleconsultation in cardiology, pulmonary medicine, pathology and radiology.^{22,25}

The use of the structural funds was also planned within the eHealth Programme developed by the Ministry of Health in Hungary in 2004 in order to establish required infrastructure in those regions which were lagging behind other areas in the country.⁸ However, the implementation process was probably slowed down by political circumstances.

e-Health reimbursement

Apart from reimbursement schemes transiently available for such services like tele-ECG in Poland, no stable financing through contracting with public or private insurance company was available throughout 2006 in six cluster countries. The growing pressure on the efficient provision of the follow-up care to patients with chronic diseases resulted in the self-driven activities of private health care providers in telemonitoring services offered to selected target groups, e.g. patients suffering from arterial hypertension, within individual health insurance plans. The official approval of the telemedicine-like interactions as equivalent to traditional health care delivery is still ahead in the countries of Central Europe. The existing regulations limit the scope of e-health-based interventions especially in relation to the services offered by providers directly to the patients. The e-health interactions between health care providers are accepted and such services are occasionally established on the basis of agreements between cooperating

institutions or professionals.

Networking infrastructure

Recent years brought essential changes in the access to telecommunication services to societies in countries of Central Europe. In the beginning of the 2000s, the access to Internet was available in less than 10% of households; the number of mobile telephony users was not high either. However, in short time, these indicators of the information society development increased considerably, which adds to the growing acceptance and demand on the availability of the e-services in various areas, not only in health care but also in learning, banking and government.

The availability of the broadband connections is still limited in most countries included in the analysis. This is at least partially the result of the de facto monopoly of main telecommunication providers originating from previous national telecoms. The growing competition in the market of telecommunication services should bring lower fees for end-users. Furthermore, some governments expressed their strong will to promote broadband access to Internet and relevant policies are being currently formulated.^{2,19}

Legal background

In all six countries, legislation regulating data protection, telecommunication services and digital signature were introduced. Even though considerable progress was made in the acceptance of the e-health domain as important option for health services provision, formal regulations addressing this field are not ready yet in cluster countries.

Progress in specific application areas

Electronic Health Record

The IZIP system implemented in Czech Republic seems to be the most successful initiative in this area.¹⁵ The key idea behind this initiatives is development of medical database of insured patients who consent to include their data to the public information network through Internet. The database structure includes medical documentation input to the IZIP by the physician taking care of the patient in various facilities. Development of the infrastructure, which in some part supports the concept of electronic health record, was

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part of the project financed from World Bank Project in Poland and focused on establishment of basic modules of hospital information systems in hospitals. However, no common platform was expected from providers proposing their systems for hospitals engaged in the project. Some activities related to establishment of standards supporting electronic health record were foreseen in the policies accepted in Hungary.⁸ Feasibility studies on electronic health record were foreseen in 2006 within national eHealth strategy in Slovakia. They were supposed to be continued in the form of large-scale projects in years 2007-2010.

e-Prescribing

E-prescribing is relatively neglected field in cluster countries. Some activities focused on the standards establishment for health care information models and communication were held in Hungary.⁸ Their results were not reported so far. The feasibility studies on e-prescribing were also being planned in Slovakia. In some countries, e-prescribing initiatives are blocked by national legislation. In Poland, only medication available without prescription may be sold over the Internet. Even if such policy is obviously in collision with recommendations approved by European Union, restrictive regulations are still active.

Telemedicine services

Availability of telemedicine-based services in every day practice is not common. Generally, there are some centres or communities focused on the telemedicine development with application to chosen fields. The most active telemedical environments in Central Europe include: Krakow Centre of Telemedicine, Kujawsko-Pomorska Telemedicine Network, Institute of Physiology and Pathology of Hearing in Kajetany in Poland; Kaunas Telemedicine Centre in Lithuania; EuroMISE in Czech Republic and Latvia Telemedicine Centre in Riga in Latvia.

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Internet-based disease management

Growing burden for health care systems related to care of patients with chronic medical conditions resulted in essential interests of health care policy makers and providers in Internet-based tools supporting online care. Relatively low Internet penetration in previous years limited the provision of disease management programme for patients with such diseases like diabetes, arterial hypertension or bronchial asthma. However, quick growth of the population of regular Internet users in cluster countries from Central Europe, adds to increased interest in telemonitoring and on-line interactions tools available on Internet platforms. Some project, which reached the pilot implementation phase, evidenced positive reactions from the end-users and potential for broader deployment of such systems in future.⁶

Other areas: patient safety, patient identifiers, health cards

Generally, the government of the cluster countries declare their interest in activities performed in the area of

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establishment of common identifiers for patients and health professionals. There are some concrete actions undertaken by some countries in order to obtain better insight in to the issues of patient safety. The Centre of Health Information Systems established at the Polish Ministry of Health implemented Internet-based platform enabling reporting of adverse effects occurring in patients. The topic of the IMPROHEALTH project carried out within Leonardo da Vinci Programme were also related to some extent to area of quality of care and patient safety.¹³

The health cards topic seems to be priority for many governmental institutions and health insurance in Central Europe. The use of health cards is the basis of the system of medical services registration established form several years in Silesia Voivodship in Poland. The management of the National Health Fund expresses also vivid interest in nationwide implementation of health card in Poland allowing not only for identity verification but also the registration of medical-related data, e.g. medication prescribed to patients by consecutive physicians. Large-scale pilot project on the use of electronic health cards were conducted in Czech Republic.²¹ Other countries from the cluster covered by the analysis, have also concrete plans in this area.²⁰

Conclusions

Growing evidence from various types of trials indicate that e-health systems implementation may yield considerable benefits related to increase quality of care, accessibility of service and their cost-effectiveness. However, the awareness of potential benefits from use of e-health applications, is not sufficient for the development of e-health environment. The experience of countries from Central Europe shows that even success achieved in the process of economy transformation does not translate straightforwardly to use of e-health technologies, especially if the status of the health care system in general is not satisfactory. Most of new member states which joined European Union in 2004

undertook considerable efforts to prepare the plans of e-health development. Final success of these activities depends on many conditions, both those specific for e-health domain, like acceptance of the service, legal background and efficient funding mechanisms as well as general circumstances including status of health care system

and progress to information society formation. □

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