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HOW FAR HAVE WE COME ? MEASURING EHEALTH PROGRESS IN EU AND EEA MEMBER STATES

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Abstract

eHealth as a means to improve health service delivery is now firmly anchored at the policy level in almost all European countries. Progress towards concrete implementations of electronic health records or ePrescribing services has also been achieved, mainly in the Nordic countries. Preliminary findings of a European Commission-funded study analysing eHealth policy documents and assessing concrete progress in fields like supporting administrative structures, citizen and healthcare provider identification systems as well as EHR and ePrescription services are outlined. The findings are discussed in the context of efforts by the EC to test and implement interoperable patient summary and ePrescription services.

Keywords – eHealth action plan, patient summary, ePrescription, progress

1. Introduction

The European Commission (EC) and Member States (MSs) have long recognised the potential of ICT-enabled applications to support the improvement of citizens' health, healthcare delivery as well as public health services or medical research. In its eHealth Action Plan, published in 2004, the EC identified distinct areas of initiatives required to build up urgently needed national and pan-European eHealth infrastructures and to implement solutions in order to move towards an ICT enabled, collaborative, personalised and more efficient model of healthcare. [5]

The EC-funded eHealth Strategies study describes, measures and assesses to what extent European Union (EU) and European Economic Area (EEA) MSs have developed national eHealth policies, roadmaps and/or strategies; implemented key elements of national eHealth infrastructures and solutions; provided for favourable framework conditions; and achieved progress on such items in recent years, focusing on selected eHealth Action Plan priorities. Following this assessment, the study will identify European and national actions which may support the further and faster realisation of eHealth Action Plan priorities.Final results of this study will be available in the summer of 2010.

2. Methodology

The search for Member State information is conducted by an expert network of national correspondents who are familiar with information society topics.

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The tool to collect this information is an online survey template containing six main sections:
1. National eHealth Strategy
2. Implementations of eHealth solutions
3. Legal and regulatory facilitators
4. Administrative and process support
5. Financing and reimbursement issues
6. Evaluation

Under each section, specific questions are formulated and combined with free text fields and drop-down menus to capture dates and stages of development (planning/implementation/routine operation). Questions regarding eHealth implementations cover: patient and healthcare provider identifiers, eCards, Patient Summary, ePrescription, Standards as well as Telemonitoring and Telecare. A handbook containing key definitions of eHealth related terms is provided to the respective national expert. The definition of key applications such as patient summary and ePrescription is based on work in the epSOS project. [6] The concept of telemedicine and other eHealth terms is based on official EC publications such as the eHealth Action Plan [5] or the EC communication on telemedicine for the benefit of patients, healthcare systems and society. [4] On the level of electronic identification systems and healthcare professional cards, the work of the EC projects STORK [15] and HPRO card [8] has served both as a conceptual and an empirical validation of the survey results. These measures are designed to assure a uniformity of understanding of key terms of the study. The final country briefs are envisaged for submission to external experts representing the country in question.

The compilation and comparative assessment of the results is informed by concepts from public policy science, notably the policy-cycle paradigm, which identifies these basic policy process steps: (1) identification of high level policy goal and objectives (Problem Definition); (2) mustering support for the policy (Agenda Setting); (3) agreeing on a policy including the identification of a strategy to realise it, the implementation process, measures and resources needed (Adoption); (4) initiating new or using established structures to execute the measures (Implementation); (5) controlling and evaluating the outcomes/performance (Evaluation); (6) feedback of results into adjusted development (Feedback). [1] [9] Informed by similar concepts, Scott et al. define eHealth Policy as “a set of statements, directives, regulations, laws and judicial interpretations that direct and manage the life cycle of eHealth.” [14]

This output will be presented in graphical form and synthesised by statistical analyses.

3. Results

At the time of writing, the eHealth strategies study is ongoing. Therefore, no complete set of data is available for all EU and EEA Member States. The following section presents preliminary findings from selected study topics, complemented by results from the previous EC-funded study: eHealth ERA. [3]

3. 1. eHealth policy documents

The eHealth strategies of EU and EEA countries are not always labelled as such. Some countries have indeed published a more generic eGovernment or Information Society policy document which also refers to ICT strategy in the healthcare sector. Or, in The Netherlands for example, the title of

the official ministerial document on the country's eHealth Strategy is "ICT in Dutch Health Care; An international Perspective."[13] Other countries such as Germany and France have enshrined the central eHealth activities in legislation governing the healthcare sector. In Germany, the relevant law is the law on the modernisation of healthcare from 2003, in France the introduction of an electronic medical record is included in a law concerning social security from 2004.

In cases where the healthcare system is decentralised, i.e. where power is delegated to the regional level, there may even be strategy documents regarding eHealth from regional authorities. Typical examples for this development can be found in Spain. [7] [10]

Results of the survey so far show, that all "old" EU-15 countries have formal documents outlining a vision or concrete policy on eHealth. In the case of countries with a longer track-record of eHealth – such as the Nordic countries – eHealth documents are no longer strategies, but updates on implementation progress. This is the case in Sweden for example. [12]

3. 2. Administrative and coordination support

More than a dozen countries in Europe have established specific eHealth consultative bodies or competent authorities, mostly under ministerial supervision. Their role is to develop, oversee, and monitor the country's strategic goals, and/or implement and manage eHealth infrastructure and application projects. Special national advisory boards on eHealth exist for example in Finland and Luxembourg. Austria has recently transformed its working group on the electronic healthcare record (ARGE-ELGA) into a limited liability company. In Slovakia the National Health Information Centre (NHIC) was appointed to serve as the eHealth related 'think-tank' for the Ministry and as the national coordinator for developing and suggesting eHealth strategies, concepts, standards, programmes, and projects. In Germany, the "gematik" organisation is given the responsibility for nationwide eHealth activities by law. Most recently, France has created a new agency – ASIP – Agency for Shared Health Information Systems, which centralises all eHealth related work in France.

3. 3. Patient and provider identification

A key prerequisite for the establishment of an eHealth infrastructure is the ability to uniquely identify citizens/patients, healthcare professionals, healthcare providers, pharmacies etc. In Scandinavian countries, a long tradition of citizen registers facilitates the creation of healthcare IDs for patients and doctors. However, the various administrative identification systems which are already in use in most countries cannot and will not automatically be used for healthcare purposes. These ID systems often do not meet the strict health system privacy criteria because they contain information traceable to a person, such as date of birth or sex. Examples of patient IDs that are specifically created for the purpose of electronic health service provision (as opposed to social security or citizen IDs) can be found in Germany, France and Greece. In the new Member States of the EU, a tradition of a single national citizen IDs prevails, even though they sometimes contain information such as a date of birth. Once eHealth projects move into the implementation stage, the usability of such IDs is likely to be reviewed. *Table 1* summarises the status of (e)Identifiers in the EU-15 based on the preliminary results of this study.

The codes used in this and the following tables reflect routine use (R), pilot status (P) or agenda setting status (A) of the respective application.

Table 1: Status of (e)Identifiers for citizens in the EU-15

AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LUX	NL	PT	SE	UK
R	R	P	R	R	R[1]	R	R	A	R	A[2]	R	R	R	P

3. 4. Patient summaries/electronic health records

Patient summaries as well as ePrescription services are key health policy applications for many Member States. Supported by the EC, twelve of them currently undertake a large scale pilot for defining, testing and piloting them in a cross-border context. [6] At least six more countries are expected to join in 2010. As such services must be based on sound legal/security, semantic and technical interoperability and need infrastructure elements like citizen and provider identification, these issues are being tackled at the same time, generating a considerable momentum to moving from high level policy statements to solving very concrete challenges.

So far, only few countries have an operational patient summary or EHR service deployed at the national level. In Denmark, which launched its first EHR strategy in 1996 already, the use of electronic patient records is well established. Almost all general practitioners (GPs) offices are computerised [2]. In the Czech Republic, the IZIP system provides 10% of the population with a web-based EHR containing information on lab results, radiology reports and emergency care data.
In Sweden a National Patient Summary (NPÖ) is in place since April 2008. It is based on experiences from an earlier national patient summary pilot. The implementation is still ongoing and so far the Örebro County Council and the Örebro municipality have subscribed. [10] The NPÖ will contain current care contacts, personal information, chronic disease diagnoses, medical alert information - e.g. allergies, current medical examination results and a list of dispensed drugs. *Table 2* illustrates the currently available study results regarding ePrescription in the EU-15.

Table 2: Status of patient summaries in the EU-15

AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LUX	NL	PT	SE	UK
R	P[3]	P	R	A	R[1]	R[1]	P	A[2]	P[3]	A	P	P/A[4]	P	R[1]

3. 5. ePrescription

In the framework of the eHealth strategies study, ePrescription is understood as the process of the electronic transfer of a prescription by a healthcare provider to a pharmacy for retrieval of the drug by the patient. In this strict sense, only few European countries can claim to have implemented a fully operational ePrescription service. In Spain, the province of Andalucia has a workable solution implemented across the entire province, which actually is a more complex ePrescribing system connected to the patient record, a logistic and billing system. [8] [13] Currently, the Spanish government is planning an extension of such services to the entire National Health System. [11] As of July 2009, an ePrescription service is implemented in Andalusia, the Balearic Islands and Extremadura. On a national level, ePrescription is only used routinely in Denmark, Sweden and Iceland. The Netherlands have established routine regional use of ePrescription, at different levels of penetration according to GP or hospital environment. Examples for pilots on ePrescription with a view

[1] Regional routine
[2] based on the eHealth ERA study
[3] pilots for regional use only
[4] local pilots/plans for national pilots

towards regional or national implementation can be found in Poland, Italy, Finland and the Czech Republic. Other countries such as Portugal may have local implementations of ePrescription software in hospitals or pharmacies, but currently no electronic transfer of a prescription from GPs to pharmacies is implemented. *Table 3* illustrates the currently available study results regarding ePrescription in the EU-15.

Table 3: Status of ePrescription services in the EU-15

AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LUX	NL	PT	SE	UK
A	A	A	R	P	R[1]	P	A	P	P	A	R[1]	A	R	P

4. Discussion

The preliminary results from our survey point to slow, but continuous incremental progress on *implementing* eHealth strategies in many countries. eHealth is firmly anchored at the policy level, with some form of written strategy or even legislation in place in most countries. Progress on key elements of an eHealth infrastructure, such as secure identification, authentication and authorisation systems depend very much on the national health system context, but also different political perspectives on desirable levels of privacy protection. Patient summary or ePrescription services are not implemented on a large scale in many countries, at least when defined in the sense of the epSOS project. Hospital based ePrescribing and pilot projects or strategic plans for the introduction exist almost everywhere in the EU-15, but also some of the "new" Member States. Italy and Spain have made considerable progress at the regional level, while national ambitions are only beginning to take shape.

From a methodological point of view, the use of a structured questionnaire with dropdown menus has proved useful in order to force the national experts to distinguish clearly between subcategories. In the field of identification, the survey differentiated between identification mechanisms such as social security ID, citizen ID and dedicated healthcare ID. The wide field of telemedicine applications was also structured in sub-categories. This approach is highly recommended for future projects with a similar comparative goal.

On the policy level, the results so far show a familiar eHealth issue: in order to be successful, eHealth has to move from an isolated IT-focussed project to an integral part of a healthcare reform programme. The preliminary analysis of policy documents in this survey shows that most EU Member States do indeed consider eHealth as a tool to improve the quality of healthcare delivery. On the way towards full implementation of interoperable eHealth services, the ongoing European large scale *epSOS* pilot on patient summaries and ePrescription [5], where national and regional ministries of health, their eHealth competence centres, research institutes and numerous industrial companies cooperate, will certainly provide a further boost to national efforts.

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6. Disclaimer

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