

Country Brief: Latvia

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About the eHealth Strategies study

The eHealth Strategies study analyses policy development and planning, implementation measures as well as progress achieved with respect to national and regional eHealth solutions in EU and EEA Member States, with emphasis on barriers and enablers beyond technology. The focus is on infrastructure elements and selected solutions emphasised in the European eHealth Action Plan of 2004.

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Executive summary

The policy document “Guidelines for eHealth in Latvia”¹ was ratified by the Latvian Cabinet in August 2005. This document involves strategic advice for the development of information and communication technologies in the sector of healthcare up until 2013. It is detailed in identifying issues related to particular eHealth applications, standards, legal, financial and evaluation activities. Additional documents were developed after the guidelines: “Information System Architecture in Healthcare” (May 2006) and “Strategy Action Plan 2008-2010” (October 2007).

Other relevant documents from other policy domains are the “Latvian eGovernment Conception”² from 2002, which envisages the creation of electronic health services for citizens, the “National Development Plan 2007-2013”³ and the “Basic principles for the development of an Information Society (2006-2013)”⁴ including the implementation of online services provided by the government.

In order to consider Latvia’s position regarding eHealth interoperability objectives the following eHealth applications have been examined: patient summaries and electronic health records, ePrescription, standards and telemedicine. In overview Latvia’s situation is as follows:

In Latvia, the development of a basic patient summary has been ongoing since 2007⁵. So far, the technical concept has been defined, but implementation has not started. The patient summary is to be an integral part of a national electronic health record. The plan for patient summaries is to create a database that can be used by all healthcare professionals to access patient information. The electronic patient data would be collected and prepared in the hospitals, but stored in and accessible through the central system. Patient summaries and electronic health records are both part of the overall plan to build a new information system for healthcare in Latvia.

The ePrescription system is also tied in to the establishment of the health information system. Procurement for this project is underway and Integrated Society (IS) development will start at the end of this year.

In terms of the use and development of standards this is discussed in the Latvian eHealth Strategy. It states that a set of standards for implementation of the electronic health record storage and transmission activities should be developed. HL7 has been selected as the basis for Latvian health standards. Latvia also plans that professionals should participate in the European Committee for Standardisation⁶ (CEN).

For telemedicine in Latvia a Latvian Telemedicine Centre exists, but generally telemedicine in Latvia is mostly project driven or involves small scale private initiatives. There has however been a cross border project, the BITNET project in 2000, which involved several hospitals in Latvia, Lithuania Estonia and Sweden.

¹ Latvian Government 2005; Ministru kabineta [Cabinet of Ministers of the Republic of Latvia] 2005

² Latvijas Republikas Tieslietu ministrija 2001

³ Valsts kanceleja 2007

⁴ Valsts kanceleja 2005

⁵ Latvijas Republikas Veselības ministrija [Latvian Health Ministry]

⁶ European Committee for Standardisation

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1 Introduction to the report

1.1 Motivation of the eHealth Strategies study

Following the *Communication* of the European Commission (EC) on “eHealth – making healthcare better for European citizens: An action plan for a European eHealth Area”⁷ Member States of the European Union (EU) have committed themselves to develop and issue national roadmaps – national strategies and plans for the deployment of eHealth applications addressing policy actions identified in the European eHealth Action Plan.

The *2004 eHealth Action Plan* required the Commission to *regularly monitor* the state of the art in deployment of eHealth, the progress made in agreeing on and updating national eHealth Roadmaps, and to facilitate the exchange of good practices. Furthermore, in December 2006 the EU Competitiveness Council agreed to launch the *Lead Market Initiative*⁸ as a new policy approach aiming at the creation of markets with high economic and social value, in which European companies could develop a globally leading role. Following this impetus, the Roadmap for implementation of the “eHealth Task Force Lead Market Initiative” also identified better coordination and exchange of good practices in eHealth as a way to reduce market fragmentation and lack of interoperability.⁹

On the more specific aspects of electronic health record (EHR) systems, the recent *EC Recommendation on cross-border interoperability of electronic health record systems*¹⁰ notes under “Monitoring and Evaluation”, that “in order to ensure monitoring and evaluation of cross-border interoperability of electronic health record systems, Member States should: consider the possibilities for setting up a monitoring observatory for interoperability of electronic health record systems in the Community to monitor, benchmark and assess progress on technical and semantic interoperability for successful implementation of electronic health record systems.” The present study certainly is a contribution to monitoring the progress made in establishing national/regional EHR systems in Member States. It also provides analytical information and support to current efforts by the European Large Scale Pilot (LSP) on cross-border Patient Summary and ePrescription services, the epSOS - European patients Smart Open Services - project.¹¹ With the involvement of almost all Member States, its goal is to define and implement a European wide standard for such applications at the interface between national health systems.

Earlier, in line with the requirement to “regularly monitor the state of the art in deployment of eHealth”, the EC already funded a first project to map national eHealth strategies – the eHealth ERA “Towards the establishment of a European eHealth Research Area” (FP6 Coordination Action)¹² - and a project on “Good eHealth: Study on the exchange of good

⁷ European Commission 2004

⁸ European Commission 2007

⁹ European Communities 2007

¹⁰ European Commission 2008

¹¹ European Patients Smart and Open Services (epSOS)

¹² eHealth Priorities and Strategies in European Countries 2007

practices in eHealth"¹³ mapping good practices in Europe - both of which provided valuable input to the present *eHealth Strategies* work and its reports. Member States' representatives and eHealth stakeholders, e.g. in the context of the *i2010 Subgroup on eHealth* and the annual European High Level eHealth Conferences have underlined the importance of this work and the need to maintain it updated to continue to benefit from it.

This country report on Latvia summarises main findings and an assessment of progress made towards realising key objectives of the eHealth Action Plan. It presents lessons learned from the national eHealth programme, planning and implementation efforts and provides an outlook on future developments.

1.2 Survey methodology

After developing an overall conceptual approach and establishing a comprehensive analytical framework, national level information was collected through a long-standing Europe-wide network of national correspondents commanding an impressive experience in such work. Latvia's country information was prepared by Martins Sitcs – consultant and partner of SIA "AA Projekts". AA Projekts works as a consultancy firm on technology issues. In addition, a handbook containing definitions of key concepts was distributed among the correspondents to guarantee a certain consistency in reporting. For Latvia relevant information on policy contexts and health system situation, policies and initiatives as well as examples for specific applications was collected by the overall project lead - empirica in Bonn, Germany.

The key tool to collect this information from the different national correspondents was an online survey template containing six main sections:

- A. National eHealth Strategy
- B. eHealth Implementations
- C. Legal and Regulatory Facilitators
- D. Administrative and Process Support
- E. Financing and Reimbursement Issues
- F. Evaluation

Under each section, specific questions were formulated and combined with free text fields and drop-down menus. The drop-down menus were designed to capture dates and stages of development (planning/implementation/routine operation). In addition, drop-down menus were designed to limit the number of possible answering options, for example with regard to specific telemedicine services or issues included in a strategy document. The overall purpose was to assure as much consistency as reasonably possible when comparing developments in different countries, in spite of the well-know disparity of European national and regional health system structures and services.

Under Section B on eHealth implementation, questions regarding the following applications were formulated: existence and deployment of patient and healthcare

¹³ European Commission; Information Society and Media Directorate-General 2009

provider identifiers, eCards, patient summary, ePrescription, standards as well as telemonitoring and telecare.

The data and information gathering followed a multi-stage approach. In order to create a *baseline* for the progress assessment, the empirica team filled in those parts of the respective questions dealing with the state of affairs about 3 to 4 years ago, thereby drawing on data from earlier eHealth ERA reports, case studies, etc. to the extent meaningfully possible. In the next step, national correspondents respectively partners from the study team filled in the template on recent developments in the healthcare sector of the corresponding country. These results were checked, further improved and validated by independent experts whenever possible.

Progress of eHealth in Latvia is described in chapter 3 of this report in the respective thematic subsections. The graphical illustrations presented there deliberately focus on key items on the progress timeline and cannot reflect all activities undertaken.

This report was subjected to both an internal and an external quality review process. Nevertheless, the document may not fully reflect the real situation and the analysis may not be exhaustive due to focusing on European policy priorities as well as due to limited study resources, and the consequent need for preferentially describing certain activities over others. Also, the views of those who helped to collect, interpret and validate contents may have had an impact.

1.3 Outline

At the outset and as an introduction, the report provides in chapter 2 general background information on the *Latvian* healthcare system. It is concerned with the overall system setting, such as decision making bodies, healthcare service providers and health indicator data.

Chapter 3 presents the current situation of selected key eHealth developments based on detailed analyses of available documents and other information by national correspondents and data gathered by them through a well-structured online questionnaire. It touches on issues and challenges around eHealth policy activities, administrative and organisational structure, the deployment of selected eHealth applications, technical aspects of their implementation, legal and regulatory facilitators, financing and reimbursement issues, and finally evaluation results, plans, and activities

The report finishes with a short outlook.

2 Healthcare system setting

2.1 Country introduction¹⁴

Situated in north-eastern Europe with a coastline along the Baltic Sea, Latvia is geographically the middle of the three former Soviet Baltic republics. It has a population of 2.3 million at an area of 64.589 km². The country's government has a two level structure: Central (National Government) and five planning regions of Latvia: Kurzeme, Latgale, Riga, Vidzeme and Zemgale. The boundaries of the regions align to the boundaries of the municipalities of Latvia following the municipality reform of 1 July 2009¹⁵. The planning regions of Latvia are not administrative territorial divisions, since they are not mentioned in the law that prescribes the administrative territorial divisions of Latvia.

Latvia has language links with Lithuania to the south and historical and ecumenical ties with Estonia to the north. Not much more than a decade after it declared independence following the collapse of the USSR, Latvia was welcomed as an EU member in May 2004.

The Latvian healthcare system has undergone a remarkable transformation in the years since independence, and is now in the process of consolidating its new structures and institutional arrangements. Having abolished the highly centralised system that prevailed during the Soviet period, it has focused on decentralisation of healthcare delivery, administration and financing¹⁶; full or partial privatisation of some kinds of provider institutions; and the establishment of independent primary care practices, which have led to a wide variety of legal forms of healthcare providers and institutions. It has experimented extensively with a variety of social insurance structures ranging from highly decentralised to partially recentralised arrangements, as well as with organisational forms of healthcare delivery in parallel with reforms of the state administrative system.

The wide-ranging reforms and continuous and ongoing process of change are prompted by the perceived need to increase the efficiency of healthcare financing and provision and to improve the quality of care.

The box below summarises the key facts about the Latvian healthcare system:

¹⁴ eUser 2005; Tragakes, Brigis et al. 2008

¹⁵ Act 202 (3986), 30.12.2008.

¹⁶ During recent years however, many local hospitals were merged. This is motivated by a desire to reduce administrative expenses. Currently only 14 state-owned hospitals are listed on the webpage of the Healthcare Ministry.

Key facts about the Latvian healthcare system:¹⁷

Life expectancy at birth: 71.2 years

Healthcare expenditure as % of GDP: 6.41%¹⁸ (WHO 2005)

WHO ranking of healthcare systems: rank 48

Public sector healthcare expenditure as % of total healthcare expenditure:
60.5% (WHO 2005)

Due to the age of the above figure on healthcare it could be misleading. The Latvian healthcare budget in 2005 was 297mLs (approx 419 m Euro), which was then raised to 577mLs (approx 814 m Euro). However, due to the economic crisis the healthcare budget for 2010 has been cut again to 433mLs (approx 610 m Euro).

2.2 Healthcare governance

Decision making bodies, responsibilities, sharing of power¹⁹

The main health policy decision-maker in Latvia is the Parliament (Saeima). Its work is organised in several committees. Within the Social and Employment Committee, the Public Health Subcommittee deals primarily with all health-related issues. The Parliamentary Secretary of the Ministry assures a link between Parliament and the Ministry of Health, and is a representative of the Minister of Health in Parliament. Since 2002, the Ministry of Health is the main executive body responsible for healthcare in Latvia

The Ministry of Health is the leading governmental institution in the health sector and is responsible for public health, healthcare, pharmacy and legal circulation of drugs. The main task of the Ministry is to develop and implement state policy by ensuring public health in a healthy environment, promoting prevention, popularising healthy life style, as well as by creating conditions where the inhabitants would benefit from cost effective, physically accessible, and high-quality healthcare services.

Local governments have their own budgets, although they receive most of their financing from the state. At local level, responsibilities broadly include ensuring access to healthcare services, promoting healthy lifestyles, restricting alcoholism and profligacy, ensuring public order and safety, providing education and social services (old-age institutions, asylums for the homeless, homes for orphaned children, etc.)

Other institutions with key roles in healthcare include the Ministry of Welfare, responsible for social services including long-term care; the State Labour Inspectorate, under the Ministry of Welfare, monitoring the area of occupational health; and the State Commission of Physicians for Health, Disability and Capacity to Work, assessing degrees of disability. The Ministry of Education and Science is responsible for health-related

¹⁷ Data from World Health Organization 2000; Health Consumer Powerhouse 2008; World Health Organization 2009

¹⁸ This percentage data is the total expenditure, as the state pays only about half of that. State healthcare budget is about 3.6% from GDP and 9-10% from total state expenditures (forecast for 2010).

¹⁹ Muciņš 2008; Tragakes, Brigis et al. 2008

educational institutions, research and health promotion. The Ministry of Agriculture, through the Food and Veterinary Service, is responsible for food safety. The Ministry of Justice provides health services for prisoners and refugees, and the Ministries of Defence and Internal Affairs provide parallel health services.

Healthcare service providers²⁰

Providers of primary healthcare services in Latvia are: general practitioners (GPs), physician's assistants, certified nurses, midwives, dentists, dentist's assistants; dentistry nurses and hygienists. Thereby, primary care physicians have a gatekeeper role: Patients need a referral from a primary care physician to visit a specialist or receive secondary level healthcare. Without a referral, patients must provide out-of-pocket payment or have a private health insurance. No referrals are needed to directly approach specialists such as: psychiatrist, pulmonologist for tuberculosis treatment, venerologist, narcologist, endocrinologist for diabetes, oncologist, gynaecologist or private specialists. When visiting private specialists, the patient pays the full amount of his/her treatment by himself/herself.

Furthermore, there are two categories of hospitals in Latvia: state/municipality funded and private. The privatisation lead to a wide variety of ownership in the healthcare system. Hospitals usually have the status of limited liability (SIA) or private stock (A/S) companies. Both should register with the State Enterprise Registry.

Multi-profile hospitals provide persons with secondary and tertiary stationary healthcare. The major hospitals have so called 'specialised competence centres'. I.e. Pauls Stradins Clinical University Hospital specialises in treatment of cardiovascular diseases; Latvian Oncology Centre is a part of Riga Eastern Clinical University Hospital etc.

Competence centres provide patients with secondary and tertiary healthcare that is specialised in single profiles, performs methodological management of healthcare, ensures and provides specialised secondary ambulatory treatment. Healthcare centres are a multi-profile or mono-profile medical institution, which provides persons with mainly primary healthcare and/or secondary ambulatory healthcare, diagnostics, medical rehabilitation care performs preventive measures and promotes cooperation between different healthcare and other institution specialists.

Major hospitals have also outpatient departments providing secondary ambulatory care and emergency care departments.

²⁰ Karaskevica and Tragakes 2001; Duplaga, Leszczuk et al. 2007; Muciņš 2008; Tragakes, Brigis et al. 2008

Figure 1: Important features of primary healthcare organisation in Latvia

| | |
|---|---|
| Political/administrative unit responsible for primary healthcare | National level (Ministry of Health has responsibility to define healthcare policy). |
| Consumer Choice | Free choice of GP, but GP may refuse patient's selection in case there are already 2000 adults or 900 minors registered at his practice. |
| Financing | Tax-based (general state budget, however private financing may be also used, e.g. private insurance, payments by patient) |
| Public or private providers | Private practices paid by state. |
| Gatekeeping function of the GP | GP has main gatekeeping function in case of state financed healthcare. It may be bypassed in a number of specific diseases, for example emergency care; psychiatric diseases dependence from drugs and alcohol, tuberculosis and diabetes. In case of private financing there are no limitations. |
| Integrating health: initiatives for coordination | Integrating initiatives are performed by central government (subordinate authorities if Ministry of Healthcare) and the specialised competence centres in major hospitals. |

2.3 Recent reforms and priorities of health system/public health

Currently ongoing reforms in the health and social care systems

Changes in the healthcare system in Latvia were initially proposed and initiated by the Latvian Physicians Association, which was re-established in 1988 and which also played a significant role in initiating changes in Latvian society as a whole. In addition, health service managers and administrators have been important in the reform process, whereas consumers have not yet had much direct influence.

Following Latvia's independence, all laws and regulations concerning the organisation and financing of healthcare were gradually replaced. A clear conceptual framework was needed for detailed and careful reform planning. Some legislation of the Parliament (Saeima), together with many temporary regulations of the Cabinet of Ministers and the Ministry of Welfare (after 2002 the Ministry of Health) on specific matters, gave rise to fragmentation of the legal basis of the reforms. This was especially marked during the 1990s.

Numerous documents, strategies, plans and regulations have been designed and accepted by the Latvian Government in the course of the last several years, intending to develop, improve and reform the Latvian healthcare system. According to the Ministry of

Health, all necessary legislative measures and policy documents are currently in place for the future successful development of the health system. In total, 33 policy documents and laws related to health promotion, 57 related to environmental health and epidemiological surveillance and 12 for healthcare have been developed in the years since independence. The implementation of these policies, strategies and plans is ongoing, and is expected to continue over the next several years.

One of the most important ongoing reforms is the Master Plan, or “Programme of Development of Primary and Hospital Care Services for 2005–2010”, developed by the World Bank project. The aim of this reform is to reduce administrative costs and improve the quality of healthcare services so as to ensure patient access to healthcare.

As a result of such a structural reform, the number of hospitals will be reduced; over 70 hospitals are to be closed or converted to long-term care or community health centres. At the time of writing the process of merging hospitals has already begun and 18 hospitals have been reorganised. Around 40 hospitals are still operational.

An additional ongoing minor reform is related information and communication technologies. The Management Information System for the Health Payment Centre (Before - SCHIA), which is linked to health statistics and patient registries, has been implemented and is in production. It has ongoing changes due to changes in legislation, but no major redesign or rebuilding of the system is planned to take place only small modifications. This system is a part of a wider programme called “Health”, which is a centralised health data system on the residents of Latvia (for further information see section 3.1.1). This plan is based on the policy document “eHealth in Latvia”²¹.

At the moment, reforms of healthcare institutions and further projects related to reorganisation and renewal of the system are continuing as normal apart from the reforms for eHealth. Latvia’s economy was affected by the economic crisis. This led to a decline of the gross domestic product (GDP), weak entrepreneurship and also strict fiscal policy in the healthcare sector. These spending cuts will only have an impact on the field of eHealth.²²

2.4 ICT use among general practitioners

This section provides a brief overview of relevant ICT related infrastructure and services data. It draws on earlier studies commissioned by the EC, notably the Indicators eHealth Study . Although the results of this study date from 2007 and may therefore not reflect latest changes, a more recent pan-European survey is not available²³.

The main eHealth application that is exerted to a noticeable degree in Latvia is the storage of administrative patient data.

In terms of infrastructure, 88% of the Latvian GP practices use a computer. 85% of practices dispose of an Internet connection. In Latvia, broadband connections have not yet arrived in force; they are however already used in 58% of GP practices.

²¹ Veselības ministrs [Health Minister]: G.Bērziņš 2005

²² Curkina

²³ ICT and eHealth use among General Practitioners in Europe 2007

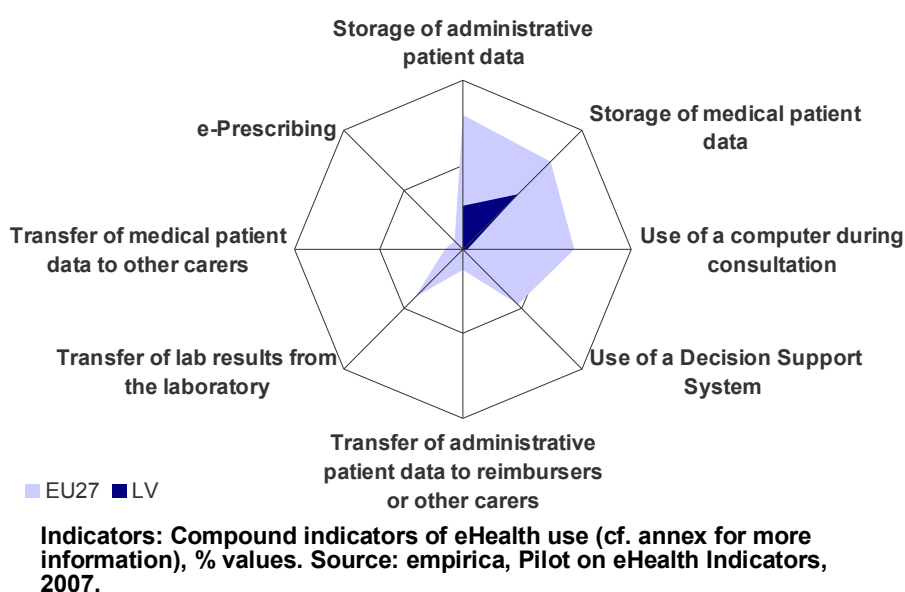
Of all applications under observation, storage of patient data either for administrative or for medical purposes is done most often. Around a quarter of Latvian GP practices store administrative patient information and roughly half of all practices store some type of medical patient data. When it comes to the storage of radiological data, 42% of Latvian GPs store it.

Computer use in consultation occurs only to a very limited extent with only 3% of GPs actually using their PC for consultation purposes.

Electronic patient data transfer is virtually non-existent among Latvian GPs. Up until now no GPs have used ePrescribing or received lab results from a laboratory via networked connections. Not one of the GPs included in the survey reported the transfer of medical or administrative patient data to other carers. For payment purposes, data to the Health Payment Centre must be transmitted electronically.

Decision Support systems (DSS) have not yet been introduced in Latvia on a larger scale as only little more than 1% of the GPs covered in the survey reported using a DSS for either diagnosis or prescription.

Figure 2²⁴: eHealth use by GPs in Latvia



²⁴ The notion of „compound indicator“ designates an indicator built from a set of other indicators/survey questions regarding the same topic. The compound indicator reflects an average calculated from different values. (see Annex) The final results of the study on eHealth Indicators is available at www.ehealth-indicators.eu.

3 eHealth Strategies survey results

The following sections present the results of the eHealth Strategies country survey. In a first section, the eHealth policy actions undertaken in Latvia are presented. This is followed by a presentation of administrative and organisational measures taken. Section 3.3 presents results on key eHealth applications. Section 0 focuses on the technical side of eHealth, namely the role of patient and healthcare provider identifiers and the role of eCards. Legal and regulatory facilitators as well as financing and reimbursement issues are presented in the following chapters, 3.4 and 3.5. The report concludes with evaluation activities (3.6) in the country and an outlook (4.).

3.1 eHealth policy action

The eHealth strategies of EU and EEA countries are not always labelled as such. Some countries may indeed publish a policy document which refers to the ICT strategy in the healthcare sector. Other countries such as France and Germany 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; in France the introduction of an electronic medical record is included in a law concerning social security.

Sometimes, also documents from domains such as eGovernment or Information Society strategies may contain provisions which concern eHealth. 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.

3.1.1 Current strategy/roadmap

“Guidelines for eHealth in Latvia” (2005-2013)

The Latvian Cabinet ratified the policy document “Guidelines for eHealth in Latvia”²⁵ in August 2005. This document states strategic directives for the development of information and communication technologies in the sector of healthcare until 2013. It defines issues related to specific eHealth applications, standards, legal, financial and evaluation activities. In detail these include e.g. the implementation of an electronic health record, and the standardisation of healthcare services.

In the course of the deployment of the strategy, further documents were developed and ratified:

“Information System Architecture in Healthcare”

- This document states basic principles and solutions which have to be taken into consideration when establishing information systems for the healthcare sector to ensure compatibility of information systems as well as to reduce their creation costs and future maintenance expenses.
- The first (1.2) version of the document was ratified by the Board of Information Technologies of Ministry of Health on May 25, 2006.
- Renewed second version (2.2.6) was approved by the Working Group on eHealth Activities on May 2, 2006.

²⁵ Latvian Government 2005; Ministru kabineta [Cabinet of Ministers of the Republic of Latvia] 2005

“Strategy Action Plan 2008-2010”

- The plan was ratified by the decree of the Cabinet No. 660 on October 24, 2007. It is aiming for the definition of overall concrete tasks measures to be taken to ensure reaching the goals of basic principles of eHealth.

As the policy document “Guidelines for eHealth in Latvia” is the first of its kind in Latvia, no earlier versions or plans are available.

Additional documents from other policy domains, which are also linked to the development of an eHealth structure are the “Latvian eGovernment Conception”²⁶ from 2002, the “National Development Plan 2007-2013”²⁷ and the “Basic principles for the development of an Information Society (2006-2013)”²⁸.

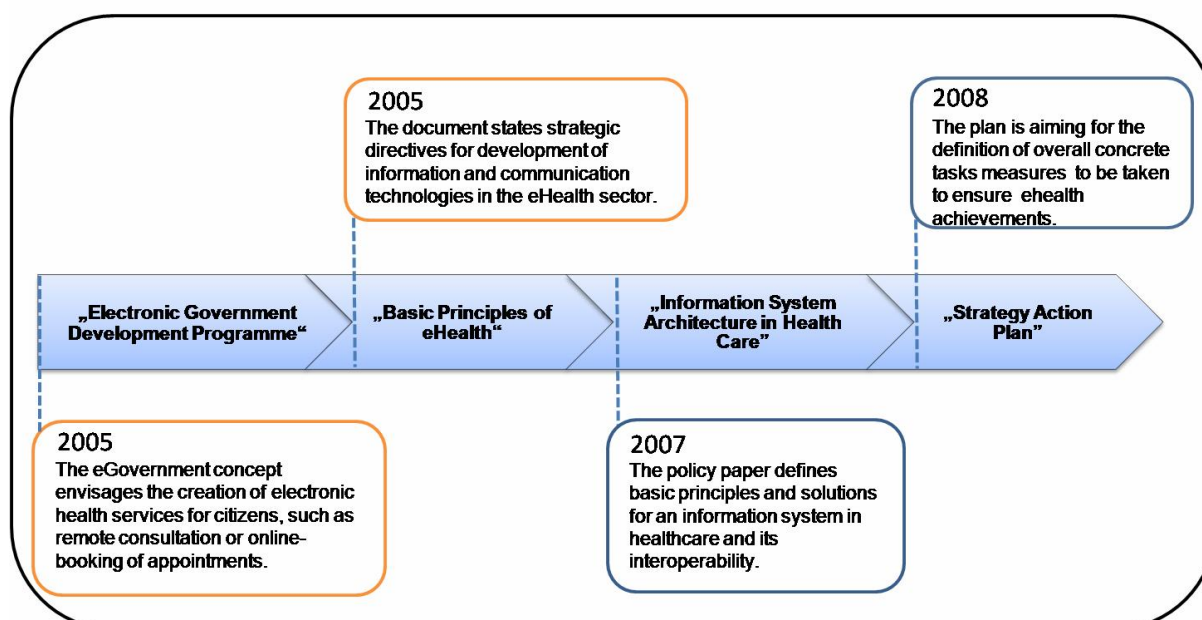
The latter is concerned with information society development goals, such as the implementation of electronic health services, including that by 2013, 5% of Latvian citizens should use online services provided by the government.

The eGovernment concept also envisages the creation of electronic health services for citizens, such as remote consultations as well as electronic referrals and booking of appointments online. These electronic services in the field of health are also mentioned in the “Electronic Government Development Programme (2005-2009)”²⁹.

Furthermore, the necessity to ensure network infrastructure access for healthcare institutions and to develop electronic health solutions arises from the Latvian “National Development Plan”.

Thereby, all eHealth initiatives are managed centrally and therefore no regional programmes concerning eHealth are available.

Figure 3: Latvian policy documents related to eHealth



²⁶ Latvijas Republikas Tieslietu ministrija 2001

²⁷ Valsts kanceleja 2007

²⁸ Valsts kanceleja 2005

²⁹ Valsts kanceleja 2005

3.2 Administrative and organisational structure

A subordinated authority under Ministry of Healthcare is responsible for the implementation of the eHealth strategy, the operation of projects and the establishment of the according infrastructure: the Center for Health Economics³⁰ (Veselības Ekonomikas Centrs).

The centre has been established on the basis of the former State Medicines Pricing and Reimbursement Agency according to State Decree No 509 adopted on 29 July 2009 and entitled "The reorganisation of the state institutions directly responsible to the Ministry of Health", and the resolution of the Cabinet of Ministers adopted on 29 September 2009. It has taken over several functions formerly carried out by the Public Health Agency, the Health Statistics and Medical Technologies State Agency and the Compulsory Health Insurance Agency.

The main tasks of the Centre are the following:

Tasks of the Latvian Centre for Health Economics:

- determine the healthcare services, which will be funded from the state budget according to the normative Acts of the State;
- provide therapeutic and financial assessment of pharmaceutical products and medical technology to develop a list of products which will be financially reimbursed;
- summarise and analyse public health (including healthcare) data;
- maintain the Register of Patients with Particular Diseases;
- implement national eHealth policy;
- execute the functions of the co-operation institution of European Union funds;
- implement the functions regarding a national focal point of the European Monitoring Centre for Drugs and Drug Addiction in the European Information Network on Drugs and Drug Addiction (Reitox).

The execution of these functions is financed by the state, whereas specific projects can be financed by other sources, e.g. the European Union. Stakeholders are integrated in these activities through temporary working groups, which are established on a project basis.

Overall, at current stage the main challenges related to the implementation of eHealth can be characterised as organisational and administrative as the Centre of Health Economics took over several other institutions and the new structure just started to operate.

³⁰ The Centre of Health Economics

3.3 Deployment of eHealth applications

3.3.1 Patient summary and electronic health record (EHR)

In this study, the epSOS project's definition³¹ of a patient summary was used as a general guideline. There a patient summary is defined as a minimum set of a patient's data which would provide a health professional with essential information needed in case of unexpected or unscheduled care (e.g. emergency, accident), but also in case of planned care (e.g. after a relocation, cross-organisational care path).

Lacking a standard definition, a patient's electronic health record (EHR) is here understood as an integrated or also interlinked (virtual) record of ALL his/her health-related data independent of when, where and by whom the data were recorded. In other words, it is an account of his diverse encounters with the health system as recorded in patient or medical records (EPR or EMR) maintained by various providers like GP, specialists, hospitals, laboratories, pharmacies etc. Such records may contain a patient summary as a subset. As of yet, fully-fledged EHR systems rarely exist, e.g. in regional health systems like Andalusia in Spain or Kronoberg in Sweden, or in HMOs (health maintenance organisations) like Kaiser Permanente in the USA.

It should be noted that in most policy documents reference is made simply to an "EHR" without any explanation of what is meant by it, thereby in reality even a single, basic electronic clinical record of a few recent health data may qualify. As a consequence, this section can only report on national activities connected to this wide variety of health-related records without being able to clearly pinpoint what (final) development stage is actually aimed for or has been reached so far.

In Latvia, the development of a basic patient summary has been ongoing since 2007³². Up to this point, the technical concept has been defined, but the implementation has not started up to this point. The technical framework defines that the following data is going to be stored in the patient summary:

Data to be stored in patient summary:

- administrative/ demographics
- recently prescribed medications
- GP record/summary
- discharge letters
- laboratory results
- radiology reports
- emergency care data (cave)

In Latvia it is opted to build separate information systems in hospitals and a central storage system on state-level. This way electronic patient data would be collected and prepared in the hospitals, but stored in and accessible through the central system.

³¹ European Patients Smart Open Services

³² Latvijas Republikas Veselības ministrija [Latvian Health Ministry]

The main goal of the patient summary plan is to create a database for every health professional (including emergency care specialists) where he/she can look up important patient information, such as health status and medication. This patient summary is planned to be integral part of a national electronic health record.

The technical concept of the EHR system also allows the storage of a medical history and a condition-specific summaries as part of the health record or as a link to external records by using the IHE XDS architecture³³. The actual decision to proceed like this is at the moment up to clinical staff and issuers of clinical guidelines.

Overall, the patient summary and the EHR are both strongly linked to the overall concept of building a new Information System for healthcare. Thereby, the Latvian government rates EHRs as very useful eHealth tool and hopes for the provision of prototypes by the World Health Organisation in order to adapt the application faster.³⁴

Main challenges concerning the creation and use of patient summaries and national electronic health records are of political nature and related to the availability of financial resources. IMF requirements force the Latvian government into a course of budgetary consolidation. This lack of resources will affect the healthcare system as a whole. For more information on healthcare reform, also consult section 2.3 above.

3.3.2 ePrescription

In the framework of this study and following work in epSOS³⁵, 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.

The development of the ePrescription system is also closely linked to the establishment of the health information system, which began in 2007. At the moment, implementation is planned for IT to be used for all basic processes concerning patient, GP and the dispensing pharmacist. Procurement for this project is underway and Integrated Society (IS) development will start at the end of this year. Documents on the proposed information system, the development concept thereof and the guidelines to implementation are available on the Ministry's website³⁶.

³³ Currently, clinical information is stored in all kinds of proprietary formats through a multitude of medical information systems available on the market as well as simple office data formats. This results in a severe interoperability problem in sharing electronic healthcare records. To address this problem, an industry initiative, called "[Integrating Healthcare Enterprise \(IHE\)](#)" has specified the "Cross Enterprise Document Sharing (XDS)" Profile to store healthcare documents in an ebXML registry/ repository to facilitate their sharing.

³⁴ World Health Organisation 2006

³⁵ European Patients Smart and Open Services (epSOS)

³⁶ Latvijas Republikas Veselības ministrija [Latvian Health Ministry]

3.3.3 Standards³⁷

Standards are not only crucial to enable interoperable exchange of meaningful information in the healthcare system; they also ensure secure access to patient records by healthcare providers and citizens. This study aims to identify, among other usage, standards related to the domain of health informatics, such as the SNOMED Clinical Terms or the LOINC terminology.

The Centre for Health Economics, which has been addressed in section 3.2, is responsible for the implementation of eHealth projects and also for standards in this field. However, the standardisation process is said to be started in close relation to individual eHealth projects during the coming 6 to 12 months.

The use of specific standards related to eHealth applications is discussed in the Latvian eHealth Strategy (see section 3.1.1). It is stated that a set of standards should be developed that is suited for the implementation of the electronic health record storage and transmission activities within the information system. HL7 has been selected as the basis for Latvian health standards. Furthermore, the policy paper focuses on the compliance with European standards, as it defines – among other things – that (e)Health professionals should actively participate in the European Committee for Standardisation³⁸ (CEN) to ensure that the standards of the Latvian healthcare industry fulfil European requirements.

The Latvia State Agency of Medicines (LSAM) takes its standards from the WHO and European Medicine Agency. Latvia uses the project European Union Telematics Controlled Terms (EUTCT) to regulate its use of terms and gradually LSAM will implement them in their information systems.

3.3.4 Telemedicine³⁹

The use of telemedicine applications is recognised as beneficial to enable access to care from a distance and to reduce the number of GP visits or even inpatient admissions. Commission services define telemedicine as “the delivery of healthcare services through the use of Information and Communication Technologies (ICT) in a situation where the actors are not at the same location”⁴⁰. In its recent communication on telemedicine for the benefit of patients, healthcare systems and society, the Commission re-emphasises the value of this technology for health system efficiency and the improvement of healthcare delivery⁴¹.

The Latvian eHealth strategy envisages the use of telemedicine, as it states that the goal is to provide telemedicine equipment and trained staff to all emergency medical care in hospitals. Furthermore, it is planned to establish a network, which includes both, a telemedicine advisory service and the according equipment. However, national activities in this field of eHealth have not started yet.

³⁷ Latvian Government 2005; Valsts kanceleja 2005

³⁸ European Committee for Standardisation

³⁹ Latvian Centre for Telemedicine; Stumbris, Baidekalna et al. 2005; Valsts kanceleja 2005; Duplaga, Leszczuk et al. 2007

⁴⁰ Europe's Information Society

⁴¹ European Commission 2008

ICD 10 is fully adopted and used

Aiming for a Latvian telemedicine network

Latvian Telemedicine Centre

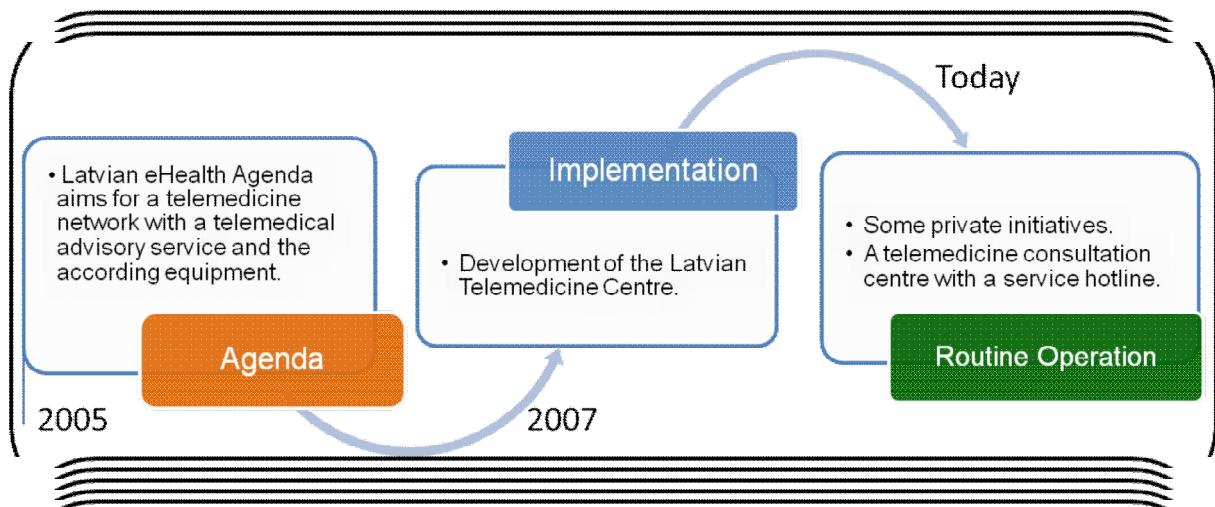
Generally, the use of telemedicine in Latvia is very fragmented and mostly project driven or small scale private initiatives. There has been cross border collaboration in telemedicine during BITNET project in 2000 which involved several hospitals in Latvia, Lithuania Estonia and Sweden. On the basis of this project which lasted for two years, recently there was an attempt to start teleconsultation/ teleconferencing between two of the former project participants Pauls Stradins Clinical University Hospital and Liepāja Regional Hospital. There have been also some projects related to providing teleradiology services, due to some organisational challenges, these projects have failed to be implemented in the routine work practices. So far, some radiologists and cardiologists offer remote consultation on an individual basis.

At national level, a Latvian Telemedicine Centre exists, which comprises:

- Personal Card Guard equipment used by patients for registration and to send data on the organs to be examined;
- A monitor centre or computer equipment set that receives data transmitted by patients;
- The acquired data is analysed by medical staff on duty. Any consultations required are provided round the clock.

Main challenges concerning the implementation and use of national telecare and telemonitoring are related to organisational and legislation issues.

Figure 4: Telemedicine services in Latvia



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Technical aspects of implementation

A key prerequisite for the establishment of an eHealth infrastructure is the ability to uniquely identify citizens/patients and healthcare professionals. This part of the survey deals with identifiers and how they are stored. This section does not deal with the tokens through which identification can or will take place. One such possibility would be via an eCard. This topic is dealt with in the following section. The current section focuses solely on whether or not unique identifiers are in place in Latvia and for which purpose.

3.3.5 Unique identification of patients

All residents (citizens and non-citizens) in Latvia receive a National ID number, which is unique through a combination of different numbers. These numbers are assigned by the Office of Citizenship and Migration (PMLP - Pilsonības un migrācijas lietu departaments). The IDs are stored in the Population Register⁴². It accumulates information about the given name, surname of inhabitants, their place of residence, personal identification documents, etc. This data is used for reference in other state information systems, statistical surveys, organising of elections and other processes of national importance.

National Citizen ID stored in the Population Register

The Office of Citizenship and Migration Affairs is a state institution under the supervision of the Ministry of Interior of Republic of Latvia and is responsible for the issuing of identity documents and travel documents, maintenance of the Population Register, implementation of state migration policy, including development and implementation of repatriation and asylum policy.⁴³

The National ID is also used by the Health Payment Centre to identify patients and to maintain the so-called Patient Register. The Patient Register is an integral part of the Management Information System used by Health Payment Centre to calculate reimbursements. Virtually it contains information about all state insured persons and links patient identities to the primary care specialists.

3.3.6 Unique identification of healthcare professionals

The national citizen ID number is also used as a unique key to identify doctors and nurses. All healthcare professionals are registered in the official register of healthcare professionals established by the Ministry of Health. This register contains identifying data, contact information, educational data, information about the healthcare professionals' certificates, structure and branches. Physically the Register of Healthcare Professionals is maintained in the same Management Information System operated by the Health Payment Centre as the Patient register since 2004.

Since 2009 Health Inspectorate (Veselības Inspekcija) is in charge of entering education and certification information about healthcare professionals in this register. The Health Inspectorate of Latvia is a state administrative institution supervised by the Ministry of Health of the Republic of Latvia.⁴⁴

⁴² Office of Citizenship and Migration Affairs

⁴³ Office of Citizenship and Migration Affairs

⁴⁴ Ministry of Health of the Republic of Latvia

Similarly, all healthcare institutions are registered in the official register of healthcare institutions, also held by the Ministry of Health. Information about pharmacists is maintained in separate register operated by Latvian Society of Pharmacology.

Electronic databases of healthcare professionals and healthcare institutions are available through the Health Inspectorate.

3.3.7 The role of eCards

The Latvian government is planning a roll-out of national ID Cards with a chip system, which then can also be used as identifiers for healthcare purposes. According to the current technical concept, the card itself will contain only identification information without any healthcare data. Thereby, it can also be used for other purposes, such as bank or eGovernment services only as an identification device. The national ID card will contain electronic signature and authentication certificates and will be linked to the National Citizen ID.

Distribution of 28,000 eCards

Furthermore, there are no specific eCards for healthcare professionals. But healthcare professionals may use qualified signature and authentication certificates, issued by the National Certification Service Provider (LVRTC – Latvijas valsts radio un televīzijas centrs), for identification. For the storage of the certificates and signatures, compliant smartcards are used (CWA 14169:2004⁴⁵). The certificate has an embedded personal ID number, thus it is possible to identify the creator of the signature or person accessing an information system.

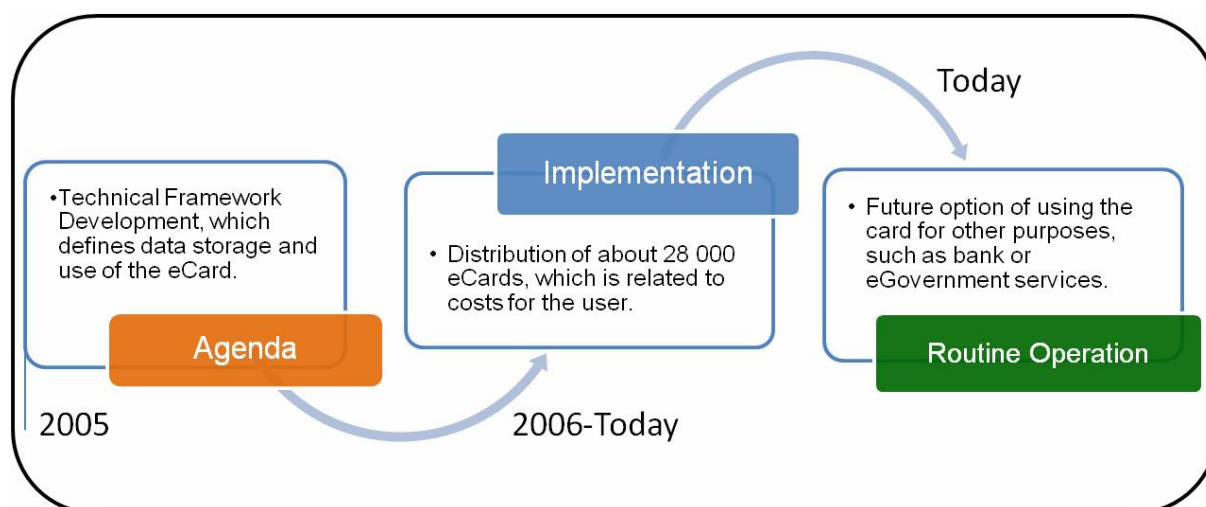
So far, only a small number of electronic signature cards have been issued: About 28.000 have been distributed since October 2006 when the certification service was started (22.000 are active). The main reason for this rather slow distribution and installation is the product price: In August 2009, the base pack costs LVL 24.61 (34.75€) for 2 years. Plus users must pay LVL 0.36 (0.50€) fee for each timestamp. The business pack samples LVL 92.29 (130.34€) per 2 years – then the usage of time-stamping service is free. Recently, the LVRTC (Latvian State Radio and TV centre) changed their pricelist for the product. Although prices are reduced, they are still high for many citizens to be considered as viable identification and authorization tool. As well many e-service providers are accepting identification issued by commercial banks (use of internet bank's password or digital token). Therefore, electronic signature cards remain unpopular. The number of active cards is expected to continue falling.

Every user, whether citizen or healthcare professional, can block the ID card through a helpdesk, if there is suspect of misuse. Then the digital certificates on the card are revoked.

As an obstacle, the accessibility of authentication tools (smart cards, digital certificates) and the availability of systems where these identifiers could be applicable, pose a problem. From a political perspective, the project is still at a conceptual planning phase and has not been approved yet.

⁴⁵ The code refers to an agreement made by the European Committee for Standardization Organisation and (CEN/ISSS) on electronic signatures. CWA stands for CEN Workshop Agreements and 14169 for the agreement code.

Figure 5: eCards in Latvia



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3.4 Legal and regulatory facilitators

Legal and regulatory issues are among the most challenging aspects of eHealth: privacy and confidentiality, liability and data-protection all need to be addressed in order to make eHealth applications possible. Rarely does a country have a coherent set of laws specifically designed to address eHealth. Instead, the eHealth phenomenon has to be addressed within the existing laws on professional liability, data protection etc.

Legislation is in the process of enacting

In general, Latvian legislation covers the issues of data protection, telecommunication, digital signatures and Health-IT product liability through relevant acts and regulations. In addition, it is planned to start the development of legislation relating to the creation of a regional/national patient data record system and the exchange of this data. Provisions for this storage and exchange would be that data will be stored centrally, however some details will remain in healthcare providers systems. This legislation clearly specifies who is in charge of the data administration.

The specific legislative or regulatory framework is currently very limited in Latvia. Legal provisions on electronic health records or telemedicine are not yet available. Consequently, accreditation schemes for the delivery of telemedicine services are for example not established yet. With regards to ePrescription however, specific regulations were approved in 2005 and the use of electronic prescriptions is allowed since 2006 (along with paper prescriptions)⁴⁶. The content of the electronic prescription has to comply with the requirements of the Regulation on Manufacture and Storage of Prescription Forms as well as Writing out and Storage of Prescriptions. More detailed provisions on the procedure for the use of ePrescriptions will follow later in 2010 when development starts.

⁴⁶ Cabinet Regulations No 175, 8 March 2005 on Manufacture and Storage of Prescription Forms as well as Writing out and Storage of Prescriptions, as amended on 27 June 2006.

3.4.1 Patient rights

Until half a year ago Latvia did not have specific regulations on patients' rights. The rights and duties of patients were regulated in the general Medical Treatment Act and the Medical Practitioner Act of 1997⁴⁷. However, on December, 30th 2009 the Patients' Rights Act was approved⁴⁸. The Act attributes the patient a right to information, right to medical treatment, right to consent or to abandon of the treatment, the right to free choice and the right to access medical information. The Act on Patients' Rights furthermore repeats the protection of patient data and foresees some provisions on clinical trials.

The new Patients' Rights Act does however not explicitly mention the use of new eHealth techniques such as telemedicine, electronic health records or ePrescription. It can be assumed that the new law is thus equally applicable to paper and electronic records,

3.5 Financing and reimbursement issues⁴⁹

The healthcare sector was recently hit by recessionary cutbacks. This derives from the fact that the impact of the economic recession on Latvia's economy is characterised by a decline in gross domestic product (GDP), weak entrepreneurship and a strict fiscal policy. One economic sector that has been particularly affected by the cuts in budget spending is the health and social work sector. According to an agreement with the social partners, the financing of healthcare in 2009 has decreased by 21% in comparison with 2008. The long-term consequences have not been evaluated yet.⁵⁰

For the implementation and long-term maintenance of the national eHealth infrastructure, EU funding and a state budget is available. The budget is allocated to planning, piloting and project management activities. Here, also a co-financing by the EU is foreseen.

Other international sources are the European Regional Development Fund (ERDF) and the World Bank, as e.g. the project for the establishment of the Health Management Information System operated by Health Payment Centre was funded with the loan from the EC programme PHARE.

However, it remains challenging that at a national level resources for eHealth financing and reimbursement are rarely available.

3.6 Evaluation results/plans/activities

From a public policy perspective, evaluation is a key activity in the policy-cycle. It provides insights into the success or failure of a policy or project and leads to new policy goals and new methods of implementation. The need for evaluation of eHealth policies and projects has been stressed time and again by the EC, not least in order to further the spread of eHealth in the process of healthcare delivery.

⁴⁷ Medical Treatment Act, 12 June 1997 and Medical Practitioner Act, 24 April 1997.

⁴⁸ , Latvijas Republikas Veselības ministrija [Latvian Health Ministry]

⁴⁹ Duplaga 2007

⁵⁰ Curkina

Evaluation activities in Latvia are ongoing since 2009, as there is an assessment of a pilot regarding an eHealth Integration platform. Here, the overall system is evaluated by the government agency Veselības Ekonomikas Centrs (Centre for Health Economics). In general, the centre is responsible for current and further evaluations in eHealth.

4 Outlook

In Latvia, the deployment of health information systems is closely linked to the renewal of the overall healthcare infrastructure. Thereby, different basic reforms and eHealth deployment activities have been accelerated since 2005 in form of an eHealth strategy and technical development frameworks in fields such as reimbursements, ongoing e-prescription and EHR projects.

Main challenges for further development in the eHealth sector are the availability of funding, accessibility of technical tools as well as organisational issues.

The Latvian healthcare sector was hit by recessionary cutbacks, which led to the hold of different pilots and projects also in the field of eHealth. Long-term outcomes of this strict fiscal policy have not been assessed, but will probably continue throughout 2012. The accessibility of technical tools is another obstacle for the Latvian eHealth development.

Furthermore, organisational issues are challenging as whole organisational infrastructure is needed to support eHealth implementation initiatives including legislation and standardisation processes. Education and training are also important issues as eHealth implementation requires new competences and knowledge management.

For coming years, Latvia will have to rely on European and international funding opportunities for smaller or regional pilot projects, until state financing can provide enough money to establish a fully-working information system for eHealth. The basic ideas and action plans have already been developed and have to be further elaborated for national roll-out.

5 List of abbreviations

| | |
|--------|---|
| CEN | European Committee for Standardisation |
| DRG | Diagnosis Related Group |
| DSS | Decision Support Systems |
| EC | European Commission |
| EEA | European Economic Area |
| EHR | Electronic Health Record |
| EMR | Electronic Medical Record |
| ERA | European Research Area |
| EU | European Union |
| EUTCT | European Union Telematics Controlled Terms |
| GDP | Gross Domestic Product |
| GP | General Practitioner |
| HCP | Healthcare Provider |
| HPC | Health Professional Card |
| ICT | Information and Communication Technology |
| ID | Identification (e.g. number, card or code) |
| IHTSDO | International Health Terminology Standards Development Organisation |
| IS | Integrated Society |
| IT | Information Technology |
| LSAM | Latvia State Agency of Medicines |
| LVL | Latvian Lats (Latvian Currency) |
| LVRTC | Latvijas valsts radio un televīzijas centrs [Latvian State Radio and TV centre] |
| OECD | Organisation for Economic Co-operation and Development |
| PHS | Personal Health System |
| PMLP | Pilsonības un migrācijas lietu departaments [Office of Citizenship and Migration] |
| R&D | Research and Development |
| USSR | Union of Soviet Socialist Republics |
| WHO | World Health Organization |

6 Annex

6.1.1 Annex 1: Compound indicators of eHealth use by GPs

| Compound indicator name | Component indicators | Computation |
|--|--|---------------------------------|
| Overall eHealth use | <ul style="list-style-type: none"> - Electronic storage of individual medical patient data - Electronic storage of individual administrative patient data - Use of a computer during consultation with the patient - Use of a Decision Support System (DSS) - Transfer of lab results from the laboratory - Transfer of administrative patient data to reimbursers or other care providers - Transfer of medical patient data to other care providers or professionals - ePrescribing (transfer of prescription to pharmacy) | Average of component indicators |
| Electronic storage of individual medical patient data | <ul style="list-style-type: none"> - A2a - Symptoms or the reasons for encounter - A2c - Medical history - A2c - Basic medical parameters such as allergies - A2d - Vital signs measurement - A2e - Diagnoses - A2f - Medications - A2g - Laboratory results - A2h - Ordered examinations and results - A2i - Radiological images - A2j - Treatment outcomes | Average of component indicators |
| Electronic storage of individual administrative patient data | <ul style="list-style-type: none"> - A1 - electronic storage of individual administrative patient | A1 value |
| Use of a computer during consultation with the patient | <ul style="list-style-type: none"> - B2 - Computer use during consultation | B2 value |
| Use of a Decision Support System (DSS) | <ul style="list-style-type: none"> - B3a - Availability of DSS for diagnosis - B3b - Availability of DSS for prescribing | Average of component indicators |
| Transfer of lab results from the laboratory | <ul style="list-style-type: none"> - D1e - Using electronic networks to transfer prescriptions electronically to dispensing pharmacists? | D1e value |
| Transfer of administrative patient data to reimbursers or other care providers | <ul style="list-style-type: none"> - D1a - Using electronic networks to exchange of administrative data with other healthcare providers - D1b - Using electronic networks to exchange of administrative data with reimbursing organisations | Average of component indicators |
| Transfer of medical patient data to other care providers or professionals | <ul style="list-style-type: none"> - D1c - Using electronic networks to exchange medical data with other health care providers and professionals | D1c value |
| ePrescribing (transfer of prescription to pharmacy) | <ul style="list-style-type: none"> - D1d - Using electronic networks to transfer prescriptions electronically to dispensing pharmacist | D1d value |

Dobrev, Haesner et al. 2008

7 References

- Curkina, I. Healthcare sector hit by recessionary cutbacks. European Industrial Relations Observatory Online, Institute of Economics, Latvian Academy of Sciences.
- Dobrev, A., M. Haesner, et al. (2008) Benchmarking ICT use among General Practitioners in Europe. Bonn/Brussels, European Commission, Information Society and Media Directorate General. http://ec.europa.eu/information_society/europe/i2010/docs/benchmarking/gp_survey_final_report.pdf (25/01/2010).
- Duplaga, M. (2007). "e-Health development policies in new Member States in Central Europe." *World Hospitals and Health Services* **43**(2).
- Duplaga, M., M. Leszczuk, et al. (2007) eHealth strategy and implementation activities in Latvia. Report in the framework of the eHealth ERA project. Krakow/Bonn. http://www.ehealth-era.org/database/documents/ERA_Reports/eH-ERA_Latvia_report_April%202007.pdf (25/03/2010).
- eHealth Priorities and Strategies in European Countries (2007). eHealth ERA Report.
- Europe's Information Society. "Thematic Portal: Telemedicine works " Retrieved 19/01, 2010, from http://ec.europa.eu/information_society/activities/health/policy/telemedicine/index_en.htm.
- European Commission (2004) e-Health - making healthcare better for European citizens: An action plan for a European e-Health Area. Brussels. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2004:0356:FIN:EN:PDF> (19/01/2010).
- European Commission (2007). European Commission Communication: "Lead Market Initiative for Europe".
- European Commission (2008). Commission Recommendation on cross-border interoperability of electronic health record systems Official Journal of the European Union. **L 190**: 37-43
- European Commission (2008). On telemedicine for the benefit of patients, healthcare systems and society. Brussels.
- European Commission; Information Society and Media Directorate-General. (2009). "Good eHealth." Retrieved 19/10/10, from www.good-ehealth.org.
- European Committee for Standardisation. "Technical Committee Liaison Organization." Retrieved 25/03/2010, from <http://www.cen.eu/cen/AboutUs/CENnetwork/EuropeanOrg/Liaison/Pages/default.aspx>.
- European Communities (2007). "Accelerating the Development of the eHealth market in Europe", eHealth task force report.
- European Patients, Smart and Open Services. "Glossary: Patient Summary." Retrieved 09/04/2010, from [http://www.epsos.eu/glossary.html?tx_a21glossaryadvancedoutput_pi1\[char\]=p&cHash=df930cccdbd](http://www.epsos.eu/glossary.html?tx_a21glossaryadvancedoutput_pi1[char]=p&cHash=df930cccdbd).
- European Patients Smart and Open Services (epSOS). "Glossary." Retrieved 20/10/10, from [http://www.epsos.eu/glossary.html?tx_a21glossaryadvancedoutput_pi1\[char\]=p&cHash=df930cccdbd](http://www.epsos.eu/glossary.html?tx_a21glossaryadvancedoutput_pi1[char]=p&cHash=df930cccdbd).
- European Patients Smart and Open Services (epSOS). "Welcome to epSOS – a European eHealth Project." Retrieved 20/10/10, from <http://www.epsos.eu/>.
- eUser. (2005). "Evidence-based support for the design and delivery of user-centred online public services." Retrieved April 2009, from www.euser-eu.org.
- Health Consumer Powerhouse (2008) Eurohealth Consumer Index. European Commission, Information Society and Media. <http://www.healthpowerhouse.com/files/2008-EHCI/EHCI-2008-index-03.pdf> (20/01/2010).
- ICT and eHealth use among General Practitioners in Europe. (2007). "eHealth Indicators." from <http://www.ehealth-indicators.eu>.
- Karaskevica, J. and E. Tragakes (2001) Latvia. Health Care Systems in Transition. Copenhagen, European Observatory on Health Care Systems. <http://www.euro.who.int/document/e72467.pdf> (25/03/2010).
- Latvian Centre for Telemedicine. "About us." Retrieved 25/03/2010, from <http://www.ltn.lv/~telemed/eng/pages/1-parmums.html>.

Latvian Government (2005). Summary of guidelines "eHealth in Latvia". Ministry of Health, Cabinet of Ministers. Riga.

Latvijas Republikas Tieslietu ministrija (2001). Latvijas e-pārvaldes koncepcija. Riga.

Latvijas Republikas Veselības ministrija [Latvian Health Ministry]. "Elektroniskā veselības karte [The electronic health card]." Retrieved 23/06/2010, from <http://www.vm.gov.lv/index.php?id=562&top=117>.

Latvijas Republikas Veselības ministrija [Latvian Health Ministry]. "Elektroniskā recepte [Electronic prescription]." Retrieved 23/06/2010, from <http://www.vm.gov.lv/index.php?id=561&top=117>.

Latvijas Republikas Veselības ministrija [Latvian Health Ministry]. "Elektroniskā veselības karte [The electronic health card]." Retrieved 23/06/2010, from <http://www.vm.gov.lv/index.php?id=562&top=117>.

Ministru kabineta [Cabinet of Ministers of the Republic of Latvia] (2005) Pamatnostādnes „e-Veselība Latvijā” (informatīvā daļa) [Guidelines for e-Health in Latvia]. Order No. 560. [http://phoebe.vm.gov.lv/misc_db/web.nsf/bf25ab0f47ba5dd785256499006b15a4/17cb8c1218bf81cdc2257313001f391a/\\$FILE/e_vesel.pdf](http://phoebe.vm.gov.lv/misc_db/web.nsf/bf25ab0f47ba5dd785256499006b15a4/17cb8c1218bf81cdc2257313001f391a/$FILE/e_vesel.pdf) (23/06/2010).

Ministry of Health of the Republic of Latvia. "Health Inspectorate." Retrieved 25/03/2010, from <http://www.vi.gov.lv/?setl=2>.

Muciņš, R. (2008). Challenges and strategic plans for development of the Latvian health care system. Ministry of Health. Riga.

Office of Citizenship and Migration Affairs. "About OCMA." Retrieved 25/03/2010, from <http://www.pmlp.gov.lv/en/>.

Office of Citizenship and Migration Affairs. "Establishing of legal status and granting of identity number." Retrieved 29/04/2010, from <http://www.pmlp.gov.lv/en/pakalpojumi/pskd/identity.html>.

Stumbris, E., Z. Baidekalna, et al. (2005). Teleradiology Project for Latvia. *Med-e-Tel*. Luxembourg.

The Centre of Health Economics. "Activities." Retrieved 25/03/2010, from <http://www.vec.gov.lv/english/default.html>.

Tragakes, E., G. Brigis, et al. (2008) Latvia: Health system review. Health Systems in Transition. Copenhagen, World Health Organization 2008 on behalf of the European Observatory on Health Systems and Policies. <http://www.euro.who.int/Document/E91375.pdf> (25/03/2010).

Valsts kanceleja. (2005). "Elektroniskās pārvaldes attīstības programma 2005-2009 (Electronic Government Development Program)." Retrieved 25/03/2010, from <http://polsis.mk.gov.lv/view.do?id=1840>.

Valsts kanceleja. (2005). "Informācijas sabiedrības attīstības pamatnostādnes 2006-2013 (Information Society Development Guidelines)." Retrieved 25/03/2010, from <http://polsis.mk.gov.lv/view.do?id=2005>.

Valsts kanceleja (2005). Pamatnostādnes "e-Veselība Latvijā" Riga.

Valsts kanceleja. (2007). "Latvijas Nacionālais attīstības plāns 2007-2013 (Latvian National Development Plan)." Retrieved 25/03/2010, from <http://polsis.mk.gov.lv/view.do?id=1995>.

Veselības ministrs [Health Minister]: G.Bērziņš (2005) Pamatnostādnes „e-Veselība Latvijā”(informatīvā daļa) [Guidelines for "e-Health in Latvia" (Informative part)]. <http://polsis.mk.gov.lv/LoadAtt/file43142.doc>

World Health Organisation (2006) Latvia. Building Foundations for eHealth, WHO European Region. http://www.who.int/goe/data/country_report/lva.pdf (25/03/2010).

World Health Organization. (2000). "The World Health Organization's ranking of the world's health systems." Retrieved 20/01/2010, from <http://www.photius.com/rankings/healthranks.html>.

World Health Organization, Regional Office for Europe. (2009). "European health for all database (HFA-DB)." Retrieved 20/01/2010, from <http://data.euro.who.int>.