Executive Summary of the Public Audit Report

CREATION OF AN ELECTRONIC HEALTH SYSTEM

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DEFINITIONS AND ABBREVIATIONS

SAI– Supreme Audition Institution (National Audit Office of Lithuania)

PHI– Personal Healthcare Institution

CPMA – PB Central Project Management Agency

IS EHSCI – Information system for the electronic health services and collaboration infrastructure

IS – Information system

IT – Information technology

ISDC– Information Society Development Committee under the Ministry of Transport and Communications

MedIMIS – National Information System for the Archiving and Exchange of Medical Images

MEIAS – Sub-system for the Compulsory Health Insurance Information System of the National Health Insurance Fund

DWCAO – Disability and Working Capacity Assessment Office under The Ministry of Social Security and Labour of the Republic of Lithuania

NEHS – National Electronic Health System (NEHS-1 marks stage I – creating the core and four of the functions; NEHS-2 marks stage II– creating eleven functions)

CHIF– Compulsory Health Insurance Fund

PHC– Primary Healthcare Centre

CoR – State Enterprise Centre of Registers

MoH– Ministry of Health of the Republic of Lithuania

SNOMED CT – (*Systematized Nomenclature of Medicine – Clinical Terms*) – a systematized set of medical terms, encompassing many medical fields and built for electronic use.

HELINS – Compulsory Health Insurance Information System of the National Health Insurance Fund

SHAA – State Healthcare Accreditation Agency under the Ministry of Health of the Republic of Lithuania

NHIF– National Health Insurance Fund under the Ministry of Health

SMCA– State Medicines Control Agency under the Ministry of Health of the Republic of Lithuania

Portal of the electronic health system (e-health portal) – Sub-system for access to e-services for patients and health promotion professionals on the Information System for the Electronic Health Services and Collaboration Infrastructure

Electronic health system (e-health system) – Aggregation of measures aimed at health promotion by means of information and communication technologies[1]

[1]The Republic of Lithuania Law on Health System, 1994-07-19 No. I-552, Art 2. Pt 2.

Electronic signature (e-signature) – data that is inserted into, joined to, or logically associated with other data to verify the authentication of the latter and/or to identify the person signing[2]

Electronic recipe (e-recipe) – Sub-system on the Information System for the Electronic Health Services and Collaboration Infrastructure, that ensures access to information on medicine and compensated aid measures, as well as transfer and collection of data on issued recipes and prescribed and dispensed medicine for health promotion professionals.

National projects – Projects of the electronic health system, aimed at implementing the healthcare functions and electronic health system services, assigned to the competences of state institutions, which are set to be executed by the Ministry of Health and various publicly-administered institutions under the ministry, or healthcare institutions that supply nation-wide hospital-based health services[3]

Regional projects – Projects of the electronic health system, aimed at implementing the healthcare functions and electronic health system services, assigned to the competences of municipalities and counties, which are set to be executed by institutions that supply regional and district-wide hospital-based health services, and institutions that supply outpatient and primary healthcare services[4]

Telemedicine – Remote consulting and treatment of patients via the means of digital measures of storing and transferring medical information.

Life cycle of the state information system – the aggregation of changes of the status of the state information system between the setting of its establishment foundation, and the conclusion of its functionality[5]

Other terms are to be understood as they are defined or utilized in the law of Healthcare Institutions of the Republic of Lithuania or the Law of Management of Information Resources of the Republic of Lithuania.

[2] Electronic signature law of the Republic of Lithuania, 2000-07-11 No. VIII-1822, Art 2. Pt 4.

[3] Order of the Minister of Health of the Republic of Lithuania, 2010-02-22 No. V-151, Art. 3 str.

[4] Order of the Minister of Health of the Republic of Lithuania, 2010-02-22 No. V-151, Art. 3.

[5] Order of the head of the Information Society Development Committee under the Ministry of Transport and Communications 2014-02-25 No. T-29.

SUMMARY

The healthcare sector is becoming more and more dependent on information and communication technologies, that help in the development of high-quality healthcare services. Many of the EU member states are facing difficulties related to the development of e-health systems on the national level, and Lithuania is not an exception. SAI reports (2008, 2011) stated, that the e-health system that had been under development since 2005 is dysfunctional.

In 2011 the creation of the system was restarted. In the same year, the health system law was amended with a new article[6], that regulated the management of the electronic health system of the Republic of Lithuania. The new model for the architecture of functional, technical, and software equipment[7] planned to combine various data registers, store electronic health records of the patients, utilize the functions of e-recipe, store and utilize a database of medical images. After reframing the establishment of the system and confirming the provisions for the IS EHSCI, a manager and a main processor for the system were assigned – the Ministry of Health and the Centre of Registers respectively.

Having completed the tasks for establishment by 2015, the use of the e-health system started out as passive and controversial opinions from the users and creators of the system showed up in the public space, regarding the achievement, quality, and safety of goals set for the creation of the system.

The Lithuanian e-health system consists of:

- The central IS (EHSCI IS), which contains the storage of electronic medical history, as well as its sub-systems: e-recipe and MedMIS;
- The main IS / registers of the health sector: IS of medical terms (SNOMED CT), Register of medical licenses of healthcare and pharmaceutical professionals, IS of medicinal products, IS of institution licensing;
- 23 PHI ISs.

EHCSI IS ensures a unified access to e-health services for both citizens, and healthcare professionals. The patient health data (history, analyses, diagnoses, recipes, referrals, x-rays, certificates, etc.) is submitted to said system by the healthcare institutions who participated in e-health projects via the e-health portal www.esveikata.lt. PHIs that do not have electronic systems can also submit data to the central IS via said portal. 150 PHIs took part in the e-health system's development programme.

Objective of the audit– to evaluate whether or not the goals set for the creation of the e-health system are achieved and whether conditions are created to receive quality services of said system.

Subjects of the audit – MoH and CoR. Information for the proof needed for the audit was collected from medical institutions that participated in projects for the development of the e-health system, in order to determine the volume of usage of e-health system functions that are created.

Period for the audit – 2011–2016. In order to have a thorough and justified evaluation, in certain cases data from earlier periods was analysed. Later periods were analysed only to the extent of

[6] LR sveikatos sistemos įstatymas, 1994-07-19 Nr. I-552, 13^1 str. (2011-06-07 Nr. XI-1432 redakcija).

[7] ESPBI IS specifikacija, patvirtinta LR sveikatos apsaugos ministro 2011-03-28 įsakymu Nr. V-294.

their relation to the decisions concerning the e-health system that were made until the end of the audit period and their implementation.

Results of the audit showed that the goals set for the creation of the e-health system have been achieved and conditions are created to receive services of said system, however, said services are not always of appropriate quality – the system is not operating at peak efficiency and its usage remains passive. While creating the system, the agreement of strategic and project management with the requirements set out in the legislation, a rational approach towards the financing of the IS, encouragement of usage, and constructive dialogue between the manager of the IS, its operator and final user, were found to be lacking.

Upon evaluating the proof, collected during the audit, we provide the conclusions and recommendations of the public audit.

CONCLUSIONS

The development projects, planned for the creation of the e-health system were executed, however, not all the results are achieved, measurable, or match the expectations of the system's users, because:

1. The strategic management of the development of the e-health system is lacking in coordination:
    1.1. The strategic planning documentation for the system has been prepared and approved, but they were not coordinated with each other – different documents set out different target values for the same objectives, so it remains unclear which criteria should be followed in order to evaluate the level of implementation of the e-health system (sub-paragraph 1.1, p. 11).
    1.2. Not all the results for the system's development programme have been achieved, the achievement for some of them is impossible to measure. After the conclusion of the programme in 2016, coordination of a methodology for measuring the results started, yet, said methodology does not include all the necessary indicators (sub-paragraph 1.2, p. 12).
    1.3. In all the stages of the system's development, decisions to create the IS were approved when financing opportunities became available, and not according to operational needs. Similarly, the decision on the development programme for the e-health system for the period of 2015-2025 has already been made, and yet the decision for the maintenance of the ISs created during the development programme for the period of 2009-2015, has not. (sub-paragraph 1.3, p. 13).
    1.4. Mistakes from the previous period are repeated in the development programme for the e-health system for the period of 2015-2025: only one qualitative criterion for the evaluation of the programme is set, mechanisms for encouraging the usage of the system or mechanisms for sanctions are not created, unjustified telemedicine solutions are planned (sub-paragraph 1.4, p. 15).
2. The applied project management principles were insufficient in ensuring proper risk management for the projects of the e-health system that were executed:

2.1. The coordination of national and regional projects was not ensured, an integrated plan for the implementation of the system's projects, that would encompass points of convergence and relations between time, complex activities of the project and related projects was not created, this lead to deadlines for the projects not being set properly and being extended several times (sub-paragraph 2.1, p. 17).

2.2. The projects for the development of the e-health system were carried out while not following all the stages set out in the methodology for the management of the IS's life cycle: IS were approved for exploitation while still not developed to the planned scope, the quality of the provided creation services and the proper functionality of the IS not being confirmed, and falling behind on submitting and updating the necessary documentation (sub-paragraph 2.2, p. 18).

2.3. The ministry has not thoroughly discussed the opportunities for combining regional projects, hence, the financing was dedicated to projects that implement similar solutions: duplicate IT solutions were created, identical services were acquired, funding was utilized irrationally (sub-paragraph 2.3, p. 20).

3. The created e-health system is not operating at peak efficiency and is being utilized minimally:

3.1. Not all state PHIs submit data to ESHCI IS: 17 percent of Lithuanian pharmacies are not prepared to work with the IS, 31 percent of PHIs, that participated in e-health system projects, do not submit data to the IS, 40 percent. of PHIs who did not participate in e-health system projects do not plan on submitting their data. The number of patients registered to the system's portal is relatively low (sub-paragraph 3.1, p. 22).

3.2. Interfaces, necessary for full functionality of the IS, are not implemented: not all the integrative interfaces planned for the ESHCI IS are created, of those created – not all are functioning properly (sub-paragraph 3.2, p. 25).

3.3. The process for ensuring the stability of the IS has flaws: ESHCI IS incident management process is not fully defined relative to the scope and does not match the good IT recommendations being applied, the ministry settles with the Centre of Registers on the maintenance of the ESHCI IS without having justified information, the management process for regional IS incidents is not defined, not always is adequate opportunity created and sufficient measures of control set up in order to use e-signature (sub-paragraph 3.3, p. 25).

3.4. While providing e-health services, not all organizational and technical security measures regarding sensitive personal data, that are set out in the laws of the Republic of Lithuania, are ensured (sub-paragraph 3.4, p. 27).

RECOMMENDATIONS

To the Ministry of Health of the Republic of Lithuania

While aiming for sustainable development of the e-health system and the principles for reliable management of finances:

1. To foresee measures that would prevent the errors in previous development stages from being repeated in the new stage of the development of the e-health system:
   - Uncoordinated provisions provided in the strategic planning documentation related to the e-health system (conclusion 1.1);
   - No measurable quantitative or qualitative indicators or methodology for their measurement are created for the e-health system programme (conclusions 1.2, 1.4);
   - No sustainable e-health system management model, that would encompass the stages of identifying the need for the IS, its creation and maintenance, is created (conclusions 1.3, 2.1, 2.2);
   - The mechanism for encouraging the use of a complete system / mechanism for sanctions is not ensured, sufficient and suitable supplying of workstations with IT tools is not ensured (conclusions 1.4, 3.1);
   - Duplicate and unjustifiable solutions are being created (conclusions 1.4, 2.3).

To ensure the proper functioning of the IS created within the e-health system development programme for the period of 2009-2015:

2. to update the required documentation for the created IS (conclusion 2.2);
3. to create all the interfaces set out in the specification of the ESHCI IS (conclusion 3.2);
4. to define the management process for IS-related incidents and ensure it has reasonable funding (conclusion 3.3);
5. to foresee sufficient measures of control, necessary for proper usage of the e-signature (conclusion 3.3);
6. to implement all organizational and technical safety measures related to sensitive personal data, set out in the legislation of the Republic of Lithuania (conclusion 3.4).