**Informative Report**

**“Digital Health Strategy Until 2029”**

**Rīga 2023**

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Introduction

[1] The Digital Health Strategy Until 2029 (hereinafter – the Strategy) has been developed to implement the task “5.12.8. Development of the Digital Health Strategy 2022–2027” included in the Public Health Guidelines 2021–2027. The development and adoption of the Strategy by the Cabinet is also Milestone 131 “Adoption of a Digital Health Care Strategy” in implementing Reform “4.1.1.r. Sustainability and Resilience of a Human-Centred, Comprehensive, Integrated Healthcare System” of the Plan for Recovery and Resilience Facility of Latvia. The Strategy is put forward as an informative report, as it includes general principles, explanations, and other information that can be used in practice by any medical treatment institution, a business which develops digital solutions in order to ensure that all digital health stakeholders share a common understanding and vision of national priorities for digital health, further development thereof, and thus promote cooperation between State administration institutions, medical treatment institutions, and the industry in ensuring data accessibility and compatibility and developing digital services. The Digital Transformation Guidelines 2021–2027 and the Public Health Guidelines 2021–2027 include the following conceptual aspects: the directions for the development of digital health, the total funding of EU Structural Funds available for the digital transformation of the health care sector during the 2021–2027 programming period, and the indicative additional funding required from the State budget. The Strategy implementation period is set until 2029, as the primary source of investments for the Strategy is the funding of EU Structural Funds for the 2021–2027 programming period which must be used by 31 December 2029. Other health sector development planning documents (for example, plans) may include digital health measures for improving the disease prevention and health care in a specific area of health care.

[2] The Strategy defines the action directions and tasks for the digital transformation of the health sector to ensure the achievement of the public health policy objectives laid down in the Public Health Guidelines 2021–2027 and also the implementation of the tasks outlined in the Digital Transformation Guidelines 2021–2027.

[3] The World Health Organization has developed the Global Strategy on Digital Health 2020–2025[[1]](#footnote-2) where it is emphasised that digital health solutions provide an opportunity to improve health care accessibility, quality, efficiency, responsiveness to patient needs, and sustainability. Furthermore, the Regional Digital Health Action Plan for the WHO European Region 2023–2030[[2]](#footnote-3) recognises digital technologies as a key driver of health care development, fully transforming health care and enabling the addressing of challenges. The Plan also emphasises that the development of digitally delivered health care should be based on establishing collaboration, enabling and managing the transformation, and on continuous innovations, with a strong focus on people – both the patient and the physician.

[4] Digital health is one of the tools for ensuring modern and high-quality health care. It presents opportunities for more active cooperation and participation for every individual and facilitates greater access to services, and also improves health care efficiency. When used appropriately, digital health helps prevent hospitalisations and disease complications or reduce their risk, minimises redundant examinations, ensures better health care coordination for people with chronic conditions, facilitates data-driven decision-making in health care and health policy, and also supports other areas that use data generated in the health sector. Digital health is also an integral tool for the efficient exchange of information and coordination of services in the field of epidemiological safety, including in crisis and disaster situations, while its impact on prevention (including in the context of challenges related to ageing population, mental health, and well-being) is increasing. Digital health not only serves as a tool that brings about changes in the communication process but also offers new and innovative solutions in the health sector and health condition monitoring, ensuring greater and more timely data exchange, and also increased engagement of individuals, thereby fostering greater trust in the services provided.

[5] Health care systems worldwide are rapidly transitioning towards a value-based health care system. It aims at improving medical treatment outcomes on a continuous basis to deliver essential **health care results** for patients, enhance the **experience** of receiving and providing care, and increase the overall **efficiency and effectiveness** of the system. In order to establish a value-based health care system, there must be a shift from fee-for-service to value-based reimbursement (from the perspective of a patient). Such a payment model requires detailed data on medical treatment outcomes and clinical data of the medical treatment process, making the development of digital solutions critical.

[6] Another important aspect in the context of digital health data is Latvia’s integration into the European Health Data Space which is one of the priorities of the EC European Data Strategy 2019–2025. On 4 May 2022, the European Commission published the Proposal for a Regulation of the European Parliament and of the Council on the European Health Data Space. The goal of the European Health Data Space is to create a common space where natural persons will be able to easily control their electronic health data and it will also allow researchers and policymakers to use that electronic health data in a trusted and secure way, while also preserving the privacy.

[7] For the purposes of developing the Strategy, a series of in-depth interviews and focus groups with stakeholders was conducted in 2021 in cooperation with the World Health Organization. Afterwards, based on the information received during this process, the proposed action directions were validated and further refined through five thematic think tanks. In 2021, a Digital Health Hackathon was also held with the goal of rapidly identifying the key user needs for the user interface (UI) and desired user experience (UX) of the DigiVes platform through cooperation between the representatives of the UX/UI (user experience/user interface) community and digital health user groups and on the basis of the available data and past experience. More than 30 different organisations participated in this stage of gathering the information and perspectives necessary for the Strategy development.[[3]](#footnote-4)

[8] In order to ensure a collaborative and inclusive development of digital health, on 7 July 2022, the organisations, authorities, and patient organisations constituting its ecosystem signed a Memorandum of Cooperation.[[4]](#footnote-5) The implementation of the Strategy will be managed by the Ministry of Health in cooperation with the members of the ecosystem. The establishment of cooperation is to be entrusted to the National Health Service through structured organisation of discussions and work with a broad range of stakeholders to plan the development, designing and implementation of solutions, and also the creation of a technical environment (preferably along with a regulatory and funding environment) that supports the cooperation between the involved parties. The Digital Health Council established by the Ministry of Health will provide advisory support at a strategic level, while expert working groups will be organised for completing tasks and project oversight boards will be set up for the implementation of projects.

[9] The State budget and EU fund investments are the main sources of funding for the implementation of the Strategy.

[10] Additionally required State budget funding to promote the implementation of modern, patient-centred digital solutions, including telemedicine solutions, in health care and to ensure resources for maintaining health sector information systems and accumulating the increasing amount of data is included in the Digital Transformation Guidelines 2021–2027 and the Public Health Guidelines 2021–2027. The RRF Plan provides for a funding of EUR 8.4 million for digital health development, while EUR 25.9 million is allocated to the implementation of the Strategy within the framework of Measure 4.1.1.4 “Strengthening and Digitising the Health Care Management System by Developing Digital Solutions” of SO 4.1.1 “Ensuring Equal Access to Health Care and Fostering Resilience of Health Systems, Including Primary Care” under the European Union Cohesion Policy Programme 2021–2027. Additionally, Latvia will have the opportunity to secure funding that is available through other EU investment programmes for digitisation, for example, EU4Health, the Digital Europe Programme, the Connecting Europe Facility (CEF), the DG REFORM Technical Support Instrument, and Horizon Europe.

[11] The key challenges in digital health development are related to the fragmentation of institutional and ICT systems and poor cooperation, especially in development planning. Therefore, the implementation of the Strategy relies on the establishment of cooperation, i.e. the creation of a cooperation-based digital health “ecosystem”. This includes measures for managing and developing the digital health “ecosystem” and measures for strengthening the capacity of the MoH department. Furthermore, the digital health management includes measures that, according to the vision of the Strategy, support and promote both the cooperation among the parties involved in the development of ICT solutions and the cooperation among all parties (patients, physicians, specialists, authorities) to improve health care services. The planned management is further described in Chapter “Strategy Implementation”.

List of Abbreviations

|  |  |
| --- | --- |
| **1+MG** | European “1+ Million Genomes” initiative[[5]](#footnote-6)  |
| **RRF Plan** | Plan for Recovery and Resilience Facility of Latvia |
| **CCUH** | *VSIA Bērnu klīniskā universitātes slimnīca* [State limited liability company Children’s Clinical University Hospital] |
| **LBRSC** | Latvian Biomedical Research and Study Centre |
| **CSB** | Central Statistics Bureau |
| **DSI** | Data State Inspectorate |
| **EC** | European Commission |
| **MoE** | Ministry of Economics |
| **EP** | European Parliament |
| **ERDF** | European Regional Development Fund |
| **EU** | European Union |
| **ESF** | European Social Fund |
| **EHR** | Centralised patient electronic health record in the eHealth system/DigiVes IS |
| **MoI** | Ministry of the Interior |
| **ICT** | Information and communication technologies |
| **IS** | Information system |
| **MoES** | Ministry of Education and Science |
| **CUH** | Clinical university hospital |
| **LADB** | Latvian Anti-doping Bureau |
| **LFA** | Latvian Pharmacist Association |
| **MoW** | Ministry of Welfare |
| **AI** | Artificial intelligence |
| **Cabinet** | Cabinet |
| **Cabinet Regulation No. 134** | Cabinet Regulation No. 134 of 11 March 2014, Regulations Regarding the Unified Electronic Information System of the Health Sector |
| **NDP 2027** | National Development Plan of Latvia for 2021–2027 |
| **NIP** | National Industrial Policy |
| **EMA** | Emergency Medical Assistance |
| **SEMS** | State Emergency Medical Service |
| **NHS** | National Health Service |
| **NGO** | Non-governmental organisations |
| **R&D** | Research and development |
| **OCMA** | Office of Citizenship and Migration Affairs |
| **PREM** | Patient-reported experience measures |
| **PROM** | Patient-reported outcome measures |
| **Project “On Health Workforce Strategy in Latvia”** | Project No. REFORM/SC2021/09 “On Health Workforce Strategy in Latvia” supported by the Directorate-General for Structural Reform Support of the European Commission and implemented until 22 May 2023 |
| **PSCUH** | *VSIA “Paula Stradiņa klīniskā universitātes slimnīca”* [State limited liability company Pauls Stradiņš Clinical University Hospital] |
| **WHO** | World Health Organization |
| **REUH** | *SIA “Rīgas Austrumu klīniskā universitātes slimnīca”* [limited liability company Riga East Clinical University Hospital] |
| **RIS3** | Smart Specialisation Strategy |
| **RSU** | Rīga Stradiņš University |
| **SOPA** | Application program for the administration of social assistance and social services of local governments |
| **SCC** | Social care centre |
| **SO** | Specific objective |
| **CDPC** | Centre for Disease Prevention and Control |
| **ICD-11** | WHO International Statistical Classification of Diseases and Related Health Problems (hereinafter – the ICD), Eleventh (11th) Revision |
| **PHG 2027** | Public Health Guidelines 2021–2027 |
| **MoJ**  | Ministry of Justice |
| **FMEIS** | Forensic Medical Examination Information System |
| **SBDC** | State Blood Donor Centre |
| **MoEPRD** | Ministry of Environmental Protection and Regional Development  |
| **HI** | Health Inspectorate |
| **SRS** | State Revenue Service |
| **MIS** | System for the Settlement of Payments for Health Care Services “Management Information System” |
| **MoH** | Ministry of Health |
| **SRP** | State Research Programme |
| **SLGUCSS** | State and local government unified customer service centres |
| **SCFME** | State Centre for Forensic and Medical Examination |
| **GSTDI 2027** | Guidelines for Science, Technology Development, and Innovation 2021–2027 |
| **SAM** | State Agency of Medicines |
| **Measure 4.1.1.4** | Measure 4.1.1.4 “Strengthening and Digitising the Health Care Management System by Developing Digital Solutions” of SO 4.1.1 “Ensuring Equal Access to Health Care and Fostering Resilience of Health Systems, Including Primary Care” under the European Union Cohesion Policy Programme 2021–2027 |

Terms Used

**Reference data** – a set of permissible values associated with a distinct definition, used within a system or shared between multiple systems in an organisation, domain, or industry, which provides a standardised semantic value to further categorise a data record. Examples of such data include country codes, postal codes, gender codes, marital status codes, and also maps (used, for example, to illustrate the spread of diseases). Reference data can be classified into: 1) universal reference data (internationally recognised codes); 2) industry reference data (codes used only within a particular industry); 3) internal reference data (codes used only within a specific authority).

**Data protection by default** – the controller implements appropriate technical and organisational measures to ensure that, by default, only personal data which are necessary for each specific purpose of the processing are processed. The abovementioned obligation applies to the amount of personal data collected, the extent of their processing, the period of their storage, and their accessibility. Such measures shall ensure that, by default, personal data are not made accessible without the individual’s intervention to an indefinite number of natural persons.[[6]](#footnote-7)

**Data processing** – any operation or set of operations performed on personal data or on sets of personal data, whether or not by automated means, for example, collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction.

**Digital health** – the tools and services that use ICT to improve prevention, diagnosis, medical treatment, monitoring, and the management of health and lifestyle habits. Digital health holds the potential to bring about innovations, improve access to care and the quality of that care, implement preventive measures, and also to increase the overall efficiency of the health sector.[[7]](#footnote-8)

**Digital literacy** – the skills, knowledge, and attitudes necessary to successfully use digital solutions, effectively understand and utilise data and results from such solutions, and also actively participate in the digital information society[[8]](#footnote-9).

**DigiVesIS “kernel”** – the central component of the unified electronic information system (IS) of the health sector (see the “eHealth system”), ensuring standardised integration and/or data exchange between the eHealth modules and indirectly providing services, including data flows, to external IS.

**Dynamic consent** – a voluntarily and explicitly expressed consent of an individual for the use of his or her health data for particular research purposes. The individual provides such consent online through a personalised communication platform, allowing to regularly monitor the use of his or her health data in research, and also to grant consent, modify its scope, or withdraw it. Dynamic consent is designed to facilitate the consent process, particularly by establishing a two-way, ongoing communication between researchers and the individual. The concept of dynamic consent is based on the Declaration of Helsinki[[9]](#footnote-10) that ensures ethical practices in research involving human biological samples and personal data.

**eHealth system/DigiVesIS platform** – a unified electronic IS of the health sector which is governed by the Law on the Rights of Patients, the Medical Treatment Law, and Cabinet Regulation No. 134, and which includes the national-level patient electronic health record. The system is accessible to medical practitioners and citizens via the eHealth portal.[[10]](#footnote-11)

**Ecosystem** – the modern, extended usage that refers to something (for example, a network of businesses) considered to resemble an ecological ecosystem especially because of its complex interdependent parts.[[11]](#footnote-12)

**Data protection by design** – technical and organisational measures at the earliest stages of the design of the data processing operations in such a way that safeguards privacy and implements data protection principles right from the start. It involves the use of pseudonymisation (information that can be used to identify specific individuals is replaced with artificial identifiers) and encryption (messages are encrypted so that only authorised persons can read them).[[12]](#footnote-13)

**Users** – in the context of the Strategy, this term refers to individuals who use digital solutions (for example, the eHealth system, registers, and databases) and for whom the digital solutions are developed, i.e. citizens, physicians, nurses, pharmacists, other health care professionals, and employees of State institutions.

**Internet of Things** – a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies. Through the exploitation of identification, data capture, processing, and communication capabilities, the Internet of Things makes full use of things to offer services to all kinds of application programs, whilst ensuring the fulfilment of security and privacy requirements.[[13]](#footnote-14)

**Artificial intelligence** – the ability of a system to correctly interpret external data and display human-like capabilities, for example, reasoning, learning, planning, and creativity.[[14]](#footnote-15)

**Patient pathway** – encompasses all stages of medical treatment a patient experiences in disease prevention, diagnosis, treatment, medical rehabilitation, and care. Consequently, the patient pathway entails consultations with the general practitioner and other specialists, diagnostic examinations and treatment in both outpatient and inpatient settings, and also home-based health care, etc.

**Patient electronic health record** – personal data concerning health maintained in a unified electronic format. They are based on an IS for the recording, retrieval, and management of health data. There are two levels of patient electronic health records, depending on their creators and the maintainer:

* a patient electronic health record at the level of the medical treatment institution is a collection of patient health data in electronic format within the IS of the medical treatment institution;
* a national-level centralised patient electronic health record is a collection of patient health data in electronic format within the eHealth system.

**Patient adherence** – the understanding of a patient about the health care provided to him or her and the resulting alignment with the recommendations of medical practitioners regarding both personal habits, for example, diet and physical activity, attending medical appointments with a specialist, and regular and correct use of medicinal products, according to the instructions. Patient adherence is closely linked to health literacy which refers to the knowledge, skills, and motivation of a patient to independently care for and improve his or her health. A patient with strong health literacy is capable of taking informed decisions on his or her treatment and consequently demonstrates appropriate adherence by cooperating with medical practitioners and following their recommendations.

**Personalised medicine** – according to the conclusions of the Council of the EU, there is no commonly agreed definition of the term “personalised medicine”. However, it is widely understood that personalised medicine refers to such medical model which uses characterisation of the phenotypes and genotypes of individuals (for example, molecular profiling, medical imaging, lifestyle data) in order to select the right therapeutic strategy for the right person at the right time, and/or to determine the predisposition to disease and/or to deliver timely and specifically targeted prevention or treatment. Personalised medicine relates to the broader concept of patient-centred care, which takes into account that, in general, health care systems need to better respond to patient needs.

**Telemedicine** – the provision of health care services using information and communication technologies in situations where the health care provider (one or more) and the patient (or another health care provider) are in two different locations. It involves a secure exchange of information and medical data in text, audio, image, or other formats to facilitate preventive examinations, consultations, diagnostics, and treatment of diseases. Telemedicine takes various forms, for example, telemonitoring (remote patient monitoring), telemanipulation, and teleconsultation, either between a physician and a patient or among two or more health care professionals for medical consultation purposes.[[15]](#footnote-16)

**Health data** – personal data related to the physical or mental health of a natural person, including the provision of health care services, and which reveal information on his or her health condition.[[16]](#footnote-17)

Current Situation in the Field of Digital Health in Latvia

[12] Over the past 10 years (since 2011), the Internet accessibility in households has increased from 63.6 % to 89.7 %. Also in the health sector, while 2.2 % of the population used the Internet to book a medical appointment in 2012, this figure had reached 17.8 % by 2020. In 2021, more than half of Latvia’s population (52.2 %) searched health-related information on the Internet.[[17]](#footnote-18) This means that a significant portion of Latvian society relies on digitally available information to build their knowledge of health-related matters. The abovementioned indicators suggest that a digital society is developing in Latvia and digital technologies are becoming an ever more significant means of addressing issues related to public welfare and economic growth.

[13] A lot has been achieved in the field of digital health in Latvia so far. Since 2016, an eHealth system and eHealth portal have been introduced and are operational in Latvia. The eHealth system was developed to ensure the centralised maintenance of the electronic health record of each Latvian citizen, making personal data concerning health accessible both to the patient and their attending physician in one place, regardless of the medical treatment institution that generated the data or the type of service (a State-paid or a fee-based service), while also allowing the medical treatment institutions, pharmacies, and State administration institutions to use those data for the fulfilment of their functions.

[14] In the eHealth system, a **medical practitioner** can enter patient data and access the data provided by other medical practitioners. Specifically, a medical practitioner can process (enter data and access the data provided by other medical practitioners) the primary health data of a patient (for example, data on identified allergies, performed surgical interventions, and diagnosed chronic diseases), issue prescriptions, view their status, issue a referral and view the referrals issued by other medical practitioners, issue a sick-leave certificate, enter vaccination data for immunisation report printouts, view the vaccination report, view the SEMS call data, fill out and view medical records of patients with specific diseases, register a patient with a general practitioner remotely (if the patient has submitted an application on the eHealth portal or the State administration services portal[[18]](#footnote-19)), and restrict access of a patient to a specific medical document if, in accordance with Section 4, Paragraph seven of the Law on the Rights of Patients, such information or facts are at the disposal of the physician that the receipt of the information significantly threatens the life or health of the patient or other persons.

[15] On the eHealth portal, a **patient** can access his or her own information or information of his or her wards, provide contact details and contact persons, apply for the European Health Insurance Card, authorise another person to access the data, provide a future authorisation, manage permissions for organ and tissue donation for transplantation, body donation after death, and autopsy procedures, view the audit trail of data access, receive inbox notifications regarding COVID-19 test results, the digital COVID-19 certificate, missed vaccination, and the initiation or finalisation of a sick-leave certificate. Meanwhile, general practitioners receive notifications of emergency medical service calls for their registered patients.

[16] Cabinet Regulation No. 134 already provides for the obligation for all medical treatment institutions, regardless of the type of service (State-paid or fee-based), to submit data to the eHealth system.

[17] Although the technical capabilities are in place and the regulatory framework requires it, an insufficient number of general practitioners, specialists, and medical treatment institutions use those functionalities, except for e-sick leave certificates and e-prescriptions for reimbursable medicinal products, where the circulation of electronic documents is fully mandatory. The local IS of medical treatment institutions are integrated into the eHealth system only for the electronic exchange of specific health data, for example, e-prescriptions, sick-leave certificates, referrals for COVID-19 testing, and information on the status of a person who has been in close contact to a person diagnosed with COVID-19. Despite the fact that, in accordance with Cabinet Regulation No. 134, reports on visual diagnostic examinations, like other health data, must be submitted to the EHR by all medical treatment institutions, regardless of whether the examination is funded from the State budget, by the patient or the insurer, only a part of medical treatment institutions currently ensure the availability of visual diagnostic reports in the EHR.

[18] A large amount of patient health data still remains outside the eHealth system in paper format and within the information systems of medical treatment institutions and therefore the EHR is currently not fully fulfilling its function.

[19] Overall, the digital data space of the health sector is complex, involving a large number of independent authorities. It consists of both the health data generated by medical treatment institutions that are processed and accumulated in information systems of medical treatment institutions and, to a limited extent, also in the eHealth system, and pharmacy data on medicinal products and laboratory data on examinations that are processed and accumulated in the information systems of pharmacies and laboratories, and partially also in the eHealth system.

[20] Additionally, the data space of the health sector includes the data necessary for the administration of health care services and the reporting, supervision, and control of statistics, with that data being generated by medical treatment institutions, pharmacies, educational institutions and certification bodies, and departmental institutions of the health sector, and accumulated in the State information systems of the health sector. The State IS and databases of the health sector include the EHR (eHealth), sector-specific disease registers and databases for statistical purposes, registers of pharmacists, medical practitioners, medical treatment support persons, and medical treatment institutions, registers of medicinal products and medical devices, IS for processing the payments for health care services, the management of reimbursable medicinal products, the international data exchange, and also IS designed to ensure the functions of various institutions (for example, SEMS, CDPC, SBDC, HI, SCFME, SAM) (for more details, see Annex 1).

[21] Since March 2020, the COVID-19 pandemic has prompted the implementation of State-paid telemedicine services (consultations of physicians). At the time when access to on-site services was severely limited, remote consultations proved to be an important instrument for ensuring the continuity of health care for patients and also the necessity to develop a well-functioning system for the provision of telemedicine services in Latvia was identified.[[19]](#footnote-20)

[22] Meanwhile, medical treatment institutions are increasingly developing and using various digital technologies and offering their patients digital solutions, for example, e-appointments, access to data on the developed data platforms, remote consultations, etc.

Key Challenges in the Field of Digital Health in Latvia

[23] **There is no strategic development and management of digital health.** So far, solutions for the management of eHealth and health care services have been designed as centralised State systems for the fulfilment of specific functions. Cooperation with medical treatment institutions at the ICT level has only been planned in the context of integrating their IS with centralised systems. The repeated requests for information (in a different format and for a different recipient) and also the use of various technologies and standards for integration into different systems tend to be an undesirable side effect of a fragmented planning of digitisation.

[24] Furthermore, the planning of the digitisation of the health sector has so far been oriented towards the development of basic ICT systems, without a broader perspective on transforming and improving the services in the health sector, which is made possible by modern technologies. No consideration is given to simultaneous development of technical solutions integrated with the modernisation of medical treatment processes, quality management processes, and payment processes, with a focus on optimising the work of stakeholders and enhancing patient experience and medical treatment outcomes. There is a lack of guidelines and experience in the digitisation of services from the perspective of both the service providers and patients, and supervisory authorities.

[25] There is also a lack of clearly defined, unified requirements for data processing in the IS of medical treatment institutions, for example, classifications, data and technology standards, mandatory technical and organisational requirements, descriptions of processes, data, and integration interfaces, manuals, and recommendations to be followed when developing the IS of medical treatment institutions.

[26] This approach hinders the development of an open and innovatively dynamic environment that could ensure a clear and convenient interaction between the patient and the health sector more effectively. Insufficient strategic, health sector-wide planning has resulted in a fragmented ICT environment and incomplete, fragmented health data.

[27] The **fragmented ICT environment** stems from insufficient strategic management of digital health, and it currently represents the key challenge related to the implementation of the Strategy. In the health sector, ICT systems are fragmented in terms of technologies, data, and the development of solutions. Due to the lack of clearly defined, unified data processing requirements, each State administration institution and medical treatment institution has historically developed, and often continues to develop, their own individual digital solutions to ensure data storage that meets the current requirements. Given that overly centralised systems do not facilitate the development and innovations, while excessive concentration of functionalities within a single system makes its maintenance and further development excessively cumbersome and difficult to sustain, the existing model in Latvia can continue to function and provide benefits, provided that precise regulations on the conditions for their management, use, and interoperability are in place when creating the ICT ecosystem of the health sector.

[28] It is currently impossible to share all medical data and this presents a risk of duplicate medical services. Medical treatment institutions are generally not able to access the data on services provided in other medical treatment institutions. Additionally, the integration of the local IS of medical treatment institutions with the eHealth system remains a systemic issue, as due to the lack of unified standards, the local IS are outdated or developed in such a way that makes their integration with the eHealth system difficult and also no unified medical data standards are used which, in turn, further complicates the successful development of the department digital data sharing infrastructure and services and the cooperation with other EU countries.

[29] A fragmented ICT environment does not support a proper cooperation between authorities and specialists, and each authority or specialist is primary responsible for the procedures or consultations they perform, without organising cooperation with other parties involved in the medical treatment or care of the patient. Information is shared with other involved parties through formalised documents (for example, referrals, discharge summaries, and examination results). In most cases, patients are required to collect their medical documents and deliver them to physicians themselves. The fragmented ICT environment and poor cooperation between the authorities and specialists take a toll on patients, i.e. the patient pathway becomes fragmented, the expected medical treatment outcomes worsen, and the patient is required to ensure the transportation of paper-based medical documents and examination results from one medical treatment institution to the other. Furthermore, the insufficient data exchange results in redundant services (mostly various examinations). The fragmented environment also makes it difficult to implement the multidisciplinary cooperation model in the medical treatment process and also hinders the unified, integrated planning of development in terms of both the services and ICT.

[30] **Fragmented, incompletely digitised, inaccessible health data.** The IS of medical treatment institutions are integrated into the eHealth system only for the electronic exchange of specific health data, for example, e-prescriptions, sick-leave certificates, referrals for COVID-19 testing, information on the status of a person who has been in close contact to a person diagnosed with COVID-19, etc. The primary health data of a patient contained in the EHR which includes information on the patient with regard to his or her allergies and intolerances, a list of health issues and diagnoses, including chronic and acute diseases, and also significant surgical procedures, have not yet been fully ensured within the eHealth system.

[31] Similarly, reports on visual diagnostic examinations are submitted to the EHR only partially, despite the fact that, in accordance with Cabinet Regulation No. 134, all medical treatment institutions are required to enter that data, regardless of whether the examination is funded from the State budget, by the patient or the insurer. At present, only part of medical treatment institutions provide access to those reports in the EHR. Meanwhile, the transfer of images obtained in radiological procedures is not mandatory for medical treatment institutions under that Regulation and also the images obtained during the examinations are only partially accessible in the EHR.

[32] There are several reasons as to why the patient health data are only partially accessible in the EHR. The main reason is the lack of a unified national strategy for the digitisation of the health sector, along with the absence of unified standards and requirements. In situations where technical disruptions in the operation of the eHealth system regularly had a negative impact on the operations of medical treatment institutions, particularly in the early years of the operation of the eHealth system, it was difficult to encourage the medical treatment institutions to submit patient health data to the eHealth system. Another reason is the capacity of the NHS and its cooperation with medical treatment institutions and developers of their information systems in system integration issues. Another factor hindering the development of the IS of medical treatment institutions and their integration with the EHR is the lack of funding for the developers of systems of medical treatment institutions for the development of those systems.

[33] A medical treatment institution can enter the patient data in the EHR either through the workspace of the physician on the eHealth portal or by transferring the data from the local IS of the medical treatment institution. Meanwhile, the IS of medical treatment institutions do not support the acquisition of data from the eHealth system, as software developers of medical treatment institutions have not yet developed data exchange (acquisition) mechanisms for the integration of the eHealth data into their systems. As a result, a medical practitioner can access the patient data generated in other medical treatment institutions only through the eHealth portal. In practice, this often means simultaneously using at least two different IS. In order to provide medical practitioners with convenient access to patient health data, it is necessary to promote the establishment of mutual data exchange between the EHR and the information systems of medical treatment institutions.

[34] Health data for which there is no centralised access in the EHR are accumulated or stored in the local IS of medical treatment institutions (including in unstructured formats) or in paper form. Although many medical treatment institutions have electronic patient data processing systems in place which serve for storing the patient health data, in most cases, the patient health data accumulated in the IS of medical treatment institutions are only accessible within specific medical treatment institutions and their branches. Within the framework of cooperation between hospitals, the need to ensure data exchange between inpatient medical treatment institutions in cases of patient transfers has been identified; however, progress in this matter remains slow. As a result, it currently falls upon the patient to ensure that all medical practitioners involved in his or her medical treatment have access to patient health data generated in other medical treatment institutions.

[35] Basic data exchange between health and social care services takes place, albeit not to a sufficient extent, and it does not ensure a unified patient pathway.[[20]](#footnote-21) General practitioners prepare medical documentation for patients for them to be able to receive social services, and often in paper format, and there is a lack of information on the necessary treatment and the use of medicinal products. In addition, medical practitioners lack comprehensive information on the social care of patients.

[36] The circulation of data in paper format is not only burdensome for the patient but may also lead to inconsistencies in the transfer of information. The exchange of information may be fragmented or incorrect if the patient possesses incomplete expertise in a specific health-related issue. Furthermore, there is a risk of documents being lost or forgotten. The risk is particularly high for patients with rare diseases or patients with multiple conditions, where the treatment process alone may be complicated or involve several stages, making documentation equally complicated. If the patient, his or her relatives, or the medical treatment institution is unable to ensure the complete exchange of information between medical treatment institutions or medical practitioners at the national or cross-border level, it may not only compromise the quality of patient health care but also duplicate the costs for the health care budget (medical treatment institutions have no access to the data on services provided in other medical treatment institutions, leading to redundant services (mostly various examinations)). Furthermore, the circulation of data in paper format significantly hinders their use in the health care organisation, planning, quality monitoring, and research.

[37] In a situation where certain health data are not centrally accessible within the EHR and no electronic exchange takes place between medical treatment institutions, economic operators have developed and offer patient electronic health records where patients have access to their examination results, including visual diagnostics. However, not all medical treatment institutions make use of these services, which has resulted in incomplete data. Furthermore, access to data in those systems is often a fee-based service, which may create unequal opportunities in receiving health care services, increase individual health care costs, and potentially even restrict access to one’s own data.

[38] The accumulation and processing of digital health data within the IS of medical treatment institutions are currently somewhat restricted by the regulatory framework regarding the circulation of electronic documents. For an electronic medical document prepared within the IS of a medical treatment institution to have legal force, it must be formatted in accordance with the document formatting requirements established by laws and regulations (including mandatory details). The mandatory details in an e-document do not differ from those in paper-based documents.[[21]](#footnote-22) In accordance with Section 3, Paragraph two of the Electronic Documents Law, an electronic document shall be considered to have been signed by hand if it has a secure electronic signature. The Procedures for Keeping Medical Documents[[22]](#footnote-23) stipulate that medical entries are made, signed, and accumulated electronically in the electronic IS of medical treatment institutions in accordance with the laws and regulations regarding electronic documents. If a medical document prepared within the information system of a medical treatment institution does not contain all mandatory details, for example, a secure electronic signature, it does not have legal force.

[39] The legal force of a document is important in cases where the document must be issued to a third party. For example, medical treatment institutions have the obligation to provide the medical documents of a patient upon request of law enforcement authorities. If medical documents are prepared electronically but are not signed with a secure electronic signature, the medical treatment institution can only issue them in paper format, which imposes an additional burden on the medical treatment institution.

[40] Incompletely digitised health data and the circulation of data in paper format significantly hinder their use in health care organisation, planning, quality monitoring, and research. Data fragmentation along with differing approaches to data classification and coding complicate data retrieval from systems, their compilation, and processing for analytical purposes. Since there are no solutions in place for the automatic execution of those processes, the data are prepared manually upon request.

[41] Likewise, the digitisation of health data is necessary to enable the integration into the common European Health Data Space, specifically the European eHealth Digital Services Infrastructure, and also to develop a national secondary data exchange infrastructure that complies with EU standards which the EC plans to establish within the framework of the European Health Data Space by 2025.

[42] **Insufficient user engagement in the planning of development and designing of solutions.** When developing centralised systems, the stakeholders have not been sufficiently engaged at either the strategic or practical level. In order to promote the implementation of effective and convenient digital solutions through the involvement of users, the eHealth User Council[[23]](#footnote-24) was established in 2019 and later the functions and tasks thereof were taken over by the Digital Health Council that was established in 2022. In parallel, various specific issues related to the functionalities of the eHealth system are being thoroughly addressed in working groups established by the NHS.

[43] However, despite the activities carried out so far to engage users, experts interviewed during the development of the Strategy indicated that users were insufficiently engaged in the creation and improvement of the eHealth system. Stakeholder engagement has not been effectively managed to ensure the integrated development of ICT systems in the health sector by taking into account the interests and needs of all stakeholders and coordinating the development plans of central systems with those of other stakeholders for their own ICT system development. Additionally, there is insufficient information on the possibilities of integration with the centralised systems of the health sector and among individual systems. There is also a lack of adequate support for system developers on the part of medical treatment institutions.

[44] Users, for example, physicians, patients, executives of medical treatment institutions, etc., are not engaged in the development of solutions in a targeted manner, and their engagement in the development remains incomplete. These stakeholders show minimal interest in ICT projects, unless they are directly linked to the development of health care services. Consequently, the created ICT solutions are often not oriented towards the needs of those end users and are not convenient for everyday use. It is highlighted that, contrary to expectations, their use only adds to the workload. The lack of benefits for physicians and patients, along with the inconvenient use, are among the reasons for incomplete data entries in the systems of the health sector.

[45] **Telemedicine was not developed in a systematic manner**.During the COVID-19 pandemic, the provision of telemedicine services developed significantly. In 2022 alone, the public sector accounted for 2.6 million remote consultations with general physicians and 222 000 consultations with specialists, with a total expenditure of EUR 6.75 million for those services.[[24]](#footnote-25) The development of those services has been driven by the initiative of each medical treatment institution, depending on its resources, expertise, and understanding of the service. Consequently, the provision of telemedicine services varies in terms of technological solutions, the organisational approach (for example, the procedures for identifying patients and organising the payment), and even medical treatment algorithms (for example, whether the initial consultation should be provided in person or it may take place remotely). In order to ensure the further development of telemedicine services of high quality, an organised approach is needed, which involves both the establishment of a regulatory framework, requirements, and standards, and proactive promotion of the broader implementation of those services. In order to create the necessary prerequisites for high-quality and secure telemedicine services provided in accordance with unified standards in Latvia, in 2023, the MoH established an expert working group as part of the Digital Health Council.

[46] **There is a lack of targeted support for the development of innovations in health care.** In Latvia, there are around 50 start-ups operating in the field of health care innovations, focusing on such directions as medical or health technologies.[[25]](#footnote-26) In 2022, the first start-up accelerator pilot project Open Health Labs[[26]](#footnote-27) organised by the NHS took place. It allowed to establish cooperation with four hospitals that provided the start-ups with access to specialists and a better understanding of issues. More than 400 teams from 29 countries applied to the accelerator, with eight being selected for further development of their presented ideas. More than 30 joint sessions took place, and three technical solutions and six software solutions were developed and tested over a period of nine weeks. Four teams were recommended for the next funding stage. In order to ensure continuous innovations with greater development opportunities in the health sector, it is necessary to establish a regulatory framework for experimental developments (“sandbox”), support for innovations, and an organisational framework to stimulate innovation activities.

[47] **There is a lack of expertise and human resource capacity for digital health development.** The lack of relevant capacity in the public sector is associated with a significantly lower remuneration for various profile ICT specialists in State administration than for those in the private sector.[[27]](#footnote-28) Additionally, the NHS which is in charge of the development of ICT solutions in the health sector has fewer planned ICT expert positions than necessary. This is just one of the many functions of the NHS which develops centralised digital health service and data solutions.

[48] Along with the fragmentation of ICT, the existing ICT human resource capacity in the health sector is also fragmented and uneven, and it is used inefficiently, providing similar basic functions across various institutions, including fragmented management functions, which is incidentally one of the causes of the uneven digital transformation within the department. At the same time, there is a lack of resources for the development, the creation and coordination of an ecosystem, the implementation of projects, the planning and management of digital transformation. It is not possible to ensure the development of expertise and a systemic approach to knowledge retention within the department, and due to the lack of organisational resources, user engagement in the development of ICT solutions remains weak.

[49] The ability of the MoH department to attract and retain the necessary ICT specialists determines the extent to which the goals set in the Strategy will be achieved. This issue will be of particular relevance in the near future, as it is planned to develop many significant ICT solutions in the health sector, create an ecosystem, and implement other tasks described in this Strategy. Therefore, it is necessary to find a solution for attracting ICT specialists for work in the MoH department, make more efficient use of those human resources, develop lacking competences, and strengthen management functions in both the ICT field and service transformation.

[50] **Insufficient digital literacy of health care professionals and patients.** The insufficient level of digital literacy among both the health care professionals and patients is highlighted by the data of Digital Economy and Society Index 2021[[28]](#footnote-29) which show that only 43 % of Latvia’s population aged 16 to 74 have at least basic digital literacy (compared to the EU average of 56 %), and only 24 % have digital literacy above the basic level (EU average – 31 %), which places Latvia below the average ranking of other Baltic and EU countries. Similarly, Eurostat’s data for 2019 show that, in terms of digital literacy, Latvia surpasses only three EU countries: Romania, Bulgaria, and Italy.

[51] The final report of the study “Adult Digital, Technology, and Language Skills: Development Opportunities and Challenges in Latvia” published by the *Saeima* of the Republic of Latvia highlights that digital literacy among Latvian citizens declines with increasing age, and in the 35+ age group, many Latvian citizens often are unable to perform tasks related to the use of digital technologies which are essential for working in a modern office environment.[[29]](#footnote-30)

[52] The so-called “digital divide” is also a pressing issue, where population groups with insufficient digital literacy face greater difficulties in accessing health care services that are provided digitally (especially when the availability of non-digital services is simultaneously reduced). Those individuals find themselves in a more unequal position compared to those with a higher level of digital literacy.

[53] A low level of digital literacy in the adult population group presents a challenge for the implementation of the Strategy, as it hinders both the implementation of ICT solutions and the coverage of their use. Additionally, a lack of understanding of the opportunities provided by digital solutions makes it more difficult to implement modern diagnostic, medical treatment, and monitoring methods and also to shift approaches to medical processes and enhance collaboration between specialists (and patients). The insufficient digital literacy among users is also one of the causes of data security breaches.

Results of Strategy Development Interviews and Focus Groups

[54] In-depth interviews and focus groups conducted in cooperation with the WHO that involved more than 30 organisations allowed to identify issues relevant to patients, medical treatment institutions, system users and developers working in the health sector, and also organisations that use (or could potentially use) the health sector data. The expectations and interests of those stakeholders regarding the development of digital health were also compiled.

[55] Digitisation has already become so integrated into the daily lives of both the patients and physicians that digital solutions are now taken for granted by people.

[56] Both the patients and medical practitioners expect that digital health would facilitate the work of physicians. They will have to spend less time for various formalities and all necessary information will be more easily accessible, allowing them to dedicate more time to their patients. Also patients will spend less time for organising the services necessary for their health care. Digital assistants and helpers, artificial intelligence, and various automated solutions will facilitate the work of both the physicians and patients.

[57] Digital health is also expected to help organise the patient pathway, i.e. all medical services a patient should receive, in a coherent, “transparent” flow with clearly defined next steps. Patients want this process to be proactive which means that “the patient is guided rather than left to struggle alone”. The “digital twin” of a patient with all health data of the patient and a “digital patient pathway map” outlining all planned care measures would be at the core of care. They would be accessible to both the patients and all involved medical practitioners, and the organisation of the medical treatment process would be facilitated either by medical practitioners themselves or coordinators (administrators) in medical treatment institutions.

[58] Both the physicians and patients emphasise that it is time to “break down barriers”. The communication facilitated by digital solutions allows health care function within a unified ecosystem, without internal obstacles for its users (both the patients and physicians). It must be structured in a way that “virtual teams of physicians from different specialities operate in the background to support the patient”, with those specialists representing various medical treatment institutions, both publicly and privately funded, in Latvia and abroad, and cooperating with general practitioners, social care providers, and researchers.

[59] Patients and physicians expect a broader use of modern digital technologies in the treatment process or monitoring, for example, various wearable devices or monitors, communication tools, or individual electronic health care event notifications.[[30]](#footnote-31) Patients and physicians expect that such solutions will motivate the patients to take a more active role in their health care. They are also aware of the value of health data and expect its broader use in service quality assessment, policymaking, and research.

[60] Both the physicians and patients emphasise the need for a strategic approach to plan and implement digital health services. That approach must be a complex one, involving the transformation of services and processes alongside the change of the regulation and the implementation of technologies, management of risks (especially those concerning data security), and the improvement of awareness and skills among both the physicians and patients. The new systems should not become a burden or increase the workload.

[61] Digital health should be planned and implemented in close cooperation with all stakeholders (patients, physicians, administrators, policymakers, etc.) from both the public and private sector. A Digital Health Team should be established for it to cooperate at all levels of planning: strategic, tactical, and operational.

Objectives of the Strategy

[62] The digital health policy is designed to promote the achievement of public health policy goals outlined in the PHPG2027, specifically, to improve the health of Latvia’s population, extend the healthy life years, prevent premature mortality, and reduce health inequality.

[63] **Digital health is a modern approach to health care supported by digital technologies**, and its goal is to improve the accessibility, quality, convenience, and efficiency of health care services through digital technologies, data, and related modern approaches to service provision. In order to promote the appropriate use of digital health technologies, investments in the digital health management must be increased by strengthening the workforce capacity in the field of digital technologies.

[64] **Objective of the Strategy:**

**Improvement of public health through digital health solutions for patients, health care service providers, State administration, and other stakeholders in the health sector.**

**[65]** The Strategy provides for the following results:

**1. The level of service digitisation has significantly reduced the circulation of “paper-based” medical documents.** The information systems of medical treatment institutions are developed in such a way as to enable the structured processing of patient health data, with free-text information on the patient kept to a minimum, as long as it does not compromise the quality of health care. The EHR will serve as the primary health data repository for the provision of health care. The IS of health care service providers will be integrated with the EHR and enable the processing of health data to be accumulated on a centralised basis, both the provision and acquisition of data. Medical practitioners will have access to the digital patient health data generated in all medical treatment institutions, regardless of the type of service (a State-paid or a fee-based service).

**2. Digital solutions help patients conveniently engage in their health care.** Patients will take a more active role in their health care, including by conveniently and safely managing their health data in the digital environment which, when needed and in accordance with the procedures laid down in laws and regulations, will be readily accessible to all stakeholders. Access to health data will be available through both the patient portal and interoperable applications. Health literacy and adherence of patients will improve, as it will not only be easier to access medical services but also to gain a better understanding of the importance of health and the risks, and to engage in the prevention. Prevention and the management of the treatment process will be carried out proactively.

**3. Remote solutions and other digital technologies are widely used in the medical treatment and prevention, making services more accessible, of a higher quality, more efficient and convenient and allowing the physicians to cooperate throughout the entire “patient pathway” and provide high-quality services.** Digital transformation will facilitate the cooperation between specialists, including across various sectors. Patient treatment will be organised in a unified patient clinical pathway model where specialists and care providers cooperate within “multidisciplinary virtual teams” and the unified process is supported by technologies. The use of technologies will allow to revise medical treatment algorithms and patient pathways, making them more convenient and improving their quality and efficiency. The boundaries between health care and social care will become increasingly seamless. Digital technologies will significantly facilitate the daily work of medical practitioners. The administrative burden of physicians will be reduced, the data will be entered only once, and it will be possible to monitor and consult the patients remotely. Telemedicine will offer the patients and physicians greater mobility and flexibility. The accessibility (also in the regions) and quality of services will improve.

**4. The understanding of digital health solutions among health sector specialists has significantly increased.** The level of digital literacy among health care professionals will have improved considerably and they will make full use of the possibilities provided by the new technologies. Every innovation introduced in the daily work will go hand in hand with training and support for both the medical practitioners and patients. The new digital solutions will be actively tested and implemented.

**5. The management of the heath sector is data-driven.** The management of the health policy and health care will be data-driven, applying medical treatment outcome measures and patient-reported experience measures. Data will be easy to compile and collect, with integrated multi-level quality controls ensuring data quality. Data will be accessible to researchers and policymakers. Following the integration into the European Health Data Space, data exchange for research, innovations, policymaking, regulatory decisions, and patient safety will also take place at a cross-border level.

**6. Sufficient State budget funding and human resource capacity are ensured for the development and maintenance of digital solutions in the health sector.**

*Table 1*

**Target achievement indicators**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Performance indicator | Baseline year | Baseline year value | Target value 2024 | Target value 2029 | Data source |
| 1. | Number of individuals who have authenticated on the eHealth portal or DigiVesIS platform at least once per year[[31]](#footnote-32) | 2020 | 351 648 |  | 667 686 | NHS |
| 2. | Number of individuals providing their contact details (e-mail or telephone, or both) of their contact persons on the eHealth portal (or DigiVesIS platform)  | 2023 | 130 992 | 200 000 | 500 000 | NHS |
| 3. | Share of primary health care professionals[[32]](#footnote-33) providing remote consultations out of the total number of primary health care professionals (%) | 2022 | 70 | 75 | 85 | NHS |
| 4. | Share of secondary outpatient health care professionals[[33]](#footnote-34) providing remote consultations out of the total number of secondary outpatient health care professionals (%)  | 2022 | 37 | 40 | 50 | NHS |
| Performance indicators outlined in the Public Health Guidelines 2021–2027 |
| 5. | Remote **consultations** provided by general practitioners and specialists (% out of the total number of **consultations**) (source: NHS) | 2020 | 9[[34]](#footnote-35) | 20 | 30 | NHS |
| 6. | Types of patient health data accessible within the EHR in a structured format for sharing, (%)\*  | 2022 | 3\*\* | 25\*\*\* | 50\*\*\*\* | NHS |
| 7. | Share of medical graduates who have acquired basic skills in the use of information technologies and data processing methods (%)  | 2021 | 80 | 90 | 100 | MoH |
| 8. | Share of practitioners using data processing and analysis by means of IT solutions in their daily work (%)  | No data | No data | >30 % | >50 % | Study |

\* – the indicator reflects the types of medical documents. It serves as an approximate indicator to represent the overall progress of the digitisation of health data (medical documents) and data accessibility in a structured format within the EHR.

\*\* – e-prescription, e-sick-leave certificate

\*\*\* – laboratory examinations (e-referral, e-result), e-referral to other services and e-result (physicians’ opinions), urgent notification of a diagnosed infectious disease, opinion on receiving a technical aid

\*\*\* – epicrisis, vaccination data, results of mandatory health examinations, cancer screening data, dental records, referral to the State Medical Commission for the Assessment of Health Condition and Working Ability (SMCAHCWA), maternity record, birth notification

Basic Principles of the Strategy

The development of digital health in Latvia is based on the following principles:

[65] **The goals of digital health are the goals of public health**: when creating and developing digital health services, it is a priority to evaluate whether they improve certain services, processes, or management related to public health and whether digital health projects are focused on the improvement of services or processes.

[66] **Digital health is not ICT**: digital health is a modern approach to health care supported by technologies. The planning of digital health development and improvement of health care services as part of that planning is comprehensive when organising a unified management, strategy, and investments, modifying service provision processes, the regulatory framework, and financing principles, establishing standards, and ensuring skills.

Figure 1. Scope of digital health



[67] **Digital health entails cooperation**: it involves cooperation between systems, digital health users, and health care service providers (physicians, specialists, authorities). Digital health does not refer to solutions imposed centrally or “from the top down”; it rather focuses on the development of cooperation between those involved in health care and is itself developed in cooperation with them. Specialists and organisations involved in health care proactively cooperate in joint processes and data exchange. Digital health is an interdependent “*ecosystem*”, and its development follows the “*ecosystem*” principles, guiding and supporting the development of every member to achieve the defined goals.

[68] **Digital health development is inclusive**: users (patients, physicians, researchers, etc.), medical treatment institutions, other authorities, and developers are engaged in the planning, creation, and development of digital health to develop solutions that meet user needs, are user-friendly, and reduce the administrative burden, and also to fully modify the relevant processes in the health sector. In order to ensure that all stakeholders in digital health are able to fully unlock the potential of digitisation without perceiving digitisation as a burden or challenge, it is necessary to improve the digital literacy of medical practitioners and patients.

[69] **Digital health reduces the administrative burden**: successful and effective implementation of the digital transformation of health care creates an opportunity to simplify and partially automate the administrative processes to reduce the bureaucratic burden and use digital solutions as a support tool. In this context, digitisation should not be perceived as an additional burden (additional data to be entered, more information systems, data input duplication) for medical practitioners and other stakeholders but rather as an opportunity to facilitate the work of those involved in health care.

[70] Digital health solutions are developed in accordance with the following principles:

* the primary task of DigiVesIS “kernel” is to ensure the exchange of information and common rules of the game to ensure the interoperability. It also ensures a centralised, unified, and high-quality repository of patient medical records, i.e. the electronic health record of a patient;
* security and quality: systemic security and quality must be ensured at all stages of developing, implementing, and using digital health solutions, following the principles of data protection by design and data protection by default and also by ensuring the continuity of data processing;
* User experience (UX) and user interface (UI) priorities: the goal of the solutions is to create user-friendly, efficient, and intuitively designed systems for users. The development of those systems follow the agile development principles. The designed systems incorporate the principles of consistency and standards, the principles of system architecture error prevention, flexibility and efficiency of the use of systems, allowing each user to choose the most suitable and efficient functions for their needs. It is essential to include the principles of matching the system with the real world, meaning that information appears in a logical sequence and the system speaks the language of the user without using terminology the user is unfamiliar with, while also implementing safeguards to prevent erroneous data entry and adhering to other Nielsen Norman Group UX/UI principles.[[35]](#footnote-36) When developing digital desktops, it is necessary to take into account disabilities and incapacities, for example, visual impairments, colour blindness, autism spectrum disorders, dyslexia, and hypoacusis, and to design digital desktops also for these user groups and to follow other accessibility requirements;[[36]](#footnote-37)
* cooperation is based on system openness, the exchange and accessibility of information to ensure that data generated and distributed within the ecosystem of the health sector are available to other ecosystem members who need the data. The “*Enter Once, Do not Ask Again*” principle (the entered data are used across all systems) and the obligation to readily transfer the data or ensure access thereto are complied with. Rapid, efficient, automated, and secure exchange of information between health sector participants and their information systems by reviewing the data-related processes of the sector (including the medical treatment and management process). Paper-based documents are being replaced;
* system interoperability, data exchange, and cooperation within the digital health “ecosystem” are established, based on all available classifications, standards, requirements, processes, data and interface descriptions, manuals, and recommendations. Data exchange interfaces will be developed or national shared solutions will be used in order to ensure data exchange between systems. The costs of digital solution development projects outlined in the Strategy also include funding for modifications of the related information systems (including those of other sectors) if necessary to achieve the objectives of the Strategy;
* decentralised development: all members of the digital health ecosystem have the right to create and develop their own information systems that meet their needs, while supporting the achievement of the objectives of the health sector (especially when public funding is involved), thereby ensuring cooperation with other members of the ecosystem and shared solutions and ensuring the necessary data circulation.

Action Directions of the Strategy

[71] The action directions of the Strategy comprehensively cover the aspects necessary to promote a modern approach to health care and also to modernise service provision processes through technological solutions, focusing on cooperation and an “ecosystem” approach.

Figure 2. Action directions of the Strategy



**1.** The **primary** action directions include the prerequisites necessary for the comprehensive digital health development:

**1.1. Development of the digital health “kernel”.** The direction involves both the creation of a new central repository of patient medical records (developed according to a new standard) and the establishment of “*rules of the game*” for data processing, covering classifications, standards, requirements, processes, data, and interface descriptions, manuals and recommendations, regulatory framework, financing and payment conditions and procedures.

**1.2. Accessible, high-quality, timely, and secure data.** Data standardisation and integration, data processing conditions for the IS of medical treatment institutions, data digitisation, etc. Data preparation and accessibility for research and policy planning, analytics. Cooperation within the European Health Data Space.

**1.3. Development of telemedicine, modern services, and innovations.** Regulation of telemedicine services and applicable standards for telemedicine solutions, activities for the development of innovations, support for the development of new digital health services.

**1.4. Skills development and culture change.** Development of the knowledge and skills necessary for the implementation of digital health measures for both patients and specialists. Both general and those related to specific types of use or processes. Improvement of the competences of health care human resources necessary for digital health development. User support systems, information.

**2.** The action direction covering **the digital transformation of health care services** is based on the primary action directions. It is “*horizontal*”, meaning that its implementation requires activities across all the primary action directions mentioned above, including changes in medical treatment algorithms and the procedures for providing services.

Tasks are consolidated into a separate action direction, as in the context of the transformation of services, **change management**, which involves significant organisational effort to achieve shifts in the change of approaches and practices in the provision of health care services, takes precedence over ICT solutions.

It also provides for solutions to encourage the patient adherence in health promotion and health care, for example, the accessibility of all own medical data, remote appointment scheduling, communication with the physician, reminders, a clear and easily manageable “patient pathway”, the accessibility of data and services on smart devices.

Furthermore, it includes tasks for the digital transformation of the work of physicians, providing the possibility to perform all necessary work digitally and conveniently. Access to patient data, e-referrals, e-results, e-laboratories, communication with patients, review of the documentation, reports, and certificates drawn up by general practitioners. The cooperation between specialists has been improved. The direction also covers the data exchange with social service providers.

**3. Digital transformation of State administration in the health sector.** Measures for the modernisation of services offered by the authorities in the health sector, focusing on the improvement of customer service, reviewing business processes, integrating systems and automating the data processing, ensuring a comprehensive data analysis, and implementing other necessary improvements to enhance the quality and efficiency of the tasks ensured by the authorities.

[72] The improvement of the accessibility, timeliness, security, and quality of health data will provide greater opportunities to create disease prevention and health care services coordinated between various health care service providers and tailored to individual needs. In addition, if citizens have electronic access to their data free of charge, in a timely manner, and at any time, including via mobile devices, they are more likely to take a more active role in monitoring, maintaining, and improving their health.

[73] A significant improvement is expected for the engagement of medical treatment institutions in digitising and structuring the patient health data and transmitting the data to the central repository or other medical treatment institutions.

[74] Health care service providers will have immediate access to high-quality and complete patient health data, regardless of the medical treatment institution that has generated the data. This will reduce duplicate examinations, allow to initiate the treatment in a timely manner, and improve the treatment outcome. Furthermore, the use of digital technologies will allow to improve security, convenience and speed of work, and reduce the administrative burden.

[75] Policymakers, medical treatment institutions, researchers, and representatives of the ICT sector will have timely access to data for the development and evaluation of the health policy, cost-effective budget planning, the conduct of scientific research, the development of innovations, the assessment of health care quality and efficiency, the improvement of the existing services, and the development of new services.

[76] Data accessibility for a comprehensive analysis from various sources of information will improve and manual efforts for data retrieval and processing will decrease, thereby allowing for a more efficient planning and organisation of the health care policy, planning, monitoring, and control of contracts with health care service providers, mutual data exchange, and also ensuring a transparent (open) management of services. This includes expanding the scope of data available on the open data portal, allowing the public to monitor the health care processes nationwide and also use the health sector data for various types of analytics.

[77] It will be possible to develop broader modern data analytics approaches, including artificial intelligence solutions, to analyse morbidity trends, anticipate disease spreads, identify hard-to-detect events, and thereby promote a data-driven policy evaluation and planning in the health sector, improve its efficiency and quality, allow to identify public health developments, and plan targeted measures.

Primary Action Directions

[78] The primary action directions describe tasks to be completed in order to pave the way for the digital transformation of health care services and the development of services supported by digital technologies. They include both centralised technical and management solutions and common conditions to be met when developing systems of medical treatment institutions and implementing other digital solutions. They also encompass tasks related to overall data accessibility and analytics, the development of digital solutions and innovations in medical technology, and also the general enhancement of skills and awareness to ensure a comprehensive and successful digital transformation.

[79] The implementation of the tasks described in the following Chapter requires collaboration with other systems, other authorities, specialists, and patients, and it is necessary to implement centralised or data exchange solutions, develop specific classifications and standards, ensure data accessibility for secondary use and analytics, facilitate their international exchange, plan the training of both the specialists and patients, and also the necessary support during the implementation period of solutions and assistance in the use thereof. Furthermore, materials addressing the relevant digital health solutions and their use should be developed for citizens and specialists.

Action Direction 1.1: Development of the “*Kernel*” of the Digital Health Information System

[80] The Strategy builds on a gradual paradigm shift, perceiving all stakeholders in the health sector, including their accumulated and processed data and their provided solutions and services, as a unified ecosystem and also creating and developing a unified data space where the data accumulated in the sector meet common quality criteria.

[81] The development of digital health in Latvia relies on collaborative development, allowing the involved members of the ecosystem develop solutions that meet their needs, while supporting them and also promoting the integration of those solutions with the DigiVesIS platform. Solutions are designed by using national-level sharing solutions and ensuring interoperability with other related national and sector-specific systems at a national level and internationally to enable data exchange and integration into the common European Health Data Space.

[82] In order to enable such development, ensure the necessary cooperation, and achieve the common goals of digital health development, a new DigiVesIS “kernel” is being created that will include a centralised, unified repository (Task 1.1.1) of high-quality patient medical records (EHR), developed according to a new standard, which will pave the way for the further development of the EHR, significantly improve system stability, performance, and speed, and ensure a modular system design, thereby allowing the IS of medical treatment institutions to interact only with the data exchanges they require. The DigiVesIS “kernel” will also incorporate centralised solutions for the notification of patients and physicians and for the access to visual diagnostics data.

[83] At the same time, “rules of the game” that include classifications, standards and other mandatory requirements, manuals, recommendations, and descriptions will be developed and adopted (and, where necessary, incorporated in the regulatory framework) that must be followed when developing the IS of medical treatment institutions to ensure their interoperability with both the IS of other members of the ecosystem and the DigiVesIS platform. Additionally, a certification process will be introduced to verify the compliance of the IS of medical treatment institutions with the abovementioned requirements. Environments for testing digital health solutions and also integration testing environments are to be provided in order to support the developers.

[84] By ensuring data exchange with information systems of the ecosystem members in the health sector, the centralised health data repository will provide access to complete patient EHR, regardless of who has covered the health care service (the State, service recipient, or insurer), allowing medical practitioners to access the data for the purposes of providing health care services, irrespective of the medical treatment institution where the data are registered, and also allowing the patients to access their data and control who and to what extent can access that data. Health data will be accessible to the extent necessary to ensure medical treatment and its continuity and to track the course of medical treatment and recommendations, whereas large volumes of detailed data (e.g. digital diagnostics) will be accumulated by the respective medical treatment institutions, creating solutions for transferring the data as needed. Furthermore, the data will be accumulated to the extent necessary for both processing payments and analysing the quality and efficiency of services.

[85] Hence, by establishing mandatory requirements for the IS of medical treatment institutions, facilitating the integration of the developers of ICT systems of medical treatment institutions with the DigiVesIS platform and other State IS, ensuring the unification of system operation and data exchange, and offering support during the integration will allow to address the key challenges of digital health in Latvia, i.e. the fragmentation of ICT systems and data. As a result, the proportion and quality of digitised health data will increase, and the data will be accessible in a timely manner for all specialists involved in the medical treatment process of a patient, regardless of the medical treatment institution where they work.

[86] Cooperation and data exchange are also the basis for creating integrated health care services and improving the patient engagement in their own health care.

**Tasks of the Action Direction**

**1.1.1. Development of a platform of the digital health information system (DigiVesIS platform), the EHR, for use on smart devices**

[87] A domain architecture will be developed, encompassing information on the necessary capabilities, data, a set of high-level use cases, stakeholders, and data flows, thereby ensuring that the health domain architecture demonstrates conformity with the overall architectural principles of State administration which are based on the European Interoperability Framework (EIF) principles and are aligned with other related domain architectures.

[88] A centralised repository of unified, high-quality patient medical records (EHR) and also solutions (API) for data exchange between the systems of the stakeholders is being developed within the DigiVesIS “kernel”. The development of the DigiVesIS “kernel” is to take place in parallel with data standardisation and the implementation of the necessary classifications (Task 1.2.1) to ensure that all necessary health data are stored in the centralised data repository. The development of the DigiVesIS “kernel” includes the transition from HL7 to HL7 FHIR (Fast Healthcare Interoperability Resources) data exchange standard, enabling smoother, more flexible, and more efficient information exchange between the information systems of medical treatment institutions and central State systems.

[89] Along with the development of the DigiVesIS “kernel”, new visual interfaces for data presentation to patients and medical professionals are to be designed as well. The DigiVesIS “kernel” focuses on creating a secure and open environment for all representatives of the sector for entering and retrieving information necessary to improve health care processes, thereby establishing the prerequisites for the rapid and efficient circulation of patient data. The entire newly developed functionality (Action Direction 2 of the Strategy) will be accessible through the portal eveseliba.gov.lv, while users will be guided to an entirely different platform. It is also planned to reconstruct and redesign the portal eveseliba.gov.lv over time.

[90] It is envisaged to implement data quality control solutions and also automatic controls to verify the compliance of activities and the relevant data with the conditions or contracts. For the purposes of data security and protection, the audit logging system will be improved, requiring all medical treatment institutions to provide personal data processing audit files that comply with the provisions of Cabinet Regulation No. 134 in order to monitor the validity of patient data processing.

[91] The necessary legal framework will be developed.

[92] It is planned to review the user interface on the eHealth patient portal and develop patient-centred “eHealth”. It will rely on user experience (UX) and focus on the improvement of user-friendliness. The patient portal will be adapted for use on smart devices.

**1.1.2. Development of an ICT solution for notifications and reminders (in conjunction with 1.1.1 and 2.3)**

[93] The DigiVesIS platform will include a centralised solution for the notification of patients and physicians that will initiate the notification of patients using the notification and reporting solutions available in the national service delivery infrastructure (including the eAddress solution). It will also incorporate a functionality enabling communication with patients and physicians through various channels, for example, text messages, e-mail, the patient portal or the connected management system of the medical treatment institution, and also telephone calls and an application once such option is developed. It will be possible to use that functionality through the patient portal or by connecting from the systems of the stakeholders.

[94] Communication will be event-based, for example, by inviting patients to examinations or vaccination, notifying them of an available test result, appointments for consultations, or procedures, sending them informative materials related to the planned procedures or lifestyle and medical treatment process (for example, the use of medicinal products, the need to obtain a new prescription), etc. Medical practitioners will receive notifications, for example, of infection cases or emergencies, contract-related matters, or the possibility to receive informative materials.

[95] Depending on the event, notifications would be sent either automatically or manually, in standard format or customised for a specific recipient (or a group of recipients). The notification and reminder system would be integrated with the systems of medical treatment institutions and the health sector to ensure more comprehensive and convenient coverage of both the individuals to be notified and relevant events. Additionally, the system would be designed to support the integration of various automated solutions (plug-in API), for example, artificial intelligence or monitoring systems.

**1.1.3. Development of a solution for centralised high-quality access to visual diagnostics images and descriptions (in conjunction with 1.2.4.1)**

[96] It is planned to develop a solution for centralised access to descriptions of visual diagnostics examinations and high-quality images within the EHR. The current solution for visual diagnostics data exchange within the eHealth system is incomplete, as it does not support the processing of high-resolution visual diagnostics images and also it requires improvements in accordance with the unified EU guidelines for the electronic exchange of visual diagnostics images and descriptions which are currently under development and will establish technical requirements, data exchange standards to be followed, data to be processed, and applicable classifications.[[37]](#footnote-38) Following the adoption of the European Health Data Space Regulation, requirements for the electronic exchange of visual diagnostics images and descriptions will be established in the EC implementing act. The draft European Health Data Space Regulation establishes the obligation of the countries to provide individuals with electronic access to their health data, including the visual diagnostics data, free of charge, which is why the task also involves analysing the current situation and preparing proposals for data storage, access, and financing facility, considering that, at present, the long-term archiving of diagnostic data and access to examinations are provided as a commercial service by the Medical Diagnostic Information System (DataMed). It is used by more than 80 medical treatment institutions in Latvia, including State, local government, and private clinics.[[38]](#footnote-39) Given the experience and interest of economic operators in ensuring that service, the possibility of using a decentralised solution and establishing public-private partnerships will be explored.

[97] Along with the implementation of technical solutions, the legal framework will require amendments to establish the obligation of medical treatment institutions to submit visual diagnostics images. At present, Sub-paragraph 11.4.1 of Cabinet Regulation No. 134 establishes that medical treatment institutions are required to submit radiological examination descriptions (opinions) to the eHealth system, whereas the images obtained from radiological procedures may be submitted voluntarily.

**1.1.4. Implementation of patient treatment and dynamic monitoring plans on the digital health platform**

[98] Another DigiVesIS kernel element is the possibility of creating a patient treatment and care plan[[39]](#footnote-40) and a dynamic monitoring plan, including the planned examinations and consultations, further treatment, including the course of rehabilitation. This will be visible to the patient and the attending medical practitioners. The management of the patient pathway will be related to other DigiVesIS (sub)systems, i.e. the notification, e-appointments, e-examinations, etc., with some of those actions being performed automatically or offered for transparent management to the patient or medical practitioner.

[99] The implementation of this solution will allow patients to see the entire treatment plan, reduce the need for the patient to navigate in the health care system on his or her own to find out how and where to take the next steps, as health care professionals will be able to organise that instead of the patient. Access to the treatment plan will promote the engagement of the patient, their relatives, and authorised representatives in the health care and self-care process of the patient. This will reduce the fragmentation of health care and improve its continuity, which, in turn, will have a positive impact on health care outcomes.

**1.1.5. Development of data processing conditions for the IS of medical treatment institutions and implement the certification**

[100] Uniform data entry requirements will be established for all medical treatment institutions, for example, developed and published classifications, data and technology standards, mandatory technical and organisational requirements, process, data, and integration interface descriptions, manuals, and recommendations to be followed when developing the IS of medical treatment institutions. Special focus will be placed on data processing security requirements, establishing not only requirements for software but also, where necessary, for the physical infrastructure and its security.

[101] Certification of the IS of medical treatment institutions will be implemented to make sure that each specific IS is compatible with the IS of other members of the ecosystem and also the centralised repository of patient medical records and other DigiVesIS “kernel” solutions, while complying with the requirements for processing sensitive patient health data. The responsibility for IS certification would lie with the IS developer and maintainer.

[102] Timely communication with medical treatment institutions will be ensured regarding the planned EHR changes, their implementation deadlines, accessibility of up-to-date documents required for the integration to the developers of the IS of medical treatment institutions, testing, etc. The integration interface delivery process will also be improved.

**1.1.6. Provision of support for the integration of the IS of medical treatment institutions with digital health solutions**

[103] In order to facilitate the integration of the IS of medical treatment institutions with digital health solutions, environments for testing the integration of digital health solutions with the digital health platform will be created, the economic operators will be provided with access to them, and also procedures by which economic operators use those testing environments will be developed.

[104] Past experience shows that the integration of the IS of medical treatment institutions with the eHealth system is significantly hindered by the availability of funding for system integration. In order to enable the data exchange between the IS of medical treatment institutions and the eHealth system, this issue should be addressed by including an ICT component in the tariffs for health care services. The costs of ensuring data exchange are to be included in the tariff element “U”[[40]](#footnote-41) (indirect manufacturing costs to be added (expenses related to the maintenance of patients for the payment for services, for making of risk payments, for purchase of materials, energy resources, water, and inventory)), increasing it accordingly. A request for additional funding for increasing the service tariffs will be put forward as a priority measure. The feasibility of allocating the funding of EU funds for the integration of the IS of medical treatment institutions with the eHealth system should be evaluated.

[105] In order to evaluate the necessary support for medical treatment institutions and the feasibility of allocating the financing of EU funds for this purpose, and to generally take data-driven decisions, an analysis of the current situation will be conducted, with the task to identify the IS used in medical treatment institutions, the offer and use of their functions, digital data accumulation principles, the compatibility of systems, and the possibility of their integration within a unified digital health ecosystem.

Action Direction 1.2: Accessibility, Timeliness, Security, and Quality of Health Data

[106] Without accurate, timely, and complete information, the health sector is prevented from exercising its functions and ensuring efficient health care. In order to ensure data accessibility, it is planned to establish standards, supplement registers, and implement solutions for the analytics and secondary use of data.

[107] **The development and implementation of unified standards, classifications, and data structures** (establishing them as mandatory) in processing health-related data are among the prerequisites for the digitisation and integration of health data. Among those, in line with the task “*Promoting the appropriate use of the WHO International Classification of Functioning, Disability, and Health (ICF)[[41]](#footnote-42) in health and welfare sectors and in the development of digitised process documentation*” included in the PHG 2027, it is necessary to continue the broader implementation of the ICF. Additionally, according to EUROSTAT requirements, ICD-11 must be implemented by 31 December 2026. The issue regarding the procedures for developing and approving clinical classifications will also be addressed.

[108] It is necessary to develop **various disease registers** to ensure timely and complete access to statistical data on the prevalence of those diseases, the quality of diagnostics and treatment, and to plan the necessary improvements in the provision of health care services. Currently, data in those registers are often entered manually from medical documents, thereby increasing the administrative burden and negatively impacting the register data quality. It is necessary to change the approach to the maintenance and creation of registers, ensuring automatic data retrieval from electronic medical documents completed by medical practitioners.

[109] **Analytics and secondary use or re-use of health data** are necessary for both the policymakers and researchers. It comprises solutions for data retrieval, integration, linkage, analytics, and visualisation (including big data and artificial intelligence solutions), and also the necessary regulatory framework. In order to ensure access to as diverse and comprehensive data as possible for their secondary use, it is necessary to develop solutions providing the possibility of including not only the data of public sector authorities and capital companies but also those of private medical treatment institutions and economic operators.

[110] Establishment of the European Health Data Space is one of the priorities of the EC European Data Strategy 2019–2025. **Latvia’s integration into the European Health Data Space** is one of the priorities of the EC European Data Strategy 2019–2025 and also one of the priorities of digital health. Its goal is to establish a shared “data space” where natural persons will be able to easily control their electronic health data and also researchers and policymakers will be able to access and use that data in a reliable and secure manner, while preserving data privacy. On 4 May 2022, the European Commission published the Proposal for a Regulation of the European Parliament and of the Council on the European Health Data Space, indicatively planning that it will be adopted in 2024 and will come into force in 2025; however, that timeline depends on how successful the alignment process will be.

[111] **Latvia has joined the 1+MG Declaration**, along with 22 other countries in Europe. It provides for the establishment of a cohort of at least one million whole genome sequences from European citizens. The project aims at ensuring secure and protected access to genetic and phenotypic data[[42]](#footnote-43) for health care research and innovation purposes. Within the framework of the Digital Europe Programme (DIGITAL), it is planned to establish a federated network of genomic data to enable the secure storage of national genomic data collections within the respective countries while allowing cross-border access to them. Currently, within a project funded by Horizon 2020,[[43]](#footnote-44) a genomic data processing framework is being developed and it covers various aspects, for example, ethical, legal, and social aspects, and also standards, minimum data to be included, and quality criteria for genetic analyses. On the other hand, within the framework of the Genomic Data Infrastructure project[[44]](#footnote-45) under the Digital Europe Programme (DIGITAL), it is planned to establish a federated network of genomic data to enable the secure storage of national genomic data collections within the respective countries while allowing cross-border access to them, rather than storing them in a central European repository.

**Tasks of the Action Direction**

**1.2.1. Ensuring the standardisation of health data**

[112] In order to ensure high-quality accumulation of data and the possibility of data exchange at both national and cross-border levels, the implementation of universal (international) reference data (standards, classifications, and data structures) is the first choice, while sector-specific and internal reference data are permissible only in specific, exceptional cases where the relevant universal reference data are not available. Standardisation is also an important condition in preparation for the adoption and implementation of the European Health Data Space Regulation.

[113] Overall there are more than 40 different organisations in the field of health information technology which develop standards for use in the health data circulation. Those standards cover not only the terminology used in the provision of health care services but also such aspects as information content, process implementation, data transport/migration between information systems, data security, and personal identification capabilities.

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| According to the advisory organisation Healthcare Information and Management Systems Society, the standardisation of health ICT solutions may take place at multiple levels:[[45]](#footnote-46)* **Vocabulary/terminology standards** address the ability to represent concepts in an unambiguous manner between a sender and receiver of information which is a fundamental requirement for effective communication. Health care information systems that communicate with each other rely on structured vocabularies, terminologies, code sets, and classification systems to represent health concepts.
* **Content standards** relate to the data content. They define the structure and organisation of the electronic message or the content of a document. This standard category also includes the definition of common sets of data for specific message types.
* **Transport standards** address the format of messages exchanged between computer systems, format, document architecture, clinical templates, user interface, and patient data linkage.
* **Privacy and security standards** aim to protect the right of an individual (or organisation) to determine whether, when, by whom and for what purpose their personal health information is collected, accessed, used, or disclosed. Security standards define a set of administrative, physical, and technical actions to protect the confidentiality, availability, and integrity of health information.
* **Identifier standards** are used to uniquely identify patients or service providers.
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[114] HL7[[46]](#footnote-47) has been used in the development of eHealth functionalities in Latvia by 2023, along with a broad range of technical standards and protocols, including the creation of more than 300 classifications; however, there are areas where standards are lacking but should be introduced.

[115] As specified in Section 1.1.1 of the Strategy, the development of the DigiVesIS “kernel” includes the transition from HL7 to HL7 FHIR (Fast Healthcare Interoperability Resources) data exchange standard. All the new EHR functionalities will be developed in accordance with the HL7 FHIR standard. The new functionality of the Latvian Cancer Register (Section 1.2.2) and the Laboratory Data Module within the EHR are the first to be created under this standard.

[116] It is also essential to continue the broader implementation of the ICF (including the ICF version for children and youth) not only in the work of physical and rehabilitation medicine physicians but also among specialists in other fields to ensure possibilities of better integration with social services implemented by the MoW and local governments. It should be noted that the ICF requires an updated translation into the national language, which could facilitate its implementation.

[117] On 1 January 2022, ICD-11 came into force which, according to EUROSTAT regulations, must be implemented in all EU Member States, including Latvia, by 31 December 2026. The WHO encourages the Member States to take an active role in the transition from ICD-10 to ICD-11. Given that ICD-11 is linked to other WHO classifications, Member States are also urged to update and implement those classifications. In 2022, the CDPC initiated preparations for the gradual implementation of ICD-11 and other related classifications (ICD-O-4,[[47]](#footnote-48) ICF, and ICF-CY) in official statistics, assessing the risks and opportunities for their electronic implementation, and also legal and financial aspects. In the coming years, the WHO also plans to approve the International Classification of Health Interventions (ICHI).

[118] Within the framework of the Strategy, it is planned to establish procedures for the adoption and implementation of the applicable standards within DigiVesIS, including classifications. Decisions on the applicable standards and classifications will be taken in a timely manner, covering the acquisition or development of new systems and technologies, and also a transition or adaptation period will be determined, including the provision of training for medical practitioners on their use.

[119] The implementation of all the new standards and classifications requires the development of plans, taking into account the impact on the solutions used in the health sector (both the central ones and those used in MoH institutions and medical treatment institutions, including in the private sector). It is also necessary to identify the training needs for both the data providers and data users (analysts, researchers, etc.), medical treatment institutions, including the managerial staff. It should be noted that it may take several years to implement new standards and classifications.

[120] All information on standards, classifications, and integration interfaces must be accessible to medical treatment institutions, system developers, and integrators.

[121] The transition to standardised medical documents using unified standards in an electronic and structured format is a time-consuming and resource-intensive process (including financial and human resources), and it requires significant interest and involvement on the part of medical treatment institutions.

**1.2.2. Reduction of the administrative burden in providing the necessary data for disease registers**

[122] It is necessary to develop various disease registers to ensure timely and complete access to statistical data on the prevalence of those diseases, the quality of diagnostics and treatment, and to plan the necessary improvements for the provision of health care services. There is the Register of Patients Suffering from Certain Diseases in Latvia and the operation thereof is governed by Cabinet Regulation No. 746 of 15 September 2008, Procedures for Establishing, Supplementing, and Maintaining the Register of Patients Suffering from Certain Diseases. The data required for that register are retrieved from the patient data (medical documents referred to in Sub-paragraphs 7.9–7.20 of Cabinet Regulation No. 134) submitted in the eHealth system.

[123] The current practice of obtaining data for the Register of Patients Suffering from Certain Diseases does not ensure adherence to the one-time data entry principle, as data for the medical records of patients suffering from certain diseases are entered in the eHealth system based on the medical documents of medical treatment institutions (for example, medical records of patients at inpatient facilities and day hospitals), which are still mostly paper-based or stored in the IS of medical treatment institutions. In addition, for the most part, data are entered not by medical practitioners but medical treatment support persons (health care statisticians and health statisticians). This data entry approach not only creates an administrative burden for medical treatment institutions but also negatively affects the quality of register data, for example, due to the lack of knowledge.

[124] It is planned to change the approach to obtaining data required for the Register of Patients Suffering from Certain Diseases, ensuring their automatic retrieval from electronic medical documents completed by medical practitioners.

[125] The implementation of the automatic approach requires the development of a central register data module in the eHealth system/DigiVesIS platform, including standards, and it is necessary to ensure a structured data processing infrastructure that enables a centralised data retrieval from the IS of medical treatment institutions that process patient health data.

[126] In order to ensure the quality of register data, it is also important to educate the medical practitioners, e.g. by including a topic on classification and coding with ICD-10 (and in the future, ICD-11) and related classifications into study and/or further education programmes.

[127] The implementation of the automatic approach would reduce the administrative burden related to data provision and also improve the timeliness, integrity, and quality of data. High-quality registers will allow to shape a data-driven health care policy and it will also be possible to use them in research and the implementation of value-based health care.

[128] In accordance with Measure 16.1[[48]](#footnote-49) of the Plan for the Improvement of Health Care Services in Oncology 2022–2024, a major modernisation of the Latvian Cancer Register was launched in 2022, involving the modernisation of the centralised register functionality within the eHealth system, the development of the necessary platform of oncological patient treatment data in clinical university hospitals, and the implementation of new standards, for example, HL7 FHIR, and classifications. The Cancer Register is being developed gradually, starting with the modernisation of the Population Register, which was scheduled for completion by the end of 2023, and followed by the development of cancer screening and clinical registers.

[129] The Plan for Improving the Organisation of Mental Health Care 2023–2025 includes Measure 4.3, under which it is planned to ensure the processing of health care data on patients with metal and behavioural disorders in an electronically structured format and to optimise the processing of data required for the Register of Patients Suffering from Certain Diseases regarding patients with mental and behavioural disorders. During the implementation of the PHG 2027, several specialists proposed the creation of new registers, for example, the register of rare eye diseases, the register of congenital surgical gastrointestinal and respiratory tract pathologies in newborns, the register of kidney diseases, the paediatric oncology register, the register of congenital cardiovascular diseases, and the register of stroke patients. The Plan for Rare Diseases 2023–2025 incorporates proposals of health care professionals to join various international registers specifically designed for monitoring populations with specific diagnoses, health conditions, treatment outcomes, and changes in the quality of life, taking into account that due to the small number of such patients, the development of such registers at the national level would not be an optimal solution.

[130] Given the scale of the Cancer Register project and other parallel tasks required for the implementation of the Strategy, the feasibility of modernising other registers of patients suffering from certain diseases within the scope of the Strategy will be evaluated during the implementation of the Strategy. The development of new registers should be evaluated based on their usefulness (considering the resources required for both their creation and maintenance) and the goal to be achieved.

[131] **A** **register of athletes should be created** or an alternative solution should be implemented. There is currently no unified register in place that would include information on athletes and children engaged in intense physical activity. The abovementioned information is necessary to plan and ensure the scope and accessibility of a service, when a sports medicine physician conducts comprehensive preventive medical examinations for athletes and children engaged in intense physical activity in accordance with the regulatory framework that establishes the procedures for health care and medical supervision of athletes and children engaged in intense physical activity.

**1.2.3. Development of data analytics solutions for the health sector**

[132] It is necessary to develop a statistical information system (repository of health sector data) of personalised and non-personalised health sector data to accumulate data from various health data sources and establish a logical linkage between those data, which will allow to integrate those various data sources and enable an efficient data analysis to ensure the shaping of a data-driven health care policy that includes the organisation, planning, and monitoring of health services and the retrieval of the necessary statistical data. Along with the expansion of the repository of health sector data, it will be possible to offload the historical data from operational system databases, thereby also improving the performance of operational information systems.

[133] It is necessary to design solutions for data selection, analytics, and statistics, and also for ensuring the monitoring of the health sector, with those solutions initially being accessible to the NHS and gradually extended to other MoH departmental institutions. Such solutions would, among other things, facilitate the work of NHS specialists who currently process up to 2000 data requests annually for the needs of the NHS, other institutions in the health sector, and authorities in other sectors (for example, law enforcement institutions) and respond to public inquiries. Additionally, opportunities for using the data for big data and artificial intelligence solutions should be explored.

[134] It would be useful to integrate the Unified Health Sector Monitoring System of the HI with a data analytics solution, while ensuring the accumulation of quality indicators, as this would allow to plan monitoring and control measures based on risk assessment.

[135] Along with the development of technical data analytics solutions, the MoH department should also develop the analytical capabilities (Action Direction 1.4).

[136] It is necessary to implement solutions for secondary processing, analysis, and broad use of health data. They would entail IT solutions for data retrieval from primary systems, the integration of data from various systems, the display and use of different indicators at different levels (medical practices, State administration institutions, scientific authorities). During the development, special focus should be placed on secure access to data, ensuring the compliance with the principles outlined in the General Data Protection Regulation[[49]](#footnote-50) and designing a physical infrastructure that prevents third parties from accessing the data-holding IS and does not pose risks of data theft, duplication, or deletion. A Latvian national secondary data exchange infrastructure that meets the EU standards is also essential for integration into the European Health Data Space.[[50]](#footnote-51)

[137] The secondary data processing should also include the data from private medical treatment institutions. Currently, there are only a few examples of such data sharing practices. One of the main reasons for this could be concerns about disclosing trade secrets or a desire to retain exclusive ownership of information. It is also necessary to develop a legal and technical solution to protect those interests and also to promote cooperation among the economic operators and raise their awareness of the fact that sharing such information will also contribute to improving health care services in the private sector.

[138] Along with the development of those solutions, it is also necessary to establish a proper regulatory framework for secondary data processing, including for the use of data. The draft Law on Secondary Use of Data is being developed by the *Saeima*. On 31 March 2023, the Ministry of Economics submitted a proposal titled “Law on Secondary Use of Data” to the *Saeima* for the second reading.[[51]](#footnote-52) As mentioned above, the draft European Health Data Space Regulation is under development.

[139] It will also be necessary to establish a unit that would be in charge of ensuring access to the data available in the health sector for secondary use, for example, the secondary data identification, their compilation and preparation (for example, anonymisation) for analytical purposes, and that would also ensure the necessary solutions, procedures, and support for the use of data (see Chapter “Strategy Implementation”). Additionally, the training of health care professionals in data processing, including the analytics of health-related data, the big data, and artificial intelligence solutions (see Action Direction 1.4 “Digital Literacy and Culture Change”), will also be necessary.

**1.2.4. Integration into the European Health Data Space by engaging in joint EU projects for cross-border exchange of health data**

[140] In order to improve the medical treatment process, within the framework of the European Health Data Space to be developed in the context of the EC Strategy for Data and in accordance with the Proposal for a Regulation of the European Parliament and of the Council on the European Health Data Space[[52]](#footnote-53) regarding the **primary use of data** (for medical treatment purposes) published by the EC on 4 May 2022, it is planned to ensure patient data exchange between EU and EEA countries, with those data including the primary patient data, e-prescriptions, visual diagnostics images and descriptions, laboratory tests, and discharge summaries, and also the implementation of a European e-vaccination card has been put forward for discussion. It cannot be ruled out that the exchange of other health data may also be planned over time.

[141] A currently functioning element of the European Health Data Space for health care provision is the eHealth Digital Service Infrastructure (under the brand “MyHealth@EU”).*[[53]](#footnote-54)* Within the scope of that infrastructure, most EU countries, including Latvia (NHS), are setting up National Contact Points for eHealth (some countries have already completed this task) that enable the exchange of data included in e-prescriptions and summaries of patient health information.[[54]](#footnote-55) One of the prerequisites for Latvia to be able to become fully integrated into the European Health Data Space is the accessibility of health data in the Latvian digital health data infrastructure that meet the EU standards.

[142] In order to promote the development of research and innovations, within the framework of the European Health Data Space, the EC plans to develop an infrastructure for **secondary** use of health data within the EU by 2025; however, this deadline may change, given that the EU regulation is still in the drafting stage. For Latvia to be able to become fully integrated into the European Health Data Space, it is necessary to ensure the involvement of Latvia in its development through engagement in joint EU projects and also to implement/adapt the national secondary data exchange infrastructure that meets the EU standards.

**1.2.5. Development of an ICT infrastructure for the Latvian population reference genome and integration into the exchange of genetic data with other EU countries under the 1+MG initiative**

[143] It is planned to develop the national ICT infrastructure for ensuring the storage of and access to a representative collection of reference genomic data of the Latvian population. Latvia is expected to become integrated into the federated European Genomic Data Infrastructure[[55]](#footnote-56) which will provide access to data stored within that infrastructure for both medical treatment and research purposes. Access to the relevant data will enable more accurate identification of genetic variations, improving the diagnosis and medical treatment of rare disease and oncology patients, thereby supporting the development of targeted (precision) therapies and the adaptation of medicinal products based on the pharmacogenetic profile of a patient and also allowing to obtain more accurate information on the risks of the most common diseases in Latvia, adapting the screening programs accordingly.

[144] At the same time, it is necessary to develop the implementation of the dynamic consent concept concerning the data stored in the State Population Genome Register and the Genome Database of Latvian Population. The introduction of dynamic consent will allow gene donors to regularly keep track of the use of their data in research and also to provide their consent, modify the scope of their consent, or withdraw their consent for the use of their personal data and human biological samples in specific research.

Action Direction 1.3: Development of Telemedicine, Services Supported by Digital Technologies, and Innovations

[145] Since March 2020, the decisions taken during the COVID-19 pandemic have prompted the implementation of State-funded remote consultations of physicians. At the time when access to on-site services was severely limited, remote consultations proved to be an important instrument for ensuring the continuity of health care for patients and also the necessity to develop a well-functioning system for the provision of telemedicine services in Latvia was highlighted.[[56]](#footnote-57)

[146] Another major health care issue in Latvia is the shortage of human resources. Consequently, in certain areas, access to services is limited, and the current personnel experiences excessive workload, creating a risk of a potential decrease in service quality. Digital solutions can help compensate for a lacking service or complement the existing services, reducing the consumption of human resources and minimising the likelihood of errors.

[147] Remote telemedicine services are of particular importance for patients residing in rural territories and also for patients with chronic illnesses to be able to consult with a physician in a convenient and timely manner. Furthermore, given the shortage of specialists and the need to promote cooperation among physicians, it is necessary to enable telephone/video consultations between general practitioners and specialist physicians or among specialist physicians themselves to support decision-making in tertiary cases and also the monitoring and outpatient treatment of patients.

[148] Similarly, other types of telemedicine services (for example, telemonitoring)[[57]](#footnote-58) should be developed and implemented in Latvia to ensure the remote monitoring of the health condition. The abovementioned includes various mobile applications and sensors that provide essential information on the health condition of a person, thereby allowing to monitor it and transmit that information to the physician. Such services improve patient engagement in health care and provide a sense of security for patients, with them being aware of the virtual presence of medical personnel. These services would also support general practitioners, assist in monitoring chronic patients, and also allow to optimise in-person visits, for example, by setting up remote monitoring offices and inviting patients to an appointment only when specific telemonitoring indications arise.

[149] Alongside the implementation of telemedicine services, it is also necessary to develop their monitoring. Additionally, it is important to enhance the understanding of medical practitioners and executives of medical treatment institutions regarding telemedicine as a whole and the organisation of health care services using digital technologies (see Action Direction 1.4 “Digital Literacy and Culture Change”).

[150] The experience gained during the implementation of those services, the regulatory basis created, the procedures, and the support would also serve as a basis for the implementation of other digital health services and also innovations in the health sector.

[151] It is also necessary to promote the development and implementation of innovations in the health sector. A regulatory framework for experimental developments (“sandbox”) must be established, allowing to test new methods outside the existing regulatory framework, while ensuring the management of potential risks. Furthermore, it is necessary to organise the innovation support which would involve access to specialists, consultations and assistance in understanding health care processes, access to data, systems, and technologies (under the competence of the MoH), and an organisational structure and procedures to promote health care innovations in a targeted manner. It might be necessary to provide financial support for businesses to promote and develop innovations (under the competence of the MoE). An active innovation environment will both promote the implementation of new technologies and solutions in Latvia and also help local businesses to design solutions for the global market.

**Tasks of the Action Direction**

**1.3.1. Development of the primary telemedicine services, descriptions of services, and a regulatory framework**

[152] Through cooperation with professional associations of specialist physicians, it is necessary to draw up **an official list of telemedicine services** (for example, by including service codes, descriptions, and all essential prerequisites for qualifying a service as a telemedicine service, for example, whether audio interaction meets the requirements for a specific service (see an example here[[58]](#footnote-59)). This list could form part of the existing list of health care services or maintained separately. The list could be used by medical treatment institutions, it could serve as a basis for quality assurance processes and facilitate the training of health care professionals.[[59]](#footnote-60)

[153] It is necessary to implement a framework for **monitoring telemedicine services**, specifically, for the evaluation of telemedicine services. It must include the evaluation of telemedicine services and their organisation.[[60]](#footnote-61)

[154] It is also important to develop an evaluation system for the inclusion of new telemedicine services and other digital tools in the basket of State-paid health care services. This includes establishing an efficient process for determining the long-term costs, benefits, and overall efficiency of telemedicine services. They might have high initial implementation costs related to both technologies and the training of professionals. Therefore, a comprehensive economic assessment of telemedicine services[[61]](#footnote-62) must be conducted, including a long-term Return on Investment (ROI) analysis and the evaluation of the impact on service quality and accessibility, and also the impact on the costs of other (non-telemedicine) services.

[155] It is also necessary to review the financing models of hospitals and other health care service providers to promote the use of telemedicine services.[[62]](#footnote-63) Such motivation is necessary, as transitioning to telemedicine may, in the short term, require investments, personnel training, and changes in the provision of services. Financing models could include incentives in the form of higher tariffs for medical procedures if they are performed via telemedicine and they meet quality requirements. In more complex cases, payment could be based on outcomes (e.g. telemonitoring reduces the need to seek for emergency medical assistance among patients with chronic respiratory and cardiac conditions) or data-based payments (e.g. compensation for the volume and quality of telemonitoring data that reflects patient adherence to the prescribed treatment or preventive measures).[[63]](#footnote-64)

[156] Other telemedicine services and the application of digital tools in health care will also be developed on the basis of the experience, regulatory framework, and solutions developed during the implementation of remote consultations of physicians.

[157] It is necessary to establish technical and security requirements for telemedicine services and develop guidelines for providing remote physician-to-physician and physician-to-patient consultations in cooperation with patient organisations and professional associations of specialist physicians, for example, by specifying in which patient care cases remote consultations are applicable or not, defining service quality criteria, conditions for their application, recording, reporting, and payment conditions.[[64]](#footnote-65)

[158] The Strategy aims at gradually ensuring that every general medicine practice, including every specialist (both State-paid and privately funded), is capable of providing telephone and video consultations if the patient chooses so and the medical prerequisites have been met. Consequently, alongside the development of a regulation and technical solutions, it is necessary to ensure training and incentivising service financing conditions.

[159] It is also planned to cooperate with the SLGUCSS (Task 1.4.3.3). Patients who do not have the appropriate devices will have access to remote health care services and also support in using these technologies in those centres, while ensuring confidentiality.

[160] It is necessary to improve the consultative telephone service of general practitioners by finding a solution for personal identification so that the consultant can securely access personal data within the EHR when needed. This would improve the provision of medical advice to citizens in acute cases outside the working hours of general practitioners, in situations where emergency medical assistance is not required. At the same time, the patients still must be able to ask questions anonymously during telephone calls without the obligation to identify themselves.

[161] Proactive notifications/reminders will be created for patients, based on the notification solution developed under Task 1.1.2 of Action Direction 1.1 “*Development of the “Kernel” of the Digital Health Information System*” of the Strategy. Initially, notifications will be introduced for preventive examinations (e.g. State-paid cancer screening, etc.) or preventive vaccination, reminders for data submission (e.g. contact details, etc.), notifications of the available test results, and notifications of the need to obtain a new prescription in cases where the amount of medicinal products is insufficient to continue a therapy.

[162] By using this solution, medical practitioners will be informed, for example, of such urgent matters as infection cases or emergencies, contract-related matters, and will also have access to various informative materials.

**1.3.2. Development of the quality monitoring of telemedicine services**

[163] The HI will establish a framework for the monitoring of telemedicine services, more specifically, for the evaluation of telemedicine services, including quality assessment indicators for telemedicine services. It should include the evaluation of telemedicine services and their organisation.[[65]](#footnote-66) Initially, after developing a regulatory framework, guidelines, and algorithms, the HI will use a self-assessment questionnaire for medical treatment institutions in the field of the provision of health care services for the purposes of the analysis of data on the organisation of telemedicine services and problems/shortcomings in the implementation of conditions and guidelines identified by the institutions themselves. Afterwards, based on the self-assessment result and the risk assessment of telemedicine service accessibility and quality indicators, the HI will consider conducting thematic inspections aimed at evaluating telemedicine services.

[164] The concept of “remote monitoring” will be developed, encompassing broader aspects, for example, the monitoring of the Digital Health Platform data, control of e-prescriptions, medical devices, and products, etc.

**1.3.3. Promotion of digital health innovations (creation of a regulatory “sandbox”)**

[165] New approaches to medical treatment processes or their management may not be covered by the existing regulation. In order to enable proper testing of the approaches, a so-called regulatory “sandbox” should be introduced, meaning that it is necessary to anticipate cases where a part of the regulation may be disregarded during such trials. At the same time, ethical principles outlined in the Helsinki Declaration[[66]](#footnote-67) must be observed in those cases to prevent or minimise risks related to potential harm to the health of a person, the security and integrity of health data, and the payment for services. Additionally, abuse of such regulatory exemptions must be prevented.

[166] The emergence of artificial intelligence in health care has prompted the need to develop guidelines/roadmap for medical treatment institutions on the safe use of artificial intelligence solutions and to evaluate the necessity for establishing a legal framework to ensure the safe use of artificial intelligence in medical treatment. In the future, the issue of using artificial intelligence solutions to compensate for the shortage of human resources in health care may become increasingly relevant.

Action Direction 1.4: Digital Literacy and Culture Change

[167] One of the prerequisites for the successful implementation of the Strategy is ensuring sufficient digital literacy for everyone involved in the ecosystem, for example, the employees of the MoH departmental institutions, medical practitioners and the administration of medical treatment institutions, pharmacy staff, health care students, and patients.

[168] Moreover, the use of digital solutions in health care is not only a matter of knowledge and skills – it is a matter of a broader change of culture and customs. It involves understanding the necessity of cooperation and recognising that digital process transformation and data entry help optimise processes and ease the workload for those involved in health care.

[169] Cabinet Regulation No. 305 of 13 June 2023 stipulates that one of the strategic objectives of short-cycle professional higher education study programmes and first- and second-cycle professional higher education study programmes is to ensure that graduates can responsibly and safely select and use information technologies for work duties, research, and lifelong learning, and also for acquiring, creating, and sharing digital content. According to the abovementioned Regulation, the relevant strategic objective must be implemented in university and college study programmes by 31 December 2023, if the decision on the accreditation of the respective study field was taken by 31 December 2022, or within 12 months from the date of the decision on the accreditation of the respective study field if the decision on the accreditation of the respective study field was taken after 31 December 2022.

[170] In nursing education, digital competences as transversal skills are included in the professional standard as a mandatory competence.

[171] While we can anticipate that the digital literacy of the new specialists will be sufficient, the digital literacy of professionals already working in the health sector is not always adequate. It is also essential for every medical practitioner to understand the significance of health data not only in the medical treatment process but also in public health policy planning to ensure greater engagement in data provision.

[172] The improvement of digital literacy is provided for in the Digital Transformation Guidelines 2021–2027 of Latvia, while specific support measures in this area are outlined in the RRF Plan.

[173] An evaluation of remote health care services and the factors influencing them has concluded that low and insufficient digital literacy among the population can be a decisive factor in the digital transformation process, including for digital transformation in the health sector.[[67]](#footnote-68) Insufficient digital literacy is one of the aspects that discourage individuals from using telemedicine services, and support measures are required in order to overcome this human factor.

[174] It is also necessary to raise public awareness of the opportunities offered by digital health and the use thereof, the benefits of digital health, and conditions for the security of services.

[175] The development of knowledge and skills related to digital health will allow for a broader engagement of both the medical practitioners and patients in the use of technologies, the digitisation of health data, and the implementation of new telemedicine services and other services based on digital technologies, thereby improving the quality, accessibility, and efficiency of medical treatment services.

**Tasks of the Action Direction**

**1.4.1. Provision of opportunities for acquiring digital literacy for health professionals within the framework of lifelong learning and professional development**

[176] In order to identify the digital skills and knowledge of health sector professionals in Latvia, it is necessary to conduct a study the results of which will provide insights into the needs for enhancing the necessary knowledge and skills and serve as a basis for implementing the necessary activities in the education of health care service providers, including in lifelong education and professional development. In the context of digital literacy, a skills pyramid should be developed, categorising clear groups: those who require only basic skills and those who also require specific skills and competences. The health workforce strategy that is to be developed in 2023 will outline a more detailed evaluation of digital literacy needs of the health workforce.

[177] The Evaluation of Remote Health Care Services and the Factors Influencing Them[[68]](#footnote-69) recommends to take the following measures for the medical personnel, IT personnel, and support personnel in health care: 1) organise multi-stage, State-supported ICT skills training for medical practices and conduct regular knowledge assessments, 2) offer courses and seminars on the safe use of telemedicine devices, technologies, and methods, 3) educate them on phishing, social engineering attack methods, and also cybercrime, and 4) educate them on the importance of digital forensics readiness in mitigating the consequences of malware.

[178] It is also necessary to strengthen the knowledge of medical practitioners and professionals in other sectors on the protection and security of health data and also on proper processing of health data, classification, and coding (e.g. ICD-10/ICD-11 and related classifications), data analytics, big data, and artificial intelligence solutions.

[179] Additionally, training is required on telemedicine as a whole, including the organisation and development of its services, focusing on health care professionals who will provide those services, technical specialists who will support and/or ensure the tools, and management specialists who will organise the provision of telemedicine services.[[69]](#footnote-70)

[180] The offer of lifelong education and professional development for medical practitioners should be developed by using the existing lifelong education and professional development measures devised or offered by the MoES, the MoEPRD, and the MoE, adapting them to the specific needs of the health sector, where necessary.

[181] The enterprises of the health sector will be able to qualify for support within the RRF support programmes developed by the MoE, including the support programme for entrepreneurs “Development of Digital Skills of Enterprises” that aims at enhancing the digital skills of small (micro), medium-sized, and large enterprises, including skills that would promote export, high-level digital management skills at the executive level, and the skills of using digital technologies in various business processes.[[70]](#footnote-71)

[182] The MoES is responsible for the RRF investment “Development of the Approach to Individual Learning Accounts”[[71]](#footnote-72) that aims at stimulating adult participation in education by supporting the acquisition and improvement of digital skills of the society, including by facilitating access to learning opportunities on international and foreign learning platforms, and also for the RRF investment “Digital Skills for Citizens, Including Young People”[[72]](#footnote-73) that provides for the acquisition of digital skills for young people, promoting the involvement of young people in local administration processes, the development of technological and innovation capacities of citizens, especially young people, and also the enhancement of the capability of young people to access the primary public and private services digitally.

[183] The MoEPRD, on the other hand, is responsible for the RRF investment “Development of State and Local Government Digital Transformation Skills and Capabilities”[[73]](#footnote-74) that aims at increasing the digital competence and capabilities of employees of State administration (the State and local governments). As part of this investment, when developing the training content for the digital skills development of employees in State and local government institutions, training programmes will be designed, where necessary and feasible, to align with the specific needs of the sectors and fields managed by those institutions.

[184] For the purposes of ensuring further education for medical practitioners, the Ministry of Health will implement Measure 4.1.2.5 “Enhancing Education Opportunities for Medical Practitioners, Including by Improving Access to Further Education” under the Specific Objective 4.1.2[[74]](#footnote-75) for the EU Funds 2021–2027 programming period, as part of which, if there is sufficient demand, a programme for the acquisition of specific digital skills focused on medical practitioners will be organised, unless it can be implemented through other previously mentioned investment projects.

[185] Similar to other health professionals in Latvia, the employees of the MoH and its other subordinated institutions need to develop their digital health competences and improve the knowledge and skills related to digital health. Employees will particularly benefit from in-depth knowledge of health data, their collection, the possibilities of statistical compilation and analysis, the organisation and regulation of telemedicine services and other services supported by digital technologies, and also legal issues related to digital health.

[186] The enhancement of expertise for the employees of the MoH and its subordinated institutions is to take place in cooperation with the Latvian School of Public Administration.

**1.4.2. Strengthening of the digital health content in the education of medical practitioners**

[187] It is necessary to evaluate the necessity and feasibility of enhancing the formal education of medical practitioners to include knowledge and skills that are or will be required to work in modern health care enabled by digital technologies. This would include knowledge and skills covering the protection and security of health data and also proper data processing, the new digital technologies, including telemedicine and telemonitoring,[[75]](#footnote-76) management systems of the medical treatment process (including the EHR), health data and classifications, the processing and analytics of various data in clinical practice and research (secondary data), including big data and artificial intelligence, digital technologies and patient rights, interdisciplinary cooperation which drives innovation in medicine and health technologies.

[188] Health care students might need access to patient data during the learning process. Given that an increasing amount of patient data will be available in the EHR in the future, it may be beneficial to **provide students with secure access to patient data in the EHR** to ensure a high-quality learning process. Furthermore, in order for students to be able to acquire the necessary skills for electronic patient data processing during their studies, **it is necessary to consider the possibility of granting them the right to access the testing environment of the eHealth system.**

**1.4.3. Promotion of the public use of digital health services**

[189] It is necessary to raise awareness of the benefits of digital health and the new implemented solutions, the functionalities available on the digital health platform and their use by taking a more active role in this process and employing widely used communication tools (for example, social networks and news portals). It is also important to update and develop informative and learning materials (including digital ones) for citizens and specialists.

[190] It is planned to cooperate with the SLGUCSS for scheduling appointments for all digital health services. Patients who do not have appropriate devices or skills to schedule appointments for those services will be able to schedule appointments for health care services remotely by visiting the SLGUCSS in person and also receive support in using the digital health platform, including telemedicine services. The public will be informed of this opportunity.

[191] It is necessary to raise public awareness of the fact that the digital health platform allows the citizens to take an active role in their health improvement and maintenance processes. It is also important to help them understand how they can participate in generating their health data and to provide clear information (instructions) on how that data are to be generated and integrated.

[192] By explaining not only the possibilities of using the implemented solutions but also their purpose, including the intended use of health data and the service and data security requirements, the citizens are expected to take a more positive attitude towards innovations, and they will appreciate their convenience, thus encouraging regular use thereof.

[193] The digital literacy of citizens will be improved within the framework of the measures under the RRF investment “Digital Skills for Citizens, Including Young People”[[76]](#footnote-77) implemented by the MoES.

# Action Direction 2: Digital Transformation of Services

[194] The digital transformation of health sector services is based on the primary action directions. It takes place “horizontally”, meaning that activities must be carried out across all the aforementioned primary directions, and it involves establishing cooperation and data exchange, developing a regulatory framework, standards, requirements, and financing conditions, raising awareness, and providing training.

[195] The tasks outlined in Action Direction 2 involve not only the implementation of ICT systems but also the transformation of the relevant process or the provision and receipt of a health care service. Consequently, this action direction is set apart, as its implementation primarily requires the review of the organisation of health care services and patient pathways. Policymakers, medical treatment institutions, their management, medical practitioners, and other health professionals should take a more active role in the implementation of this action direction.

[196] Nowadays, patients want to be well-informed of their health and the medical treatment process, and also actively and conveniently participate in the decision-making and the organisation of their medical treatment process. Therefore, one of the key objectives of the Strategy is to create digital solutions that would encourage patient adherence in the disease prevention and health care.

[197] By transforming the manner of providing health services:

* citizens will be able to conveniently access their health data in the EHR, for example, their laboratory examination referrals and results, referrals for health care services and their results, a referral for the SMCAHCWA, results of visual diagnostics examinations, vaccination data, results of mandatory health check-ups, dental records, treatment plans, e-prescriptions, and information on the costs of State-funded health care services. The individual will have access to the abovementioned data regardless of the type of service (a State-paid or a fee-based service);
* physicians or medical practitioners attending the patient will have access to data required for providing services to the patient, without requiring the patient to provide them, unless the patient has exercised their right to restrict access to their health data partially or entirely;
* The EHR will serve as the primary health data repository for the provision of health care. The IS of health care service providers will be integrated with the EHR and enable the processing of health data to be accumulated on a centralised basis, both the provision and acquisition of data. Medical practitioners will have access to the digital patient health data generated in all medical treatment institutions, regardless of the type of service (a State-paid or a fee-based service);
* patients will be able to request health care services remotely. Their attending physician (or assistants) will also be able to complete this procedure on their behalf, regardless of the medical treatment institution where the registration takes place. Additionally, a unified “waiting list” will be implemented for at least some services and the patient will not be required to search for the available specialists;
* patients will be able to remotely communicate with specialists (e.g. ask a question or submit their information), request e-prescription renewals, receive reminders and important information on both the planned consultations or procedures and other matters related to treatment and prevention;
* patients will have access to their treatment and recovery plan, also known as “patient pathway”, especially in complex cases, including the planned examinations and consultations, and the course of further treatment or rehabilitation;
* patients will be able to remotely receive consultations and other telemedicine or telemonitoring services or, with the development of technologies, integrate data from various applications, smart devices, and wearable devices into their health records.

[198] Patients will be able to perform all those actions on both computers and smart devices in a user-friendly and intuitive manner. These options will allow to improve the access to services, reduce the patient costs and time spent, and minimise the need for in-person consultations, which may enhance patient safety. Furthermore, the patients are expected to take a more active role in their health care, leading to better adherence to medical instructions and more regular preventive check-ups, vaccinations, behavioural changes, etc.

[199] The tasks of the action direction are focused on enabling a physician (or medical practice) to discontinue issuing or receiving paper-based medical documents. In order to achieve this, it is necessary to have access to all data required for patient treatment or disease prevention from all involved medical treatment institutions, both publicly and privately funded, and also from laboratories and visual diagnostics. It is also important in order for a physician to be able to manage the medical treatment of a patient digitally, including to make e-appointments, digitally communicate with the patients, and provide them telemedicine services.

[200] The exchange of information with social service providers will also be improved. Currently, the State service system enables a connection between health care and social care services; however, this integration is not sufficiently comprehensive and does not ensure a unified patient pathway.[[77]](#footnote-78) According to social service providers and SCCs, the medical documentation drawn up by general practitioners is often incomplete and lacks information on the necessary further treatment and care plan and the use of medicinal products. Furthermore, all those forms are paper-based and there is no data exchange between the information systems used in health care and local government SCCs.[[78]](#footnote-79)

[201] The integration of health and social sector data will enable the provision of high-quality and timely services to individuals who are clients of both the health and social sectors (e.g. patients requiring home-based health care, palliative care patients), improving their quality of life, and it will also serve as an informational support for the provision of social services.

**Tasks of the Action Direction**

**2.1. Provision of the compilation of the medical treatment data within the EHR and their centralised accessibility to the patient**

[202] The EHR will enable access to personal data concerning health essential for the treatment and disease prevention process, including the primary data (information on allergies and intolerances, diagnosed diseases, surgical procedures, etc.).[[79]](#footnote-80) Efforts will be made to ensure access to the following data within the EHR: medical birth certificate, data on the blood type and Rh factor of the individual,[[80]](#footnote-81) referrals for laboratory examinations and their results, referrals for other health care services and their results, including the results of visual diagnostics examinations, cancer screening data, vaccination data, the results of mandatory health check-ups, dental records, maternity record, treatment plan, including the rehabilitation plan, the prescribed medicinal products and medical devices, including the medicinal products acquired both within the reimbursement system and in inpatient facilities, and also the data required to receive technical aids provided by the Ministry of Welfare, information on the costs of State-funded health care services, the possibility of being assigned to a general medicine practice[[81]](#footnote-82) based on the declared place of residence of the individual, information on patient data recorded in various disease registers, and information on the right to receive State-paid services. As part of the development of the EHR, consideration will be given to implementing a proposal received during the public consultation of the Strategy, more specifically, a proposal for developing a digital solution that would enable the structured and efficient preparation of essential information on a chronically ill patient who has attained legal age and facilitate its transfer to another medical practitioner who will take over the health care of the patient once he or she has attained legal age.

[203] The individual will have access to the abovementioned data regardless of the type of service (a State-paid or a fee-based service).

[204] As for the laboratory examination data, the SBDC already holds a considerable set of that data, but it is currently not accessible to any other medical treatment institution. For example, the SBDC holds immunohaematological blood sample testing data without an expiration date (for example, blood type, Rh factor, and phenotype data) which remain unchanged throughout the lifetime of the individual (except for the cases of bone marrow transplantation). The inclusion of the relevant data in the EHR or the Laboratory Examination IS of the NHS (NHS LADB IS) would be meaningful both financially (without the need to cover redundant examinations covered from the health care budget or by the patient) and in terms of prompt access to the information (without the need to visit medical facilities or wait in line for examinations).

[205] **Paper-based referrals should be replaced with e-referrals within the EHR**. Logical access controls will be integrated into the e-referral system in order to assess compliance with health care service payment conditions, patient data (register of service recipients, diagnosis, etc.), and the requirements of the referring party (specialisation, contract with the NHS, etc.) during the preparation of the e-referral. It is also planned to extend the use of e-referrals to the SMCAHCWA or home-based health care, etc.

[206] The implementation of this task will involve using the digital health “kernel” platform to be developed and the planned centralised solutions that enable digital access to visual diagnostics, the notification of patients, and the management of waiting lists and appointments.

[207] It also involves cooperation with medical treatment institutions to ensure the entry of that data into digital health platforms and their accessibility within the EHR, and also changes in the procedures (regulation, conditions, financing) for organising the provision of health care services if that would turn out to be necessary to achieve that result.

**2.2. Development of an e-appointment system and establishment of a unified waiting list mechanism**

[208] It is necessary to develop an e-appointment system and establish a unified waiting list mechanism for **specific** (primarily expensive) State-paid health care services, integrated with the waiting list modules of medical treatment institutions. The e-appointment system should allow to schedule an appointment at any medical treatment institution through a unified appointment system, provide an option to display the actual waiting list for a specific service at a specific medical treatment institution, and also eliminate duplicate appointments by allowing patients to schedule an appointment for a specific service at only one medical treatment institution at their choice.

[209] This would make it easier for patients to schedule appointments for the services they need, ensure appointment transparency, reduce the administrative burden on medical treatment institutions related to scheduling, and also provide access to up-to-date data on the actual waiting list for a specific health care service.

**2.3. Modernisation of the circulation of medicinal products and medical devices**

[210] A clinical decision support system will be implemented for medical practitioners and pharmacists, i.e. during issuance of an e-prescription, the medical practitioner will be alerted if medication is incompatible with a previously prescribed medication, the diagnoses of the patient, or if the patient has a documented allergy to the active substance, and this information will also be accessible to pharmacists to prevent duplicate medication use, unwanted drug interactions, including with over-the-counter medicinal products, and also to enable pharmacists to provide high-quality consultations on the proper and safe use of medicinal products. Additionally, in cases where the patient is an athlete, the medical practitioner, pharmacist, and patient will be informed if a therapeutic use exemption is required for the medicinal product.[[82]](#footnote-83)[[83]](#footnote-84) Physicians and pharmacists will also be notified of the market availability of a medicinal product (or medical device) to avoid prescribing unavailable medicinal products (devices) and whether the medicinal product is included in the list of reimbursable medicinal products. While monitoring the use of medicinal products, pharmacists will have the option to record observations (allergies, incorrect use of medicinal products, or non-adherence) and this information will be accessible to the medical practitioner treating the patient.

[211] Moreover, when prescribing the active substance, the medical practitioner will have immediate access to informative and educational materials aimed at reducing the risks related to the use of medicinal products, including indications about cautious antibiotic use or medicinal products that impair driving, and those materials would also be displayed to the pharmacist when reviewing the e-prescription and dispensing the medicinal products and also accessible to the patient.[[84]](#footnote-85)

[212] The e-prescription will be also linked to the instructions on the use of medicinal products and product characteristics.

[213] An integrated solution for reporting adverse drug reactions will be implemented.

[214] Although e-prescriptions are also used for prescribing individually reimbursable medicinal products, it is necessary to develop the e-prescription for individually reimbursable medicinal products by designing a module for the reimbursement of medicinal products for individual patients that would enable the maintenance, verification, and payment of individually reimbursable prescriptions, which is currently done manually. It would involve the use of automated decision-making solutions for obtaining the necessary information and the organisation of the NHS system and the reporting system. At the same time, the Information System for the Registration and Accounting of Reimbursable Medicinal Products (SRARMP) must be improved in general, making it more user-friendly and compatible with other NHS systems (Task 3.2 of the Strategy).

[215] It is also necessary to introduce e-prescriptions for List M medicinal products.[[85]](#footnote-86)

**2.4. Digital transformation of reports and certificates drawn up by general practitioners**

[216] One of the most challenging administrative tasks for general practitioners is issuing certificates on the health condition of children and adults, e.g. for an educational institution, extracurricular activities, camps, post-illness school attendance and exemptions from physical education, requests from social services, orphan’s and custody courts, the police, insurance companies, including responses to various letters from those authorities, etc. Overall, physicians issue nearly 20 types of documents. For the time being, those documents can only be issued in paper format and there is no electronic solution available for that.

*Table 1. List of certificates issued at practices of general practitioners*

|  |
| --- |
| **List of certificates issued by a general practitioner** |
| 1. For educational institutions, including pre-school education institutions, regarding the recovery from an infection or exemption from physical activities |
| 2. For camps regarding the health condition of a child |
| 3. Regarding exemptions from exams or tests |
| 4. For the employer regarding the health condition of an individual |
| 5. For the social service regarding the need for social services |
| 6. For ensuring home-based health care services and performing the necessary procedures |
| 7. Referrals for receiving social rehabilitation services |
| 8. Summaries and reports for the labour inspection service regarding an accident at work |
| 9. Summaries for occupational physician and occupational disease specialists regarding the health condition of a patient and preparation of documentation for the medical commission for occupational diseases |
| 10. Opinions for receiving technical aids |
| 11. Summaries upon admitting the patient to a social care institution |
| 12. Correspondence, issuance of certificates, and referral to the medical-pedagogical commission |
| 13. Summaries for social services regarding the need for assistant services |
| 14. Certificates for insurers regarding an insurance case |
| 15. Communication and certificates for the Court of the Republic of Latvia regarding the health condition of a patient or inability to attend court |
| 16. Certifications for carrying narcotic or psychotropic substances for medical purposes |
| 17. For the National Armed Forces regarding the health condition of an individual |
| 18. Summaries for travellers and airlines with flight permission |
| 19. Summaries for obtaining a sports licence, e.g. for participation in motor sport |

[217] In order to reduce the workload of general practitioners, the necessity of those certificates should be reviewed; they should be digitised and, where possible, simplified and automatically retrieved from the eHealth system (e.g. regarding the vaccination data, mandatory medical examinations for employment, sports licenses, etc.). In addition, it is necessary to design an information transfer system in cooperation with the MoES to reduce the number of documents to be issued for the education sector. Currently, the most widely used information system in primary and secondary schools is the electronic school register E-klase, provided by the cooperation partner of the MoES, SIA “Izglītības sistēmas” [limited liability company Education Systems].

**2.5. Provision of the electronic data processing of oncological patient treatment data in a structured format and data exchange between CUHs**

[218] Both the CUHs and other medical treatment institutions currently have the outcomes of oncological patient treatment and health care services stored by each service provider in both electronic and paper format, using an individually designed approach. It is very difficult for the supervising physicians to manage the patient treatment process and also obtaining data describing the health condition of a patient and the course of treatment takes a considerable amount of time for the treatment process providers.

[219] A unified transformation of processes in line with digital environment requirements and possibilities is the most efficient way to ensure proactive cooperation among medical professionals. It is essential to transform the process of oncological patient data exchange by unifying and adapting it to the digital environment. RRF funding is allocated for the implementation of a platform for the exchange of oncological patient data at REUH, PSCUH, and CCUH to ensure the digitisation and exchange of oncological patient data, and also for the transfer of data to the Latvian Cancer Register. In the course of developing that solution, an oncological patient data model will be designed in line with the international standards that would serve as a basis for the processing of oncological patient data at any of the aforementioned hospitals and also on the shared platform. It will encompass the patient treatment process to a degree that allows oncology specialists to access the full event details and record the outcomes of their services. Additionally, it is necessary to identify the engagement and solutions of other medical treatment institutions to ensure that the processing of oncological patient data is conducted exclusively in digital format across all medical treatment institutions. The platform to be developed will ensure optimally coordinated exchange of oncological patient data in line with the previously designed data model. Medical treatment and care procedures will be reviewed alongside the creation of ICT solutions to ensure the full digitisation of the medical treatment and health care data of oncological patients among hospitals.

**2.6. Integration of digital health and social care management systems**

[220] In the course of implementing the Strategy, a link between the eHealth system and SOPA will be created to ensure an automated and traceable exchange of structured patient treatment and care plan data between medical practitioners (e.g. general practitioners) and the local government social service regarding personal data to which the social service has a legal basis for access. This will allow to reduce the administrative burden and ensure efficient and client-centred health care.

[221] In order to enable the exchange of information within the eHealth system, the physician should be able to indicate that the patient requires social services, which would trigger the automatic data exchange with SOPA after which the social service will be able to organise the further health care according to the needs of the client.[[86]](#footnote-87) The task does not include the development of solutions for the digitisation of social care plans; it rather focuses on the transfer and acquisition of data essential for those plans.

[222] The eHealth system needs to include an indication that the individual is a client of the social care centre and a solution that would enable secure access to certain health data of the specific client within the eHealth system for a nurse employed at the social care centre, which would allow the nurse, within the scope of his or her competence, to provide support to the individual in self-care and ensure the necessary health (and social) care services.

**2.7. Creation of an eLibrary within DigiVesIS**

[223] A repository of informative digital resources should be created as an additional section within the eHealth system/DigiVesIS. The eHealth library will include digital informative booklets, visual info sheets, and video materials developed by health sector specialists on various health topics, for example, such materials as *Pacients pēc sirds operācijas* [Patient After Heart Surgery], *Kā atpazīt insultu?* [How to Recognize a Stroke], the animated film on injury prevention *Bērnu laukuma detektīvs* [The Playground Detective], etc. The goal of the eHealth library is to bring all information “under one roof” and classify the materials by health sectors; as a result, that eLibrary section will support the one-stop agency approach of the eHealth system. Materials should be accessible by using a search field or searching them based on health sector keywords. The provision of the eLibrary will allow the patient to easily find the necessary informative materials on specific health conditions, self-care, etc. which will improve patient engagement in their own health care and ensure a better treatment outcome. Some of the existing visual and audio materials have been developed with the European Union support, thus ensuring sustainable use and dissemination of these materials.

Action Direction 3: Digital transformation of State administration in the health sector

[224] The digital transformation of State administration processes in the health sector outlined in the Strategy involves the review of sector-specific processes and is primarily focused on three directions: 1) the improvement of customer service, allowing them manage their data and documents more comprehensively; 2) system integration, automation of data exchange and processing, development of data exchange interfaces, and elimination of manual work; 3) broader data analysis and processing opportunities to improve the flexibility of sector management and monitoring and also to plan changes.

[225] In the course of developing the Strategy, the health sector authorities highlighted the need to improve cooperation with clients and organisations involved in the processes, thereby allowing them to enter data and manage documents themselves and ensuring data exchange with client information systems (across the public, private, and non-governmental sectors). Alongside a better customer service and closer involvement of clients in health sector management and monitoring processes, sectoral authorities will facilitate their own work processes and also ensure higher-quality and more timely information about clients.

[226] The authorities in the health sector have also identified that incomplete integration with other health sector systems and systems of other sectors hinders effective operations. There is a shortage of data necessary for high-quality decision-making or the processing of such data requires manual and time-consuming work. The authorities themselves face a significant burden when preparing data and documents and transferring them to other organisations.

[227] They also recognise the need to shape a more flexible, outcome-oriented management and monitoring of the health sector. This approach requires a comprehensive repository of timely, complete and high-quality data and also the possibilities for a convenient analysis thereof.

**3.1. Digital transformation of the registration of health sector service providers**

[228] It is necessary to create the Unified Register of Health Sector Specialists by modernising the operation of the Register of Medical Practitioners and Medical Treatment Support Persons and consolidating all key health sector workforce data on the basis of that register. Accordingly, the Unified Register should also include information on citizens, pharmacists, pharmacist assistants, medical assistants, etc.

[229] The Unified Register should include the data necessary for the registration, certification, re-certification, and monitoring of the abovementioned persons and for the relevant policy planning by automating and simplifying those functions, where possible. Stakeholders will be able to conveniently manage their data, communicate with the HI, provide information to it, and also prepare reports. The Unified Register will be accessible to the HI, MoH, educational institutions in the medical sector, certification bodies, medical treatment institutions, CDPC, SAM, NHS, MoES, CSB, etc., including the individuals registered in that register.

[230] The modernisation will be carried out in accordance with the technical specification developed as part of the project “On Health Workforce Strategy in Latvia”.[[87]](#footnote-88) It is planned that the NHS will be the technical resource manager of the Unified Register of Health Sector Specialists, while the HI will be its business process owner and the primary data validator. The Register of Pharmacists and Pharmacist Assistants will be taken over from the LFA.

[231] The development of the register will allow the alignment and enhancement of the process of supervision of all aforementioned specialists. The Unified Register will enable more precise planning of residency (including paid residency, where salaries are funded from the State budget) and also the post-residency monitoring. Complete, accurate, and up-to-date data on specialists practising in the health sector, their education, further education measures, and actual workload will be available for the efficient planning of health sector workforce.

[232] It is necessary to increase effectiveness of the operation of the Register of Medical Treatment Institutions. Integration should be established between the Register of Medical Treatment Institutions and other registers, for example, the Enterprise Register, State Address Register, and SRS information systems. Integration with the Enterprise Register is necessary to provide up-to-date information on the suspension of the economic activity or the initiation of insolvency or liquidation proceedings of a medical treatment institution, or changes in the name or registered office of the institution. On the other hand, integration with the SRS information systems is necessary to provide up-to-date information on the suspension of the economic activity of a medical treatment institution. Integration with the State Address Register is necessary to ensure the circulation of information in cases where the address is clarified, although it is updated automatically in the Register of Medical Treatment Institutions.

[233] When developing online services, medical treatment institutions should be able to submit on their own information on the registration or changes in their units with the Register of Medical Treatment Institutions, while certification bodies should be able to provide information on the certificates obtained both in Latvia and abroad. At the same time, technological solutions should support the convenient processing of those documents within the HI (enabling verifications, requests for additional documents, approvals, rejections, etc.).

[234] Furthermore, the public portfolio of medical treatment institutions should be developed that should provide, for example, up-to-date information on the medical treatment institution, units, accessibility of the environment, a suspended health care service, or the results of examinations performed by the HI or the SAM. Usability improvements are also needed with regard to the information on medical practitioners and medical treatment support persons authorised to practice.

[235] It is necessary to **develop a data analytics solution** to enable the integration of data inflows from various IS with data analytics tools. For the provision of functions, data are currently selected and entered manually, and also data exchange between the NHS and the HI takes place manually several times a week through multiple Excel and TXT files which inefficiently utilises human resources (this is related to data migration to the public databases of the website of the HI). Such data exchange process has a negative impact on data quality and creates an additional administrative burden.

**3.2. Digital transformation of the administration of health care services**

[236] It is planned to modernise the System for the Settlement of Payments for Health Care Services (“Management Information System”) used for the administration of State-paid health care services, including the payment for outpatient and inpatient health care services and medicinal products reimbursed by the State, and also the analysis of statistical and financial information. The system is technologically outdated, requiring partially manual work that consumes significant human resources and increases the risk of errors; it also hinders process automation and is difficult and slow to adapt to new business processes, including the implementation of outcome-based payment approach.

[237] The modernisation of the system is to involve the integration of the necessary logical verification for data quality and control processes, automation of data processing, data retrieval, and analysis, and the facilitation of data verification (both technical and expert work). It is also planned to integrate the Management Information System with the DigiVesIS platform/eHealth system primarily to link the payment for a health care service with patient health data within the DigiVesIS platform/eHealth system. More specifically, if a medical treatment institution fails to submit patient health data on the specific service with the DigiVesIS platform/eHealth system, the NHS will not pay for the service. Laboratory test results will be the initial data used for this purpose. The abovementioned proposal also provides that, simultaneously with the submission of laboratory examination results of a patient in the eHealth system, a medical treatment institution will no longer be required to submit a separate service payment request to the Management Information System.

[238] When improving the payment settlement process, it is necessary to introduce the calculation of the maximum limit of the patient co-payment and also automated preparation of financial notifications.

[239] In order to enable outcome-based payments and improve service planning, the system should include additional options, for example, the input and processing of quality indicators, the compilation of patient health data, and their linkage to the prescribed therapy and medicinal products.

[240] It is also planned to significantly facilitate analytical and planning functions by automating data retrieval and analysis across various dimensions, developing solutions for tariff recalculation, anticipating service volumes and finances based on different parameters, automatically compiling data for budgeting, and creating selections of service providers based on specific criteria.

[241] The intended improvements will reduce manual work within the NHS, allow them to redirect their human resources to the development planning, and also enable more flexible development of various new service payment models.

[242] It is also necessary to modernise and enhance the System for the Registration and Accounting of Reimbursable Medicinal Products (SRARMP). The system maintains information on the lists of reimbursable medicinal products and medical devices and facilitates the decision-making process in managing the list of medicinal products or medical devices and evaluating the received applications. It also contains classifications for prescribing reimbursable medicinal products in e-prescriptions and for the settlement of payments within the MIS. The system has not been improved for a long time and requires significant manual efforts. It should be integrated with other State IS systems of the NHS (EVES and MIS) and made more user-friendly. Furthermore, improvements are also needed in relation to the solution for modernising the reimbursement of individually reimbursable medicinal products and medical devices and the introduction of e-prescriptions (a module for the reimbursement of medicinal products for individual patients).

**3.3. “Real-time” epidemiological surveillance and digital transformation of the vaccination process**

[243] A modern, reliable integrated epidemiological surveillance system will be created to enable prompt exchange of data and documents in both the health department and other sectors (e.g. educational and social care institutions). Artificial intelligence solutions will be used for the improvement of data analysis and epidemic intelligence. The system will enable automated reporting, bringing epidemiological surveillance closer to “real-time”.

[244] The CDPC will be able to promptly receive information from laboratories regarding the identified infection disease agents and also from medical treatment institutions that currently issue urgent reports on infection disease cases, educational institutions, and other entities exposed to risk that report the group illness cases to the CDPC.

[245] A unified digital epidemiological tool (EPID tool) is to be developed that will enable the self-reporting of infected individuals. It will also allow to ensure a more efficient communication with the identified individual, identify the contact persons, and provide recommendations to them. This tool will also make it possible to identify the infected individuals and their contact persons who are currently unreachable for providing that information and to inform them of the necessary measures to be taken.

[246] It is planned to use the notification and reminder system described in the baseline action direction of the Strategy to ensure prompt communication with medical treatment institutions, medical practitioners, and patients regarding an infection case (or contact person) and further steps to be taken, including public health threats and the necessary measures.

[247] It is essential to draw on the experience gained during the COVID-19 vaccination campaign to develop a system for the management of vaccines and the vaccination process that would encompass all vaccines (both the State-paid vaccines and the fee-based vaccines). This would involve electronic data exchange with all stakeholders (CDPC, HI, NHS, medical practitioners, wholesalers of medicinal products, vaccination institutions), the digitisation of vaccine ordering, the monitoring of vaccine stock levels in vaccination institutions and wholesale establishments, the provision of complete patient data on vaccination, an efficient coordination of the vaccination process, and also the monitoring and analysis of the coverage of vaccination. This would allow to replace the circulation of data that currently often takes place via Excel files or even fax, which involves extensive manual efforts, errors, and insufficiently efficient management and monitoring of the vaccination process.

[248] It is necessary to develop data exchange solutions to enable the integration of data inflows from various IS with other systems and data analytics tools. Data for specific functions are currently selected and entered manually, while data exchange between the NHS or other governmental authorities and the CDPC also takes place manually several times a week using several Excel files, which results in insufficient consumption of human resources (the data transfer from the IS and databases managed by the NHS to the CDPC). Such data exchange process has a negative impact on data quality and creates an additional administrative burden.

**3.4. Development of a reporting-based system for the evaluation of quality, outcomes, and incidents in the provision of medical treatment services**

[249] It is essential to continue developing a nationwide non-punitive reporting and learning system for compiling, analysing, and identifying the causes of incidents and risks in health care. Based on the WHO International Classification for Patient Safety adapted to the needs of Latvian population and in cooperation with health sector specialists, it is necessary to evaluate the cases to be reported and also develop a system (preferably as part of the existing systems) that would allow medical treatment institutions to easily report patient safety incidents.

[250] In order to develop a patient-centred health care system, it is essential to obtain and evaluate patient-reported indicators, for example, PROM, PREM, and, potentially in the future, also PRIM (patient-reported incidence measures).

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| **Explanation**PROM can be generic or condition-specific, for example, in cases of breast cancer or mental illnesses, or service-specific, for example, hip or knee arthroplasty procedures and measures where the treatment outcome is evaluated from the point of view of a patient. Given that the clinical evaluation provided by a physician does not always coincide with the evaluation of a patient with regard to the outcome of the received treatment, it is important to obtain that information and engage the patient in this process.[[88]](#footnote-89)PREM is a health care quality indicator that assesses the extent to which the provision of health care services in a medical treatment institution or within the entire health care system is patient-centred. It is based on patient-reported experience while receiving health care services.**[[89]](#footnote-90)**PREM is based on objective events and, in line with a specific system, covers various service aspects, for example, accessibility, communication, and service continuity. The obtained data may be used for the evaluation of the process of providing health care services from the point of view of a patient within a specific medical treatment institution, in comparison with other institutions, and for evaluating the entire health care system, thereby allowing for international comparisons.Furthermore, PREM may be used to identify the priorities of patients based on their feedback and to strengthen a patient-centred health care, focusing on general experience, for example, staff attitude, the environment of the medical treatment institution, respect for patient dignity and individual needs, etc., rather than experience related to the medical treatment of a specific disease. PREM helps assess how patients perceive health care to improve its practical aspects, for example, coordination, waiting times, communication between the service provider and patient, etc.In order to obtain information, an electronic questionnaire in Latvian, English, and Russian was developed in cooperation with medical treatment institutions. The questionnaire includes open-ended, closed, and partially closed questions. It must be completed online. After the patient is discharged from the hospital, a link to the questionnaire is sent to the patient to the e-mail address or telephone number specified in the medical treatment contract concluded with the hospital. Questionnaires completed by patients (anonymously) are referred back to medical treatment institutions for them to be able to conduct evaluations, draw conclusions, and plan further steps. The results on all medical treatment institutions are compiled by the CDPC. |

[251] The draft informative report “Proposals for Strengthening the Hospital Network”[[90]](#footnote-91) envisions the implementation of PROM evaluation in priority areas, for example, oncology, mental health, cardiovascular health, and also maternal and child health profiles to evaluate treatment outcomes. In parallel with the implementation of that solution, it is essential to ensure that medical treatment institutions have introduced an organised process of processing patient data in order to enable the compilation of patient-reported outcomes by means of modern solutions, for example, mobile applications, smart devices, and web platforms that can be integrated with the health care institution.

[252] All Level V hospitals, 57 % of Level IV hospitals, 71 % of Level III hospitals, 25 % of Level II hospitals, 20 % of Level I hospitals, and 25 % of specialised hospitals have joined the PREM system so far.[[91]](#footnote-92) During the Strategy implementation period, it is planned to achieve that all Level III to Level V hospitals and specialised hospitals and at least 75 % of the remaining hospitals obtain feedback on PREM.

**3.5. Establishment of a blood donor portal**

[253] The key task of the donor portal is to raise the awareness of donors and attract them, develop and foster their sense of belonging to the donor community, ensure regular communication between the blood establishment and the donor and provide modern customer service to make the blood donation experience simpler, more convenient, and more enjoyable.

[254] Through the portal, donors will be able to register for blood donation, view the nearest donation locations, manage the individual donation calendar, and perform other actions. The donor will also be informed of the day when their donation played a crucial role in saving a life. International experience shows that such feedback is of great importance, as it helps the donors to understand the significance of their contribution and encourages them return over time and donate blood again.

[255] Donors will also be informed of various SBDC events and the current blood stock levels to encourage them to engage in blood donation when it is needed the most. The portal will allow to reach the donors more promptly and replenish low blood supply levels for specific blood groups.

**3.6. Digital transformation of emergency medical assistance**

[256] In order to improve emergency medical assistance for Latvian citizens in life- and health-critical situations and also to optimise the SEMS resources for processing EMA emergencies (calls), one of the key activities is to enhance the **circulation of information between emergency services**, i.e. to ensure data reception from the 112 platform[[92]](#footnote-93) and their automatic capturing in the EMA call card within the SEMS information system. The process will prevent the duplication of questions asked to the caller, thereby speeding up the processing of calls. From the perspective of EMA recipients, the digital acquisition of call data from the 112 platform will also improve the service accessibility (e.g. the possibility of placing an EMA call also in cases where the mobile phone has no SIM card and enhanced options to locate the caller), including in accordance with the requirements laid down in the Law on the Accessibility of Products and Services.

[257] For the purposes of continuing the **optimisation and increase the effectiveness of the exchange of information while processing EMA calls** **and the improvement of ICT tools,** it is essential to continue the enhancement and modernisation of the EMA Dispatching Solution Emy (v.3) (including the implementation and development of machine learning functionalities), the efficiency of processing EMA calls, the quality of the provision of the EMA service, including the integration of ICT tools with telephony systems and the Information System of the Resources of Inpatient Medical Treatment Institutions, and also new developments, for example, Near Field Communication (NFC) for reading personal identity documents, including the ICT tool integration and processes in cooperation with other emergency services.

[258] In the upcoming period, by equipping the SEMS emergency vehicles with devices and management software that enhance the mobility of emergency response activities and include video cameras, a Global Positioning System (GPS) receiver, a computer, laptop, and other devices with software that can be integrated with SEMS systems (RVS Horizon, Emergency Medical Service Dispatching Solution Emy (v.3), etc.), and the Integrated Geographic Information System (IGIS) developed and implemented by the Information Centre of the MoI within the 112 platform, it is important to be able to ensure the development of solutions for operational continuity.

[259] Voice recognition technologies are to be implemented in at least two areas: 1) recognition of the voice of EMA providers while completing the electronic EMA call card; 2) creation of a database containing transcriptions of recordings of emergency calls received via the 113 line. The implementation of voice recognition technologies will accelerate the preparation of medical documentation entrusted to the EMA team, which, in turn, will speed up the hospitalisation process. The implementation of voice recognition technologies will also facilitate the analysis of incoming and outgoing calls, the retrieval of the necessary records, and promote the use of that data in machine learning processes to enhance the call reception quality, decision-making algorithms, and conversation scenarios.

[260] It is necessary to continue developing the digitised process of **operational accounting and management** of SEMS medical resources (medical devices, medical equipment, medicinal products, and medical supplies) by providing the option to automatically read the information necessary for the inventory of medical devices, medical equipment, medicinal products, and medical supplies that is typically presented as a barcode or QR code.

[261] It is also essential to **develop and improve remote learning opportunities to strengthen the competences of SEMS medical personnel** by developing the necessary infrastructure. Although the epidemiological situation in the country over the past two years has prompted an increased use of the available remote meeting solutions and also training seminars and even individual hands-on training sessions are organised at the initiative of employees, it is necessary to develop a proper and unified infrastructure within the SEMS in general.

[262] In order to provide remote support for a high-quality emergency response online, the EMA team should be **provided with video cameras (body cameras, to be specific)** in both the emergency situations and daily operations. The relevant solution would allow to improve and enhance the medical quality of the provided service and ensure the safety of the EMA team while responding to the emergency by recording any threats that may arise.

**3.7. Digitisation of the circulation of e-certificates of the cause of death**

[263] A centralised solution will be introduced for all medical practitioners and medical treatment institutions (mostly general practitioners and inpatient facilities) for issuing electronic medical certificates of the cause of death and ensuring the data circulation (medical treatment institutions currently issue that document in paper format; in 2021, the SCFME started issuing a medical certificate on the cause of death generated by the Forensic Medical Examination Information System (with 2500 to 3000 certificates being issued annually), yet there is no centralised data processing solution in place in the sector)). This would significantly reduce the administrative burden on State administration institutions in processing cause-of-death data and streamline the data circulation process. Data digitisation requires a comprehensive approach, given that the data exchange process involves medical treatment institutions and medical practitioners (the latter pronounce the death of a person and issue a medical certificate of the cause of death), civil registry offices (enter civil status records), OCMA (maintains the Register of Natural Persons), and CDPC (compiles cause-of-death statistics and manages the Database of Causes of Death).

**3.8. Digitisation of forensic medical examination processes**

[264] The digitisation of forensic medical examination and research processes will continue by improving the Forensic Medical Examination Information System (FMEIS) to adapt it to the e-case architecture and enable data exchange with digital health platform systems (as part of the centralised digitisation of the circulation of e-certificates on the cause of death),[[93]](#footnote-94) thereby supporting the analytics and post-graduate training in forensic medicine by using the analysis of digital expertise and research data. Firstly, the improvement of the FMEIS will include upgrades in management and security, which will involve user and system administration by reducing dependence on system developers and third-party solutions, and also modifications in the authentication and system structure to ensure that all e-case participants securely access data relevant to their competence. Secondly, it is planned to ensure more support for laboratory research and forensic evidence examinations by improving traceability, expanding the existing functionality with structured data on results, conducting research, and developing a pilot solution for the automated transfer of laboratory research data to the FMEIS.

Strategy Implementation

[265] The key challenges in the field of digital health in Latvia are related to the fragmentation of ICT systems in terms of technologies, data, and the development of solutions, etc. This places a burden on the exchange of data between organisations, the cooperation between specialists in patient treatment, the use of data in the management of the health sector and research, and also the solutions tend to be detached from user needs and used inefficiently. The fragmentation of ICT systems reflects the overall fragmentation of the health sector – it is both a consequence and a cause of poor cooperation between authorities and specialists, both in daily operations and, particularly, in development planning.

[266] Therefore, the key challenge in the implementation of the Strategy is the establishment of cooperation, i.e. the creation of a cooperation-based digital health “*ecosystem*”. This requires a strong engagement of all stakeholders, including ICT system developers, medical treatment institutions, physicians and other specialists involved in the relevant medical treatment or organisational processes, patients, etc. from both the private and public sector, in the development planning and cooperation. In order to ensure cooperation, the organisations forming the ecosystem, authorities, and patient organisations have concluded a Memorandum of Cooperation[[94]](#footnote-95) and provide strategic advisory support for digital health development as part of the activities performed by the Digital Health Council. As part of the activities performed by the Digital Health Council, expert working groups will be organised for completing tasks and project oversight boards will be set up for the implementation of projects. The approach of a cooperation-based digital health “ecosystem” also envisages the integration into the overall “ecosystem” of public services and the European Health Data Space.

[267] In cases where the “*ecosystem*” approach is used and close cooperation is established, the development takes place both “horizontally” by developing processes and ICT solutions at as many involved authorities as possible, and “vertically” by simultaneously reviewing and optimising medical treatment processes, improving cooperation throughout the patient pathway, adapting the regulatory framework and financing conditions, and also establishing a culture of cooperation between authorities and specialists. This development also takes place at all levels of planning: strategic, tactical, and operational.



[268] This also entails timely communication with medical treatment institutions regarding the planned digital health solutions, investments, and projects, their implementation deadlines, funding, and also availability of the documentation necessary for integration to the developers of the IS of medical treatment institutions, testing, etc.

[269] The implementation of the Strategy will primarily fall upon the MoH that will cooperate with organisations representing the members of the digital health ecosystem (health care service providers and recipients, IS developers) and State administration institutions. A significant role in the implementation of the Strategy is assigned to the NHS that will be responsible for the development of a large part of ICT solutions and their further maintenance; therefore, the successful implementation of the Strategy relies on strengthening the NHS capacity.

[270] For the purposes of ensuring the representation of all stakeholders, the monitoring of the Strategy implementation and a coordinated implementation of all planned IS development projects will be carried out by the Ministry of Health and its established Digital Health Council representing State administration institutions, for example, the MoEPRD, the MoW, and also the eHealth system users and digital service developers.

[271] The primary source of funding for the implementation of the Strategy is the funding of EU funds (Measure 4.1.1.4). Projects for the development of digital solutions to be financed from the funding of EU funds, as specified in the Strategy, will be implemented in accordance with the requirements for the implementation of investment projects under the European Union Cohesion Policy Programme 2021–2027, European Union Solidarity Fund, and RRF laid down in laws and regulations. In 2023, the Ministry of Health will establish procedures (Draft Cabinet Regulation) for the implementation of Measure 4.1.1.4 which will specify conditions for receiving the ERDF funding to implement projects related to the development of digital solutions. Measure 4.1.1.4 provides for the allocation of funding for eventual modifications in State information systems of other sectors if it will be necessary to fulfil the tasks outlined in the Strategy/objectives of the projects related to the development of digital solutions.

[272] Regulations regarding the control of support for commercial activity will be complied with when allocating public funds and implementing the tasks described in the Strategy.

[273] In order to address specific issues related to digital health and also to **develop projects** listed in Table “Summary of Tasks” in the Strategy, expert-level working groups will be established by involving experts from authorities involved in business processes, service users, IS developers, and representatives of universities.

[274] For the purposes of coordinating and monitoring the implementation of specific projects, project oversight boards will be established, representing the project implementers, cooperation partners, the MoEPRD, the MoH, medical treatment institutions as the primary data generators, and also the relevant representing organisations.

[275] The achievement of the objectives of the Strategy also involves the tasks defined in other planning documents that cover such aspects as high-quality nationwide Internet connectivity, enhancement of digital literacy of Latvian citizens, and strengthening cybersecurity within the unified digital space. Annex 1 “Alignment of the Strategy with Other Development Planning Documents” to this Strategy provides a detailed description of the alignment of the Strategy with international, EU-level, and national policy documents.

[276] Reports on the implementation of the Strategy will be included in the informative reports on the Public Health Guidelines 2021–2027: 1) by 1 November 2024 in the medium-term evaluation of the implementation of the Guidelines; 2) by 1 November 2028 in the final evaluation of the implementation of the Guidelines. The final evaluation of the implementation of the Strategy will be included in the public report of the MoH for 2029.

**Tasks for the Management of the Implementation of the Strategy**

**V.1. Strengthening of the digital health management and project implementation capacity of the NHS**

[277] The NHS will organise the work of stakeholders involved in the implementation of the Strategy (“Strategy Implementation Team”) at the strategic, tactical, and operational level, and also ensure the sustainability of the digital health ecosystem and continuity of decision-making. In order to complete the abovementioned tasks, the NHS needs to recruit additional human resources and develop their expertise.

[278] In order to strengthen the ICT management capacity of the NHS and implement the tasks of the Strategy, part of the funding from Measure 4.1.1.4 (up to EUR 4 million) will be allocated for the recruitment of additional specialists for the NHS. In addition, the State budget funding for strengthening the ICT management capacity of the NHS needs to be increased, considering that the funding of EU funds is available for a limited period, while the demand for ICT specialists will not diminish. In order to strengthen the digital health management, the NHS requires additional specialists in such areas as IT system architecture, business and process analysis, IS testing, semantics and standards, IS security, product management, cooperation with system users and integrators (including the training), the maintenance of the existing IS and ICT infrastructure, data processing, and organisation of procurements. The minimum additional number of required specialists is 30.

**V.2. Consideration of the possibility of establishing a separate team/unit of the NHS that would handle the implementation of telemedicine services**

[279] It is necessary to build **capacity** for promoting the development and implementation of telemedicine services **at a national level**, e.g. by establishing a separate unit or team within the NHS that would promote the use of telemedicine at all health care levels, cooperation with universities, medical treatment institutions, and professional and patient organisations to ensure that the skills and competences required for high-quality telemedicine are acquired by those who need them, and also the implementation of telemedicine service payment models, etc.

**V.3. Development of competences and resources to ensure the secondary use of health sector data**

[280] It is necessary to establish a unit within the MoH department that will identify the secondary data available in the health sector and ensure the compilation and preparation thereof (e.g. anonymisation) for analytical purposes, and also ensure the necessary solutions, procedures, and support for data accessibility.

Summary of Tasks

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Task** | **Task priority****(A – highest, B – lowest)** | **Deadline** | **Responsible authority** | **Co-responsible authority** | **Source of funding** | **Amount of the indicative funding (EUR, including VAT)** | **Related indicative RRF, ERDF project** |
| **1.1.** | **ACTION DIRECTION: DEVELOPMENT OF THE DIGITAL HEALTH “*KERNEL*”** |
| 1.1.1. | Development of a platform of the digital health “kernel”, the EHR, for use on smart devices | A |  |
| *1.1.1.1.* | *– to develop a platform of the digital health “kernel”* |  | *2024* | *NHS* | *MoH* | *Within the current SB/Measure 4.1.1.4* | *The need for additional funding and the source thereof will be evaluated during the implementation of the Strategy* |  |
| *1.1.1.2.* | *– to update the digital health patients section for use on smart devices* |  | *2024* | *NHS* | *MoH* | *Within the current SB/Measure 4.1.1.4* | *The need for additional funding and the source thereof will be evaluated during the implementation of the Strategy* |  |
| *1.1.1.3.* | *Development of the domain architecture for the health sector* |  | *2024* | *NHS* | *MoH* | *Within the current SB* | *The need for additional funding and the source thereof will be evaluated during the implementation of the Strategy* |  |
| 1.1.2. | Design of an ICT solution for notifications and reminders based on the existing national-level solutions (sharing channels). In cases where the necessary sharing channel is not established, it will be created exclusively as a shared channel. | B | 2029 | NHS | NGOs representing the users | Measure 4.1.1.4 | Costs are outlined under Task 2.1 | Development of digital health services, stage 2 |
| 1.1.3. | Development of a solution for centralised high-quality access to visual diagnostics images and descriptions (in conjunction with 1.2.4.1)1) case study, proposals;2) technical solution, standardisation, implementation, regulation (in conjunction with 1.2.4.1). | A | 1) 20232) 2027 | NHS, MoH | 1) MoH, medical treatment institutions, DataMed2) Medical treatment institutions | 1) Within the current SB2) Measure 4.1.1.4, EU4Health  | 2) 1 000 000 | 2) Creation of a centralised repository of visual diagnostics images |
| 1.1.4. | Implementation of patient treatment, care, and dynamic monitoring plans on the digital health platform | B | 2029 | NHS | NGOs representing the users | Measure 4.1.1.4 | Costs are outlined under Task 2.1 | Development of digital health services, stage 2 |
| 1.1.5. | Development of data processing conditions for the IS of medical treatment institutions and implement the certification | A |  |
| *1.1.5.1.* | *– the development and adoption of standards, classifications, manuals, etc., a regulatory framework* |  | *2024* | *NHS, MoH* | *MoEPRD*  | *Within the current SB* |  |  |
| *1.1.5.2.* | *– the certification and monitoring of the IS of medical treatment institutions* |  | *2026* | *NHS*  | *MoH, MoEPRD* | *Certification can be offered as a fee-based service and additional State budget funding may be required for the monitoring.* | *The need for additional SB funding will be evaluated when developing certification requirements and monitoring procedures.* |  |
| 1.1.6. | Provision of support for the integration of the IS of medical treatment institutions with digital health solutions | A |  |
| *1.1.6.1.* | *– case study of the IS used by medical treatment institutions* |  | 2023 | NHS, MoH |  | Within the current SB |  |  |
| *1.1.6.2.* | *– access to the testing environment* |  | 2024 | NHS, MoH |  | Within the current SB |  |  |
| *1.1.6.3.* | *– ICT component in service tariffs* |  | 2025 | NHS, MoH |  | SB | The necessary SB funding will be calculated when reviewing the tariffs for health care services. |  |
| **1.2.** | **ACTION DIRECTION: ACCESSIBILITY, TIMELINESS, SECURITY, AND QUALITY OF HEALTH DATA** |
| 1.2.1. | Provision of the standardisation of health data by establishing procedures for the adoption and implementation of the applicable standards within DigiVesIS, including classifications | A | 2023 | NHS |  | SB/Measure 4.1.1.4 | The need for additional funding and the source thereof will be evaluated during the implementation of the Strategy | The need for the project will be evaluated during the implementation of the Strategy |
| 1.2.2. | Reduction of the administrative burden in providing the necessary data for disease registers  | A |  |
| *1.2.2.1* | *Development of the* *Register of Oncological Patients* |  | *2027* | *NHS* | *CDPC, MoH, professional associations* | *Measure 4.1.1.4* | *1 200 000* | *Development of the Register of Oncological Patients, stages 2 and 3* |
| *1.2.2.2.* | *Creation of the register of athletes and provision of access to the register data for the purposes of providing health care to athletes and children engaged in intense physical activity.* |  | *2027* | *MoES* | *CCUH/NHS/MoH* |  |  |  |
| *1.2.2.3* | *Modernisation of the register of patients with mental and behavioural disorders in accordance with the Plan for Improving the Organisation of Mental Health Care 2023–2025* |  | *2027* | *MoH, NHS, CDPC* | *Professional associations* | *SB, Measure 4.1.1.4* | *The source of additional funding will be evaluated during the implementation of the Strategy* |  |
| 1.2.3. | Development of data analytics solutions for the health sector |  |  |
| *1.2.3.1.* | *– a repository of health sector data* | A | *2026* | *NHS* | *MoH, CDPC, SAM, SEMS, HI* | *Under RRF 2.1.3.1.i* |  4 577 650 | *1)* *Enhancement of the management of medical treatment process data[[95]](#footnote-96)* |
| *1.2.3.2.* | *– data analysis solutions* | B | *2027* | *NHS* | *MoH, CDPC, HI, SAM* | *Measure 4.1.1.4* | *3 500 000* | *Development of the information system for health sector statistics* |
| 1.2.4. | Integration into the European Health Data Space by engaging in joint EU projects for cross-border exchange of health data: | B |  |
| *1.2.4.1.* | *– primary use of data**1) exchange of e-prescriptions and primary patient health data**2) other draft solutions for data exchange with EU countries* |  | *1) 2025**2) 2029* | *NHS* | *NGOs representing the users* | *EU4Health, the Digital Europe Programme, or CEF* | *1), 2) To be determined during the development of the project application* |  |
| *1.2.4.2.* | *– secondary use of data* |  | *2027* | *NHS* |  | *EU4Health, the Digital Europe Programme, or CEF* | *To be determined during the development of the project application* |  |
| 1.2.5. | Development of an ICT infrastructure for the Latvian population reference genome and integration into the exchange of genetic data with other EU countries under the 1+MG initiative | B |  |
| *1.2.5.1.* | *– reference genome ICT infrastructure* |  | *2026* | *LBRSC* | *NHS, MoH, MoEPRD, MoES* | *Under RRF 2.1.3.1.i* |  *832 300* | *Development of an IT infrastructure for storing the Latvian population reference genome and ensuring access thereto* |
| *1.2.5.2.* | *– dynamic consent**1) feasibility evaluation**2) implementation of the solution* |  | *2029* | *LBRSC/NHS* |  | *1) Within the current SB**2) Measure 4.1.1.4 (if a decision on the creation of IS has been taken)* | *2) To be determined during the development of the project application* | *The feasibility of implementing the project will be evaluated during the implementation of the Strategy, and it depends on the availability of funding* |
| *1.2.5.3.* | *– solutions for data exchange with EU countries within the framework of 1+MG*  |  | *2027* | *LBRSC* |  | *Digital Europe Programme or CEF* | *To be determined during the development of the project application* |  |
| *1.2.5.4.* | – *the integration of the reference genome ICT infrastructure with the EHR (indication in the EHR that the genome sequence of an individual is available in the IS of the Latvian population genomic data)* |  | *2029* | *LBRSC/NHS* |  | *Measure 4.1.1.4*  | *To be determined during the development of the project application* | *The feasibility of implementing the project will be evaluated during the implementation of the Strategy, and it depends on the availability of funding* |
| **1.3.** | **ACTION DIRECTION: DEVELOPMENT OF TELEMEDICINE, SERVICES SUPPORTED BY DIGITAL TECHNOLOGIES, AND INNOVATIONS** |
| 1.3.1. | Development of the primary telemedicine services, descriptions of services, and a regulatory framework | B |  |
| *1.3.1.2.* | *– regulatory framework for telemedicine services* |  | *2024* | *MoH, NHS* | *HI, NGOs representing the users* | *Within the current SB* |  |  |
| *1.3.1.3.* | *– to enhance the process of evaluating procedure tariffs, taking into account the market entry of telemedicine services*  |  | *2024* | *NHS* | *MoH* | *Within the current SB* |  |  |
| *1.3.1.4.* | *– to review the health care service financing models to facilitate the provision of telemedicine services* |  | *2024* | *NHS* | *MoH* | *Within the current SB* |  |  |
| *1.3.1.5.* | *– to create a list of telemedicine services*  |  | *2024* | *NHS* |  | *Within the current SB* |  |  |
| *1.3.1.6.* | *– guidelines/algorithms for remote consultations* |  | *2023* | *MoH* | *HI, NHS, NGOs representing the users* | *SB* |  |  |
| *1.3.1.7.* | *– to develop the functions of the consultative telephone service of general practitioners* |  | *2027* | *SEMS* | *MoH* | *Measure 4.1.1.4* | *The need for additional funding and the source thereof will be evaluated during the implementation of the Strategy* |  |
| *1.3.1.8.* | *– to notify medical practitioners of urgent matters* |  | *2027* | *NHS* | *CDPC* | *SB (telecommunication services)* | *The costs depend on the number of notified individuals, and the need for additional funding and its amount will be determined when implementing the specific service.* |  |
| 1.3.2. | Development of the quality monitoring of telemedicine services | B | 2027 | HI | CDPC, medical treatment institutions | Additional State budget funding is required to create a new job position for executing a new function. | When developing the quality monitoring of telemedicine services, the need to create a new job position for executing a new function within the HI will be evaluated, taking into account the State human resources policy and changes in the volume of on-site control/supervision visits, considering the future increase in the volume of electronically available health care data. |  |
| 1.3.3. | Promotion of digital health innovations  | B |  |
| *1.3.3.1.* | *– to create a regulatory “sandbox”* |  | *2027* | *MoH, NHS* | *MoEPRD, CDPC, HI*  | *Measure 4.1.1.4*  |  |  |
| *1.3.3.2.* | – *to develop guidelines/roadmap for medical treatment institutions on the safe use of artificial intelligence solutions*  |  | *2023* | *MoH, SAM* | *NGOs, HI*  | *Within the current SB* |  |  |
| *1.3.3.3.* | *– to evaluate the need for developing a legal framework to ensure the safe use of artificial intelligence in medical treatment* |  | *2023* | *MoH, SAM* | *NGOs, HI*  | *Within the current SB* |  |  |
| **1.4.** | **ACTION DIRECTION: DIGITAL LITERACY AND CULTURE CHANGE** |
| 1.4.1. | Provision of opportunities for acquiring digital literacy for health professionals within the framework of lifelong learning and professional development | A |  |
| *1.4.1.1.* | *– for medical practitioners and medical treatment support persons, pharmacists and pharmacist assistants, health professionals, and the administrative staff* |  | *2027* | *MoH* |  | *Measure 4.1.2.5 under SO 4.1.2*  | *The funding will be determined when planning a specific training programme* |  |
| *1.4.1.2.* | *– for employees of the MoH and its subordinated institutions* |  | *2027* | *MoEPRD* | *MoH* | *RRF 2.3.2.2.i Development of State and local government digital transformation skills and capabilities* |  |  |
| 1.4.2. | Strengthening of the digital health content in the training of medical practitioners |  |  |
| *1.4.2.1.* | *– to improve undergraduate medical programmes* | *A* | *2027* | *RSU, LU* | *MoH* | *Within the current SB* |  |  |
| *1.4.2.2.* | *– to evaluate the possibility for health care students to access the testing environment of the eHealth system*  | *B* | *2027* | *NHS*  | *RSU, LU, MoH* | *Within the current SB* |  |  |
| *1.4.2.3.* | *– to evaluate the possibility for health care students to access patient data within the EHR* | *B* | *2027* | *NHS, MoH* | *RSU, LU* | *Within the current SB* |  |  |
| 1.4.3. | Promotion of the public use of digital health services | A |  |
| *1.4.3.1.* | *– training materials on digital health services* |  | *2027* | *NHS* | *MoEPRD* | *Measure 4.1.1.4* | *The task is to be completed within the framework of digitisation projects as one of the project activities. The necessary funding will be determined when developing projects.* |  |
| *1.4.3.2.* | *– to inform of digital health services* |  | *on a continuous basis* | *NHS* |  | *Within the current SB* |  |  |
| *1.4.3.3.* | *– SLGUCSS provides support to citizens in using digital health services* |  | *2024* | *MoEPRD, NHS* | *MoH* | *SB* |  |  |
| **2.** | **ACTION DIRECTION: DIGITAL TRANSFORMATION OF SERVICES** |
| 2.1. | Provision of the compilation of the medical treatment data within the EHR and their centralised accessibility to the patientStage 1Stage 2 | A | 1) 20262) 2029 | NHS, CDPC, MoH, MoW | HI, LADB, SAM, NGOs representing the users | 1) Measure 4.1.1.42) Measure 4.1.1.4,EU4Health (data for cross-border data exchange) | 1) 3 000 0002) 3 000 000 (50 % ERDF 4.1.1 SO 4.1.1.4, 50 % EU4Health) | 1) Development of digital health services, stage 12) Development of digital health services, stage 2 |
| 2.2. | Development of an e-appointment system and establishment of a unified waiting list mechanism | A | 2027 | NHS | Medical treatment institutions, MoH, HI, NGOs representing the users | Measure 4.1.1.4 | 2 500 000 (the costs include the integration of the IS of medical treatment institutions) | Establishment of an e-appointment system and a unified waiting list solution |
| 2.3. | Modernisation of the circulation of medicinal products and medical devices | A |  |
| *2.3.1.* | *– e-prescription for individually reimbursable medicinal products, alerts on medicinal products banned in sports, informative materials on the reduction of risks posed by the use of medicinal products* |  | *2026* | *NHS* | *MoH, HI, LADB, SAM, NGOs representing the users* | *SB/Measure 4.1.1.4* | *The need for additional funding will be evaluated during the implementation of the Strategy* | *If additional funding is required, the task will be implemented as part of the project “Development of Digital Health Services, stage 1”* |
| *2.3.2.* | *– a module for the reimbursement of medicinal products and medical devices for individual persons* |  | *2025* | *NHS* | *Pharmacies* | *Measure 4.1.1.4* | *500 000* | *Module for the reimbursement of medicinal products and medical devices for individual persons* |
| *2.3.3.* | *– clinical decision support system (regarding drug compatibility and compliance with diagnosis). Informative and educational materials on the reduction of risks posed by the use of medicinal products* |  | *2025* | *NHS* | *SAM* | *Measure 4.1.1.4* | *Costs are outlined under Task 2.1* | *Development of digital health services, stage 1* |
| *2.3.4.* | *– solutions for reporting adverse drug reactions* |  | *2027* | *NHS* | *SAM* | *Measure 4.1.1.4* | *Costs are outlined under Task 2.1* | *Development of digital health services, stage 1* |
| 2.4. | Digital transformation of reports and certificates drawn up by general practitioners | B | 2029 | NHS | MoEPRD, MoES, NGOs representing the users | Measure 4.1.1.4 | *Costs are outlined under Task 2.1* | Development of digital health services, stage 2  |
| 2.5. | Provision of the electronic data processing of oncological patient treatment data in a structured format and data exchange between CUHs | A | 2026 | REUH | PSCUH, CCUH, NHS, NGOs representing the users | RRF2.1.3.1.i. |  4 577 650  | Development of a platform for the exchange of data of oncological patients treated in clinical university hospitals[[96]](#footnote-97) |
| 2.6. | Integration of digital health and social care management systems | B |  |
| *2.6.1.* | *– data exchange between the eHealth system and SOPA* |  | *2029* | *MoW, NHS* | *MoH, NGOs representing the users* | *Measure 4.1.1.4* | *Costs are outlined under Task 2.1; the costs will also include the costs for the development of SOPA required for data exchange* | *Development of digital health services, stage 2* |
| *2.6.2.* | – to include an indication in the *eHealth system* that the individual is a client of the social care centre and also *develop solutions that would enable secure access to certain health data of the specific client within the eHealth system for a nurse employed at the social care centre* |  | *2024* | *NHS* | *MoH, MoW*  | *Within the current SB* |  |  |
| *2.7.* | Creation of an eLibrary within DigiVesIS | B | 2026 | NHS |  | Measure 4.1.1.4 | Costs are outlined under Task 2.1 | Development of digital health services, stage 1 |
| **3.** | **ACTION DIRECTION: DIGITAL TRANSFORMATION OF STATE ADMINISTRATION IN THE HEALTH SECTOR** |
| 3.1. | Digital transformation of the registration of health sector service providers | A |  |
| *3.1.1.* | *– digital transformation of the registration of medical treatment institutions*  |  | *2025* | *HI (business process owner and primary data validator of the register)**NHS (technical resource manager of the register)* | *MoH, SAM, CDPC, medical treatment institutions (MTIs), NGOs* | *Measure 4.1.1.4* | *1 000 000* | *Development of digital solutions to enhance the process of registering medical treatment institutions and to raise public awareness* |
| *3.1.2.* | *– to create a Unified Register of Health Sector Specialists (the enhancement of the process of registering medical practitioners and medical treatment support persons, the Register of Residents, the Register of Pharmacists and Pharmacist Assistants)*The task is to be implemented in accordance with the technical specifications that **will** be developed by 22 May 2023 as part of the project “On Health Workforce Strategy in Latvia”. |  | *2025* | *HI (business process owner and primary data validator of the register)**NHS (technical resource manager of the register)* | *NHS, MoH, MoES, LFA, medical treatment institutions, educational institutions, certification bodies* | *Measure 4.1.1.4* | *2 000 000* | *Development of digital solutions to enhance the process of registering medical practitioners, medical treatment support persons, pharmacists, and pharmacist assistants and to raise public awareness* |
| 3.2. | Digital transformation of the administration of health care services | A |  |
| 3.2.1. | *– the enhancement of processes by improving the data management, including the data accumulation, analysis, and sharing options* |  | *2026* | *NHS* | *Medical treatment institutions, pharmacies* | *RRF**2.1.3.1.i.* | *The funding is outlined under Task 1.2.3.1*  | *Enhancement of the management of treatment process data[[97]](#footnote-98)* |
| 3.2.2. | *– the adaptation of the payment processing system in line with the new model for funding the basked of the services developed by the MoH and also the integration of payments into medical data transfer* |  | *2029* | *NHS* | *Medical treatment institutions, pharmacies* | *Measure 4.1.1.4* | *Depending on the RRF**2.1.3.1.i project results* | *Data processing solutions for efficient administration of health care services* |
| 3.3. |  “Real-time” epidemiological surveillance and digital transformation of the vaccination process | A |  |
| *3.3.1.* | *– integrated “real-time” epidemiological surveillance system, stage 1, and unified digital epidemiological safety tool for citizens (EPID tool)* |  | *2023* | *CDPC, NHS* | *MoH, NGOs representing the users* | *EU Solidarity Fund**State budget (the funding was allocated under the priority measures for 2021–2023)* | *EUR 436 497* | *Development of a new integrated epidemiological surveillance system*  |
| *3.3.2.* | *– integrated “real-time” epidemiological surveillance system, stage 2* |  | *2025* | *CDPC, NHS* | *MoH, NGOs representing the users* | *EU4Health/Measure 4.1.1.4* | *The necessary additional funding will be calculated when preparing the project application*  | *Development of an integrated epidemiological surveillance system enabling the connection and interaction between systems and the data of other sectors* |
| *3.3.3.* | *– to ensure a modernised State-paid vaccination administration system* |  | *2027* | *NHS, CDPC* | *Medical treatment institutions* | *SB/Measure 4.1.1.4* | *The need for additional funding and the source thereof will be evaluated during the implementation of the Strategy* |  |
| 3.4. | Development of a reporting-based system for the evaluation of quality, outcomes, and incidents in the provision of medical treatment services |  |  |
| *3.4.1.* | *– nationwide non-punitive reporting and learning system**1) evaluation**2) implementation of the solution* | *B* | *1) 2023**2) 2025* | *CDPC* | *MoH, medical treatment institutions* | *1) SB**2) Measure 4.1.1.4**(if a decision on the creation of IS has been taken)* | *2) To be determined during the development of the project application* | *Implementation of a non-punitive reporting and learning information system in health care (the feasibility of implementing the project will be evaluated during the implementation of the Strategy, and it depends on the availability of funding)* |
| *3.4.2.* | *– implementation of the PREM solution in hospitals* | *A* | *2025* | *CDPC* | *Medical treatment institutions, NGOs representing the users* | Within the current SB | *In 2023 – 2800**In 2024 and onwards each year – 3375* |  |
| *3.4.3.* | *– PROM solution* | *B* | *2027* | *CDPC* | *Medical treatment institutions, NGOs representing the users* | *Measure 4.1.1.4* | *To be determined during the development of the project application* | *Development of the system of condition-specific or service-specific patient-reported outcome measures (PROM)* |
| 3.5. | Establishment of a blood donor portal  | A | 2026 | SBDC | NGOs representing the users | Within the current SB | 174 240 |  |
| 3.6. | Digital transformation of emergency medical assistance | A | 2027 | SEMS | Medical treatment institutions, NHS, Information Centre of the MoI | Measure 4.1.1.4 | 3 000 000 | Development of a unified emergency medical assistance and disaster management information system, stage 3 |
| 3.7. | Digitisation of the e-certificate on the cause of death | B | 2029 | NHS | OCMA,CDPC, SCFME, medical treatment institutions | Measure 4.1.1.4 | 600 000 | Development of a centralised solution for issuing the electronic medical certificate on the cause of death and ensuring the circulation of data |
| 3.8. | Digitisation of forensic medical examination processes | A | 2025 | SCFME | NHS | Within the framework of ERDF SO 1.3.1 “Use the Advantages of Digitisation for Citizens, Enterprises, Research Organisations, and Public Institutions”  | 2 500 000 | Digitisation of forensic medical examination and research processes, stage 2 |
| **V.** | **MANAGEMENT OF STRATEGY IMPLEMENTATION** |
| V.1. | Strengthening of the NHS capacity in implementing digital health solutions by recruiting additional human resources within the NHS to enhance the ICT management  | A | 1) 20242) 2029 | MoH, NHS  |  | 1) Measure 4.1.1.4 2) additional SB funding | *1) Up to EUR 4 million*2) In conformity with the Public Health Guidelines 2021–2027 and Digital Transformation Guidelines 2021–2027  | *1) Management of the architecture of digital health information and communication technologies*  |
| V.2. | Consideration of the possibility of establishing a separate team/unit of the NHS that would handle the implementation of telemedicine services | B | 2029 | NHS | MoH | Additional SB funding | The establishment of a new structural unit requires additional SB funding.The feasibility of establishing a separate structural unit and the need for additional SB funding will be evaluated. |  |
| V.3. | Development of competences and creation of a team for ensuring the secondary use of health sector data (the timeline for creating a team in charge of the secondary use of data depends on the adoption of the draft Law on Secondary Use of Data, which will establish the fundamental principles for the secondary use of data, by the *Saeima* and the timeline for the adoption and coming into force of the European Health Data Space Regulation). | A | 2027 | CDPC, NHS | MoH | Additional SB funding, EU4Health |  |  |

Annexes

Annex 1. Mapping of the Digital Data Space in the Health Sector

[281] Information is a critical resource that helps ensuring efficient operation of the health sector. It is used in all management processes. Without accurate, timely, and complete information, the health sector is prevented from exercising its functions and ensuring efficient health care.

[282] On 4 May 2022, the European Commission published the Proposal for a Regulation of the European Parliament and of the Council on the European Health Data Space. The goal of the European Health Data Space is to create a common space where natural persons will be able to easily control their electronic health data and it will also allow researchers and policymakers to use that electronic health data in a trusted and secure way that preserves privacy.

[283] The Strategy builds on a gradual paradigm shift, perceiving all stakeholders in the sector, including their accumulated and processed data, and also the provided solutions and services as a unified ecosystem and also creating and developing a unified data space that meets common quality criteria.

[284] A domain architecture of the health sector will be developed, encompassing information on the necessary capabilities, data, a set of high-level use cases, stakeholders, and data flows, thereby ensuring that the health domain architecture demonstrates conformity with the overall architectural principles of State administration which are based on the European Interoperability Framework (EIF) principles and are aligned with other related domain architectures. The sectoral data space has four dimensions:

Legal dimension – matters related to the legal framework governing the circulation of sector-specific information, mutual contracts between the involved legal persons regarding the circulation of information, conditions for the use of data, etc.

Organisational dimension – matters related to defining responsibilities for the generation of information necessary for the sector (classifications, other reference data).

Semantic dimension – matters related to the compatibility and unambiguous interpretation of information that also cover aspects of data quality, for example, the unique identification, the use of unified classifications, etc.

Technical or solution dimension – software and technical solutions to be used to ensure the interoperability of information systems.

[285] Information resources can be categorised in four groups:

1. Shared information resources that are centrally available and distributed through the eHealth platform, open data, or State-provided information exchange channels.

2. Information resources generated to complete a specific task, using data from the sectoral data space but not constituting shared information resources.

3. Statistical and other compiled information resources developed to compile aggregated information from other resources.

4. Internal information resources of sector operators to support the implementation of processes and ensure the operation of an institution, e.g. personnel, accounting, contract-related, and technical information.

[286] The following data sources constitute the digital data space of the health sector:

1. Patient health data generated by medical treatment institutions which, for the purposes of achieving the goals of medical treatment, are accumulated in the information systems of medical treatment institutions and the patient electronic health record within the eHealth system (currently to a limited extent).

2. Data generated by pharmacies regarding the dispensed medicinal products are stored within the information systems of pharmacies and the patient electronic health record within the eHealth system.

3. Data generated by medical treatment institutions, pharmacies, certification bodies, and MoH departmental institutions that are necessary to ensure State administration functions and tasks in the fields of public health and health care, including to administer health care services, compile statistics, and ensure the monitoring and control, and those data are accumulated in the State information systems of the health sector (see Figure 1 and Table 1).



*Figure 1.* **Health care processes and parties involved in the circulation of the process-related information**

*Table 1*

**State information systems and databases in the health sector system**

|  |  |  |
| --- | --- | --- |
| **Name of the State information system or database** | **Manager** | **Law or regulation** |
| **State information systems** |
| System for the Settlement of Payments for Health Care Services “Management Information System” | NHS | Cabinet Regulation No. 265 of 4 April 2006, Procedures for Keeping Medical DocumentsCabinet Regulation No. 555 of 28 August 2018, Procedures for the Organisation of and Payment for Health Care Services[[98]](#footnote-99) |
| System for the Registration and Accounting of Reimbursable Medicinal Products | Cabinet Regulation No. 899 of 31 October 2006, Procedures for the Reimbursement of Expenditures for the Acquisition of Medicinal Products and Medical Devices Intended for the Outpatient Medical Treatment[[99]](#footnote-100) |
| Electronic Information System for International Cooperation of the Health SectorReference Implementation for a National Application (RINA) for the NHS | Cabinet Regulation No. 555 of 28 August 2018, Procedures for the Organisation of and Payment for Health Care Services |
| Unified Electronic Information System of the Health Sector (eHealth system) | Medical Treatment Law, Law on the Rights of PatientsCabinet Regulation No. 134 |
| Vaccination Information System (Unified Vaccination Network (ViVaT) |  | Cabinet Regulation No. 662 of 28 September 2021, Epidemiological Safety Measures for the Containment of the Spread of COVID-19 Infection |
| Database of Health Care Service Recipients |  | Cabinet Regulation No. 271 of 8 May 2018, Regulations Regarding the Database of Health Care Service Recipients[[100]](#footnote-101) |
|  |  |
| State Infectious Diseases Supervision and Monitoring System | CDPC | Cabinet Regulation No. 265 of 4 April 2006, Procedures for Keeping Medical DocumentsEpidemiological Safety LawCabinet Regulation No. 7 of 5 January 1999, Procedures for Registration of Infectious Diseases |
| State Population Genome Register | Cabinet Regulation No. 135 of 14 February 2006, Procedures for Establishing, Supplementing, and Maintaining the State Population Genome Register[[101]](#footnote-102) |
| Register of Newborns | Cabinet Regulation No. 328 of 12 June 2018, Regulations Regarding the Register of Newborns[[102]](#footnote-103) |
| Register of Patients Suffering from Certain Diseases | Cabinet Regulation No. 746 of 15 September 2008, Procedures for Establishing, Supplementing, and Maintaining the Register of Patients Suffering from Certain Diseases[[103]](#footnote-104) |
| Database of Causes of Death of Inhabitants of Latvia | Cabinet Regulation No. 265 of 4 April 2006, Procedures for Keeping Medical Documents |
| Register of Medical Practitioners and Medical Treatment Support Persons | HI | Cabinet Regulation No. 317 of 24 May 2016, Procedures for Establishing, Supplementing, and Maintaining the Register of Medical Practitioners and Medical Treatment Support Persons[[104]](#footnote-105) |
| Register of Medical Treatment Institutions | Cabinet Regulation No. 491 of 9 August 2022, Regulations Regarding the Register of Medical Treatment Institutions[[105]](#footnote-106) |
| Emergency Medical Assistance and Disaster Management Information System | SEMS | Cabinet Regulation No. 265 of 4 April 2006, Procedures for Keeping Medical Documents |
| Forensic Medical Examination Information System | SCFME | Cabinet Regulation No. 776 of 7 September 2004, By-laws of the State Centre for Forensic Medical Examination |
| Unified Information System of the State Blood Service | SBDC | Cabinet Regulation No. 1037 of 27 December 2005, Regulations Regarding Quality and Safety Standards for the Collection, Testing, Processing, Storage, and Distribution of Human Blood and Blood Components, Import and Export Conditions, and also Compensation for Expenditures for the Renewal of the Lost Volume of Blood |
| Information System of the Resources of Inpatient Medical Treatment Institutions (ISRIMTI) |  | Draft Cabinet Regulation, Regulations Regarding the Information System of the Resources of Inpatient Medical Treatment Institutions (22-TA-2774)[[106]](#footnote-107) |
| Register of Pharmacists and Pharmacist Assistants | LFA | Cabinet Regulation No. 454 of 27 April 2004, Procedures for the Registration of Pharmacists and Pharmacist Assistants |
| **Databases** |
| Database of Health Care Service Recipients | NHS | Cabinet Regulation No. 271 of 8 May 2018, Regulations Regarding the Database of Health Care Service Recipients |
| Database of State Statistical Reports on Health Care Sector | Cabinet Regulation No. 720 of 27 November 2018, Regulations Regarding the Official Statistical Form Templates in the Health Care Sector |
| Database of Use of In-patient Bed Fund | Cabinet Regulation No. 265 of 4 April 2006, Procedures for Keeping Medical Documents |
| Database of Clinical Guidelines | CDPC | Cabinet Regulation No. 469 of 25 May 2010, Procedures for the Development, Evaluation, Registration, and Implementation of Clinical Guidelines[[107]](#footnote-108) |
| Unified Health Sector Monitoring System of the HI | HI |  |
| Medicinal Product Register of Latvia | SAM | Pharmaceutical Law[[108]](#footnote-109)Cabinet Regulation No. 416 of 26 June 2007, Procedures Regarding the Distribution and Quality Control of Medicinal Products;[[109]](#footnote-110)Cabinet Regulation No. 376 of 9 May 2006, Procedures for the Registration of Medicinal Products[[110]](#footnote-111) |
| Medical Devices Register of Latvia (LATMED) | Cabinet Regulation No. 689 of 28 November 2017, Procedures for Registration, Conformity Assessment, Distribution, Operation, and Technical Supervision of Medical Devices |

[287] When planning information systems or their updating, all operators of the sectoral data space should plan their solutions to ensure information reusability, considering aspects, for example, object identification, the use of unified classifications, and other principles.

[288] The sectoral data space primarily concerns shared information resources. It does not concern internal information resources.

Annex 2. Alignment of the Strategy with Other Development Planning Documents

**International Policy Objectives and Plans**

**WHO Global Strategy on Digital Health 2020–2025[[111]](#footnote-112)**

[289] The goal of the global strategy is to improve health for everyone by accelerating the development and adoption of appropriate, accessible (both physically and financially), scalable, and sustainable person-centred digital health solutions everywhere to detect and respond to epidemics and pandemics, developing infrastructure and resources that enable countries to use health data to promote health and well-being.

[290] Digital health is expected to be valued and accepted in society if it: 1) is accessible and supports equitable and universal access to quality health services; 2) enhances the efficiency and sustainability of health systems in the provision of quality, accessible, and equitable care; 3) strengthens and expands health promotion, disease prevention, diagnosis, management, rehabilitation, and palliative care, including before, during an epidemic and after a pandemic, in a system that respects the privacy and security of patient health information.

[291] The Strategy further seeks to enhance research and development, innovation, and collaboration across sectors. It recognises that digital health can radically change health outcomes if it is supported by sufficient investment in governance, institutional and workforce capacity to enable the changes in digital systems and data use training, planning, and management that are required as health systems and services are increasingly being digitised. Alongside this essential investment in people and processes, in accordance with national strategies that lay out a vision for the digitisation of the health sector, digital health can improve the efficiency and cost-effectiveness of care, allowing for new business models in the delivery of services.

[292] The global digital strategy emphasises that health data are to be classified as sensitive personal data, or personally identifiable information, that require a high safety and security standard. Therefore, it stresses the need for a strong legal and regulatory base to protect privacy, confidentiality, integrity, and availability of data and the processing of personal health data, and to deal with cybersecurity, trust building, accountability and governance, ethics, equity, capacity building, and literacy, ensuring that good quality data are collected and subsequently shared to support planning, commissioning, and transformation of services. It is important to maintain transparency and effectively communicate about the data security strategies.

[293] Four guiding principles were established to reach all objectives:

1. It is necessary to acknowledge that institutionalisation of digital health in the national health system requires a decision and commitment by countries.

2. It is necessary to recognise that successful digital health initiatives require an integrated strategy.

3. It is necessary to promote the appropriate use of digital technologies for health.

4. It is necessary to recognise the urgent need to address the major impediments faced by least-developed countries implementing digital health technologies.

**EU Documents and Strategic Visions**

**European Climate Pact[[112]](#footnote-113)**

[294] This document is mentioned solely due to its key objective, i.e. the EU has set a goal to achieve climate neutrality by 2050. The European Climate Pact is expected to turn this political commitment into a legal obligation. The European Climate Pact aims to help spread scientifically sound information on climate action and provide practical advice for climate-friendly choices in everyday life. It addresses **green skills** – the ability to perform professional activities in accordance with the sustainable environmental development, resource-efficient and energy-efficient management and to make environmentally friendly and green decisions on a daily basis. This framework serves as a foundation for the widespread consideration of service digitisation, which will significantly conserve various land resources and contribute to improving environmental cleanliness and biodiversity.

**Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. Europe’s Moment: Repair and Prepare for the Next Generation[[113]](#footnote-114)**

[295] The Communication begins with the conclusion that COVID-19 has shaken Europe and the world to its core. At the same time, it accelerates the green and digital transition which is one of the key EU objectives by 2030.

[296] In the long run, this is likely to trigger permanent and structural changes in societal and economic life: more teleworking, e-learning, e-commerce, e-government. This highlights the potential of developing a universally accepted electronic identification, i.e. public electronic identity, to allow for simple, trusted, and secure access to cross-border digital public services.

[297] Four elements will be key for a digital dimension of recovery, helping to stimulate competitive innovation and to provide users with greater choice. Two of those are relevant to the digital health strategy of Latvia:

1. First, more investment will be needed to achieve better connectivity. The rapid deployment of 5G will have a widespread effect on the whole digital society and increase the strategic autonomy of Europe. This will support the efforts to build a more extensive infrastructure that can handle emerging and future processes and applications. Also, this will provide the bandwidth required in the fields of health, education, transport, logistics, and media that is important for our resilience, competitiveness, and economic recovery.

2. Second, a stronger industrial and technological presence will be needed in strategic parts of the digital supply chain. Just as it became clear how important connectivity and digital technologies are, it is also being reminded of the importance of security of technology. This reaffirms the need for Europe to have technological sovereignty in areas where it matters and also keeping open trade and the flow of innovation going.

**EU Digital Strategy[[114]](#footnote-115)**

[298] Digital technology is changing people’s lives. The EU Digital Strategy aims to make this transformation work for people and businesses, while helping to achieve its target of a climate-neutral Europe by 2050. The Commission is determined to make this Europe’s “Digital Decade”. Europe must now strengthen its digital sovereignty and set standards, rather than following those of others – with a clear focus on data, technology, and infrastructure.

[299] It is generally aligned with the EU objectives in shaping Europe’s digital future, as defined by the European Digital Compass (Europe’s digital ambitions for 2030).

[300] The vision for the EU Digital Decade is built around four main pillars:

1. Skills.

2. Secure and sustainable digital infrastructure.

3. Digital transformation of businesses.

4. Digitisation of public services (eHealth: 100 % of citizens have access to medical records).[[115]](#footnote-116)

[301] Digital transition is expected to work for all, putting people first and opening new opportunities for business. Digital solutions are also key to fighting climate change and achieving the green transition.

[302] The European approach will be based on three main pillars to ensure that Europe seizes the opportunities offered by digital transformation and the citizens, businesses, and governments retain control over the digital transformation.

1. **Technology that works for people.** Development, deployment, and uptake of technology that makes a real difference to people’s daily lives. A strong and competitive economy that masters and shapes technology in a way that respects European values.

2. **A fair and competitive digital economy.** A frictionless single market, where companies of all sizes and in any sector can compete on equal terms, and can develop, market, and use digital technologies, products, and services at a scale that boosts their productivity and global competitiveness, and consumers can be confident that their rights are respected.

3. **An open, democratic, and sustainable society.** A trustworthy environment in which citizens are empowered in how they act and interact, and of the data they provide both online and offline. A European way to digital transformation which enhances our democratic values, respects our fundamental rights, and contributes to a sustainable, climate-neutral, and resource-efficient economy.

**Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A European Strategy for Data[[116]](#footnote-117)**

[303] According to the Strategy, innovation driven by the ever-increasing amount of data will bring enormous benefits for citizens, for example, through improved personalised medicine. In a society where individuals will generate ever-increasing amounts of data, the way in which the data are collected and used must place the interests of the individual first and in accordance with European values, fundamental rights, and rules. Citizens will trust and embrace data-driven innovations only if they are confident that any personal data sharing in the European Union will be subject to full compliance with the strict data protection rules of the EU.

[304] The vision of the Commission is based on European values and fundamental rights and the conviction that the human being is and should remain at the centre. The Commission is convinced that businesses and the public sector in the EU can be empowered through the use of data to make better decisions. It is all the more compelling to seize the opportunity presented by data for social and economic good, as data, unlike most economic resources, can be replicated at close to zero cost; moreover, the use of data by one person or organisation does not prevent the simultaneous use by another person or organisation. That potential should be put to work to address the needs of individuals and thus create value for the economy and society. This will require better access to data and its responsible usage.

[305] The EU should create an attractive policy environment so that, by 2030, the EU’s share of the data economy, i.e. data stored, processed, and put to valuable use in Europe, at least corresponds to its economic weight, not by fiat but by choice. The aim is to create a single European data space which is a genuine single market for data, open to data from across the world where personal and also non-personal data, including sensitive business data, are secure and businesses also have easy access to an almost infinite amount of high-quality industrial data, boosting growth and creating value, while minimising the human carbon and environmental footprint. It should be a space where EU law can be enforced effectively and where all data-driven products and services comply with the relevant norms of the EU’s single market. For this purpose, the EU should combine appropriate legislation and governance to ensure availability of data with investments in standards, tools and infrastructures, and also data processing competences. This favourable context, promoting incentives and choice, will lead to more data being stored and processed in the European Union.

**Commission Recommendation (EU) 2019/243 of 6 February 2019 on a European Electronic Health Record exchange format[[117]](#footnote-118) (Commission Recommendation of 6 February 2019 on a European Electronic Health Record exchange format)**

[306] This Recommendation was developed, based on several circumstances, including:

1. Although citizens have the right to electronic access to their personal data, many of them cannot access them yet.

2. The ability of citizens and health care providers to securely access and share electronic health documents both nationally and across borders has a number of benefits.

3. The EU population is ageing. Therefore, digital technologies will be one of the key solutions to reduce the pressure on the health care system.

4. New technologies for health protection should support citizens to become active agents of their own health journey.

5. The highest possible standards for security and data protection are central to developing and exchanging electronic health records.

[307] Some of the recommendations are as follows:

1. Member States should ensure that electronic health record systems meet high standards for the protection of health data, and the security of network and IS on which such electronic health record systems rely, to avoid data breaches and minimise the risks of security incidents.

2. Member States should ensure that citizens and their health care professionals have secure online access to personal electronic health documents by using secure electronic identification means. There should also be a possibility for secure exchange of this data.

3. Member States should take appropriate measures to support the use of coherent electronic health record systems, for example, leveraging dedicated financial investments and adapting legislation where appropriate.

**Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on enabling the digital transformation of health and care in the Digital Single Market; empowering citizens and building a healthier society[[118]](#footnote-119)**

[308] In the Communication, it is concluded that digital solutions for health and care can increase the well-being of millions of citizens and radically change the way health and care services are delivered to patients, if designed purposefully and implemented in a cost-effective way. Digitisation can support the continuity of care across borders which is an important aspect for those who spend time abroad. It can support the reform of a health care system and its transition to new care models, centred on people’s needs and enabling a shift from hospital-centred systems to integrated care structures. Digital tools can transform scientific knowledge into helping citizens remain in good health. They also have the potential to enable a better use of health data in research and innovation to support personalised health care, better health interventions, and more effective health and social care systems.

[309] Although people have the right to access their data, it is, however, concluded that, at present, many citizens in Europe have limited electronic access to data about their own health. The data are often untraceable and scattered in different places. This may leave a negative impact on diagnosis, treatment, and care (for example, when a person is abroad and his or her medical information is not accessible). Moreover, incompatible formats and standards in electronic health record systems continue to be used across the EU. It is therefore concluded that work must continue on developing a unified electronic health system. For this purpose, both interoperable systems and legislation should be developed.

[310] Innovative digital solutions can boost people’s health, improve the quality of life, and enable more efficient ways of organising and using health and care services. For this to happen, they must be designed to meet the needs of people and health systems and be thoughtfully implemented to suit the local context. Digital technologies should be seen as an integral part of the health and care system and need to be tailored to the wider objectives of health systems. The primary objective of the actions put forward in this Communication is to supplement the strategies of the Member States with regard to reforming health care systems. The swift implementation of innovative digital health solutions can best be achieved through cooperation at EU level, exchange of experience in the implementation of such systems, measuring the impact thereof, and implementation of innovative solutions across all Member States and regions. The active engagement of all parties is essential to succeed in creating a “triple win” that benefits people, health care systems and the market.

**European Principles for Digital Health**

[311] The digital solutions for health to be developed must be people-centred, adhering to the four key European Principles for Digital Health, established by the French Presidency of the EU Council and the eHealth Network:[[119]](#footnote-120)

**Development Planning Documents of Latvia**

**National Development Plan of Latvia for 2021–2027[[120]](#footnote-121)**

[312] The National Development Plan of Latvia for 2021–2027 (NDP 2027) is the main national-level medium-term development planning document of Latvia.

[313] It has been concluded that over the past decade, Latvia has experienced renewed growth after the economic crisis. The economy experienced significant growth and several important reforms have taken place in State administration. This has now set the stage for comprehensive changes to ensure a steady course of development in the current dynamic global environment. This marks a shift involving inextricably linked transformations in technology, State administration, societal organisation in various sectors, and the relationship between the State and its citizens. Focus should be placed on the human/technology interaction which brings changes to every Latvian citizen and organisation. In 2027, fundamental changes and growth in four areas are expected, with three of them being particularly relevant in the context of this Strategy:

**1. Quality of life.** Citizens have access to more opportunities and better services in every city and region of Latvia. It has become easier in Latvia to stay healthy, with greater emphasis on a healthy lifestyle and improved access to physicians.

**2. People-centred health care.** The goal of this action direction is to ensure equally accessible, high-quality health care services. Timely access to health care is critically important to prevent premature work incapacity and mortality, and also to promote social inclusion and productivity.

**3. Rule of law and governance.** The goal of the action direction is for citizens, through interaction with public authorities, to contribute to a better society and governance while exercising their legal rights. State administration at all levels has become more professional, i.e. it has become more open, modern, and efficient in achieving results. People feel that the State is working in their best interest, increasing satisfaction with services and trust in State administration and the law enforcement system. Services are personalised and policies balance societal interests. This is achieved through the opportunities provided by digitisation and coordinated cross-sectoral measures. Good governance is characterised by citizen engagement, including participation in open State administration processes and influencing them, trust in policymakers chosen by society, and active engagement in civil society, i.e. NGOs, and social partnerships, including participation and social dialogue. Public authorities and society are not in opposition but cooperate to work towards jointly defined, common development goals, solutions, and a better future, taking into account environmental, social, and economic interests.

**Public Health Guidelines 2021–2027[[121]](#footnote-122)**

[314] The Public Health Guidelines 2021–2027 are a medium-term policy planning document establishing Latvia’s public health policy for 2021–2027. The Guidelines prescribe the objective, action directions, and tasks of public health policy to ensure the achievement of the objectives outlined in the NDP 2027.

[315] A significant horizontal component of the Guidelines is the development and much broader use of digital technologies in the health sector with the aim of promoting integrated and patient-centred health care, improving the accessibility and quality of health care services, and contributing to the efficient use of resources. The Strategy will serve as a roadmap for the development and implementation of secure digital solutions that meet the needs of the sector and its service users in the health sector (Action Direction 5). The Strategy states that several digitisation projects have been implemented in the recent years to make the health care system ore effective; however, the potential of accumulated health data in the health sector for ensuring patient health care and fulfilling State administration functions and tasks, and also for research remains insufficiently used. It is concluded that a valuable and extensive amount of health data is generated in both outpatient and inpatient health care; however, its potential for improving health care quality, patient safety, and efficiency, enhancing patient engagement in the medical treatment process, reducing the administrative workload for medical practitioners, and also facilitating research is currently highly limited, either because data are accumulated in paper format, or because the IS used in inpatient medical treatment institutions do not provide adequate data accumulation and analysis capabilities.

[316] According to the Strategy, in order to enhance the efficiency of data processing, improve the capabilities of health sector data analysis, including their use in policy planning and evaluation, and also in research, and to reduce the administrative burden for patients, medical treatment institutions, and State administration institutions, it is necessary to review the data required for ensuring State administration functions and data exchange processes, develop State IS of the health sector, including the development of data analysis capabilities through artificial intelligence solutions, and also to create new data processing platforms. In order to address the discrepancy between the increasing role of ICT in ensuring State administration functions in the health sector and the inadequate ICT capability of the MoH departmental institutions (in terms of the capacity, competences, and funding) in providing efficient and secure ICT support, it is necessary to centralise ICT resources and their management within the MoH department by investing in human resources, the ICT infrastructure, and security solutions, while ensuring the interoperability of the State administration ICT infrastructure and promoting its unified development.

**Digital Transformation Guidelines 2021–2027[[122]](#footnote-123)**

[317] The Digital Transformation Guidelines 2021–2027 are a medium-term policy planning document establishing the digital transformation (information society development) policy of Latvia for the period from 2021 to 2027. The Guidelines determine a common policy for the digital development of State administration, national economy, and society. The Guidelines build upon the settings, action directions, and tasks in the digital transformation policy which have been approved in the NDP 2027.

[318] The vision of the Digital Transformation Guidelines 2021–2027 is as follows: *a beneficial and modern living space has been established on the basis of the use of modern technologies and the capacities of the developed society to create its own welfare and economic growth effectively by taking advantage of the opportunities provided by digital technologies, and also developing its creative potential.* The overarching objective of the Guidelines is the following: *such society, national economy, and public administration have been established which use the existing opportunities of digital technologies, including the environment created by them, and establish new ones in a targeted manner, improving the quality of life for all individuals and the society as a whole, boosting the competitiveness of the country and national economy.*

[319] The Guidelines establish several tasks that are relevant to the health sector. In the first area of development “Digital Literacy and Education”, the first task of the action direction “Development of Digital Literacy in the Education Process” is *the* *enhancement of digital literacy as transversal skills in the education sector, including the development of digital literacy among the teaching staff and managerial staff of educational institutions*. *The development and use of digital literacy in the education process.*

[320] The task of the fourth action direction “Digital Literacy for the Creation and Commercialisation of Innovations” is *the development of human resources in the ICT sector and the strengthening of excellence. Development of high-level skills and knowledge that involves the development/excellence of the teaching staff of higher education institutions (for an IT school, etc.).*

[321] Action Direction 5 is titled “Digital Literacy in the Health Sector”. The vision of this direction is to ensure that health care professionals, including the executives of medical treatment institutions, have acquired digital literacy, skilfully use digital solutions when providing services, and take an active role in designing, enhancing, and developing the digital solutions in the sector.

**Guidelines for Science, Technology Development, and Innovation 2021–2027[[123]](#footnote-124)**

[322] The Guidelines for Science, Technology Development, and Innovation 2021–2027 (hereinafter – the GSTDI 2027) are a medium-term policy planning document that defines the science and technology development for the period from 2021 to 2027. The GSTDI 2027 determine the strategic objectives to be achieved in Latvia by 2027, mark out the action directions and main reforms of the science and technology development policy, and also the directions of public investments for contributions from the State budget, EU funds, and other financial sources (including foreign and national funds, programmes) for the development of the R&D system.

[323] One of the national-level objectives for the R&D system is to ensure the preparation of highly qualified, professional, multifaceted, and adaptive specialists, particularly in the context of digitisation, industrial transformation, and the transition to a climate-neutral economy, which is also a crucial aspect for State administration. When planning new ICT solutions, it is essential to prepare professionals who will design and maintain those solutions. In this regard, another important task of the GSTDI 2027 is to develop new technologies for the creation of innovative products and services, promoting resource efficiency, technological transformation, and the integration of businesses into value chains of various scales.

[324] The objective of the GSTDI 2027 is to facilitate the development of a smart, technologically advanced, and innovative society in Latvia.

[325] The second sub-objective of the GSTDI 2027 is to enhance innovation capacity and the social and economic value of knowledge and research. Meanwhile, the first action direction focuses on the digital transformation of the R&D system and open science. The digital transformation of the R&D system should be carried out in order to improve the efficiency and transparency of administrative and coordination processes of higher education institutions and scientific institutions, and the data processing and administration opportunities, and also to improve access of researchers, businesses, public administration, and society to knowledge, resources, research outcomes, and data. This aspect is of particular importance when considering the development of medicine as a sector that relies on latest scientific discoveries.

**National Industrial Policy Guidelines 2021–2027[[124]](#footnote-125)**

[326] The National Industrial Policy Guidelines 2021–2027 are a medium-term policy planning document that covers all sectors of national economy and establishes the objectives and action directions for promoting economic growth over the next seven years both at a local level and internationally. The objective of the National Industrial Policy is to increase export volumes to EUR 22 billion in 2023 and EUR 27 billion in 2027, while its sub-objective is to raise expenditure on research and development activities to EUR 300 million in 2023 and EUR 600 million in 2027. In addition, considering the impact of COVID-19 on Latvia’s national economy, it is concluded that it is essential to make well-placed investments in areas the performance of which directly relies on public safety and health, and also the mitigation of the consequences of the COVID19 wave.

[327] The following five knowledge-intensive areas have been identified in the Smart Specialisation Strategy (RIS3) of Latvia: 1) knowledge-intensive bioeconomy; 2) biomedicine, medical technologies, and pharmacy; 3) photonics and smart materials, technologies and engineering systems; 4) smart energy and mobility; 5) information and communication technologies. The Guidelines recognise that biomedicine, medical technologies, and pharmacy (hereinafter – the biomedicine) are a significant, internationally recognised, and competitive research field for Latvia, with rich traditions, high scientific excellence, and innovation potential. Thematically, research in this field in Latvia covers both traditional high-quality biological research and clinical studies, and also the increasingly digitised health care.

[328] A key challenge in this field is for Latvia to determine the potential biomedicine niches to be developed using RIS3 tools and also to identify the optimal support for increasing added value in the traditional pharmaceutical and health care service sectors.

[329] In 2019 and 2020, within the framework of a pilot project by the MoE and the Latvian Investment and Development Agency, the Biomedicine Ecosystem Strategy “Precision Medicine Value Chains” was developed and it is a medium-term strategy focused on establishing a nationally harmonised health data infrastructure. The first step in developing this data infrastructure is opening health sector data for research. By using the open data infrastructure integrated into the European Data Cloud and implementing precision medicine solutions in priority medical fields developed through cooperation between research institutions, medical treatment institutions, and also businesses in the ICT and medical sectors at both national and international levels, and also by supporting the export potential of precision medicine, the objective of the value chain is to extend the healthy life years for Latvian citizens and reduce remotely preventable and treatable mortality. In addition to the infrastructure component, the Strategy includes activities aimed at preparing new interdisciplinary professionals, training the existing health care personnel, raising public awareness of precision medicine opportunities, improving the relevant legal framework, and also fostering business innovation, thereby ensuring the achievement of this objective.

**Summary of Knowledge Ecosystems: Smart Specialisation Strategy[[125]](#footnote-126)**

[330] The Smart Specialisation Strategy (RIS3) was developed to stimulate sustainable economic growth and changes in the national economy of Latvia, making it more productive and developing products with a higher value. RIS3 envisions changes across all sectors of the national economy of Latvia, including traditional sectors, high added-value sectors, and sectors with significant horizontal impact, for example, higher education and science. RIS3 aims to create incentives to influence the behaviour of businesses and research organisations towards research, development, and innovation activities, while also fostering changes in the economic environment to ensure that those transformations yield benefits for Latvia’s economy. The core idea of RIS3 is to concentrate the limited State resources on enhancing innovation capacity in the areas of knowledge with the greatest potential for growth of national economy.

[331] The State has identified five areas of knowledge in which competences in the development, production, and commercialisation of new products and technologies, and additional research competences, are currently most needed. The majority of RIS3 funding will be allocated by the State to shape and strengthen the expertise in certain areas of knowledge. These areas are as follows:

* knowledge-intensive bioeconomy;
* biomedicine, medical technologies, biopharmaceuticals, and biotechnologies;
* smart materials, technologies, and engineering systems;
* smart energy and mobility;
* information and communication technologies.

[332] In the specialisation area “Biomedicine, Medical Technologies, Biopharmaceuticals, and Biotechnology”, research and innovation in Latvia are focused on the following thematic niches:

* personalised/precision medicine;
* translational medicine;
* infection diseases/antimicrobial resistance/global health;
* environmental health;
* health systems;
* digital health;
* biopharmaceuticals.

[333] The RIS3 specialisation area “Biomedicine, Medical Technologies, Biopharmaceuticals, and Biotechnology” contributes to implementing the “One Health” approach of the WHO, ensuring improvements in public health on a global scale.

[334] The smart specialisation area “Information and Communication Technologies” is an area with a direct horizontal contribution to the development of other smart specialisation areas, for example, bioeconomy, biomedicine, smart materials and technologies, smart energy, and it also plays a crucial role in fostering the transformation of national economy to boost the high and medium-high technologies in the exports of Latvian goods and services. In the specialisation area of information and communication technologies, research and innovation in Latvia are focused on the following thematic niches:

* computational linguistics, including research on machine translation;
* algorithms, including research on quantum algorithms and computing;
* machine learning;
* educational technology and digitisation of culture;
* business process management system;
* electronics, including research on screens, semiconductors, microchips, smart transportation, 3D printing, audio, and precision devices;
* smart sensors and the Internet of Things;
* robotics, including research on computer vision of robots;
* big data, including smart cities and bioinformatics research;
* data storage, transmission, and systems, including cloud computing platforms;
* space technologies and remote sensing;
* public safety and cybersecurity.

[335] In the context of the Strategy, RIS3 serves as a framework for conducting scientific activity in the health sector, thus contributing not only to the health sector but also the overall national economy. This would be innovation-driven research financed through various EU funding instruments.

1. Global Strategy on Digital Health 2020–2025, World Health Organization. Available at: <https://www.who.int/docs/default-source/documents/gs4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf> [↑](#footnote-ref-2)
2. Regional digital health action plan for the WHO European Region 2023–2030. Available at: <https://apps.who.int/iris/handle/10665/360950> [↑](#footnote-ref-3)
3. Association of Pharmacies; Association *“Resursu centrs cilvēkiem ar garīgiem traucējumiem “ZELDA””* [Resource Centre for People with Mental Disorders ZELDA]; Digital Health Association; HIV Patients’ Association AGIHAS; Association of People with Disabilities and Their Friends *Apeirons*; Latvian Association of Pharmacy Owners, Latvian Medical Association, Latvian Cooperation Organisation for People with Special Needs SUSTENTO; Latvian Pharmacist Association; General Practitioners’ Association of Latvia; Young Doctors’ Association of Latvia; Rural General Practitioners’ Association of Latvia; Latvian Association of Mayor Hospitals; Latvian Nurses Association; Latvian Network of Patient Organisations; Latvian Association of Local and Regional Governments; Latvian Pensioners’ Federation; Latvian Alliance of Rare Diseases; Latvian Hospital Association; Latvian Association of Universities; Latvian Parents’ Organisation *Mammām un tētiem* [For Moms and Dads]; Latvian Dental Association; *Onkoalianse* [OncoAlliance]; Healthcare Employers’ Association; Children’s Clinical University Hospital; Ministry of Economics; Ministry of Education and Science, Ministry of Welfare, Chancellery of the President of Latvia; University of Latvia; National Health Service; World Health Organization; Cross-sectoral Coordination Centre; Riga City Council; Rīga Stradiņš University; Riga Technical University; Centre for Disease Prevention and Control; Health Inspectorate; Ministry of Health; Ministry of Environmental Protection and Regional Development. [↑](#footnote-ref-4)
4. Memorandum of Cooperation between the Health Care Sector and Stakeholders on Digital Transformation, the Digital Health Ecosystem, and the Promotion of Innovations in the Health Sector. Available at: <https://www.vm.gov.lv/lv/jaunums/vienojas-par-jaunu-pieeju-veselibas-nozares-digitalizacija> [↑](#footnote-ref-5)
5. For more information, see https://digital-strategy.ec.europa.eu/en/policies/1-million-genomes [↑](#footnote-ref-6)
6. Article 25(2) of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). [↑](#footnote-ref-7)
7. https://health.ec.europa.eu/ehealth-digital-health-and-care/overview\_en [↑](#footnote-ref-8)
8. <https://digitalhealtheurope.eu/glossary/digital-literacy/> [↑](#footnote-ref-9)
9. World Medical Association Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects. Available at: <https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/> [↑](#footnote-ref-10)
10. Available online at: [www.eveseliba.gov.lv](http://www.eveseliba.gov.lv) [↑](#footnote-ref-11)
11. <https://www.merriam-webster.com/dictionary/ecosystem> [↑](#footnote-ref-12)
12. [https://commission.europa.eu/law/law-topic/data-protection/rules-business-and-organisations/obligations/what-does-data-protection-design-and-default-mean\_en](https://ec.europa.eu/info/law/law-topic/data-protection/reform/rules-business-and-organisations/obligations/what-does-data-protection-design-and-default-mean_en) [↑](#footnote-ref-13)
13. <https://www.itu.int/rec/T-REC-Y.2060-201206-I> [↑](#footnote-ref-14)
14. <https://www.europarl.europa.eu/topics/en/article/20200827STO85804/what-is-artificial-intelligence-and-how-is-it-used> [↑](#footnote-ref-15)
15. <https://ec.europa.eu/health/sites/default/files/ehealth/docs/2018_provision_marketstudy_telemedicine_en.pdf> [↑](#footnote-ref-16)
16. <https://digitalhealtheurope.eu/glossary/health-data/> [↑](#footnote-ref-17)
17. CSB data. [↑](#footnote-ref-18)
18. latvija.gov.lv [↑](#footnote-ref-19)
19. Kursīte, M., Stars, I., Strēle, I. et al. (2022). *A mixed-method study on the provision of remote consultations for non-communicable disease patients during the first wave of the COVID-19 pandemic in Latvia: lessons for the future.* BMC Health Serv Res 22, 263. <https://doi.org/10.1186/s12913-022-07634-x> [↑](#footnote-ref-20)
20. This issue is also highlighted in the Digital Transformation Guidelines 2021–2027. [↑](#footnote-ref-21)
21. Section 4 of the Law on Legal Force of Documents establishes the mandatory details that ensure legal force to a document, for example: 1) the name of the author of the document; 2) the date of the document; 3) the signature (except for the cases laid down in the Law); 4) the recipient (in a document where its recipient must be indicated). [↑](#footnote-ref-22)
22. Cabinet Regulation No. 265 of 4 April 2006, Procedures for Keeping Medical Documents. [↑](#footnote-ref-23)
23. The Council included representatives from the Latvian Pharmacist Association, Latvian Medical Association, Professional Association of Latvian Outpatient Service Doctors’ Assistants, Latvian Hospital Association, Latvian Association of Mayor Hospitals, Latvian Nurses Association, the Association of Pharmacy Owners, the Rural General Practitioners’ Association of Latvia, the General Practitioners’ Association of Latvia, the Healthcare Employers’ Association, and also the Resource Centre for People with Mental Disorders ZELDA and the Cooperation Organisation for People with Special Needs SUSTENTO. [↑](#footnote-ref-24)
24. NHS data. [↑](#footnote-ref-25)
25. According to the Latvian Startup Association: <https://startin.lv/startup-database/> [↑](#footnote-ref-26)
26. See <https://www.openhealthlabs.com> [↑](#footnote-ref-27)
27. On 1 July 2022, the reform of the remuneration system in State administration came into force to ensure that the employee salary, on average, corresponds to 80 % of the salary for equivalent positions in the private sector. However, the impact of this reform to the employment of ICT specialists in State administration can only be assessed over time (<https://www.mk.gov.lv/lv/amatu-klasifikacijas-process>). [↑](#footnote-ref-28)
28. Digital Economy and Society Index (DESI) 2021. Available at: https://digital-strategy.ec.europa.eu/en/policies/desi-latvia [↑](#footnote-ref-29)
29. <https://www.saeima.lv/petijumi/Pieauguso_izglitiba_petijums.pdf> [↑](#footnote-ref-30)
30. Individual electronic health care event notifications may take various forms, for example, a reminder to undergo a screening examination, a notification of an upcoming vaccination deadline, a notification that laboratory test results are available, etc. [↑](#footnote-ref-31)
31. Within the framework of Measure 4.1.1.4 “Strengthening and Digitising the Health Care Management System by Developing Digital Solutions” under the European Union Cohesion Policy Programme for the 2021–2027 programming period, it is planned to implement a significant portion of the Strategy tasks, including the development of the EHR by ensuring the health data digitisation, timeliness, security and quality, and also the modernisation of the circulation of medical devices and medicinal products. The implementation of those tasks will allow to achieve one of the indicators of this SO, i.e. the number of individuals using the services offered by the eHealth system; the number of individuals using the services offered by the eHealth system is set to reach 667 686 users annually by 2029 (compared to the initial value of 351 648 users annually in 2020). [↑](#footnote-ref-32)
32. A general practitioner (general medicine physician), paediatrician, internist, nurse, physician assistant, midwife. [↑](#footnote-ref-33)
33. Specialist physicians (excluding neonatologists, forensic psychiatry experts, laboratory physicians, radiologists, pathologists, forensic medical experts, emergency medicine physicians, clinical physiologists, phlebologists, transplantologists, transfusiologists, endoscopists (gastrointestinal endoscopy)) and nutrition specialists, psychologists. [↑](#footnote-ref-34)
34. Remote consultations are included in the list of State-paid services since March 2020. In four months of 2021, the share of consultations provided by general practitioners and specialists was 15 %. [↑](#footnote-ref-35)
35. 10 Usability Heuristics for User Interface Design. NN/g Nielsen Norman Group. Available at: https://www.nngroup.com/articles/ten-usability-heuristics/ [↑](#footnote-ref-36)
36. Information on the website evaluation in accordance with the Web Content Accessibility Guidelines (WCAG 2.1 AA): https://pieklustamiba.varam.gov.lv/ [↑](#footnote-ref-37)
37. The guidelines (Guideline on the electronic exchange of health data under Cross-Border Directive 2011/24/EU.Medical images and medical imaging reports) are developed within the EC eHealth Network. [↑](#footnote-ref-38)
38. <https://datamed.lv/en/faq.html>; accessed on 23 November 2022. [↑](#footnote-ref-39)
39. <http://petijumi.mk.gov.lv/node/3872> [↑](#footnote-ref-40)
40. The formula for calculating the tariffs for State-paid health care services is defined in Paragraph 152 of Cabinet Regulation No. 555 of 28 August 2018, Procedures for the Organisation of and Payment for Health Care Services. [↑](#footnote-ref-41)
41. International Classification of Functioning, Disability, and Health (ICF) developed by the WHO aims to provide a unified and standardised language and guidelines for describing health conditions and health-related states. It characterises health components and certain well-being components related to health (for example, education and employment). (<https://www.spkc.gov.lv/lv/media/1633/download>) [↑](#footnote-ref-42)
42. Information on the phenotypic data on gene donors stored in the Genome Database of the Latvian Population is available at: https://www.genomadatubaze.lv/en/available-phenotypic-data [↑](#footnote-ref-43)
43. The **Beyond 1 Million Genomes (B1MG)** project, <https://b1mg-project.eu/> [↑](#footnote-ref-44)
44. The Genomic Data Infrastructure (GDI) project <https://gdi.onemilliongenomes.eu/>  [↑](#footnote-ref-45)
45. <https://www.himss.org/resources/interoperability-healthcare> [↑](#footnote-ref-46)
46. <https://www.hl7.org/> [↑](#footnote-ref-47)
47. Currently Latvia is using ICD-O-2. [↑](#footnote-ref-48)
48. Measure 16.1 of the Plan provides for the following: “Development of a unified national health and examination database for oncology, including the creation, development, and implementation of content for the Cancer Register, thereby ensuring data availability for research, the development of proposals for the functionality of a screening data platform, thereby ensuring the recording of indicators in line with EU quality indicators and data exchange at the EU level, and the development of a unified screening mammography data entry software module that supports double-blind examination descriptions, the transition to the BI-RADS classification system used in European countries, and also the evaluation of the feasibility of establishing a centralised archive for digital screening mammography images for archiving the mammography images of screening performed in Latvia. Development of a model for the introduction of patient and service coordinators”. [↑](#footnote-ref-49)
49. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). [↑](#footnote-ref-50)
50. During the development of the Strategy, EU standards for secondary data exchange infrastructure have not yet been established. [↑](#footnote-ref-51)
51. Law on Secondary Use of Data. Draft law of the 13th*Saeima* No. 1670/p. 13. https://titania.saeima.lv/LIVS13/saeimalivs13.nsf/webSasaiste?OpenView&restricttocategory=1670/Lp13 [↑](#footnote-ref-52)
52. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0197 [↑](#footnote-ref-53)
53. <https://ec.europa.eu/health/ehealth-digital-health-and-care/electronic-cross-border-health-services_en> [↑](#footnote-ref-54)
54. <https://ec.europa.eu/health/ehealth/electronic_crossborder_healthservices_en> [↑](#footnote-ref-55)
55. A federated data access infrastructure will enable the secure storage of national genomic data collections in the relevant countries and cross-border access to them, rather than them being stored in a central European repository. [↑](#footnote-ref-56)
56. Kursīte, M., Stars, I., Strēle, I. et al. (2022). *A mixed-method study on the provision of remote consultations for non-communicable disease patients during the first wave of the COVID-19 pandemic in Latvia: lessons for the future.* BMC Health Serv Res 22, 263. <https://doi.org/10.1186/s12913-022-07634-x> [↑](#footnote-ref-57)
57. **Telemonitoring** – the use of information and communication technologies to monitor and transmit information related to the health condition of a patient between geographically separated individuals. It allows for patient monitoring while being at home or in a health care facility, using external electronic devices in combination with a telecommunication system (landline or mobile phone, cable network, or broadband technologies). [↑](#footnote-ref-58)
58. https://www.cms.gov/Medicare/Medicare-General-Information/Telehealth/Telehealth-Codes [↑](#footnote-ref-59)
59. Action Plan for the Implementation of Telemedicine Services in Latvia, 7 November 2022 (developed within the scope of the project “Further Development of Hospital Services, Telemedicine, and Integrated Health Care” supported by the Directorate-General for Structural Reform Support of the European Commission) [↑](#footnote-ref-60)
60. Action Plan for the Implementation of Telemedicine Services in Latvia, 7 November 2022 (developed within the scope of the project “Further Development of Hospital Services, Telemedicine, and Integrated Health Care” supported by the Directorate-General for Structural Reform Support of the European Commission) [↑](#footnote-ref-61)
61. Ibid. [↑](#footnote-ref-62)
62. Ibid. [↑](#footnote-ref-63)
63. Ibid. [↑](#footnote-ref-64)
64. Villeruša, A. (Ed.). (2021). *Covid-19 pandēmijas ietekme uz veselības aprūpes sistēmu Latvijā: pieredze un nākotnes risinājumi* [The Impact of the COVID-19 Pandemic on the Health Care System in Latvia: Experience and Future Solutions]. Available at: https://www.vm.gov.lv/lv/media/6489/download [↑](#footnote-ref-65)
65. Action Plan for the Implementation of Telemedicine Services in Latvia, 7 November 2022 (developed within the scope of the project “Further Development of Hospital Services, Telemedicine, and Integrated Health Care” supported by the Directorate-General for Structural Reform Support of the European Commission) [↑](#footnote-ref-66)
66. World Medical Association Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects. Available at: https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/ [↑](#footnote-ref-67)
67. ARTSS: *Perspektīvās tehnoloģijas noturīgiem un drošiem servisiem VPP-COVID-2020/1-0009 Izvērtējums par attālināto veselības aprūpes pakalpojumiem un to ietekmējošajiem faktoriem Rekomendācijas normatīvo aktu grozījumiem veselības aprūpes pakalpojumu kvalitātes vadībai* [ARTSS: Advanced Resilience Technologies for Secure Service. VPP-COVID-2020/1-0009 Evaluation of Remote Health Care Services and the Factors Influencing Them. Recommendations for Amendments to Laws and Regulations for Quality Management of Health Care Services]. G. Majore, I. Reinholde, J. Binde, E. Bušs, I. Auliciema, M. Stučka, V. Bambāns, M. Švirksts, 10 March 2021, Version 6. Available at: <https://lzp.gov.lv/wp-content/uploads/2021/04/ARTSS-WP5-SR1-Telemedicina_publicesanai.pdf> [↑](#footnote-ref-68)
68. ARTSS: *Perspektīvās tehnoloģijas noturīgiem un drošiem servisiem VPP-COVID-2020/1-0009 Izvērtējums par attālināto veselības aprūpes pakalpojumiem un to ietekmējošajiem faktoriem Rekomendācijas normatīvo aktu grozījumiem veselības aprūpes pakalpojumu kvalitātes vadībai* [ARTSS: Advanced Resilience Technologies for Secure Service. VPP-COVID-2020/1-0009 Evaluation of Remote Health Care Services and the Factors Influencing Them. Recommendations for Amendments to Laws and Regulations for Quality Management of Health Care Services]. G. Majore, I. Reinholde, J. Binde, E. Bušs, I. Auliciema, M. Stučka, V. Bambāns, M. Švirksts, 10 March 2021, Version 6. Available at: <https://lzp.gov.lv/wp-content/uploads/2021/04/ARTSS-WP5-SR1-Telemedicina_publicesanai.pdf> [↑](#footnote-ref-69)
69. Action Plan for the Implementation of Telemedicine Services in Latvia, 7 November 2022 (developed within the scope of the project “Further Development of Hospital Services, Telemedicine, and Integrated Health Care” supported by the Directorate-General for Structural Reform Support of the European Commission) [↑](#footnote-ref-70)
70. Investment 2.3.1.2.i “Development of Digital Skills of Enterprises” of Reform and Investment Direction 2.3 “Digital Skills” under Component 2 “Digital Transformation” of the Plan for the European Recovery and Resilience Facility; information available at: https://www.em.gov.lv/lv/digitalo-prasmju-attistiba. [↑](#footnote-ref-71)
71. Investment 2.3.1.4.i “Development of the Approach to Individual Learning Accounts” of Reform 2.3.1.r “Development of a Sustainable and Socially Responsible Support Framework for Adult Learning” of Reform and Investment Direction 2.3 “Digital Skills” under Component 2 “Digital Transformation” of the Plan for the European Recovery and Resilience Facility. [↑](#footnote-ref-72)
72. Investment 2.3.2.1.i “Digital Skills for Citizens, Including Young People” of Reform 2.3.2.r “Digital Skills for the Digital Transformation of Society and Government” of Reform and Investment Direction 2.3 “Digital Skills” under Component 2 “Digital Transformation” of the Plan for the European Recovery and Resilience Facility. [↑](#footnote-ref-73)
73. Investment 2.3.2.2.i “Development of State and Local Government Digital Transformation Skills and Capabilities” of Reform 2.3.2.r “Digital Skills for the Digital Transformation of Society and Government” of Reform and Investment Direction 2.3 “Digital Skills” under Component 2 “Digital Transformation” of the Plan for the European Recovery and Resilience Facility. [↑](#footnote-ref-74)
74. Specific Objective 4.1.2 “Improving Equal and Timely Access to High-Quality, Sustainable, and Cost-Efficient Health Care, Health Promotion, and Disease Prevention Services by Enhancing the Efficiency and Resilience of Health Care Systems”. [↑](#footnote-ref-75)
75. Action Plan for the Implementation of Telemedicine Services in Latvia, 7 November 2022 (developed within the scope of the project “Further Development of Hospital Services, Telemedicine, and Integrated Health Care” supported by the Directorate-General for Structural Reform Support of the European Commission) [↑](#footnote-ref-76)
76. Investment 2.3.2.1.i “Digital Skills for Citizens, Including Young People” of Reform 2.3.2.r “Digital Skills for the Digital Transformation of Society and Government” of Reform and Investment Direction 2.3 “Digital Skills” under Component 2 “Digital Transformation” of the Plan for the European Recovery and Resilience Facility. [↑](#footnote-ref-77)
77. This issue is also highlighted in the Digital Transformation Guidelines 2021–2027. [↑](#footnote-ref-78)
78. Study “Evaluation of the Necessary Investments for Developing a New Patient-oriented Integrated Health Care Service Model for Patients with Chronic Diseases” (service contract No. 12-10/60 concluded on 23 March 2020, procurement identification No. VM 2020/03/ESF, Technical Assistance No. 10.1.3.0/19/TP/001). Available at: <http://petijumi.mk.gov.lv/sites/default/files/title_file/Integretas_aprupes_pakalpojumi_PETIJUMS.docx> [↑](#footnote-ref-79)
79. Health data specified in Sub-paragraph 6.17 of Cabinet Regulation No. 134. [↑](#footnote-ref-80)
80. The SBDC already receives and compiles that information within the scope of its functions. This information must be integrated with the eHealth system or the NHS LADB IS. [↑](#footnote-ref-81)
81. Medical treatment institutions and the NHS already have access to that information and they use it; however, it must be also accessible to the patient. [↑](#footnote-ref-82)
82. Paragraph 73 of Cabinet Regulation No. 661 of 28 September 2021, National Anti-Doping Regulations. Available at: <https://likumi.lv/ta/en/en/id/326512-national-anti-doping-regulations> [↑](#footnote-ref-83)
83. In the practice of the LADB, there have been cases where a patient (athlete) takes prescribed medicinal products without knowing that those medicinal products are banned in sports. Taking medication which is prohibited in sports increases the risk for the athlete to face sanctions and may also provide an unfair advantage over other athletes, thereby compromising the principle of fair play in sports. [↑](#footnote-ref-84)
84. In the EU, after the registration of medicinal products, particular attention is given to the safety of their use, and measures are taken to constantly monitor and evaluate the potential risk to the health and life of patients. With the emergence of new information, medicinal product manufacturers prepare educational materials (for medical practitioners, pharmacists, and patients), highlighting the risks of interaction between medicinal products and active substances, including the potential risks to human health and life and possibilities of mitigating those risks. Educational materials on the reduction of risks posed by the use of medicinal products contain important and up-to-date information essential for the health and life of patients. [↑](#footnote-ref-85)
85. List M medicinal products – medicinal products reimbursable within the scope of the reimbursement procedures and used by pregnant women, women during the period following childbirth up to 70 days, and children up to the age of 24 months, but not included on the list of reimbursable medicinal products and meet the requirements laid down in Paragraph 9.1 of Cabinet Regulation No. 899 of 31 October 2006, Procedures for the Reimbursement of Expenditures for the Acquisition of Medicinal Products and Medical Devices Intended for the Outpatient Medical Treatment. [↑](#footnote-ref-86)
86. <http://petijumi.mk.gov.lv/node/3872> In the context of the Strategy, care plan refers to social recommendations in accordance with Cabinet Regulation No. 265 of 4 April 2006, Procedures for Keeping Medical Documents. [↑](#footnote-ref-87)
87. <https://www.vm.gov.lv/lv/veselibas-darbaspeka-strategija-latvija> [↑](#footnote-ref-88)
88. [https://www.oecd-ilibrary.org//sites/4bbba455-en/index.html?itemId=/content/component/4bbba455-en&mimeType=text/html#](https://www.oecd-ilibrary.org//sites/4bbba455-en/index.html?itemId=/content/component/4bbba455-en&mimeType=text/html) [↑](#footnote-ref-89)
89. <https://www.spkc.gov.lv/lv/pacientu-pieredzes-merijumi> [↑](#footnote-ref-90)
90. Informative report “Proposals for Strengthening the Hospital Network”, 23-TA-1007, available at: <https://tapportals.mk.gov.lv/legal_acts/3e06b766-0a7d-4088-b1f6-5a47e573369a>. Accessed on 6 June 2023. [↑](#footnote-ref-91)
91. PREM was developed as part of the project No. SRSS/S2019/035 “Support to the Development of Patient-reported Experience Measures for Health System Performance Assessment in Latvia” supported by the EC Structural Reform Support Programme 2017–2020. [↑](#footnote-ref-92)
92. As part of the ERDF Project No. 2.2.1.1/17/I/024 “Unified Contact Centre Platform for Supporting Emergency Services and Delivery of Public Services”, managed and implemented by the Information Centre of the Ministry of the Interior, a platform has been developed for the digitised reception of calls and the transmission of information to emergency services. [↑](#footnote-ref-93)
93. Paragraph 2.8 “Continue the Improvement of the Forensic Medical Examination Information System of the State Centre for Forensic Medical Examination by Adapting it to the E-case Architecture and Further Digitisation of the Examination and Research Process” under Action Sub-direction 4.4.5.1 “Further Digitisation of the Investigation and Litigation Process” of the Digital Transformation Guidelines 2021–2027. [↑](#footnote-ref-94)
94. Memorandum of Cooperation between the Health Care Sector and Stakeholders on Digital Transformation, the Digital Health Ecosystem, and the Promotion of Innovations in the Health Sector. Available at: <https://www.vm.gov.lv/lv/jaunums/vienojas-par-jaunu-pieeju-veselibas-nozares-digitalizacija> [↑](#footnote-ref-95)
95. Draft Cabinet Order “On Approval of the Passport of Project “Improvement of the Management of Treatment Process Data” under Investment 2.1.3.1.i” (22-TA-3556) [↑](#footnote-ref-96)
96. Draft Cabinet Order, On Approval of the Passport of Project “Development of a Platform for the Exchange of Data of Oncological Patients Treated in Clinical University Hospitals” under Investment 2.1.3.1.i (22-TA-2949) [↑](#footnote-ref-97)
97. Draft Cabinet Order “On Approval of the Passport of Project “Improvement of the Management of Treatment Process Data” under Investment 2.1.3.1.i” (22-TA-3556) [↑](#footnote-ref-98)
98. <https://likumi.lv/ta/id/301399-veselibas-aprupes-pakalpojumu-organizesanas-un-samaksas-kartiba> [↑](#footnote-ref-99)
99. <https://likumi.lv/ta/id/147522-ambulatorajai-arstesanai-paredzeto-zalu-un-medicinisko-iericu-iegades-izdevumu-kompensacijas-kartiba> [↑](#footnote-ref-100)
100. <https://likumi.lv/ta/id/299077-veselibas-aprupes-pakalpojumu-sanemeju-datubazes-noteikumi> [↑](#footnote-ref-101)
101. <https://likumi.lv/ta/id/128393-iedzivotaju-genoma-valsts-registra-izveides-papildinasanas-un-uzturesanas-kartiba> [↑](#footnote-ref-102)
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103. <https://likumi.lv/ta/en/en/id/181288-procedures-for-establishing-supplementing-and-maintaining-a-register-of-patients-suffering-from-certain-diseases> [↑](#footnote-ref-104)
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