Situational Analysis Report

THE DEVELOPMENT OF THE ESTONIAN HEALTH SYSTEM PERFORMANCE ASSESSMENT FRAMEWORK

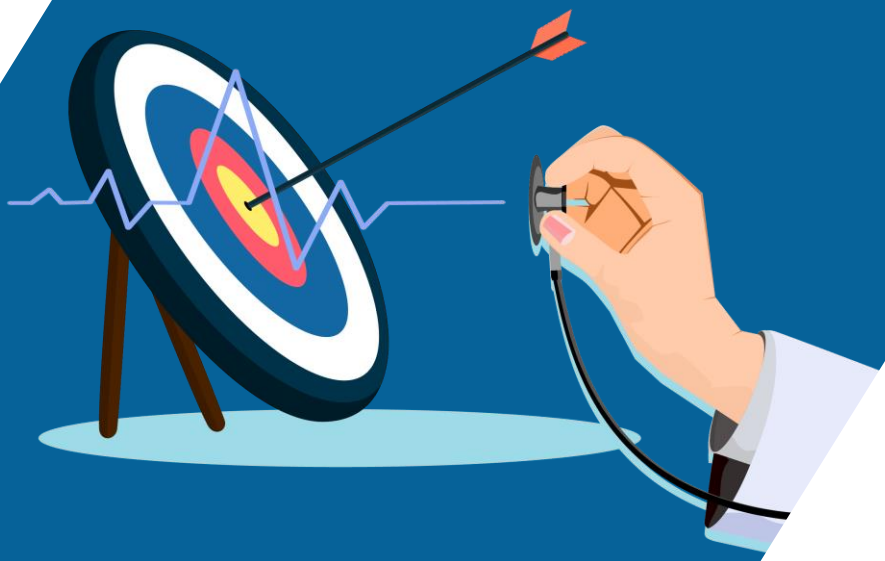

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Table of contents

Acknowledgements 2

Table of contents 3

Acronyms 5

1 Background and Introduction 6

2 Sources and quality of accessible health data in Estonia 8
- Introduction 8
  - National priorities 9
- Other indicators at national level 10
- International benchmarking 11
- Sources and quality of data 11
  - National Institute for Health Development 11
  - National registers and databases 12
  - Health Statistics 13
  - Estonian Health Insurance Fund 14
  - Health Board 15
  - State Agency of Medicines 17
  - Health and Welfare Information Systems Center 18
  - Statistics Estonia 19
  - eHIV 20
  - Myocardial Infarction Register 20
  - Social Insurance Board 20

3 Estonia's Health Data Infrastructure in the International Context 22
- Data development, use and governance in the OECD context 22
  - Data linkage capacity is strong, but can be better utilized 24
  - Concerns about the quality of data could limit their usefulness, though timeliness is not a significant barrier 26

4 Current policy context and governance structures related to HSPA 29
- Main stakeholders and their current roles 29
- Strengths and weaknesses of current practices in Estonia 31
  - Data collection 31
  - Publishing data 32
- Use of the evidence-based information in the strategic planning and implementing process 32

5 Previous HSPA Development Process 34

6 Conclusions 37

References 38

Annex A. Indicators listed in the National Health Plan 2020-2030 41

Annex B. EHIF Clinical Indicators 46

Annex C. Provider Feedback Indicators 52

Annex D. Quality Bonus System for family physicians (EHIF) 53

Annex E. Estonian Indicators Reported for International Benchmarking 56

Annex F. Summary of HSPA development meetings and informative consultations 57

Annex G. HSPA Development Workshop Summaries 58

Workshop 1: Purpose and scope of the HSPA Framework [21 October 2021]. 58
Workshop 2: HSPA Elsewhere [21 October 2021]. 59
Workshop 3: Health Data Infrastructure [03 February 2022] 59
Workshop 4: HSPA Governance [30 March 2022] 60

Figures

Figure 2.1. Key Indicators of the Estonian National Health Plan 2020–2030 9
Figure 2.2. Internationally submitted data by categories 11
Figure 2.3. Health Statistics Published by NIHD 13
Figure 3.1. OECD Recommendation on Health Data Governance 23
Figure 3.2. Small group of Adherents score highly on both dataset availability, maturity and use and dataset governance 24
Figure 3.3. Estonian key national health datasets are available and but not regularly linked for monitoring and research 25
Figure 3.4. Estonia does not link most datasets regularly for monitoring and research 26
Figure 3.5. Estonia updates most key national health data in real time 27
Figure 3.6. Countries using clinical data for monitoring and research 27
Figure 4.1. Institutions in health policy 30
Figure 4.2. Other stakeholders 31
Figure 5.1 2009 Framework for assessing health system performance in Estonia 34

Acronyms

ADR	Adverse drug reaction
AMI	Acute myocardial infarction
ATC	Anatomical-Therapeutical-Chemical classification
COSI	Childhood Obesity Surveillance Initiative
EHIF	Estonian Health Insurance Fund
EHIS	European Health Information Survey
EHR	Electonic Health Record
eHIS	Electronical Health Information System
EMIR	Estonian Myocardial Infarction Register
EUROSTAT	Statistical Office of the European Union
HSPA	Health system performance assessment
HWISC	Health and Welfare Information System Center
ICD10	International Classification of Diseases 10th version
ICT	Information and Communication Technology
MoSA	Ministry of Social Affairs
NHP	National Health Plan
NIHD	National Institute for Health Development
OECD	Organisation for Economic Co-operation and Development
QBS	Quality Bonus System
SAM	State Agency of Medicines
SE	Statistics Estonia
WHO	World Health Organization

1 Background and Introduction

This document assesses the current status quo of the HSPA in Estonia. It discusses the main stakeholders and definition of their current roles, sources and quality of currently collected data, the Estonian data infrastructure compared with other countries, current policy context and governance structures, and strengths and weaknesses of current practices. It also includes a review of the previous HSPA effort, implementation, challenges and opportunities.

The Ministry of Social Affairs (MoSA) oversees the Estonian health system, while the Estonian Health Insurance Fund (EHIF) pools the majority of public funds and organises the purchasing of health care. Agencies under MoSA support national health activities such as professional certifications, pharmaceutical quality assurance and public health. Hospitals in Estonia are mostly owned by the state, local governments or public legal bodies, while primary care centres, pharmacies and outpatient clinics (if not part of a hospital) are privately owned.

With the goal of achieving better health outcomes for the Estonian population over the next decade, and to ensure the sustainability and resilience of the national health system, MoSA has identified the need for the development and implementation of a Health System Performance Assessment (HSPA) framework, methodology, and governance plan. There is a need for clear health information system governance and for agreement on a systematised list of health system monitoring indicators and objectives.

Activities that monitor the performance of specific aspects of the health care system are currently in place in Estonia, but they are fragmented and lack systematic implementation. Estonian health data is collected and analysed by several different organisations, including the National Institute for Health Development (NIHD), the EHIF, the Estonian Health and Welfare Information System Center (HWISC), the Health Board and the State Agency of Medicines (SAM). However, the strategies, methodologies and procedures used in the calculation of health statistics lack harmonisation between relevant government bodies.

National authorities have recognized the need for governance structures, policies, and processes which would ensure the consistent and systematic generation of health related indicators. However, in some cases, the roles and responsibilities of different government agencies overlap. For example, some data sets are analysed and published by both NIHD and EHIF. This lack of clear delineation results in the fragmentation in health information system, inefficient use of resources, and challenges in generating the necessary data to inform evidence-based policy decisions.

Estonia has advanced in digital innovation in health, and provides many health tools and services online. These include electronic health records, national image archiving, ePrescriptions, eReferrals, eAmbulance and eConsultations. A data exchange system allows linkages between various eServices in both the public and private sectors, and more than 96% of Estonians hold an ID card that allows for digital authentication and access to eServices via the Internet. Additionally, the EHIF has used electronic billing data since the late 1990s, ahead of many other EU Member States.

The high level of digitisation in Estonia provides a vast amount of health related data which can serve as a foundation for HSPA. However, challenges in interoperability remain, especially relating to integrating eHealth solutions to care processes, outcome measurements and clinical decision-making. National authorities have recognized the potential for using the e-health information system data in a way that will align with the development of indicators sourced from e-health data. The Estonian health system is largely funded through payroll tax. The Estonian Health Insurance Fund (EHIF) operates as a semi-autonomous public organisation, pooling most of the public funding for health and organising the purchasing of health care. The Ministry of Social Affairs oversees the Estonian health system, and one of its agencies—the Health Board—led Estonia's health system response to the COVID-19 pandemic, in accordance with the provisions of the Emergency Act. All major hospitals in Estonia are publicly owned; they provide inpatient care, day-care and the majority of outpatient specialist care. Most primary health and dental care providers are private, as are some providers of outpatient specialist and nursing care.

This document assesses the current status quo of HSPA in Estonia. It discusses the main stakeholders and definition of their current roles, sources and quality of currently collected data, the Estonian data infrastructure compared with other countries, current policy context and governance structures, and strengths and weaknesses of current practices. It also includes a review of the previous HSPA effort, implementation, challenges and opportunities.

2 Sources and quality of accessible health data in Estonia

There is a significant amount of data collected in the health care field of Estonia. All databases are structured to allow the collecting authority to perform the tasks assigned to them by law. A large part of the databases contains detailed data, where, among other things, personal identification codes are registered. However, non-standardized definitions and lack of data structure have been identified as challenges, reducing data comparability. In some cases, data collection is carried out in an aggregated manner using the reports prepared for this purpose. Consequently, such data is not linkable, cannot be easily verified, and often does not meet the needs of consumers to obtain more detailed information. In addition, these reports rely on significant administrative inputs from health care providers. With improved coordination in data collection and linkage this could be avoided.

Introduction

This section describes available health-related data and its specifics in Estonia. Its purpose is to support the work of OECD in the Estonian health system performance assessment framework development. The report is compiled based on legislation (statutes of registers, institutions, etc.), materials available on the

web (e.g., webpages of institutions), discussions held in HSPA development meetings (see 6Annex F and 6Annex G), and communication with key stakeholders (MoSA, NIHD, EHIF, Health Board, SAM and HWISC) held over the period of November 2021 – March 2022.

Indicators and methods

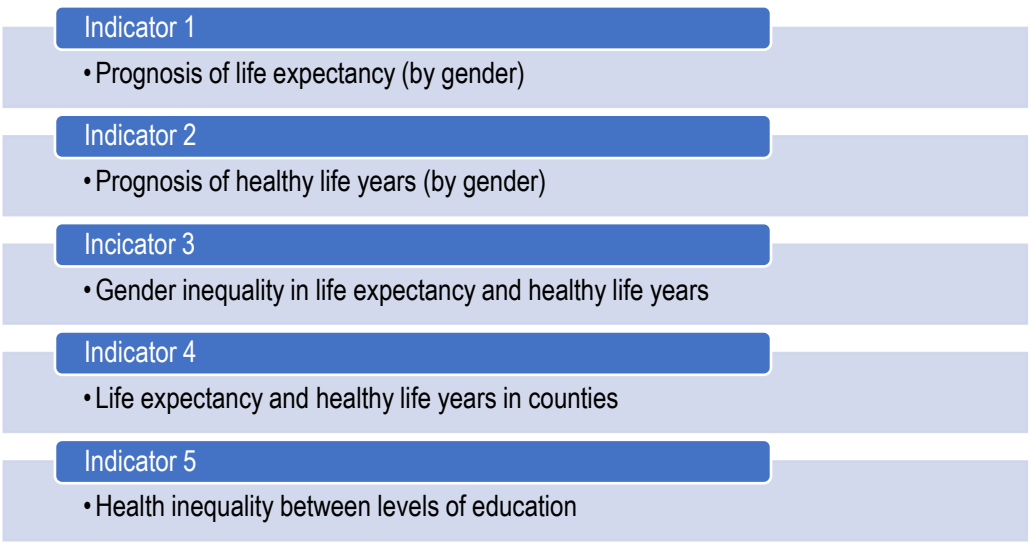
National priorities

The main policy document in Estonia is the National Health Plan (NHP) (Sotsiaalministeerium, 2019). The NHP operates on a ten year cycle; during this period, it sets goals with measures and activities for the health care field. Key objectives of NHP for 2020–2030 are the following:

- The average life expectancy of Estonian people will increase by 2030: to 78.0 years for men and 84.0 years for women. Healthy life years will increase to 62.0 and 63.0 years for men and women, respectively.
- The growth of healthy life years exceeds the increase of life expectancy, i.e., people live most of their lives without any limitations caused by their health.
- Reduce health inequalities between gender, regions, and levels of education. By 2030, life expectancy in any county is not more than two years shorter than the Estonian average. People with basic education do not fall behind the average life expectancy of people with higher education by more than eight years.

The plan is divided into programs with means and activities to achieve goals and set indicators to measure progress. There are three program domains: healthy choices, a health-supportive environment, and person-centred health care. Altogether, 114 indicators are used to measure progress, and five of them are considered as key indicators (Figure 2.1). A full list of the indicators included in the plan can be found in 6Annex A.

Figure 2.1. Key Indicators of the Estonian National Health Plan 2020–2030



Source: National Health Plan 2020-2030; Ministry of Social Affairs

Other indicators at national level

Estonian Health Insurance Fund (EHIF) leads the development of **clinical indicators**. First, a governing council to oversee the development of indicators was established. Members of this council were leading specialists in the healthcare field; associations of different clinical specialties developed clinical indicators for specific topics. From 2022 onward, a working group of care quality indicators replaced the council. This working group includes quality managers from six hospitals. Their task is to evaluate the relevance of existing indicators, map bottlenecks in clinical work and reasons for any problems, and additionally to develop measures for quality improvements. This working group includes quality managers from six hospitals.

EHIF also leads the development of another set of indicators for improving performance at the provider level. These indicators are called **health care service provider feedback indicators,** developed in collaboration with a care quality working group (see 6Annex C). Members of the working group are hospitals that are included in the hospital network development plan. The hospital development network plan is a state established hospital network which includes 21 hospitals. Depending on the population size in a county, at least one, but sometimes more than one hospital per county serves the needs of citizens for health care. These hospitals have different levels, and their capacity to provide some services depends on it. The levels are regional, central, general and local hospitals. This arrangement aims to provide better availability of health care services and integration between different health care levels (Ministry of Social Affaires, 2022). The feedback indicators measure integration and cooperation between health care levels and other aspects of care. Data used to compute these indicators also comes from EHIF's database and other national registers. The results are published by hospitals on EHIF's webpage once a year (Estonian Health Insurance Fund, n.d.). These indicators will allow both service providers and other experts to identify bottlenecks in service provision and improve quality and efficiency.

Hospitals can evaluate their work processes, coding, and prescribing practices based on the indicators using the publicly available performance indicator dashboard.[1]

Quality Bonus System (QBS) is a part of EHIF's payment scheme for family physicians in primary health care, and has been developed jointly by EHIF and the Estonian Family Doctors Association (see 6Annex D). The project was initiated in 2006, and participation was initially voluntary. Since 2016 it has been mandatory for all family physicians working with dedicated patient lists. The pay for performance scheme has a set of activities that family physicians need to complete to receive an additional incentive to base payments. There are three domains:

- observation of well-child follow-up visits and vaccinations,
- treatment and regular follow-ups of patients with certain chronic illnesses (diabetes, hypertension, post-acute myocardial infarction activities),
- presentation of additional competencies.

Data is collected and results calculated from primary health care claims. EHIF finds target groups based on claims data. Results are calculated annually and published on EHIF's web page at the provider level in terms of achieved points in total and coefficients for prevention/monitoring and additional competencies (QBS, Estonian Health Insurance Fund, n.d.).

1. [1] Example: https://www.haigekassa.ee/partnerile/tervishoiuteenuste-kvaliteet/ravikvaliteedi-indikaatorid/ravikvaliteedi-aruanded

International benchmarking

Estonia submits data to the OECD, WHO, EUROSTAT and other international databases for the purposes of international benchmarking. National Institute for Health Development gathers data from various sources and oversees the submission process. Broadly, the categories in which data has been presented are:

Figure 2.2. Internationally submitted data by categories

EUROSTAT-WHO-OECD	WHO	OECD	EDCD
• Operation theatres in hospitals • Day care places altogether • Health Activities • Health Employment • Workforce Migration • Physical Resources • Health Accounts	• Demographic and socioeconomic • Mortality–based indicators • Morbidity, disability, and hospital discharges • Lifestyles • Environment • Maternal and child health	• Health Status: life-expectancy, mortality, morbidity, road injuries, absence from work • Health Care Activities: ambulatory care, hospital care, procedures • Health Employment and Education • Long term Care Resources and Utilization • Non-Medical Determinants of Health: lifestyle and behavior • Pharmaceutical Market • Physical and Technical Resources • Remuneration of health professionals • Social Protection: health care coverage • Waiting Times	• Communicable diseases • Tuberculosis • Euro-Momo excess mortality

Source: OECD and NIHD

Some indicators requested in international data collections are not currently submitted by Estonia. The main reason for not submitting is that required data are not collected, or that there are differences in the methodology of calculating specific indicators. More specific descriptions for all the indicators mentioned in this section can be found in 6Annex E.

Sources and quality of data

National Institute for Health Development

The National Institute for Health Development (NIHD) is a government-established research and development body collecting, connecting, and providing reliable national information from many sources related to the health of the Estonian population. NIHD was established in 2003, and it is the legal successor of three institutions: Institute of Experimental and Clinical Medicine, the Estonian Center for Health Education, and the Center for Public Health and Social Training. Its primary responsibilities are research, development, and implementation in the health and social sector. NIHD collects and publishes health statistics (Tervise Arengu Instituudi põhimäärus, 2019). It is an internationally recognised leading public health competence centre in Estonia. Its mission is to promote research-based healthy choices, and its vision is to develop research-based health policies, promote living environments supportive of health and well-being, and create and share health knowledge in collaboration with its partners. As a result of its work, the key health indicators will improve(National Institute for Health Development, 2022).

Research

NIHD conducts a variety of studies. These studies are done based on available register data, or population-based surveys are undertaken to understand citizens' mindsets and behaviour related to health.The results are essential for policy-making and prevention activities and are often used for international benchmarking.

Some studies have been conducted for decades now; some are new. Some examples of the studies include Health Interview Survey (since 1996), Health Behaviour among Estonian Adult Population (since 1990), Health Behaviour in School-aged Children (HBSC: since 1993/94), Childhood Obesity Surveillance Initiative (COSI; since 2015/16), but there are many others.

National registers and databases[2]

NIHD is also responsible for maintaining six national registers and databases described below. Each registry uses data from electronic health records and collects personalized data. Unique personal ID codes are used, and data are enriched with data from other registers and databases, for example, the Population Register. Definitions for data collection are based on those developed by the international organizations (WHO, Eurostat, ECDC, etc.), and data is therefore internationally comparable. Registries provide data to international organizations and European and Global Data sources (WHO, ECDC, EMCDDA, Eurostat, ECIS, GBD, IARC, UNICEF, EUROMOMO, Europeristat, Nordscreen), and organizations and partners in Estonia (Statistical Office of Estonia, Health Board, universities, etc).

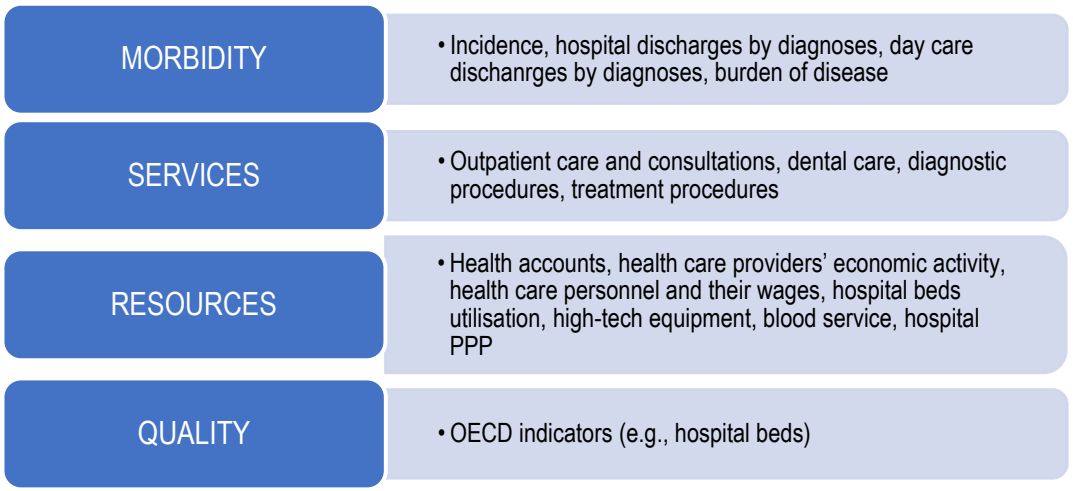
- **Medical Pregnancy Information System** (Estonian Medical Birth Registry and Estonian Abortion Register) (Raseduse infosüsteemi põhimäärus, 2019) was established in 1992 and collects data on all live and stillbirths and abortions (incl. induced and spontaneous abortions) in Estonia since 1992. Data are used to measure fertility in Estonia and epidemiologic scientific research, organise post-delivery health services, and publish birth statistics.
- **Estonian Causes of Death Register** (Surma põhjuste registri põhimäärus, 2019) collects data on all causes of death if death is registered on the Estonian territory or in Estonian foreign missions. The data are gathered in the electronic death certificate and causes of the death certificate and perinatal death certificate from the electronic Health Information System (eHIS). Collection and processing register data will support the development of national social policy, evaluation of population structure and state of health, and planning of preventive actions in the social and public health area.
- **Estonian Cancer Register** (Vähiregistri Põhimäärus, 2019), founded in 1978, has reliable cancer incidence data from 1968. Data are collected using clinical notifications from physicians and laboratory notifications from pathology and hematology laboratories. Data about children cancer incidence are not included.
- **Estonian Tuberculosis Register** (Tuberkuloosiregistri põhimäärus, 2019) collects data on all diagnosed tuberculosis cases in Estonia, treatment outcome, and antimicrobial resistance. This electronic database includes data since 1987; data providers are physicians, pathologists, and mycobacterial laboratories.
- **Estonian Cancer Screening Register** (Vähi sõeluuringute registri põhimäärus, 2022) The register was established in 2015. It is a digital register to which the data are obtained from the eHIS. It records data that is collected via cancer screening programs. Currently, there are three ongoing screening programs in Estonia: breast, cervical and colorectal cancer screenings. The register also facilitates the process of sending out participation invitations.
- **Estonian Drug Treatment Database** (Narkomaaniaraviregistri põhimäärus, 2020) contains data about patients who have been treated because of diagnosed mental and behavioral disorders due to drug use. Its data are used to organize relevant health services and plan preventive actions for drug abuse. Health care institutions holding authorization to provide psychiatry services in Estonia are data providers.

[2] The section has been written based on personal communication with representatives of the Department of Health Statistics of the National Institute for Health Development, a technical note from NIHD, and statutes of each register.

Health Statistics

In addition to registry data, NIHD collects, produces, and publishes health statistics in morbidity, burden of disease, health care services, resources, and quality (see Figure 2.3). Collaboration with international institutions provides the basis for definitions and methods.

Figure 2.3. Health Statistics Published by NIHD



Data for compilation and publication of healthcare-related statistics are collected from various sources. All health care providers are obliged to submit reports to NIHD. The obligation comes from the Health Services Organization Act and the Regulation (Tervishoiustatistika ja tervishoiualase majandustegevuse aruannete koostamise nõuded, andmete koosseis ning esitamise kord, 2022). There are eleven reports that are currently produced: ten at the aggregated data level, and one about the workforce at a personal level (A-web, 2022). Decision on what data to collect and publish is made in collaboration with MoSA, professional medical associations, and other associated partners. Topics of the reports are shown in the Table 2.1 below.

Over the past few years, NIHD has looked for alternative data sources to reduce the administrative burden of the health care providers and discontinue reporting using aggregated forms submitted by the providers. They have been able to replace reports about incidence statistics (incl. injuries) with EHIF's database claims data. Currently the other reports still rely on provider submissions.

NIHD uses EHIF's database data to compute international quality indicators. Claims data are at a personal level, but instead of the national ID codes, pseudocodes are used for sharing the data with NIHD. NIHD and EHIF have data exchange contracts in place, and the methodology for the compilation of statistics is under development.

EHIF is not the only institution with whom data exchange contracts are in place. Similar agreements with eHIS managed by the Health and Welfare Information System Center (HWISC), State Agency of Medicines (SAM), Health Board, Statistics Estonia (SE), and Rescue Board are made.

By legislation, NIHD has the right to get aggregated data from eHIS and the Estonian Myocardial Infarction Register. That enables to exchange of data between institutions more fluently and reduces the administrative burden that usually would be related to data exchange. NIHD receives extractions from eHIS annually from 2014 onwards. These extractions contain data of care types (out- and inpatient care, day care) and activities (bed profiles, diagnosis, procedures related to diagnostic and treatment, surgery,

visits). Additionally, other data sources are used by the statistics department of NIHD. For that, NIHD submits regular data requests to data holders.

Table 2.1. Data sources of health statistics

Data Sources	**Health registers and databases**	Registers of NIHD
		Health Information System
		Estonian Health Insurance Fund
		Health Board
		State Agency of Medicines
		Myocardial Infarction Register
	Surveys	Nutrition Study
		Health Behavior of Adult Population
		HBSC
		COSI
		ESPAD
	Other national registers and databases	Population Register
		Business Register
		Working Register
		Work environment Register
		Traffic Register
	Statistical reports submitted by health care providers	11 different forms: outpatient visits and home visits; hospitals; dentists; infant breast feeding; mental and behavioural disorders; day care; economy; health care facilities; health care personnel; blood centers
		Collected annually; 10 aggregate, one individual level

NIHD conducts regular quality checks on the data received. There are automatic checks for data submissions done via an A-web[3] environment by health care providers, both within and across individual data submissions. Statisticians do further inspections and contact providers in case of any ambiguity. Corrections are made according to consultation results. These inconsistencies can be, for example, significant changes compared to previous years. Regular quality reports (Tervise Arengu Instituut, 2022) are also published to present data quality. These include, among other topics, analyses of the eHIS data quality.

Estonian Health Insurance Fund

Estonian Health Insurance Fund (EHIF) is a legal person in public law whose objective is to ensure the payment of health insurance benefits, pay for the provision of health services, and performance of other functions relating to the organization of health services according to the legislation (Estonian Health Insurance Fund Act, 2021). Health insurance benefits are divided into two categories: non-monetary and monetary benefits. Non-monetary benefits cover services for prevention and treatment and medicines and medical devices. Monetary benefits include temporary work incapacity benefits (due to sickness, care responsibilities) and benefits for health services provided outside the waiting list or in another EU member

[3] A-web is an environment developed for and used to collect health statistics from health care providers via the web. Report forms need to be filled in by the providers and are later used for computing statistics by the NIHD statistics department.

state (Health Insurance Act, 2022). EHIF is responsible for contracting health care providers and paying for the services provided in health promotion, disease prevention, and health care according to the health care service list and terms described in contracts.

One of EHIF's responsibilities is to ensure the appropriate use and quality of health care services provided. Therefore, as described above, they conduct quality assessments (controls, audits) and contribute to quality improvement activities (development and computation of agreed quality indicators).

Estonian Health Insurance Fund Databases

EHIF maintains the **Estonian Health Insurance Fund Database**, an electronic claims database (Haigekassa andmekogu pidamise põhimäärus, 2022). Entries to the database are typically made within five calendar days after receiving the data. Data submitters are contract partners (e.g., health care providers), social tax payers, insured persons or those applying to get insurance cover, and those responsible for submission data required for the establishment, suspension, or termination of insurance cover. The database contains data about EHIF contract partners only. Therefore, data about some providers are not reflected in that database. The database is linked with other databases, for example the Population Register, Business Register, Register of Taxable Persons, Register of Health Care Professionals, and Register of Activity Licenses for the Provision of Health Services, Employment Register, Education Information System, and other relevant registers. There is an extensive amount of patient-level data in the database; national identity codes are used. Data collected are broadly divided into the following categories (Estonian Health Insurance Fund Act, 2021):

- general data of the insured person (full name, date of birth, date of death, contact information);
- data about insurance cover (creation, termination, suspension);
- a basis for payments of both monetary and non-monetary health insurance benefits;
- data of the health care provider and relating to the health service;
- other necessary data for the performance of EHIF's functions arising from legislation.

Detailed data description can be found in 6Annex B.

Estonian Medical Prescription Center is a database established for the issuance and processing of prescriptions and medical device cards and the provision of drug benefits and medical device benefits to insured persons under the conditions provided for in the Health Insurance Act (Retseptikeskuse asutamine ja retseptikeskuse pidamise põhimäärus, 2022). It is also used for compiling statistics of medicines. Data submitters are those with the right to prescribe a prescription, dispense a medicinal product based on prescriptions or issue medical device cards, and SAM and EHIF. Data are exchanged with other databases: the Register of Health Care Professionals, Register of Activity Licenses for the Provision of Health Care Services, Health Insurance Fund Database, Register of Medicinal Products, Medical Device Database, and Register for Dispensing Chemists and Pharmacists. Data contain details about patients, prescribers, issuers, medicines, and devices prescribed and other relevant data to the prescription.

The **annual patient survey** is conducted in collaboration with EHIF and a survey firm with an aim to understand Estonian citizens' satisfaction with health care and its organization. The sample size was around 1200 respondents in 2021. All important and relevant health care topics are covered – primary and secondary care, dental care, medicines, and overall health insurance organization. Respondents are asked to express their satisfaction in each field and results are published on EHIF's webpage (Rahulolu-uuring Eesti tervishoiusüsteemiga, Eesti Haigekassa, n.d.).

Health Board

The Health Board is an agency in the Ministry of Social Affairs governance area. Its areas of responsibility include health care, surveillance, prevention and control of communicable diseases, environmental health,

chemical safety, and safety of medical devices. Tasks involve both organizational and surveillance roles. The goal of the Health Board is to implement a public health policy in the field of health, health protection, chemical safety, and medical devices aimed at creating a healthy and improving living and learning environment and oriented towards high-quality health care and health care services (Terviseameti põhimäärus, 2021). Their mission is to work towards public health and a good living environment. With prevention-oriented evidence-based activities, they support the development of health care and healthcare services' quality (Terviseamet, 2019).

Health Board Registers

- **National Register of Activity Licenses for the Provision of Health Services** maintains records of sole proprietors and legal persons granted the right to provide general medical care, emergency medical care, specialized medical care, independent nursing, or midwifery care. It is used for managing and organizing health care, also for health statistics. Data are registered at the level of the health care provider. Information about the license type and details about its validity period, and a list of health care workers working for the provider are presented.
  - Data collected:
    - data on the holder of an activity license
    - general data on the economic activity of the holder of an activity license
    - data on the employees of the holder of an activity license data on precepts issued to an undertaking and the persons associated (Health Services Organisation Act, 2022)
- **National Register of Health Care Professionals.** Registration of the health care professionals ensures national protection of the consumers of health services – health services are provided by persons who have the required qualifications and supervision over them. The register contains data at the level of a health care specialist. Data submitters are health care professionals themselves. The data are used to manage and organise health care and health statistics.
  - Data collected:
    - personal data
    - information certifying qualifications
    - information concerning the place of employment
    - registration information (Health Services Organisation Act, 2022)
- **Register for Dispensing Chemists and Pharmacists** includes information about all registered pharmacists and dispensing chemists at a personal level. Registration is necessary for the right to work in pharmacies.
- **Family Doctors Practice Lists**: data about each list – size, vacancies, doctors, and nurses working on that list, addresses, and other contact information.
- **Estonian Communicable Diseases Register** established in 2009, collects data about infections (diagnosis, dates, immunization information) at a patient's level.[4] Data is used to provide information on the occurrence and risk factors of infectious diseases and suspected infectious diseases. The purpose is to register cases of infectious diseases to prevent infectious diseases and understand trends. Overviews are published at the webpage of the Health Board once a month.
- **Medical Devices and Appliances Database** collects general information about medical devices in Estonia, their manuals, and copies of packages. This database contains data on companies

[4] HIV data are collected separately and details about the database are described hereinafter.

based in Estonia that place a class I medical device, custom-made medical device, medical device system, procedure package, or in vitro diagnostic medical device on the market for the first time. Additionally, information about reimbursement possibilities of a medical device is available.

- **Medical Situation Report** is an operational overview of the capacity of hospitals in dealing with COVID-19.

Other data collected by the Health Board

Additionally to the registers' data, each department of the Health Board is collecting data according to its specifics. Table 2.2 below shows the broad topics.

Table 2.2. Data collected by the departments of the health board in addition to registers' data

Communicable diseases	Environmental health	Chemical Safety
• Immunisation data • Vaccine supply • COVID-19 contact management environment	• Drinking water quality • Natural mineral and springer water quality • Swimming pool and bathing water quality • Health safety of schools, preschool institutions and youth camps, social facilities • Noise, vibration and non-ionizing radiation levels in environment • Provision of beauty and personal services: health protection requirements (supervision)	• Chemicals, including biocides and detergents • Poisoning information • Health assessments of products (incl. toys, chemicals and cosmetics)

State Agency of Medicines

State Agency of Medicines (SAM) is an agency of MoSA. SAM works to ensure that medicinal products authorized in Estonia for the prevention, treatment, and diagnosis of human and animal diseases are proven to be effective, high quality, and safe. Also, it promotes the appropriate use of medicinal products (incl. narcotic and psychotropic substances) and ensures the safety and protection of participants in clinical trials. It has a management function – surveillance and application of coercion in medicines (Ravimiameti põhimäärus, 2020). SAM is responsible for the safety of donated cells, organs, and tissue transplants. It conducts quality control of human and veterinary pharmaceuticals. Also, it regulates and supervises the pharmaceutical trade.

State Agency of Medicines Registers

Like the institutions described above, SAM maintains registers relevant to their field. It collects data from different sources: pharmacies and wholesalers on turnover, health care providers, and, in some cases, patients about adverse effects of medicines using standardised reports. SAM collaborates with EHIF. Registers of SAM do not contain any patient-level data, and data is often aggregated.

- **Register of Medicinal Products** is a state register where information about all medicinal products (incl. special foods and food supplements reimbursed by EHIF) and their packages sold in Estonia can be found. The register enables the production of statistics and publishs reliable information to the public. There are, for example, data about active substances, pharmaceutical form, strength,

information about reimbursement rates and reference prices in Estonia[5], and summaries of product characteristics and package leaflets presented. Unique codes for each package are in use (Ravimiregister, 2022; Ravimiregistri põhimäärus, 2019).

- **State Agency of Medicines Register of Activity Licenses** is a state register that keeps records of those with activity licenses for handling medicinal products, mediation of medicinal products, and procurement of cells, tissues, and organs. This information is used to help perform SAM's tasks and make statistics (Ravimiameti tegevuslubade registri põhimäärus, 2019).

State Agency of Medicines Statistics

The **pharmacy statistics** are based on the quarterly reports of Estonian general, hospital, and veterinary pharmacies (Ravimiamet, 2021; Ravimiregister, 2022). These reports contain aggregated level data on the turnover of a pharmacy. The turnover of medicines includes sales of non-prescription medicines, prescription medicines, and veterinary medicines. The turnover of prescription medicines can be divided into the turnover of drugs reimbursed by EHIF or not. The other goods sold in pharmacies are hygiene products, medical supplies, medical equipment, food additives, cosmetics, etc.

Drug consumption data is expressed as the number of defined daily doses per 1000 inhabitants per day (DDD/1000 inhabitants/day according to WHO recommended methodology). Also, the Anatomical-Therapeutical-Chemical (ATC) classification of drugs is used. The calculations are based on the wholesalers' sales to general and hospital pharmacies and other institutions, the defined daily dose per day for each drug, and the Estonian population on the 1st of January each year. The WHO suggests that all combination preparations with one active substance should be classified under the same ATC code, but in Estonia, all combinations have been assigned different ATC codes (80-series or 90-series codes) to differentiate between the consumption of combinations. These codes are not available in the WHO classification.

Information on **adverse drug reactions** (ADR) is collected from the healthcare workers, patients, and marketing authorization holders. There are forms for reporting in use. Both severe and non-serious adverse drug reactions of medicinal products are registered. SAM publishes overviews on their website.

All clinical trials and their phases must be registered in SAM. Applications are submitted according to specialties. SAM provides overviews on their website.

Health and Welfare Information Systems Center

The Health and Welfare Information Systems Center (HWISC) is responsible for the technical implementation of information and communication technology (ICT) services in healthcare, social care, and labor domains. Its tasks entail everything related to ICT in the field: from preparing strategies and development plans for MoSA's agencies to maintaining databases. Also, they are responsible for publishing standards and classifications (Health and Welfare Information Systems Center, n.d.-a). Regular updates in standards and classifications have crucial role in assuring data quality. HWISC helps to manage over 40 databases (Health and Welfare Information Systems Center, n.d.-b).

HWISC is an authorized processor of the electronic Health Information System (eHIS). eHIS is a central national database that was established in 2008. Its primary role is to support the operation of the health system by enabling data exchange between the health care service providers. Citizens have access to their health data via patient portal.[6] It is also used for contracting purposes, quality assurance, patient

[5] Base price for medicines that have the same active substance and administration method and are listed in the Estonian Health Insurance Fund reimbursed medicines list.

[6] Accessible at https://www.digilugu.ee/login

rights protection, and population health protection. It enables to do health statistics and manage health care field.

Data collection: eHealth Information System

Detailed patient-level data related to the health care service provision is collected and processed via online documents, such as case summaries, referral notes, different notifications, etc.[7]

Data submissions are mandatory to all health care service providers in Estonia. Other data submitters are Cancer Screening Register, Population Register, Employment Register, Health Board, Social Insurance Board, EHIF, Unemployment Fund, Ministry of Defense, Ministry of Education, Emergency Response Centre, and Prescription Center. Some of its functions—digital prescriptions, digital registration to appointments, e-consultation—have been successfully implemented. Some others require further development, for example, the system has a module for statistics that has not been widely used due to data quality issues.

Quality: eHealth Information System

NIHD performs regular quality analyses of eHIS data. Comparisons are made against data received via NIHD statistical reports, health surveys, or EHIF claims data. Regardless of mandatory data submissions to eHIS, these studies show that coverage remains low to compile health statistics (Kirpu & Eigo, 2018; Liivlaid, 2019). Due to the lack of automated controls, the quality of submitted data varies. For example, problems with inserted ICD10 codes or empty informative fields and misuse of the statistical diagnosis type leads to problems with interpretation of the data. There is a need for standardisation and unified use of classifications. Document format includes free text fields, which can be difficult to analyse (Liivlaid, 2019). One of the recently published quality analyses compared eHIS data with the international Childhood Obesity Surveillance Initiative (COSI) results in Estonia. It was observed that at a higher level, data quality is improved, but in more detailed views, problems with inconsistent coding, empty informative fields, logic errors etc. become evident (Maasoo, 2022). Similar recommendations for improvements have resulted from other analyses.

Other Data Sources

Statistics Estonia

Statistics Estonia (SE) is the main statistics competence center in Estonia. It is the source of population statistics–main demographic indicators, population figures, and composition. Health statistics, however, are primarily published by NIHD. SE publishes only some health sector-related indicators, such as access to health care, disabled persons, and health status—as well as vital events including spontaneous and induced abortions, births, and deaths. SE is the conductor of the Health Interview Survey (except 1996 and 2006 when NIHD was responsible for conducting the survey). This survey aims to evaluate the state of health of Estonians and factors influencing it and the use of health care services. The survey was first conducted in 1996 and has been conducted five times. Data collected gives input to prognoses of health, health behavior, social coping, and need for help. It focuses on five topics:

- Chronic illnesses and injuries
- Mental health and emotional wellbeing
- Functional limits

[7] Detailed data descriptions for eHIS can be found in the document "Tervise infosüsteemi edastatavate dokumentide andmekoosseisud ning nende esitamise tingimused ja kord" available at https://www.riigiteataja.ee/akt/122062016039?leiaKehtiv (In Estonian; accessed in March 2022)

- Use of health care and hospitalization
- Use of medicines
- Health behaviour

Given that it has been conducted several times, trends can be observed. As the activity is a part of the European Health Interview Survey (EHIS), it also enables benchmarking with other European countries.

eHIV

eHIV is a database established in 2009 by the Estonian Society of Infectious Diseases in collaboration with the Institute of Medical Microbiology in Tartu University. It contains demographics and clinical information related to the infection, and also bio-samples for scientific and clinical purposes. Data is collected based on informed consent of adult HIV-positive patients.[8]

Myocardial Infarction Register

Myocardial Infarction Register's (EMIR's) purpose is to improve the diagnosis and treatment of acute myocardial infarction and facilitate the planning of health care services for AMI and conduct epidemiological research. It is managed by the University of Tartu and MoSA. This electronic database includes all acute myocardial infarction hospitalisation cases in Estonia at an individual level. The hospitals submit data, which are linked with data from other national registries (e.g., Population Register, Health Insurance Fund Database, and Estonian Causes of Death Registry) (*Estonian Myocardial Infarction Register*, n.d.; Müokardiinfarktiregistri põhimäärus, 2019).

Social Insurance Board

The Social Insurance Board is a government agency operating in the area of government of the Ministry of Social Affairs, which performs functions arising from legislation in its field of activity and exercises state supervision. It organizes state social services, victim support and conciliation services, payments of state pensions, benefits and allowances, and more. It applies state coercion on the basis and to the extent prescribed by law (Sotsiaalkindlustusameti põhimäärus, 2022). The board maintains Social Services and Benefits Registry. Registry uses national ID-codes and data are therefore linkable to any other database that also uses ID-codes, though this may require ethical and procedural approvals if it is beyond Social Insurance Board regular data analysis processes. The purposes of maintaining the register are (Sotsiaalteenuste ja -toetuste andmeregistri põhimäärus, 2022):

- Processing and documentation of the provision of social services and benefits and other assistance
- Performance and documentation of social work performed on the principle of case management
- Organisation and documentation of adoption and guardianship
- Collection of information and statistics on social welfare.

Public reporting

All main institutions described in this document publish their data, though there is no central publication channel. Institutions use public media announcements and often make use of social media channels as well.

- NIHD Health Statistics and Health Research Database is most comprehensive in terms of health care statistics. Publishing dates for the previous year are released on October 1st. Data are available both in Estonian and in English. The database includes data from medical registers and

[8] EESTI HIV andmekogu (E-HIV) [Estonian HIV database; in Estonian] http://hiv.ut.ee/e-hiv?lang=et (Accessed in March 2022)

national health behaviour surveys to morbidity, health care services and health care resources and their use; brief descriptions of metadata and methods are available for everything published there. Data are used for scientific publications, conference presentations in Estonia and abroad. EHIF publishes statistics in their annual yearbook, infographics are available on their webpage, and quality analyses and reports are also accessible via their webpage. Additionally, EHIF may provide personalised overviews to their contract partners (about quality indicators or related to other quality assurance activities).

- SAM gives annual overviews via Statistical Yearbook of State Agency of Medicines. Sales and pharmacy data are also published on NIHD statistics database, but annual reports and analyses can be found on the website of SAM as well (ADRs, clinical trials, shortages). Additionally, information on demand is provided to the EHIF, Statistics Estonia, the Association of Pharmaceutical Manufacturers in Estonia, journalists etc.
- Health Board publishes registers data in publicly accessible electronic databases and an open data portal.

Conclusions

Institutions mentioned in the report collect data according to the tasks and responsibilities of the legislation. Data collection is based broadly on two principles: data is gathered into registers to assess the national situation or databases have been created to support institutions' work. Statistics can be generated from data collected for both of these purposes. Although there are significant amounts of data collected, challenges remain in ensuring data quality, timeliness, and granularity that may need to be addressed to use the data for the purposes of developing and evaluating Estonia's forthcoming health performance assessment framework.

3 Estonia's Health Data Infrastructure in the International Context

Based on a recent OECD international survey, this chapter illustrates how Estonia is well placed relative to other countries regarding dataset availability, maturity and use, but does not perform as well on aspects of dataset governance. Particular challenges faced by Estonia include the utilization of current data and limitations in data coding and quality.

Data development, use and governance in the OECD context

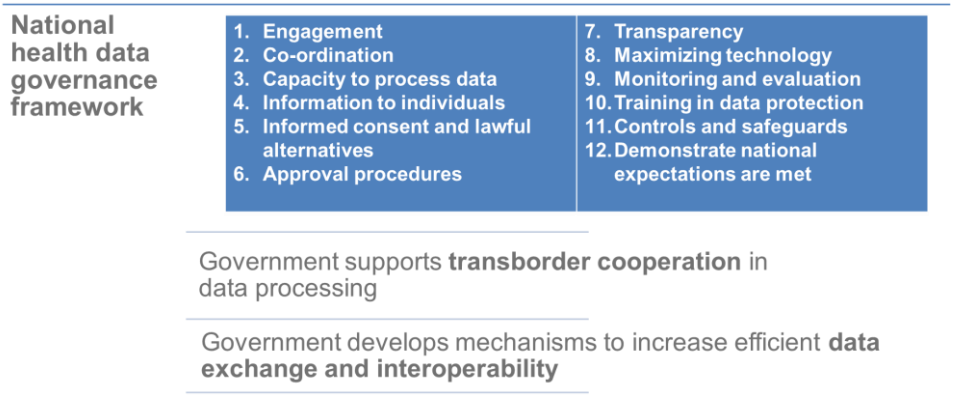
Data are fundamental in any effort to improve and optimise health system performance. Performance can only be defined around the goals and objectives of a health system. While these vary, the metrics and indicators needed to assess how well the system achieves its goals (and where improvement is needed) require data. Because system objectives will typically cover various domains ranging from technical efficiency to equity and sustainability, a range of data from various sources will be needed to generate the necessary metrics and indices. Moreover, performance domains will include areas that benefit from the sharing of information (prevention and care coordination, for example). The importance of an infrastructure that enables the exchange and sharing of relevant data can therefore not be understated as it not only informs where improvement is needed, but also provides a key mechanism to improve performance.

As such, a 'learning health system' leverages its data in this manner to improve performance through continuous cycles of reflection, adjustment and evaluation. Learning health systems aim to deliver health services that are of high quality and value, that improve health and well-being and, at the same time,

provide innovative and rewarding workplace environments for health professionals (AHRQ, 2019[1]) Such a system needs to go beyond answering the questions of "What went wrong (or right)?" to the more important questions of "Why did this happen?" and "What changes are needed to minimise risks and maximise value fairly across a domain or the system as a whole?" This relies on highly detailed and timely information.

The OECD has put a priority on supporting Members and non-Members in measuring quality in health care, strengthening health data governance, developing knowledge-based health systems, and advancing health statistics. Nonetheless, cross-country variability remained significant in 2019/20 based on a survey of National health data infrastructure and pointed to challenges not yet overcome (Oderkirk, 2021[2]).

Figure 3.1. OECD Recommendation on Health Data Governance



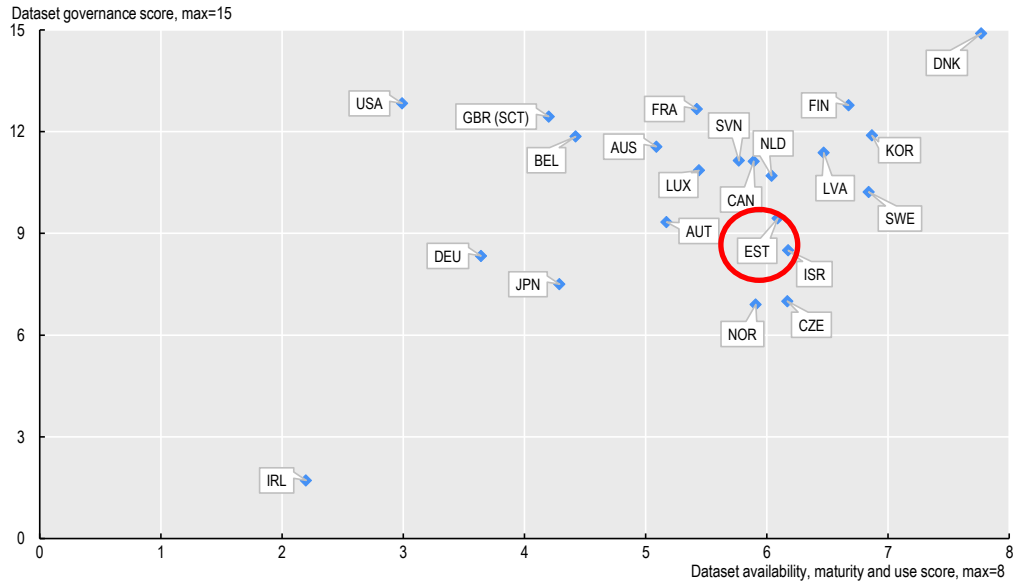
Source: (OECD, 2019[3])

The 2019/20 survey identified a small cluster of OECD countries with policies, regulations and practices that foster the development, use, accessibility and sharing of key national health datasets for research and statistical purposes while also having a high degree of recommended health data governance policies and practices in place (Oderkirk, 2021[2]). Adherents reporting the strongest national health data availability, maturity and use and health dataset governance policies and practices were Denmark, Finland, and Korea (see Figure 3.2).

Estonia is well placed relative to other countries regarding dataset availability, maturity and use, but does not perform as well on aspects of dataset governance. Particular challenges faced by Estonia include the following:

- The current data systems are comprehensive, but not fully utilized
- There is not currently a national diabetes registry or registry using PROs
- There are current limitations in data coding quality across datasets
- Patient experience and population health survey data published by NIHD are not linkable to other datasets using unique patient IDs
- Regular dataset linkages are limited to deaths and disease registries for data completeness checks

Figure 3.2. Small group of countries score highly on both dataset availability, maturity and use and dataset governance



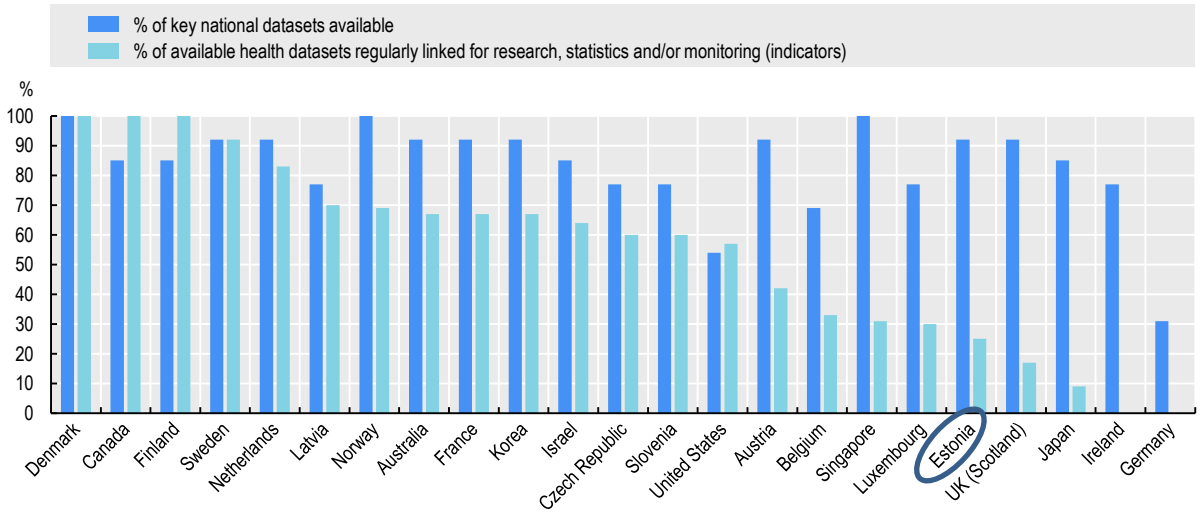
Note: Dataset governance score is the sum or the proportion of health care datasets meeting 15 dataset governance elements and the dataset availability, maturity and use score is the sum of the proportion of health datasets meeting 8 elements of dataset availability maturity and use.
Source: Oderkirk (2021[4]), "Survey Results: National Health Data Infrastructure and Governance", https://doi.org/10.1787/55d24b5d-en.

Data linkage capacity is strong, but can be better utilized

An integrated health information system does not require all data to be stored in a single location. It is quite possible to achieve the key objectives outlined earlier in this report without central storage or even aggregation. A unified and co-ordinated approach to national data governance can enable smooth information exchange and use for a range of purposes without compromising privacy, security and ownership of data. In fact, in some ways data protection can be enhanced under a federated data structure.

The recent OECD survey found that countries are divided between those linking the majority of key national health datasets together on a regular basis for statistics and research, and those linking few or no key national health datasets. Eighteen countries reported regularly linking datasets to monitor health care quality or system performance including indicators of mortality at intervals after procedures; indicators of readmission to acute care; indicators of medication prescribing patterns; and indicators of survival after diagnosis or treatment. Restrictions to dataset linkages are both related to regulations and policies, resources and to technical limitations such as a lack of unique identifiers supporting linkages or barriers to dataset sharing due to the number of custodians of key datasets. Estonia currently reports having a high percentage of datasets that are available for monitoring and research, but a much smaller percentage of datasets that are currently linked (Figure 3.3).

Figure 3.3. Estonian key national health datasets are available and but not regularly linked for monitoring and research



Source: Oderkirk (2021[4]), "Survey Results: National Health Data Infrastructure and Governance", https://doi.org/10.1787/55d24b5d-en.

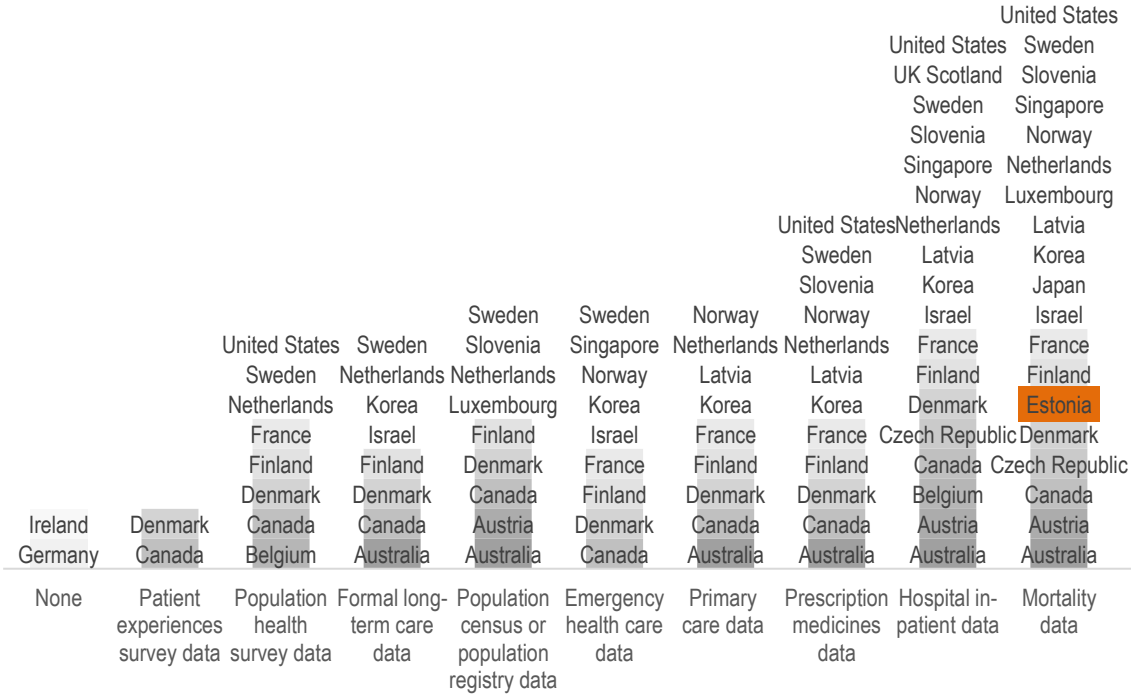
Estonia has all of the national health datasets identified here and all have the same unique patient ID to establish a record linkage however, Estonia reports that only mortality data and certain disease registry data (cancer, tuberculosis register) are linked on a regular basis (see Figure 3.4). Only indicators of health care quality and health system performance reported that were based on dataset linkage were:

1. EHIF schizophrenic patients with Causes of Death Registry dataset – indicator of suicide among schizophrenic patients
2. AMI patients from EMIR with Causes of Death Registry dataset – indicators of 30-day and 1-year mortality of AMI patients

Particular concerns related to the access of health data for policy making and research include the following:

- Data protection regulation makes linking data complicated and time consuming
- Long bureaucratic process to access data
- Lack of remote data access or secure research data centres
- Lack of a standard data sharing agreement
- Lack of a national authority to create, de-identify or approve access to datasets based on eHIS
- A relatively small external community accessing and using national data

Figure 3.4. Estonia does not link most datasets regularly for monitoring and research



Source: (Oderkirk, 2021[4])

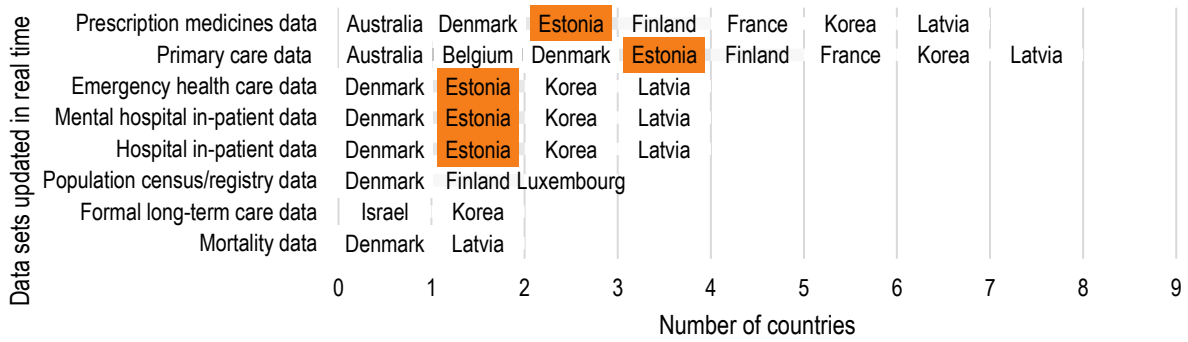
Estonia reports that data protection legislation makes linking and accessing different data sources a complicated, bureaucratic and time consuming process. In Estonia, sharing data can be a lengthy and bureaucratic process, however, it is possible for both foreign and domestic applicants to be approved.

Concerns about the quality of data could limit their usefulness, though timeliness is not a significant barrier

Overall, 16 respondents to the 2019–2020 survey on national health data infrastructure and governance reported that there are concerns about the quality of national data that limit their usefulness (Oderkirk, 2021[2]). Respondents reported concerns with the quality of administrative data when they are used for purposes beyond their original intent (Latvia, Australia); as well as with the quality of data entered/coded by health care practitioners in electronic records, which has not yet been widely assessed – as has been cited to be the case in Estonia.

Reliance on electronic data, as well as upon clinical professionals for coding, have a positive impact upon the timeliness of data within key national datasets. Data that are available in real time or near real time open the possibility of monitoring health care quality and performance in time to detect and address issues as they are emerging, including a rapid detection and response to adverse events. Estonia stands out for having a very short time lapse, of one week or less, between when a data record is first created and when it is included in the national dataset used for analysis for all or most key national datasets (Figure 3.5).

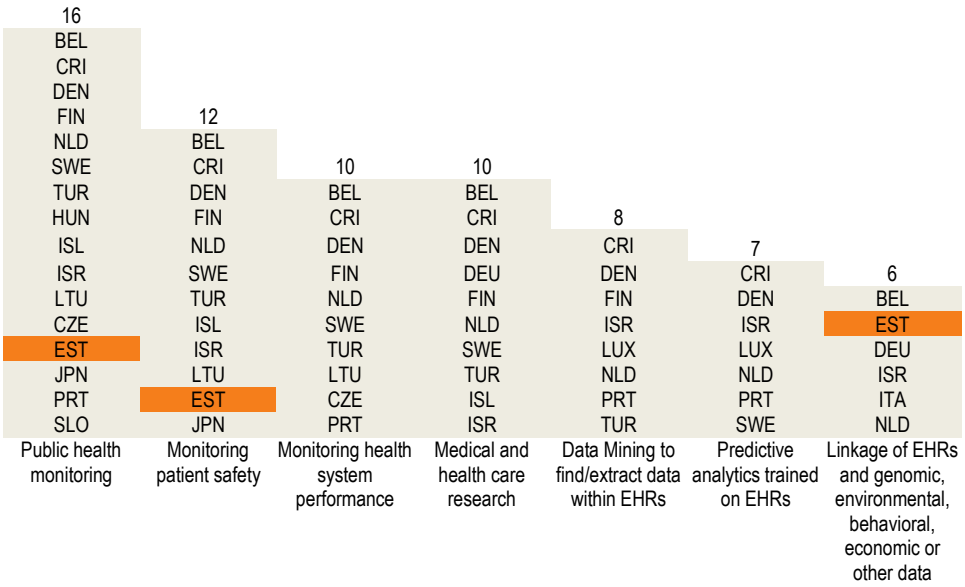
Figure 3.5. Estonia updates most key national health data in real time



Source: (Oderkirk, 2021[2])

Among 28 countries surveyed in 2021, 16 countries electronic health records systems are mature enough they are supporting routine national public health monitoring – including for generating health statistics in Estonia (see Figure 3.6). Twelve countries, including Estonia, routinely draw on their electronic health records (EHRs) to monitor patient safety. Ten countries routinely use EHRs to monitor health system performance and the same number use EHRs for medical and health care research. Eight countries are routinely using data mining techniques to find and extract data within EHRs. Seven countries are applying predictive analytics (trained on EHRs) to support patient care or managerial decision making. Six countries have national projects to integrate/link EHRs to other data: genomic data, environmental data, and economic data. Estonia is linking health care and other data to develop a decision support tool in primary care.

Figure 3.6. Countries using clinical data for monitoring and research



Source: (Oderkirk, 2021[2])

Estonia reports currently participating in a number of activities related to improving EHR data, including for example, collaborating on global standards for interoperability, adopting policies or projects to improve interoperability, and adopting the HL7 FHIR standard.

4 Current policy context and governance structures related to HSPA

This chapter aims to analyse the health information system in Estonia from a governance perspective. The report is compiled based on legislation (e.g. statutes of registers, institutions), materials available online (e.g. webpages of institutions), discussions held in various meetings, and discussions with key stakeholders.

Main stakeholders and their current roles

The Ministry of Social Affairs (MoSA) is responsible for policymaking in the health care field. Health Board, State agency of Medicines (SAM), National Institute for Health Development (NIHD), and Health and Welfare Information Systems Center (HWISC) are institutions in its governance area. The Health Board has an organisational and surveillance role in health care. It keeps records on licenses and registered health workers; is responsible for the supervision, prevention, and control of communicable diseases, environmental health, chemical safety, and safety of medical devices. SAM has similar functions as previously mentioned Health Board but in medicines. SAM's responsibilities are to ensure that medicinal products authorized in Estonia to prevent, treat, and diagnose human and animal diseases are effective, high quality, and safe. Also, SAM manages medicines records in Estonia and activity licenses. NIHD has a different role compared to the last-mentioned agencies.

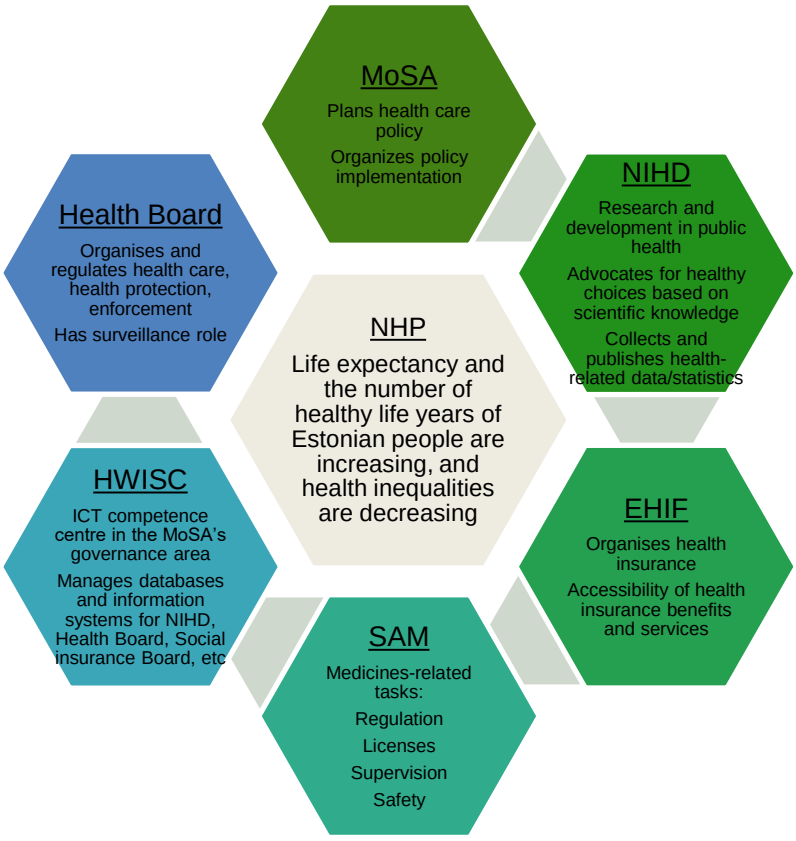
NIHD is a research and development institution for the health and social sector. It focuses on public health: evidence-based information influences behaviour, policies, and the environment. NIHD is a sovereign

health statistics producer who uses the most appropriate methodologies in compiling statistics. NIHD also submits data into international databases – data is based on international definitions and is comparable at the international level. But regardless of being the leading health care statistics provider in Estonia, NIHD is not included in the official statistical system (NSI, ONA) and does not have an official statistical authority status. This limits NIHD's possibilities to get data (micro, individual level data) from different stakeholders. The same problem is mentioned in the HIS Assessment Report for Estonia (Abboud et al., 2019).Similar to others, NIHD manages databases and medical registers.

Another important institution in the field is the Estonian Health Insurance Fund (EHIF). It is a relevant stakeholder in policymaking. EHIF organises health insurance – ensures the payment of health insurance benefits, contracts service providers and pays for the provision of health services and makes sure that services are accessible.

All these institutions promote public health and aim to improve Estonians' lives by achieving the goals outlined in the National Health Plan (NHP) (see Figure 4.1). The NHP is the central strategy document that sets targets in the health care field for ten years. The plan is divided into three programs: healthy choices, health-supportive environment, and person-centred healthcare. It has a set of measurable goals, and it describes means and measures to achieve them. Every two years is a checkpoint, where indicators are evaluated a progress is reported. MoSA is responsible for coordinating the NHP.

Figure 4.1. Institutions in health policy



The above mentioned institutions are assisted in maintaining their electronic databases by HWISC, which is responsible for the technical implementation of information and communication technology (ICT) services in healthcare, social care, and labour domains. It also prepares strategies and development plans; publishes standards and classifications.

Currently, changes in the system described above are in progress. Tasks of the organizations are mapped, and possible re-division of tasks between organizations is considered. Potential challenges for the reorganisation related to the dispersion of the production of health statistics and research (previously the role of NIHD) across a number of government entities. The reform is expected to be completed by the end of 2022.

Additional stakeholders have input to the field and are key partners in achieving the goals documented in the NHP (see Figure 4.2). These stakeholders represent clinical specialists, patients, higher education providers, etc. Since health is not only a health care issue but also influenced by many factors - environment, economy, social background, and many others - it needs to be considered in other sectors as well. For that reason, the stakeholder list is even broader. It includes, among others, local governments and civil society, which all contribute to people's health. Collaboration between all the parties in reaching the goals of the NHP is relevant.

Figure 4.2. Other stakeholders

Strengths and weaknesses of current practices in Estonia

Data collection

Estonia collects a significant amount of data that is related to health care across multiple platforms; however, there are opportunities for the data to be better utilized. NIHD has noted that health statistics could be used more comprehensively and suggests that better data utilisation could be supported by more efficient data processing.

Multiple challenges impact data use. Despite concerted efforts to build data collection capacity, there has been less investment in efforts to assess and improve data quality and conduct analysis. For example, data quality in eHIS currently does not meet the requirements for compiling reliable health statistics.

Regardless of mandatory data submissions, the coverage remains lower than needed and the documentation formats can create challenges for analysis. Quality analyses also show problems with inserted data and indicate the need for more automated quality controls, more unified use of classifications and more targeted manner datasets (Kirpu & Eigo, 2018; Liivlaid, 2019; Maasoo, 2022).

Other data sources, such as registries or institution-based databases, have been established for supporting the collecting institution's work, and may not be appropriate inputs as representative health statistics. For example, the large variety of the healthcare provider software currently in use are not designed for uniform data entry and processing.

Finally, data collection in aggregated reports are often not sufficient. Both NIHD and SAM use aggregated reports to collect data, but it should change to the compilation of individual level data collections from various registries. This change would help avoid duplication in data collection that places a high administrative burden onto data submitters and would meet better consumers' need for more detailed data. Data linkage due to legal basis and data protection rules can also be challenging and reduce the dissemination of health care statistics.

Data are mainly collected based on the national ID codes (EHIF, eHIS, and registers). When shared with others, it is re-coded, and each data holder uses different re-coding systems. Therefore linking between different datasets is impossible when data are shared with someone who only has the right to work with anonymized datasets. This produces limitations in analysing the data. Also, it is one reason for duplication in data collection.

Publishing data

All stakeholders analyse and publish the data they collect, primarily through websites or web databases, as well as public reporting and social media channels. In general, publishing is fragmented and the source of statistics can be difficult to identify. Enhanced collaboration between stakeholders could improve the recognition of available data. In addition, there are opportunities for better aligning data collection processes—including standardisation in methodology and definitions. Standardised data collection methodologies could then be used as a basis in data collection needs discussions and agreements between key partners (MoSA, EHIF, registries, professional medical societies, etc.).

In general, HIS assessment has found many strengths and limited weaknesses in the Estonian health information system. Health data are generally freely accessible in user-friendly formats and databases, and have been found to meet policy maker's needs. There are also opportunities to better operationalize data linkage from various sources to enhance data use and produce relevant analytical reports and communications.

However, discussions with the stakeholders often mention that more collaboration and a more decisive central coordination could enhance the publication and use of data. The fact that institutions work separately and have little knowledge of others' work can lead to duplication, as similar analyses, for example, could be conducted in parallel. To address some of these challenges, efforts are currently underway develop a state-level tool to secure data storage, integration, access and analysis to enhance the use of large and detailed health and lifecycle datasets (*EVIPNet Europe. Situation Analysis to Improve Evidence-Informed Health Policy-Making in Estonia*, 2019).

Use of the evidence-based information in the strategic planning and implementing process

All the stakeholders report the importance of evidence-based information in their work to inform policy and decision making.

- NIHD conducts studies and research in public health, organizes surveys, and publishes health statistics for the purposes of informing policymaking. Registries provide statistics and data for developing and evaluating health policy documents such as the NHP, National Cancer Control Plan, Hospital Master Plan, quality of care indicators, etc. Nevertheless, NIHD has indicated that health care statistics could be better utilized for in-depth analysis and policymaking.
- EHIF is a leading coordinator for work in developing care quality indicators and guidelines, in collaboration with state and international organisations. There are councils established for the development of the indicators, including those related to clinical quality, service provider performance, and service integration. For primary care, clinical guidelines related to the quality bonus system indicators are publically accessible. [9]
- The Centre for Health Technology Assessment was established in 2012 to conduct health technology assessments to inform policy decisions. Assessment is a systematic, transparent and unbiased process of summarizing relevant information on the different aspects of health technology for the purpose of informing coverage decisions. Assessments typically cover a range of efficiency, effectiveness, safety, economic, and organizational factors (Institute of Family Medicine and Public Health, University of Tartu, n.d.).[10] HTA assessment reports are used by EHIF while to inform decisions as to the inclusion of new health benefits, taking into consideration the evaluations made by a committee which reviews the evidence and possible applications for new services. There is a separate committee for medicines to decide whether a drug is a good candidate for adding to the already existing list of medicines for which EHIF provides some form of compensation.

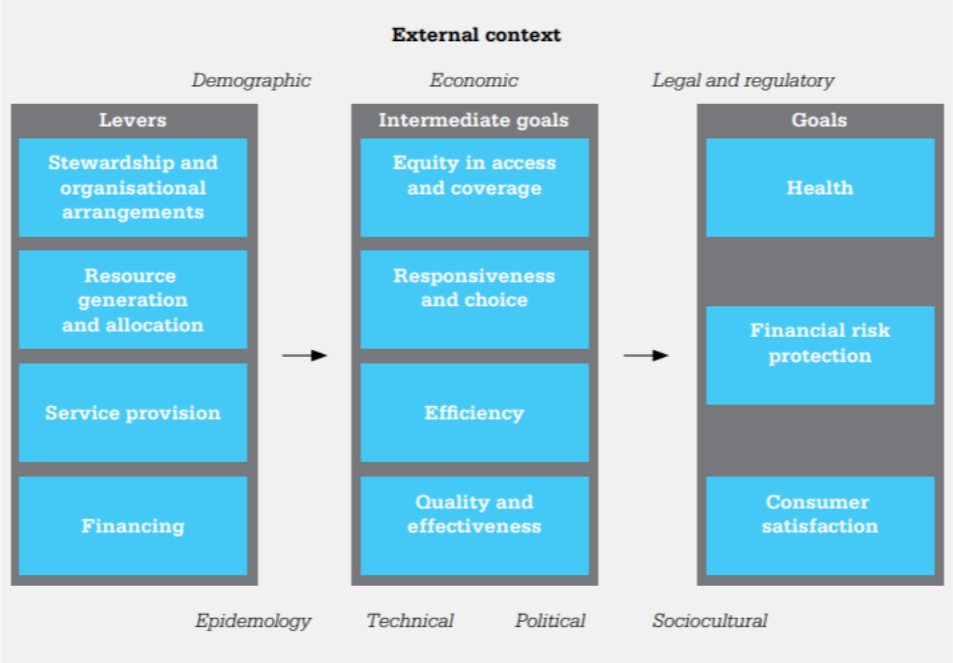
Despite a number of institutionalised processes to that support the use of evidence-based information, remaining challenges include limitations in skills, guidelines, and resources for evaluating evidence and assessing its quality. There is also a lack of clearly delineated responsibility for enhancing the use of evidence-informed policy and inconsistent support from politicians. (EVIPNet Europe, 2019). To conclude, there are evidence-based practices currently implemented, but a continuous effort and recognition is required, along with ongoing collaboration between key institutions.

[9] https://ravijuhend.ee/ (Accessed in March 2022)
[10] https://tervis.ut.ee/en/health-technology-assessment/health-technology-assessment-estonia (Accessed in March 2022)

5 Previous HSPA Development Process

The previous and only HSPA report in Estonia was conducted in 2008 and published in a 2010 collaboration with the World Health Organisation (WHO). The 2008 HSPA was developed by a working group consisting of representatives of MoSA, University of Tartu, and EHIF and experts from the WHO Regional Office for Europe. The working group mapped performance dimensions included in the NHP 2009–2020 to dimensions in the World Health Report 2000 and the WHO 2007 Health System Framework to develop the HSPA framework (see Figure 5.1).

Figure 5.1 2009 Framework for assessing health system performance in Estonia



Source: World Health Organization. "Estonia Health System performance assessment: 2009 snapshot." *Estonia Health System performance assessment: 2009 snapshot.* (2010).

The methods used to carry out the health system performance assessment involved reviewing similar experiences from other countries in assessing health system performance, developing a framework for performance measurement consistent with the priorities of the government for health system strengthening and with its international commitments, mapping the numerous indicators used in current health sector strategies, selecting an initial set of performance indicators for various performance domains, based as much as possible on international evidence, and interpreting findings in the context of national health

system objectives. A reference group comprising national and international experts reviewed and amended the report.

The working group identified a set of performance indicators reflecting the HSPA framework, collected the data and calculated the performance indicators, and developed a HSPA report with the support of national and international HSPA experts. Although regular assessments using the HSPA indicators were planned, they were never carried out by the Ministry of Social Affairs or by its agencies.

Table 5.1. Performance indicators selected for the first health system performance assessment in Estonia, 2009

Domains	Indicators
Health status (level and distribution	• Change in life expectancy at birth in Estonia, by sex • Male and female life expectancy at birth in selected European countries • Changes in life expectancy 2000 versus 2008 attributable to different disease groups • Disability-free life expectancy • Self-assessed health • Infant mortality rate • Child mortality rate • Avoidable mortality • Potential gains in life expectancy in days if avoidable mortality were avoided in 2008 • Main disease groups causing the burden of disease • Regional levels of the burden of disease (disability adjusted life-years per 1000 persons)
Health behaviour and health promotion	• Immunization rates of two-year-olds with national immunization calendar vaccines • Proportion of daily smokers aged 15+ years • Consumption of pure alcohol per person • Overweight • Prevalence of overweight and obesity • Physical activity
Broader determinants of health	• Level of education • Unemployment rate • Percentage of population having access to clean drinking-water • Average concentration of small particles in the air in cities • Incidence of occupational diseases • Deaths from work-related accidents
Responsiveness of the health system	• Satisfaction with the health care • Satisfaction with the quality of health care services • Satisfaction with access to health care services • Satisfaction with hospital care and primary care during the last visit • Satisfaction with health care benefit package
Fair financing, financial protection and coverage	• Government spending on health compared with overall government spending • Out-of-pocket and other private expenditure on health as a percentage of total health expenditure • Government spending on health as a percentage of gross domestic product (GDP) • Out-of-pocket payments as a percentage of GDP per capita • Sources of health care financing as a percentage of total health care expenditures. • Total household out-of-pocket payments and as a percentage of total household expenditure by income quintile • Proportion of households impoverished due to out of-pocket payments • Total population health service coverage (no figure)
Efficiency and effectiveness of the health system	• Hospital beds per 1 000 000 population • Average length of stay, all hospitals • Bed occupancy rate (%), acute care hospitals only • Physicians per 100 hospital beds • Primary health care and inpatient expenditure compared with total health system expenditure • GPs and specialist physicians per 100 000 population • Ratio of nurses to physicians

	• GP utilisation versus hospitalisation rate
Access to health care services	• Rates of inpatient admissions and outpatient contacts • Average hospital waiting times for inpatient, outpatient and ambulatory care • Distribution of waiting times for hospital inpatient care in large Estonian hospitals as of July 1, 2009 • Reported waiting times for specialist services • Reported waiting times for access to General Practitioners • Percentage of population reporting problems accessing dental care by income quintile • Relationships between standardised mortality rates compared with hospitalization rates Relationships between standardised mortality rates compared with GP contacts
Quality and safety of health care services	• Hospital readmission rates for acute myocardial infarction and for asthma

Source: https://www.euro.who.int/__data/assets/pdf_file/0015/115260/E93979.pdf

The 2009 report noted that challenges ahead include standardising and improving data quality and converting performance information in ways that are simple and clear to policy-makers and can be communicated effectively to the public. In addition, health system performance assessment has to be built into integrated performance management systems, through which important performance indicators are used systematically in decision-making processes across government. These processes relate to strategy and policy development, target setting, performance measurement, resource allocation and accountability enhancement and performance improvement.

There was a combination of reasons why HSPA remained a one-time exercise. One was a lack of institutional support, but also, it was unclear who should be responsible for carrying out further evaluations. A lack of resources played some role as well. There was not enough relevance and benefit seen in this exercise at this point.

6 Conclusions

This situational analysis report is the first step in the project to develop the Estonian HSPA Framework. The chapters function to assess the current status quo as it relates to the key functions of HSPA in Estonia, including implementation, challenges and opportunities. The previous sections of this report been informed by the first four workshops of the HSPA project and meetings, consultations with key stakeholders, literature review, and information from the OECD and Government of Estonia (see Annex F and Annex G).

Current available indicators that could be used as inputs to the HSPA are included in the annexes, specifically:

- Indicators listed in the National Health Plan 2020–2030 (Annex A)
- EHIF Clinical Indicators (Annex B)
- Provider Feedback Indicators (Annex C)
- Quality Bonus System Indicators for Family Physicians (EHIF) (Annex D)
- Estonian Indicators Reported for International Benchmarking (Annex E)

This situational analyses will form input for next steps in the project to support Estonia with the development and implementation of a HSPA. In particular, the creation of the HSPA framework with the engagement of key stakeholders. In the following steps of the HSPA development process, three additional workshops will be held with the high level advisory board and other key stakeholders in the Estonian health system on the purposes of determining the HSPA scope and function, HSPA governance, and the content (domains/indicators) of the HSPA framework. This document will serve as inputs to the process of creating the framework and developing a sustainable governance plan for continued implementation.

References

Abboud, L., Želviene, A., & Našlene, Ž. (2019). WP5.1 HIS Assessment Report – Estonia.

AHRQ (2019), About Learning Health Systems | Agency for Healthcare Research and Quality, https://www.ahrq.gov/learning-health-systems/about.html (accessed on 30 March 2022).

A-web. (2022). Vormid. https://aveeb.sm.ee/index.php?tid=752061200001011215010121221000302200210141307519529540303042171 65

Estonian Health Insurance Fund Act, (2021). https://www.riigiteataja.ee/en/eli/530042021003/consolide

Estonian Health Insurance Fund. (n.d.). Care quality indicators (Estonian Health Insurance Fund). Tervishoiuteenuse osutajatele tagasiside indikaatorid. Retrieved April 14, 2022, from https://www.haigekassa.ee/partnerile/tervishoiuteenuste-kvaliteet/ravikvaliteedi-indikaatorid/tervishoiuteenuse-osutajatele

Estonian Myocardial Infarction Register. (n.d.). Retrieved April 14, 2022, from https://www.kliinikum.ee/infarkt/en/

EVIPNet Europe. Situation analysis to improve evidence-informed health policy-making in Estonia. (2019). WHO Regional Office for Europe.

Haigekassa andmekogu pidamise põhimäärus, Pub. L. No. Vastu võetud 06.03.2019 nr 14 RT I, 12.03.2019, 19 jõustumine 15.03.2019, osaliselt 01.07.2019 (2022). https://www.riigiteataja.ee/akt/112032019019?leiaKehtiv

Health and Welfare Information Systems Center. (n.d.-a). Meist. Retrieved April 14, 2022, from https://www.tehik.ee/meist

Health and Welfare Information Systems Center. (n.d.-b). Standards and classifications. Retrieved April 14, 2022, from http://pub.e-tervis.ee/classifications

Health Insurance Act, (2022). https://www.riigiteataja.ee/en/eli/505042022003/consolide

Health Services Organisation Act, (2022). https://www.riigiteataja.ee/en/eli/528122021005/consolide

Institute of Family Medicine and Public Health, University of Tartu. (n.d.). Retrieved April 14, 2022, from https://tervis.ut.ee/en/health-technology-assessment/health-technology-assessment-estonia

Kirpu, V., & Eigo, N. (2018). Statsionaarselt ja päevaravilt lahkunute arvu võrdlus tervise infosüsteemi ja Tervise Arengu Instituudi andmete põhjal. Tervise Arengu Instituut.

Liivlaid, H. (2019). Dental Care Data in the Health Information System. National Institute for Health Development.

Maasoo, K. (2022). Ülevaade tervise infosüsteemi edastatud laste arengu hindamise teatistest. Tervise Arengu Instituut.

Ministry of Social Affaires. (2022). Haiglavõrk, Sotsiaalministeerium. Haiglavõrk. https://www.sm.ee/et/haiglavork

Müokardiinfarktiregistri põhimäärus, (2019). https://www.riigiteataja.ee/akt/112032019023

Narkomaaniaraviregistri põhimäärus, (2020). https://www.riigiteataja.ee/akt/107022020002

National Institute for Health Development. (2022). https://tai.ee/et

Oderkirk, J. (2021), “Survey results: National health data infrastructure and governance”, OECD Health Working Papers, No. 127, OECD Publishing, Paris, https://dx.doi.org/10.1787/55d24b5d-en.

OECD (2019), Recommendation of the Council on OECD Legal Instruments--Health Data Governance, http://legalinstruments.oecd.org (accessed on 20 April 2020).

QBS, Estonian Health Insurance Fund. (n.d.). Perearsti kvaliteedisüsteem. Retrieved April 14, 2022, from https://haigekassa.ee/partnerile/raviasutusele/perearstile/perearsti-kvaliteedisusteem

Rahulolu-uuring Eesti tervishoiusüsteemiga, Eesti Haigekassa. (n.d.). Rahulolu-uuring. Retrieved April 14, 2022, from https://haigekassa.ee/uudised/rahulolu-tervishoiususteemiga-kerkis-ligi-kumnendiku-vorra

Raseduse infosüsteemi põhimäärus, (2019). https://www.riigiteataja.ee/akt/122032019010

Ravimiamet. (2021). Ravimiameti statistika aastaraamat 2021 | Statistical Yearbook of the State Agency of Medicines 2021. Ravimiamet.

Ravimiameti põhimäärus, (2020). https://www.riigiteataja.ee/akt/110052013007?leiaKehtiv

Ravimiameti tegevuslubade registri põhimäärus, (2019). https://www.riigiteataja.ee/akt/121122017016?leiaKehtiv

Ravimiregister. (2022). https://ravimiregister.ee/en/publichomepage.aspx

Ravimiregistri põhimäärus, (2019). https://www.riigiteataja.ee/akt/107032017027?leiaKehtiv

Retseptikeskuse asutamine ja retseptikeskuse pidamise põhimäärus, (2022). https://www.riigiteataja.ee/akt/121122017018?leiaKehtiv

Sotsiaalkindlustusameti põhimäärus, (2022). https://www.riigiteataja.ee/akt/101022019018?leiaKehtiv

Sotsiaalministeerium. (2019). Rahvastiku tervise arengukava 2020-2030. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=https%3A%2F%2Fwww.sm.ee%2Fsites%2Fdefault%2Ffiles%2Fcontent-editors%2FTervishoid%2Frta_05.05.pdf&clen=2674293&chunk=true

Sotsiaalteenuste ja -toetuste andmeregistri põhimäärus, (2022). https://www.riigiteataja.ee/akt/117042018012?leiaKehtiv

Surma põhjuste registri põhimäärus, (2019). https://www.riigiteataja.ee/akt/113072018009?leiaKehtiv

Tervise Arengu Instituudi põhimäärus, (2019). https://www.riigiteataja.ee/akt/125112014010?leiaKehtiv

Tervise Arengu Instituut. (2022). Publications (incl. Quality reports) of the National Institute for Health Development. Väljaanded. https://tai.ee/et/valjaanded?type=All&keys=kvaliteediraport&area=All&lang=All

Terviseamet. (2019). Terviseameti olulised tegevussuunad 2019–2023. Terviseamet. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=https%3A%2F%2Fwww.terviseamet.ee%2Fsites%2Fdefault%2Ffiles%2FTerviseametist%2Fterviseameti_olulised_tegevussuunad_2019-2023.pdf&clen=2558083&chunk=true

Terviseameti põhimäärus, (2021). https://www.riigiteataja.ee/akt/13233888?leiaKehtiv

Tervishoiustatistika ja tervishoiualase majandustegevuse aruannete koostamise nõuded, andmete koosseis ning esitamise kord, (2022). https://www.riigiteataja.ee/akt/129122021061

Tuberkuloosiregistri põhimäärus, (2019). https://www.riigiteataja.ee/akt/112032019021

Vähi sõeluuringute registri põhimäärus, (2022). /104012022004?leiaKehtiv https://www.riigiteataja.ee/akt/104012022004?leiaKehtiv

Vähiregistri põhimäärus, (2019). https://www.riigiteataja.ee/akt/112032019022

Annex A. Indicators listed in the National Health Plan 2020-2030

	RTA põhinäitajad		Key indicators of NHP
1	Oodatava eluea prognoos - Mehed	Indicators	Life expectancy prognosis - Men
	Oodatava eluea prognoos - Naised		Life expectancy prognosis - Women
2	Tervena elada jäänud aastate prognoos - Mehed		Prediction of the healthy life years - Men
	Tervena elada jäänud aastate prognoos - Naised		Prediction of the healthy life years - Women
3	Sooline ebavõrdsus tervises - oodatav eluiga		Gender inequality in health - life expectancy
	Sooline ebavõrdsus tervises - tervena elada jäänud aastad		Gender inequality in health - healthy life years
4	Tervise ebavõrdsus maakondades		Gender inequality in counties
5	Tervise ebavõrdsus haridustasemete vahel		Health inequality between levels of education
	Alaeesmärgid		**Sub-objectives**
6	Standarditud varajase suremuse kordaja	Indicators	Standardised early mortality rate
7	Keskkonnast, sh töökeskkonnast, tingitud enneaegse suremuse ja haigestumuse tõttu kaotatud eluaastate arv 100 000 elaniku kohta		Number of disability-adjusted life years attributable to the environment, including the working environment, per 100,000 people
8	Katmata tervishoiuteenuste vajadus		Unmet need for healthcare
9	Avaliku sektori tervishoiukulude osakaal SKPs		Share of public sector's health expenditure in the GDP
	Programm Tervist toetav keskkond		**Health-supporting environment programme**
TE01	Keskkonnast, sh töökeskkonnast, tingitud enneaegse suremuse ja haigestumuse tõttu kaotatud eluaastate arv 100 000 elaniku kohta väheneb	Indicators	Number of life years lost per 100,000 population due to premature mortality and morbidity due to the environment, including the working environment
Meede 1.1.	**Tervist toetava keskkonna arendamine ja elukeskkonnast tulenevate terviseriskide hindamine ja vähendamine**	**Measure**	**Development of a health-supportive environment and assessment and reduction of health risks arising from the living environment**
TE02 M1	Ennetusega välditav suremus 100 000 elaniku kohta väheneb	Indicators	Avoidable mortality – preventable causes of mortality per 100,000 population decreases
Tegevus 1.1.1.	**Tervist toetava ning parendava keskkonna poliitika kujundamine ja elluviimise korraldamine**	**Activity**	**Shaping and organising the implementation of health-supporting and improving environmental policies**
TE01 M1	Tervise säilimist ja parendamist soodustava elukeskkonna poliitika on kujundatud ja elluviimine korraldatud		Policies for the living environment that promote the preservation and improvement of health have been designed and implemented organised
Tegevus 1.1.2.	**Vee, välis- ja siseõhuga (sh sisekliima) ning müra ja kiirgusega seotud terviseriskide hindamine ning vähendamine**	**Activity**	**Assessment and reduction of health risks related to water, ambient air and indoor air (including indoor climate), noise, and radiation**
TE01 T1.1.2	Kvaliteetse ühisveevärgi joogiveega varustatud tarbijate osakaal on stabiilne	Indicators	The share of consumers supplied with high-quality drinking water from the public water supply is stable
	Kvaliteetse veega basseinide osakaal tõuseb		The share of pools with quality water increases
	Supluskohtade osakaal, mille suplusvee kvaliteediklass loetakse „väga heaks" või „heaks" on stabiilne		The proportion of bathing sites classified as 'very good' or 'good' is stable
Tegevus 1.1.3.	**Kemikaalide ohutus ja riskide vähendamine**	**Activity**	**Chemical safety and risk reduction**
TE01 T1.1.3	Suureneb kemikaale, sh detergente turustavate ettevõtete osakaal, kes puudused kõrvaldasid	Indicators	The share of companies marketing chemicals, including detergents, that remedied the shortcomings increases
	Biotsiide turustavate ettevõtete osakaal, kes puudused kõrvaldasid		Share of companies marketing biocidal products that remedied deficiencies
Tegevus 1.1.4.	**Toodete ja teenuste ohutus ja riskide vähendamine**	**Activity**	**Safety and risk reduction of products and services**
TE01 T1.1.4	Kosmeetikatooteid turustavate ettevõtete osakaal, kes puudused kõrvaldasid, tõuseb	Indicators	The share of companies marketing cosmetics that eliminated the shortcomings increases

	Ilusalongide osakaal, kus puudused kõrvaldati, tõuseb		The proportion of beauty salons that eliminated the shortcomings increases
	Tervisekaitsenõuetele vastavate haridusasutuste osakaal kontrollitud haridusasutuste arvust tõuseb		The share of educational institutions that meet the health protection requirements out of the inspected educational institutions is increasing
	Tervisekaitsenõuetele vastavate sotsiaalasutuste osakaal kontrollitud sotsiaalasutuste arvust on stabiiline		The share of social institutions meeting the health protection requirements out of the inspected social institutions is stable
	Programm Tervist toetavad valikud		**Healthy choices programme**
TE02	Standarditud enneaegse suremuse kordaja (30–69-aastaste suremus kroonilistesse mittenakkushaigustesse 100 000 sama vana elaniku kohta	Indicators	The standardised premature mortality rate (mortality from chronic non-communicable diseases per 100,000 population aged 30–69) has decreased
Meede 1.1.	**Terviseriskide vähendamine ning kogukondade ja paikkondade võimestamine tervise edendamisel**	**Measure**	**Reducing health risks and risky health behaviours and empowering communities and municipalities to promote health**
TE02 M1	Ennetusega välditav suremus 100 000 elaniku kohta väheneb	Indicators	Avoidable mortality – preventable causes of mortality per 100,000 population decreases
Tegevus 1.1.1.	**Terviseriskide ja riskikäitumise ennetamise ja tervise edendamise poliitika kujundamine ja elluviimise korraldamine**	**Activity**	**Developing and organising the implementation of health risk and risky health behaviours prevention and health promotion policies**
TE02 M1	Terviseriskide ennetamise ja edendamise poliitika on kujundatud, rakenduslikud küsimused on lahendatud, seisukohad on esitatud		Policies for the prevention and promotion of health risks have been developed, implementation issues have been resolved, and views have been provided
Tegevus 1.1.2.	**Vaimse tervise edendamine**	**Activity**	**Promoting mental health**
TE02 T1.1.2	Väheneb 16–64-aastaste inimeste osakaal, kellel on viimase 12 kuu jooksul diagnoositud või ravitud depressiooni	Indicators	The share of people aged 16–64 who have been diagnosed with or treated for depression in the last 12 months decreases
	Väheneb 11-, 13- ja 15-aastaste laste osakaal, kellel on viimasel 12 kuul esinenud depressiivseid episoode		The share of children aged 11, 13, and 15 who have had depressive episodes in the last 12 months decreases
	Enesetapu tõttu hukkunute arv 100 000 elaniku kohta väheneb		The number of deaths due to suicide per 100,000 population decreases
	0–19-aastaste enesetapu tõttu hukkunute arv 100 000 sama vana elaniku kohta väheneb		The number of deaths due to suicide among people aged 0–19 per 100,000 population of the same age decreases
	20–64-aastaste enesetapu tõttu hukkunute arv 100 000 sama vana elaniku kohta väheneb		The number of deaths due to suicide among people aged 20–64 per 100,000 population of the same age decreases
	65-aastaste ja vanemate enesetapu tõttu hukkunute arv 100 000 sama vana elaniku kohta väheneb		The number of deaths due to suicide among people aged 65 and older per 100,000 population of the same age decreases
	15–34-aastaste tahtlike enesevigastuste arv 100 000 sama vana elaniku kohta väheneb		The number of intentional self-injuries among people aged 15–34 per 100,000 population of the same age decreases
Tegevus 1.1.3.	**Vigastuste ennetamine**	**Activity**	**Prevention of injuries**
TE02 T1.1.3	Haigestumus vigastuste, mürgistuste ja teatavate muude välispõhjuste toime tagajärjel 100 000 elaniku kohta väheneb	Indicators	Morbidity from injuries, poisonings, and certain other external causes per 100,000 population decreases
	0–19-aastaste haigestumus vigastuste, mürgistuste ja teatavate muude välispõhjuste toime tagajärjel 100 000 sama vana elaniku kohta väheneb		Morbidity of the population aged 0–19 due to injuries, poisonings, and certain other external causes per 100,000 population of the same age decreases
	Üle 65-aastaste haigestumus vigastuste, mürgistuste ja teatavate muude välispõhjuste toime tagajärjel 100 000 sama vana elaniku kohta väheneb		Morbidity of the population over the age of 65 from injuries, poisonings, and certain other external causes per 100,000 population of the same age decreases
	Vigastuste, mürgistuste ja teatavate muude välispõhjuste toime tagajärjel hukkunute arv 100 000 elaniku kohta väheneb		The number of deaths due to injuries, poisonings, and certain other external causes per 100,000 population decreases
	0–19-aastaste vigastuste, mürgistuste ja teatavate muude välispõhjuste toime tagajärjel hukkunute arv 100 000 sama vana elaniku kohta väheneb		The number of deaths due to injuries, poisonings, and certain other external causes among people aged 0–19 per 100,000 population of the same age decreases
	Juhuslike kukkumiste tõttu hukkunute arv 100 000 elaniku kohta väheneb		The number of deaths due to accidental falls per 100,000 population decreases
Tegevus 1.1.4.	**Tasakaalustatud toitumise ja füüsilise aktiivsuse edendamine**	**Activity**	**Promoting a balanced diet and physical activity**
TE02 T1.1.4	Vabal ajal vähemalt neli korda nädalas poole tunni vältel (või kauem tervisesporti harrastavate 16–64-aastaste osakaal kasvab)	Indicators	The share of 16–64-year-olds who are doing physical exercises at least 30 minutes and four times a week in their leisure time increases
	Iga päev vähemalt 60 minutit mõõdukalt või intensiivselt kehaliselt aktiivsete 11-, 13- ja 15-aastaste õpilaste osakaal kasvab		The proportion of 11-, 13-, and 15-year-old students who are moderately or intensively physically active for at least 60 minutes every day increases

	Ülekaaluliste või rasvunud I klassi õpilaste osakaal väheneb		The proportion of overweight or obese first-grade pupils decreases
	Ülekaaluliste või rasvunud 1–4-aastaste laste osakaal väheneb		The proportion of overweight or obese children aged 1 to 4 decreases
	Ülekaaluliste või rasvunud 10–14-aastaste laste osakaal väheneb		The proportion of overweight or obese children aged 10 to 14 decreases
	Ülekaaluliste või rasvunud 16–64-aastaste osakaal rahvastikus väheneb		The proportion of overweight or obese people aged 16 to 64 decreases
Tegevus 1.1.5.	**Uimastite tarvitamise tõkestamine ja vähendamine**	**Activity**	**Prevention and reduction of drug use**
TE02 T1.1.5	Narkootikume proovinud 15–16-aastaste osakaal väheneb	Indicators	The proportion of 15- to 16-year-olds who have tried drugs decreases
	Narkootikumide üledoosidest tingitud surmajuhtude arv 1 000 000 elaniku kohta väheneb (kolme aasta keskmine)		The number of deaths from drug overdoses per 1,000,000 population decreases (three-year average)
	Absoluutse alkoholi tarbimine 15-aastaste ja vanemate elanike kohta pidurdub		Absolute alcohol consumption among population aged 15 and over slows down
	15-aastaste purjus olnud noorte osakaal väheneb		The proportion of 15-year-olds who have been drunk decreases
	Alkoholi tarvitamisest põhjustatud haigustesse surnute arv 100 000 elaniku kohta väheneb		The number of deaths from alcohol-related illnesses per 100,000 population decreases
	Alkoholimürgistusest tingitud surmajuhtumite arv 100 000 elaniku kohta väheneb		The number of deaths due to alcohol poisoning per 100,000 population decreases
	Igapäevasuitsetajate osakaal 16–64-aastaste naiste hulgas väheneb		The share of daily smokers among women aged 16–64 decreases
	Igapäevasuitsetajate osakaal 16–64-aastaste meeste hulgas väheneb		The share of daily smokers among men aged 16–64 decreases
	Igapäevasuitsetajate osakaal kuni põhiharidusega 16–64-aastaste hulgas väheneb		The share of daily smokers among those aged 16–64 with up to basic education decreases
	15-aastaste sigaretti suitsetanud noorte osakaal väheneb		The share of 15-year-olds who have smoked a cigarette decreases
	16–64-aastaste tubakasuitsule eksponeeritus kodus väheneb		The exposure to tobacco smoke at home among 16–64-year-olds decreases
Tegevus 1.1.6.	**Nakkushaiguste ennetamine ja leviku tõkestamine (sh vaktsineerimine, antimikroobne resistentsus, HIV ja hepatiit**	**Activity**	**Prevention and control of communicable diseases (including HIV, tuberculosis, and viral hepatitis)**
TE02 T1.1.6	Uute HIVi juhtude arv 100 000 elaniku kohta väheneb	Indicators	The number of new HIV cases per 100,000 population decreases
	Krooniliste ja ägedate C-hepatiidi juhtude arv 100 000 elaniku kohta väheneb		The number of chronic and acute cases of hepatitis C per 100,000 population decreases
	Tuberkuloosi haigestumuskordaja (esmas-, retsidiiv- ja korduvravijuhud 100 000 elaniku kohta väheneb)		The incidence of tuberculosis (new cases, relapses and retreatment cases) per 100,000 population decreases
Tegevus 1.1.7.	**Seksuaal- ja reproduktiivtervise edendamine**	**Activity**	**Promoting sexual and reproductive health**
TE02 T1.1.7	Juhupartneriga seksuaalvahekorras olles alati kondoomi kasutavate 16–64-aastaste osakaal suureneb	Indicators	The proportion of 16–64-year-olds who always use a condom during sexual intercourse with an episodic partner increases
	Indutseeriutd abortide arv 100 elussünni kohta väheneb		The number of induced abortions per 100 live births decreases
	Teismeliste (10–19 sünnitajate arv 1000 sama vana tüdruku kohta väheneb)		The number of teenage (10–19 years of age) mothers per 1,000 girls of the same age decreases
	Summaarne sündimuskordaja ei vähene		The total birth rate does not decrease
	Raseduse ajal suitsetanud sünnitajate osakaal väheneb		The share of mothers who smoked during pregnancy decreases
	Programm Inimkeskne tervishoid		**Person-Centred Healthcare Programme**
TE03-1	Katmata tervishoiuteenuste vajadus väheneb	Indicators	The unmet need for healthcare services decreases
TE03-2	Avaliku sektori tervishoiukulude osakaal SKPs suureneb		The share of public sector health expenditures in GDP increases
Meede 1.1.	**Inimkeskse tervishoiu arendamine**	**Measure**	**Development of person-centred healthcare**
TE03 M1	Raviga välditav suremus 100 000 elaniku kohta väheneb	Indicators	Avoidable mortality – treatable causes of mortality per 100,000 population decreases
Tegevus 1.1.1.	**Inimkeskse tervishoiupoliitika kujundamine ja elluviimise korraldamine**	**Activity**	**Designing and organising the implementation of a person-centred health policy**
TE03 T1.1.1	Inimkeskne tervishoiupoliitika on kujundatud ja elluviimine korraldatud, rakenduslikud küsimused on lahendatud ja seisukohad esitatud		Person-centred healthcare policy has been designed and implemented, implementation issues have been resolved and views have been presented
Tegevus 1.1.2.	**Inimeste terviseharitus ja põhiõiguste kaitse ning kogukondade võimestamine ja kaasamine**	**Activity**	**Health literacy and the protection of fundamental rights and the empowerment and involvement of communities**

TE03 T1.1.2	Patsiendiportaali kasutatavus suureneb	Indicators	The number of users of the national Patient Portal increases
	Suureneb osakaal 18-aastastest ja vanematest elanikest, kes on täitnud nõusoleku vormi loovutada surmajärgselt elundeid või kudesid siirdamiseks		The number of statements of intention increases: the proportion of residents aged 18 and over who have completed a consent form to donate organs or tissues for transplantation after death is increasing
	0–14-aastaste laste hambaraviga hõlmatus suureneb		The coverage of dental care among children aged 0–14 increases
	15-aastaste ja vanemate hambaraviga hõlmatus suureneb		The coverage of dental care among aged 15 and above increases
	13-aastaste tütarlaste HPV (inimese papilloomiviirusevastane vaktsiin) vaktsineerimisega hõlmatus suureneb		Coverage of HPV (human papillomavirus) vaccination among 13-year-old girls increases
	Elanikkonna hõlmatus hooajalise gripivastase vaktsineerimisega suureneb		Coverage of seasonal influenza vaccination among the population increases
	Emakakaelavähi sõeluuringuga hõlmatus suureneb		Coverage of cervical cancer screening increases
	Rinnavähi sõeluuringuga hõlmatus suureneb		Coverage of breast cancer screening increases
	Jämesoolevähi sõeluuringuga hõlmatus suureneb		Coverage of colon cancer screening increases
Tegevus 1.1.3.	**Personali võimekuse kasvatamine, juhtimise ja vastutuse tugevdamine**	**Activity**	**Building the capacity of staff and strengthening management and responsibility**
TE03 T1.1.3	Arstide arv 100 000 elaniku kohta suureneb	Indicators	The number of doctors per 100,000 population increases
	Perearstide keskmine vanus langeb		The average age of family doctors decreases
	Psühhiaatrite arv 100 000 elaniku kohta suureneb		The number of psychiatrists per 100,000 population increases
	Õdede arv 100 000 elaniku kohta suureneb		The number of nurses per 100,000 population increases
	Proviisorite arv 100 000 elaniku kohta suureneb		The number of pharmacists per 100,000 population increases
	Tagasi tervishoidu koolituse läbinute arv aastas suureneb		The number of people completing the 'Return to healthcare system' course per year increases
	Residentide aasta keskmine arv suureneb		The average annual number of residents increases
Tegevus 1.1.4.	**Teenuste mudeli ümberkujundamine ning koostöö ja koordineerimine sektorite sees ja vahel**	**Activity**	**Redesigning the service model and cooperation and coordination within and between sectors**
TE03 T1.1.4	Pereõdede iseseisvate vastuvõttude osakaal perearstiabis tehtud vastuvõttusest suureneb	Indicators	The share of independent appointments of family nurses among family doctor care appointments increases
	Koduõdede koduvisiitide arv 1000 elaniku kohta kasvab		The number of home visits of home nurses per 1,000 population increases
	Hospitaliseerimised astma tõttu 100 000 elaniku kohta vähenevad		Asthma hospital admissions per 100,000 population decreases
	Hospitaliseerimised kõrgvererõhutõve tõttu 100 000 elaniku kohta vähenevad		Hypertension hospital admissions per 100,000 population decreases
	Hospitaliseerimised diabeedi tõttu 100 000 elaniku kohta vähenevad		Diabetes hospital admissions per 100,000 population decreases
	Haiglavõrgu arengukava haiglate aktiivravi voodihõive suureneb		The bed occupancy rates of curative care in the Hospital Network Development Plan hospitals increases
	Iseseisva statsionaarse õendusabi voodihõive suureneb		The bed occupancy rate of independent inpatient nursing care increases
	Järelvisiidid 30 päeva jooksul pärast ägeda müokardiinfarkti haiglaravi perearsti juurde suurenevad		The number of follow-up visits to a family doctor within 30 days of acute myocardial infarction increases
	Järelvisiidid 30 päeva jooksul pärast insuldi haiglaravi perearsti juurde suurenevad		The number of follow-up visits to a family physician within 30 days of hospitalisation due to stroke increases
	Kõikide vähipaikmete viie aasta suhteline elumus suureneb		The five-year relative survival rate of all cancer sites increases
	Kopsuvähi viie aasta suhteline elumus suureneb		The five-year relative survival rate of lung cancer increases
Tegevus 1.1.5.	**Tervisesüsteemi kvaliteeti toetavate tegevuste ja patsiendiohutuse arendamine**	**Activity**	**Development of activities supporting the quality of the healthcare system and patient safety**
TE03 T1.1.5	Aasta jooksul heakskiidetud uute ravijuhendite ja tervisetehnoloogiate hindamise raportite arv suureneb	Indicators	The number of treatment guidelines and health technology assessment reports approved during the year increases
	Ägedasse müokardiinfarkti haigestunute 30 päeva järgne suremus väheneb		Thirty-day mortality after hospital admission for acute myocardial infarction (AMI) decreases
	Isheemilisse insulti haigestunute 30 päeva järgne suremus väheneb		Thirty-day mortality after hospital admission for ischemic stroke decreases
	Kopsuemboolia määr pärast puusa- või põlveliigese vahetamise operatsiooni väheneb		The rate of post-operative pulmonary embolism after hip or knee replacement decreases
	Kõhuõõne operatsioonijärgse sepsise määr väheneb		The rate of post-operative sepsis after abdominal surgery decreases
	Keisrilõigete osakaal esmassünnitajate ajalise üksiksünnituse korral (Robson 1+2) väheneb		The proportion of caesareans in the case of a single birth in the first child (Robson 1 + 2) decreases
	Suitsiidide arv haiglaravis väheneb		The number of suicides in hospital decreases
Tegevus	**Tervise ebavõrdsuse vähendamine**	**Activity**	**Reducing health inequalities**

1.1.6.			
TE03 T1.1.6	Ravikindlustusega kaetute osakaal rahvastikus suureneb	Indicators	The share of people covered by health insurance in the population increases
	Leibkondade omaosaluse osakaal tervishoiukuludes väheneb		The share of household out-of-pocket payment in health expenditure decreases
	Täiskasvanute (19-aastaste ja vanemate) hambaravihüvitise kasutamine suureneb		The use of dental care benefits for adults (19 years and older) increases
	Oma tervist heaks või väga heaks hindavate inimeste hinnangute erinevus kõrgeima ja madalaima sissetulekuga inimeste vahel väheneb		The difference between people who rate their health as good or very good among people with the highest and lowest income decreases
	Oma tervist heaks või väga heaks hindavate inimeste hinnangute erinevus põhi- ja kõrgharidusega inimeste vahel väheneb		The difference between people who rate their health as good or very good among people with basic and higher education decreases
Tegevus 1.1.7.	**Ravimite ja meditsiiniseadmete ohutuse, tõhususe ning kvaliteedi ja kättesaadavuse tagamiseks poliitika kujundamine ja elluviimise korraldamine**	**Activity**	**Policy development and implementation to ensure the safety, efficacy, quality, and availability of medicinal products and medical devices**
TE03 T1.1.7	Ravimite ja meditsiiniseadmete ohutuse, tõhususe, kvaliteedi ja kättesaadavuse tagamiseks on poliitika kujundatud ja elluviimine korraldatud. Rakenduslikud küsimused on lahendatud ja seisukohad esitatud		The policy has been developed and implemented to ensure the safety, efficacy, quality, and availability of medicinal products and medical devices. Implementation issues have been resolved and views have been expressed
Tegevus 1.1.8.	**Kvaliteetsete ravimite, verepreparaatide ja meditsiiniseadmete kättesaadavuse tagamine**	**Activity**	**Ensuring the availability of quality medicinal products, blood products, and medical devices**
TE03 T1.1.8	Geneeriliste ravimite kasutamise osakaal ravimite kogumahust suureneb	Indicators	The share of the generic medicinal products in the total volume of pharmaceuticals increases
	Kulutused retseptiravimitele osakaaluna leibkondade omaosalusest vähenevad		Expenditure on prescribed medicinal products as a share of the household out-of-pocket payment in health expenditure decreases
Tegevus 1.1.9.	**Nakkushaiguste ennetamine ja leviku tõkestamine (sh vaktsineerimine, antimikroobne resistentsus**	**Activity**	**Prevention and control of communicable diseases (including vaccination, antimicrobial resistance)**
TE03 T1.1.9	2-aastaste vaktsineerimisega hõlmatus leetrite, mumpsi ja punetiste (MMR) suhtes suureneb	Indicators	Vaccination coverage of measles, mumps, and rubella (MMR) in 2-year-olds increases
	14-aastaste revaktsineerimisega hõlmatus leetrite, mumpsi ja punetiste (MMR) suhtes suureneb		Revaccination coverage of measles, mumps, and rubella (MMR) among 14-year-olds increases
	2-aastaste vaktsineerimisega hõlmatus difteeria, teetanuse, läkaköha, poliomüeliidi, Haemophilus influenzae tüüp b ja B-viirushepatiidi suhtes suureneb		Vaccination coverage of diphtheria, tetanus, pertussis, poliomyelitis, Haemophilus influenzae type b, and hepatitis B among 2-year-olds increases
	7-aastaste hõlmatus revaktsineerimisega difteeria, teetanuse, läkaköha ja poliomüeliidi suhtes suureneb		Revaccination coverage of diphtheria, tetanus, pertussis, and poliomyelitis among 7-year-olds increases
	65-aastaste ja vanemate hõlmatus hooajalise gripivastase vaktsineerimisega suureneb		Vaccination coverage of seasonal influenza among 65-year-olds and older increases
	Multiresistentsete tuberkuloosihaigete (MDR-TB) osakaal kõigist esmas- ja retsidiivjuhtudest väheneb		The proportion of multidrug-resistant tuberculosis cases (MDR-TB) in all new and relapse cases decreases

Annex B. EHIF Clinical Indicators

Methodology descriptions available on EHIF's webpage: https://www.haigekassa.ee/detailsed-kliinilised-indikaatorid

Kiirabi indikaatorid		**Ambulance indicators**	
Indikaator 1	Kiirabi reageerimisaeg Delta prioriteediga kiirabikutsetel kiirabi vahetus teeninduspiirkonnas linnas/maapiirkonnas	Indicator 1	Ambulance response time for Delta priority ambulance calls in ambulance service area in city/rural area
Indikaator 2	Elustamiskatsete arv kiirabibrigaadi kohta aastas 100 000 elaniku kohta	Indicator 2	Number of resuscitations attempts per ambulance crew per year per 100 000 inhabitants
Indikaator 3	Haigla eelteavitusega insuldijuhtude osakaal kõikidest insuldijuhtudest	Indicator 3	The share of hospital pre-reported stroke cases in all stroke cases
Indikaator 4	ST-segmendi elevatsiooniga müokardi infarktiga patsiendi hospitaliseerimine reperfusiooni teostavasse haiglasse 80 minuti jooksul alates kiirabibrigaadi sündmuskohale saabumisest	Indicator 4	Hospitalisation of a patient with an ST segment elevation myocardial infarction in a hospital performing reperfusion within 80 minutes of the arrival of the ambulance crew on the scene
Indikaator 5	Insuldiga patsiendi hospitaliseerimine rekanaliseeriva protseduuri teostavasse haiglasse 80 minuti jooksul alates väljasõidukorralduse saamisest	Indicator 5	Hospitalisation of a stroke patient in a hospital performing the re-channelling procedure within 80 minutes of receiving an exit order
Indikaator 6	Traumakeskusesse esmaselt hospitaliseeritud raske traumaga patsientide osakaal kõikidest raske traumaga hospitaliseeritud patsientidest	Indicator 6	The share of patients with severe trauma first hospitalized in a trauma center of all patients hospitalized with severe trauma
Indikaator 7	Patsientide osakaal haiglas kinnitatud ST-segmendi elevatsiooniga müokardi infarktiga patsientidest, kes müokardi infarkti diagnoosiga hospitaliseeriti reperfusiooni teostavasse haiglasse.	Indicator 7	The share of patients with a hospital-approved ST-segment elevation myocardial infarction who was hospitalized with a diagnosis of myocardial infarction was hospitalized with a diagnosis of myocardial infarction.
Indikaator 8	Spontaanse vereringe taastumisega lõppenud elustamiskatsete osakaal kõikidest elustamiskatsetest kiirabi vahetute teeninduspiirkonniti	Indicator 8	The share of resuscitation attempts completed with spontaneous regeneration of blood circulation in all resuscitation attempts by immediate service area of emergency medical care
Erakorralise meditsiini osakonna indikaatorid		**Emergency department indicators**	

Indikaator 1	Erakorralise meditsiini eriala omandanud arstide osakaal erakorralise meditsiini osakonna (EMO) arstkonna profiilis	Indicator 1	Percentage of doctors who have acquired a specialty in emergency medicine in the profile of the medical team of the Emergency Department (EMO)
Indikaator 2	Patsientide osakaal, kes lahkus erakorralise meditsiini osakonnast arsti visiidita	Indicator 2	Percentage of patients who left the emergency department without a doctor's visit
Indikaator 3	Patsientide osakaal, kellel triaaži määramist alustati 10 minuti jooksul alates saabumisest erakorralise meditsiini osakonda	Indicator 3	Percentage of patients who started triage within 10 minutes of arrival in the emergency department
Indikaator 4	Patsientide osakaal, kes pöördusid erakorralise meditsiini osakonda 72 tunni jooksul korduvalt	Indicator 4	Percentage of patients who went to the emergency department repeatedly within 72 hours
Indikaator 5	Isheemilise insuldi rekanaliseeriva ravi ajalised intervallid „uks – kompuutertomograafia“ ja „uks – rekanaliseeriva ravi algus“	Indicator 5	Temporal intervals for rechangeal treatment of ischemic stroke "door - CT scan" and "door - start of rechaniling treatment"
Indikaator 6	Septilises seisundis patsientide osakaal, kelle antibakteriaalne ravi oli alustatud hiljemalt 1 tunni jooksul alates arstliku läbivaatuse algusest erakorralise meditsiini osakonnas	Indicator 6	Percentage of patients in septic condition whose antibacterial treatment had started within 1 hour of the start of the medical examination in the emergency department at the latest
Indikaator 7	Valusündroomiga ja trauma diagnoosiga patsientide osakaal, kellele valu intensiivsus oli hinnatud vähemalt tugevaks ja ning valuravi ordineerimine erakorralise meditsiini osakonnas toimus hiljemalt 30 minuti jooksul alates triaaži kategooria määramisest	Indicator 7	The proportion of patients with pain syndrome and trauma diagnosis for whom the intensity of pain was assessed as at least severe and the ordination of pain management in the emergency department took place no later than 30 minutes from the appointment of the triage category
Indikaator 8	Aeg hospitaliseerimise vajaduse otsusest sihtosakonda saatmiseni	Indicator 8	Time from hospitalization need decision to send to target department
Indikaator 9	Patsientide osakaal, kes viibisid erakorralise meditsiini osakonnas rohkem kui 360 minutit	Indicator 9	Percentage of patients who stayed in the emergency department for more than 360 minutes

Kardioloogia indikaatorid		**Cardiology indicators**	
Indikaator 1	Reperfusioonravi osakaal STEMI haigetel, kellel haiglaeelne viivitus on < 12 tunni (sümptomite algusest hospitaliseerimiseni)	Indicator 1	The share of reperfusion therapy in STEMI patients with a pre-hospital delay of < 12 hours (from the onset of symptoms to hospitalization)
Indikaator 2	NSTEMI haigete osakaal, kellele teostatakse koronaarangiograafia 24 tunni jooksul esmasest hospitaliseerimisest	Indicator 2	The share of NSTEMI patients undergoing coronary arangiography within 24 hours of initial hospitalisation
Indikaator 3	Ägeda müokardiinfarkti järgne 30 päeva suremus	Indicator 3	30-day mortality following acute myocardial infarction
Indikaator 4	Ägeda müokardiinfarkti haigete osakaal, kellele on haiglast väljakirjutamisel määratud statiinravi	Indicator 4	The share of acute myocardial infarction patients who have been prescribed statin therapy when discharged from hospital

Indikaator 5	Püsiva suukaudse antikoagulantravi määramine ≥65 aastastel kodade virvendusarütmia (RHK-10 diagnoos I48) patsientidel.	Indicator 5	Determination of permanent oral anticoagulant therapy in patients of ≥65 years of age atrial fibrillation (ICD-10 diagnosis I48).
Kirurgia indikaatorid		**Indicators of surgery**	
Indikaator 1	Kirurgilise ohutuse kontrollkaardi (KOK) kasutamine	Indicator 1	Use of surgical safety checklist (COPD)
Indikaator 2	Päevakirurgia osakaal kubemesonga operatsioonidel	Indicator 2	The share of day surgery in groin hernia surgeries
Indikaator 3	Unearteri endarterektoomia operatsiooni aeg peale transitoorse isheemilise episoodi (TIA) ja >70% unearteri stenoosi diagnoosi kuupäeva	Indicator 3	Time of carotid artery selfreterectomy surgery after transitory ischemic episode (TIA) and >70% carotid stenosis diagnosis date
Indikaator 4	Jala amputatsioon 30 päeva peale verevoolu taastamise protseduuri	Indicator 4	Leg amputation 30 days after blood flow recovery procedure
Indikaator 5	Tüsistuste registreerimine Kokk - Murruste (KM) ja Clavien-Dindo (CD) klassifikaatorite alusel ning raporteerimine aastaaruandes	Indicator 5	Registration of complications Cook - On the basis of fractions (KM) and Clavien-Dindo (CD) classifications and reporting in the annual report
Indikaator 6	Operatsioonijärgne 30 päeva suremus	Indicator 6	Postoperative 30-day mortality
Indikaator 7	Operatsioonijärgne 30 päeva erakorraline rehospitaliseerimine	Indicator 7	Postoperative 30 days of emergency rehospitalization
Neuroloogia indikaatorid		**Indicators of neurology**	
Indikaator 1	Insuldi diagnoosiga patsientide osakaal, kelle akuutravi toimub kesk või piirkondlikus haiglas	Indicator 1	The share of patients diagnosed with stroke whose acute care is carried out in a central or regional hospital
Indikaator 2	Insulti haigestunud statsionaarsel ravil viibivate patsientide osakaal, kellel on 1 tunni jooksul tehtud kompuutertomoraagiline uuring (KT) ja/või magnetresonantstomograafiline (MRT) peaajust	Indicator 2	The share of patients undergoing inpatient treatment for stroke who have undergone a computed tomography examination (CT) and/or magnetic resonance imaging (MRI) of the brain within 1 hour
Indikaator 3	Isheemilise insuldiga patsientide osakaal, kellel on tehtud intravenoosne trombolüüs ja/või mehaaniline trombi eemaldamine ajuarteritest	Indicator 3	The share of patients with ischemic stroke who have undergone intravenous thrombolysis and/or mechanical clot removal from cerebral arteries
Indikaator 4	Isheemilisse insulti haigestunud patsientide osakaal, kellel on tehtud unearterite piltdiagnostika 96 tunni jooksul alates hospitaliseerimisest	Indicator 4	The share of patients suffering from ischemic stroke who have undergone imaging of the carotid arteries within 96 hours of hospitalisation
Indikaator 5	Insulti haigestunud patsientide osakaal, kelle liikumisfunktsioon on hinnatud füsioterapeudi poolt esimese 48 tunni jooksul peale hospitaliseerimist	Indicator 5	The share of stroke patients whose mobility function has been assessed by a physiotherapist within the first 48 hours after hospitalisation
Indikaator 6	Insulti haigestunud patsientide osakaal, kellel on neelamisfunktisoon uuritud 24 tunni jooksul	Indicator 6	The share of stroke patients who have been examined for swallowing function within 24 hours
Indikaator 7	Osakaal ajuinfarkti ja kodade virvendusarütmiaga patsientidest, kellele on määratud püsiv suukaudne antikoagulantravi 12 kuud + 1 päev hiljemalt alates akuutsest ajuinfarktist	Indicator 7	The share of patients with brain infarction and atrial fibrillation prescribed permanent oral anticoagulant

			therapy for 12 months + 1 day no later than from acute brain infarction
Indikaator 8	Esimese kuu jooksul pärast insulti haigestumist taastusravi saanud patsientide osakaal	Indicator 8	The share of patients rehabilitated in the first month after a stroke
Indikaator 9	Ägeda insuldihaige 30. päeva suremus	Indicator 9	Day 30 mortality of acute stroke patients
Intensiivravi indikaatorid		**Intensive care indicators**	
Indikaator 1	Probleemjuhtumite ja tüsistuste registreerimine ja analüüs	Indicator 1	Registration and analysis of problem cases and complications
Indikaator 2	Standarditud suremuskordaja	Indicator 2	Standardised mortality rate
Indikaator 3	Intensiivravijärgne 12 kuu elulemus	Indicator 3	12-month survival after intensive care
Indikaator 4	Intensiivravijärgse elukvaliteedi hindamine	Indicator 4	Assessment of post-intensive care quality of life
Indikaator 5	Intensiivravi osakonda taashospitaliseerimine 48 tunni jooksul pärast väljakirjutamist	Indicator 5	Rehospitalisation of intensive care unit within 48 hours of discharge
Indikaator 6	Tsentraalveeni kateetriga seotud vereringeinfektsioonide esinemissagedus	Indicator 6	Incidence of circulatory infections associated with central vein catheter
Indikaator 7	Ventilaatorpneumoonia esinemissagedus	Indicator 7	Incidence of fan pneumonia
Patoloogia indikaatorid		**Pathology indicators**	
Indikaator 1	Patoloogia teenust pakkuva labori kehtiva rahvusvahelise standardi ISO 15189 akrediteeringu olemasolu patoloogia põhiteenustele – histoloogia ja tsütoloogia	Indicator 1	Existence of the accreditation of iso 15189, the current international standard of the laboratory providing pathology services, for basic services of pathology – histology and cytology
Indikaator 2	SNOMED-CT nomenklatuuri kodeeringute kasutamine kõikides patoloogia teenust pakkuvates osakondades	Indicator 2	Use of SNOMED-CT nomenclature encodings in all pathology service departments
Indikaator 3	Pahaloomulise kasvaja histoloogiliste operatsioonipreparaatide vastamine sünoptilise või struktureeritud vastusega	Indicator 3	Responding to malignant histological operating preparations with a synoptic or structured response
Indikaator 4	Pahaloomulise kasvaja patomorfoloogilise lõppdiagnoosiga uuringu vastamise aeg	Indicator 4	Time of response to examination with pathomorphological final diagnosis of malignant tumor
Psühhiaatria indikaatorid		**Indicators of psychiatry**	
Indikaator 1	Skisofreeniahaigete suitsiidid esimese diagnoosiaasta jooksul	Indicator 1	Suicides in schizophrenia patients during the first year of diagnosis
Indikaator 2	Skisofreenia spektri psüühikahäiretega inimeste hõivatus tööga	Indicator 2	Employment of people with mental disorders of the schizophrenia spectrum
Indikaator 3	Esimese diagnoosiaasta skisofreeniahaige esimene ambulatoorne visiit 30 päeva pärast haiglaravi	Indicator 3	First outpatient visit of a schizophrenic patient of the first year of diagnosis 30 days after hospitalization
Indikaator 4	Skisofreeniahaiged, kes kasutavad antipsühhootilist ravi haiglaväliselt	Indicator 4	Schizophrenia patients using antipsychotic treatment outside the hospital
Indikaator 5	Esimese diagnoosiaasta skisofreeniahaige pere kaasamine raviprotsessi esimese 12 kuu jooksul	Indicator 5	Involvement of the family of a schizophrenic patient in the first 12 months of the first year of diagnosis

Indikaator 6	Skisofreeniahaigete rehospitaliseerimine psüühilise seisundi olulise halvenemise tõttu 30 päeva jooksul peale eelnevat haiglaravi	Indicator 6	Rehospitalisation of schizophrenia patients due to a significant deterioration in their mental state within 30 days of prior hospitalisation
Indikaator 7	Bensodiasepiinide ja bensodiasepiinisarnaste ainete esmane kasutamine ≥ 65-aastastel isikutel	Indicator 7	Primary use of benzodiazepines and benzodiazepine-like substances in persons aged ≥ 65 years
Indikaator 8	A) Bensodiasepiinide ja bensodiasepiinisarnaste ainete esmane pikaajaline kasutamine; B)Bensodiasepiinide ja bensodiasepiinisarnaste ainete esmane pikaajaline kasutamine ≥ 65-aastastel isikutel	Indicator 8	(A) Primary long-term use of benzodiazepines and benzodiazepine-like substances; B)Primary long-term use of benzodiazepines and benzodiazepine-like substances in persons aged ≥ 65 years
Sünnitusabi indikaatorid		**Obstetrics indicators**	
Indikaator 1	Väga enneaegsete sündide osakaal sündidest	Indicator 1	The share of very premature births in births
Indikaator 2	III ja IV astme lahkliha rebendite osakaal	Indicator 2	The share of grade III and IV perineum lacerations
Indikaator 3	Keisrilõigete osamäär esmassünnitajatel ajalise üksiksünnituse korral, kui loode on peaseisus (Robson 1+2)	Indicator 3	Cesarean sectional rate in first-time single births when the foetus is in a head position (Robson 1+2)
Indikaator 4	Keisrilõigete osamäär korduvsünnitajatel ajalise üksiksünnituse korral, kellel vähemalt üks sünnitus on lõppenud keisrilõike teel ja kelle loode on peaseisus (Robson 5)	Indicator 4	Cesarean sectional proportion in repeat births in case of single births in time, who have completed at least one birth by caesarean section and whose fetus is in a head position (Robson 5)
Indikaator 5	Sünnitusega seotud massiivse verekaotuse osakaal	Indicator 5	The share of massive blood loss associated with childbirth
Onkoloogia indikaatorid		**Oncology indicators**	
Emakakaelavähi indikaatorid		**Cervical cancer indicators**	
Indikaator 1	Esmase emakakaelavähi diagnoosimisel vaagnast MRT teostamise osakaal kõigist esmastest patsientidest	Indicator 1	The share of pelvic MRI in all primary patients when diagnosing primary cervical cancer
Indikaator 2	Diagnostilise konisatsiooni olemasolu enne radikaalset kirurgilist ravi varase emakakaelavähi (Tis, T1a1,T1a2) korral	Indicator 2	The share of diagnostic constabulary before radical surgical treatment for early cervical cancer (Tis, T1a1,T1a2)
Indikaator 3	Emakakaelavähi radikaalse kiiritusraviga samaaegne keemiaravi kasutamine	Indicator 3	Simultaneous use of chemotherapy with radical radiotherapy for cervical cancer
Indikaator 4	Lähikiirtusravi kasutus emakakaelavähi radikaalse kiiritusravi korral	Indicator 4	Use of close-up therapy for radical radiation therapy for cervical cancer
Indikaator 5	Emakakaelavähi radikaalse kiiritusravi kestus kuni 56 päeva	Indicator 5	Duration of radical radiation therapy for cervical cancer up to 56 days
Indikaator 6	R0 staatus peale emakakaelavähi radikaalset kirurgilist ravi	Indicator 6	R0 status after radical surgical treatment of cervical cancer
Kolorektaalvähi indikaatorid		**Colorectal cancer indicators**	
Indikaator 1	Kolorektaalvähi diagnoosiga opereeritud patsientide postoperatiivne 30 päeva suremus	Indicator 1	Postoperative 30-day mortality of patients

			diagnosed with colorectal cancer
Indikaator 2	Neoadjuvantset kiiritusravi (koos või ilma keemiaravita) saanud patsientide osakaal kõigist lokoregionaalselt levinud pärasoolevähi patsientidest	Indicator 2	Proportion of all patients receiving neoadjuvant radiotherapy (with or without chemotherapy) of all patients with lochlorogically common rectal cancer
Indikaator 3	Esmase radikaalse kirurgilise ravi läbinud kolorektaalvähi diagnoosiga patsientide operatsioonipreparaadis uuritud lümfisõlmede arv	Indicator 3	Number of lymph nodes studied in the surgery preparation of patients diagnosed with colorectal cancer who have undergone primary radical surgical treatment
Indikaator 4	Adjuvantset keemiaravi saanute osakaal kõrge retsidiveerumisriskiga II staadiumi ja III staadiumi käärsoolevähi patsientide seas	Indicator 4	The share of Adjuvant chemotherapy patients at high risk of relapse among stage II and stage III colon cancer patients
Rinnavähi indikaatorid		**Breast cancer indicators**	
Indikaator 1	Aeg esmase rinnavähi diagnoosiga patsientide esimesest visiidist raviasutuses kuni onkoloogilise ravi alguseni	Indicator 1	The time from the first visit of patients diagnosed with primary breast cancer to the treatment facility until the oncological treatment begins
Indikaator 2	Re- ekstsisioonide osakaal protsentides peale kirurgilist ravi histoloogilisel uuringul tuvastatud ebapiisava kasvajavaba serva tõttu operatsioonipreparaadis esmase rinnavähidiagnoosiga patsientidel	Indicator 2	The share of re-excisions in percentages after surgery due to insufficient tumor-free edge detected in histological examination in surgery preparation in patients with primary breast cancer diagnosis
Indikaator 3	Invasiivse rinnavähiga patsientide osakaal, kes on saanud postoperatiivset kiiritusravi rinnanäärmele peale rinda säilitavat operatsiooni (BCT)	Indicator 3	The share of patients with invasive breast cancer who have received postoperative radiotherapy for the breast after breast-preserving surgery (BCT)
Indikaator 4	Trastuzumabiga ravi saavate patsientide osakaal protsentides kõigist HER 3+ (T> 1cm N0 või N+) ja HER2 (2+ ISH+) rinnavähi diagnoosiga patsientidest	Indicator 4	The share of patients treated with Trastuzumab in all patients diagnosed with HER 3+ (T> 1cm N0 or N+) and HER2 (2+ ISH+) breast cancer
Eesnäärmevähi indikaator		**Prostate cancer indicator**	
Indikaator 1	Kõrge progressiooniriskiga eesnäärmevähi ravieelse staadiumi hindamine	Indicator 1	Assessment of the pre-treatment stage of prostate cancer with a high risk of progression
Indikaator 2	Radikaalse prostatektoomiaga seotud vereülekanne	Indicator 2	Blood transfusion associated with radical prostatectomy
Indikaator 3	Resektsioonijoone positiivsus radikaalse prostatektoomia järgselt	Indicator 3	Resection line positivity after radical prostatectomy
Indikaator 4	Kõrgdoosis kiiritusravi saanud patsientide osakaal keskmise ja kõrge progressiooniriskiga eesnäärmevähiga RT saanud patsientidest	Indicator 4	The share of patients receiving high dose radiotherapy with medium and high risk of progression with prostate cancer RT
Indikaator 5	Adjuvantne hormoonravi kõrge progresseerumisriskiga prostata vähiga radikaalselt kiiritusravi saanud haigetel	Indicator 5	Adjuvantne hormone therapy in patients with radical radiation therapy with a high risk of progression with prostata cancer

Annex C. Provider Feedback Indicators

Tervishoiuteenuse osutajate tagasiside indikaatorid		Feedback indicators for health care providers
Indikaatorhaigusega patsientide eriarstivisiitide osakaal	Indicators	Share of specialist visits for patients with indicator disease
Indikaatorhaigusega patsientide hospitaliseerimiste osakaal		Share of hospitalisations in patients with indicator disease
Statisonaarse aktiivravi järgsed ambulatoorsed visiidid		Outpatient visits after inpatient active therapy
TIA-le järgnev ajuinfarkt		Brain infarction following TIA
Ravikestus: koletsüstektoomia		Treatment duration: cholecystectomy
Ravikestus: apendektoomia		Duration of treatment: appendectomy
Ravikestus: pneumoonia		Treatment duration: pneumonia
Casemix indeks (CMI)		Casemix Index (CMI)
Päevakirurgia: koletsüstektoomia		Day surgery: cholecystectomy
Päevakirurgia: tonsillektoomia		Day surgery: tonsillectomy
Lahtise lõikusega koletsüstektoomia osakaal		Share of cholecystectomy with open surgery
Mitteriskirühma keisrilõigete osakaal		Share of non-risk cesarean sections
Toimeainepõhiste retseptide osakaal		Share of active ingredient-based prescriptions
Puusa- ja põlveliigese proteesimine		Hip and knee replacement
Seireindikaatorid		**Indicators for monitoring**
Kroonilise neeruhaiguse ennetus ja käsitlus	Indicators	Prevention and treatment of chronic kidney disease
Riskirühma patsientide sõelumine kroonilise neeruhaiguse suhtes		Screening at-risk patients for chronic kidney disease
Ägeda neeruhaiguse episoodi järgne kontroll		Post-episode control of acute kidney disease
Esmasdiagnoositud kroonilise neeruhaigusega patsientide kordusuuringud		Re-examinations of patients with primary diagnosed chronic kidney disease
Proteinuuria hindamine		Proteinuria assessment
Bariaatrilise patsiendi käsitlus enne ja pärast kirurgilist sekkumist		Treatment of a bariatric patient before and after surgical intervention
Vereanalüüsid enne üldkirurgi vastuvõtt		Blood tests before general surgeon's appointment
Endoskoopiline ülemise seedetrakti uuring bariaatrilise operatsiooni eelselt		Endoscopic upper gastrointestinal examination before bariatric surgery
Rindkere röntgenülesvõte bariaatrilise operatsiooni eelselt		Chest X-ray before bariatric surgery
Bariaatria õe konsultatsioon bariaatrilise operatsiooni eelselt		Bariatric nurse consultation before bariatric surgery
Eriarsti korduv vastuvõtt bariaatrilise operatsiooni järgselt		Repeated appointment of a specialist after bariatric surgery
Vereanalüüsid bariaatrilise operatsiooni järgselt		Blood tests after bariatric surgery
Luutiheduse uuring bariaatrilise operatsiooni järgselt		Bone density study after bariatric surgery
Bariaatrilise operatsiooni järgne endoskoopiline ülemise seedetrakti uuring		Endoscopic upper gastrointestinal examination after bariatric surgery
Hüpoglükeemiaga patsiendi suunamine endokrinoloogi vastuvõtule		Referring a patient with hypoglycemia to an endocrinologist's appointment
Jala veenilaiendite ja kroonilise venoosse puudulikkuse diagnoosimine ning ravi		Diagnosis and treatment of leg varicose veins and chronic venous insufficiency
Välja ostetud meditsiinilised seadmed		Purchased medical equipment
Ooteaeg eriarsti konsultatsioonist operatiivse ravini		Waiting time from specialist consultation to operative treatment
Doppler ultraheliuuringu teostamine enne invasiivset ravi		Doppler ultrasound scan before invasive treatment

Annex D. Quality Bonus System for family physicians (EHIF)

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Domain I		
Indicator	**Vaktsineerimine**	**Vaccination**
Definition	% perearsti nimistus olevatest vastava eagrupi lastest, kel on teostatud vaktsineerimine vastavalt riiklikule vaktsineerimiskavale	Share of children of the relevant age group in the family physician's practice list who have been vaccinated in accordance with the national vaccination schedule
Indicator	**Laste läbivaatus ja kuni 3-aastaste laste üldine tervisekontroll**	**Children's examination and general health check for children up to 3 years of age**
Definition	% perearsti nimistus olevatest vastava eagrupi lastest, kellel on teostatud tervisekontrollid (kuni 3a) lastel vastavalt ravijuhendile „Lapse tervise jälgimise juhend“.	Share of the children of the respective age group in the family physician's list who have undergone medical examinations (up to 3 years of age) in children according to the treatment guide "Guide to monitoring the health of the child".
Indicator	**3. aastase lapse läbivaatus ja üldine tervisekontroll**	**Examination of a 3-year-old child and general medical examination**
Definition	% perearsti nimistus olevatest vastava eagrupi lastest, kellel on teostatud läbivaatus ja üldine tervisekontroll lähtuvalt ravijuhendist „Lapse tervise jälgimise juhend“	Share of children of the respective age group in the family physician's list who have undergone a medical examination and general medical examination according to the treatment guide "Guide to monitoring the health of the child"
Indicator	**Kooliminevate laste läbivaatus (6-, 7- või 8-aastaselt)**	**Examination of children going to school (at the age of 6, 7 or 8 years)**
Definition	% perearsti nimistus olevatest hindamisaastal üheksa aastastest lastest, kellele on kuue, seitsme või kaheksa aastaselt tehtud koolimineva lapse läbivaatus ja tervisekontroll.	Share of children aged nine in the family physician's practice list during the assessment year for whom there are examination and medical examination of a child going to school at the age of six, seven or eight.
Indicator	**Kooliealiste laste läbivaatus (11 või-12aastaselt)**	**Indicator name Examination of school-age children (at the age of 11 or-12 years)**
Definition	% perearsti nimistus olevatest hindamisaastal 13 aastastest lastest, kellele on 11- või 12- aastaselt tehtud koolieelise lapse läbivaatus ja tervisekontroll.	Share of children aged 13 in the family physician's list during the assessment year who have undergone a school-age examination and health check at the age of 11 or 12.
Domain II		
Indicator	**Diabeet II haigete jälgimine**	**Monitoring of patients diagnosed with DM II**
Definition	% II tüüpi diabeedi haigetest,	Share of patients with type 2 diabetes,
	i. kellel on määratud glükohemoglobiin (66118) vähemalt 1x aastas (kui glükohemoglobiin on üle (või võrdne) 7,0% tuleb raviarvele märkida kood 9050)	i. who have been prescribed glycohemoglobin (66118) for at least 1x per year (if glycohemoglobin is above (or equal to) 7.0% should be indicated on the medical bill by the code 9050)
	ii. kellel on määratud kreatiniin vähemalt 1x aastas (66102),	ii. having tested creatinine levels at least 1x per year (66102),
	iii. kellel on määratud üldkolesterool (66104) vähemalt 1x aastas (kui patsiendil on üldkolesterooli väärtus üle 5,0 mmol/l, siis sõltumata haigusest või seisundist kantakse alati arvele kood 9040),	iii. having tested total cholesterol (66104) at least 1x per year (if the patient has a total cholesterol value of more than 5,0 mmol/l, then regardless of the disease or condition, code 9040 is always recorded),
	iv. kellel on määratud kolesterooli fraktsioonid (66105) vähemalt 1x 3a jooksul,	iv. Having tested cholesterol fractions (66105) for at least 1x 3 years,
	v. keda on nõustanud pereõde (eluviis, haiguse kontrolli all hoidmine) (9061) vähemalt 1x aastas või kellele on teostatud kroonilise haige nõustamine(9044) vähemalt 1x aastas	v. counseled by a family nurse (lifestyle, controlling illness) (9061) at least 1x per year or for whom counselling of a chronic patient (9044) has been carried out at least 1x per year
	vi. kellel on määratud albumiini ja kreatiniini suhe (66117 ja 66102) uriinis vähemalt 1x aastas	vi. Having tested the ratio of albumin/creatinine (66117 and 66102) in urine at least once a year
Indicator	**Diabeet II haigetel väljakirjutatud metformiin või selle kombinatsioonid**	**Metformin or its combinations prescribed to DM II patients**
Definition	12 kuu jooksul välja kirjutatud vähemalt 3 soodusretsepti metformiini või selle kombinatsioonidele II tüüpi diabeedi (diagnoosiga E11) haigele.	At least 3 reimbursed prescriptions for metformin or its combinations prescribed over a 12-month period for patients with type 2 diabetes (diagnosed with E11).
Indicator	**Madala riskiga hüpertooniatõve haige jälgimine**	**Monitoring of a patient with low-risk hypertension**
Definition	% madala riskiga hüpertooniatõve haigetest,	Share of patients with low-risk hypertension,
	i. kellel on määratud glükoos või glükolüseeritud hemoglobiin (HbA1c) (66101 või 66118) vähemalt 1x 3 aasta jooksul,	i. tested glucose or glycolysed hemoglobin (HbA1c) (66101 or 66118) at least 1x for 3 years,

	ii. kellel on määratud üldkolesterool vereseerumis (66104) vähemalt 1 x 3 aasta jooksul	ii. tested total cholesterol in the blood serum (66104) for at least 1 in 3 years
	iii. kellele on teostatud pereõe nõustamine (9061) või kroonilise haige nõustamine 1x aasta jooksul (9044)	iii. to whom the counselling of a family nurse has been carried out (9061) or counselling of a chronic patient 1x per year (9044)
Indicator	**Mõõduka lisariskiga hüpertooniatõve haige jälgimine**	**Indicator name Monitoring of a patient with hypertension disease with moderate additional risk**
Definition	% mõõduka lisariskiga hüpertooniatõvehaigetest,	Share of hypertension patients at moderate risk,
	i. kellel on määratud üldkolesterool (66104) vähemalt 1x aastas	i. total cholesterol (66104) tested at least 1x per year
	ii. kellel on määratud kolesterooli fraktsioonid (66105) vähemalt 1x aastas	ii. cholesterol fractions (66105) tested at least 1x per year
	iii. kellel on määratud glükoos või glükolüseeritud hemoglobiin (HbA1c) (66101 või 66118) vereseerumis vähemalt 1x aastas	iii. glucose or glycolyzed hemoglobin (HbA1c) (66101 or 66118) tested in blood serum at least 1x per year
	iv. kellel on määratud kreatiniin vereseerumis vähemalt 1x aastas	iv. creatinine in the blood serum tested at least 1x per year
	v. kellel on tehtud EKG (6361 või 6362) vähemalt 1 x 3 aasta jooksul	v. had an ECG (6361 or 6362) for at least 1 in 3 years
	vi. kellel on toimunud pereõe nõustav vastuvõtt (9061) vähemalt 1x aastas või kellele on teostatud kroonilise haige nõustamist (9044) vähemalt 1x aastas	vi. who has had a family nurse's counselling appointment (9061) for at least 1x per year or who has been given counselling for a chronically ill person (9044) for at least 1x per year
	vii. kellel on määratud albumiini ja kreatiniini suhe uriinis vähemalt 1x aastas (66117/66102)	vii. who has a determined ratio of albumin and creatinine in the urine of at least 1x per year (66117/66102)
Indicator	**Kõrge ja ülikõrge lisariskiga hüpertooniatõve haigete jälgimine**	**Monitoring hypertension patients with high and extremely high additional risk**
Definition	% kõrge ja ülikõrge riskiga hüpertooniatõve haigetest,	share of patients with hypertension at high and extremely high risk,
	i. kellel on määratud üldkolesterool (66104) vähemalt 1x aastas	i. total cholesterol (66104) tested at least 1x per year
	ii. kellel on määratud kolesterooli fraktsioonid (66105) vähemalt 1x aastas	ii. cholesterol fractions (66105) tested at least 1x per year
	iii. kellel on määratud glükoos (66101) või glükosüleeritud hemoglobiin (HbA1c) (66118) vereseerumis vähemalt 1x aastas	iii. glucose (66101) or glycosylated hemoglobin (HbA1c) (66118) tested in blood serum at least 1x per year
	iv. kellel on määratud kreatiniin (66102) vereseerumis vähemalt 1x aastas	iv. creatinine (66102) tested in a blood serum of at least 1x per year
	v. keda on nõustanud pereõde (9061) vähemalt 1x aastas või kellele on teostatud kroonilise haige nõustamine (9044) vähemalt 1x aastas	v. who has been advised by a family nurse (9061) for at least 1x a year or who has been counselled for a chronic patient (9044) at least 1x per year
	vi. kellel on määratud albumiini ja kreatiniini suhe uriinis (66117/66102) vähemalt 1x aastas	vi. who have a determined ratio of albumin to creatinine in urine (66117/66102) at least 1x per year
Indicator	**Mõõduka, kõrge ja ülikõrge lisariskiga riskiastmetega hüpertooniatõve haigetele välja kirjutatud ravimid**	**Hypertension patients with moderate, high and extremely high risk levels Drugs prescribed**
Definition	12 kuu jooksul välja kirjutatud vähemalt 4 retsepti angiotensiini konverteeriva ensüümi inhibiitorite, kaltsiumkanalite blokaatorite, beeta-blokaatorite, või angiotensiin (II) antagonisti ravimirühmast või nende kombinatsioonidele hüpertooniatõve (RKH-10 koodid I10-I15) perearsti nimistus olevale haigele, mõõduka, kõrge ja ülikõrge riskiastmetega.	At least 4 prescriptions of angiotensin-converting enzyme inhibitors, calcium channel blockers, beta-blockers, or angiotensin (II) antagonist drug group or combinations thereof were prescribed over a 12-month period for patients on the family physician's list for hypertension (ICD-10 codes I10-I15) with moderate, high and extremely high risk levels.
Indicator	**Antikoagulantravi =65 aastastel kodade virvendusarütmia (RHK-10 diagnoos I48) patsientidel**	**Anticoagulant therapy =65 years of age in patients with atrial fibrillation (ICD-10 diagnosis I48)**
Definition	= 65 aastaste kodade virvendusarütmia (RHK-10 diagnoos I48) patsientide osakaal perearsti nimistus, kellele on 12 kuu jooksul välja kirjutatud vähemalt 4 retsepti varfariini või 6 retsepti rivaroksabaani , apiksabaani , dabigatraani või edoksabaani	proportion of patients with atrial fibrillation (ICD-10 diagnosis I48) = 65 years of age in the family physician's list who have been prescribed at least 4 prescriptions for warfarin or 6 prescriptions for rivaroxaban, apixaban, dabigatran or edoxaban within 12 months
Indicator	**Müokardi infarkti läbiteinu jälgimine (määratud üldkolesterool, kolesterooli fraktsioonid ja glükoos vereseerumis)**	**Monitoring after myocardial infarction (prescribed total cholesterol, fractions of cholesterol and glucose in the blood serum)**
Definition	% müokardi infarkti läbiteinud haigetest,	Share of patients who have had a myocardial infarction,
	i. kellel on määratud üldkolesterool (66104) vähemalt 1x aastas,	i. who has total cholesterol (66104) tested at least 1x per year,
	ii. kellel on määratud kolesterooli fraktsioonid (66105)vähemalt 1x aastas,	ii. who have cholesterol fractions (66105) tested at least 1x per year,
	iii. kellel on määratud glükoos (66101) või glükolüseeritud hemoglobiin (HbA1c) vereseerumis (66118) vähemalt 1x aastas.	iii. who have glucose (66101) or glycolysed hemoglobin (HbA1c) in blood serum (66118) tested at least 1x per year
	iv. kellel on toimunud pereõe nõustamine (kood 9061) 1x aastas või kroonilise haige nõustamine (kood 9044) 1x aastas	iv. who has had the counselling of a family nurse (code 9061) 1x per year or counselling for a chronically ill person (code 9044) 1x per year
Indicator	**Müokardi infarkti läbiteinul väljakirjutatud beetablokaatorid või nende kombinatsioonid**	**Beta blockers or combinations of beta blockers prescribed after myocardial infarction**
Definition	12 kuu jooksul välja kirjutatud vähemalt 4 soodusretsepti beetablokaatoritele (üksi või kombinatsioonis) müokardi infarkti läbiteinud (RKH-10 koodid I21, I22, I23, I25.2) haigele, kes on nimistus.	At least 4 discount prescriptions issued within 12 months for beta blockers (alone or in combination) for patients who have undergone a myocardial infarction (ICD-10 codes I21, I22, I23, I25.2) and who are on the list.
Indicator	**Müokardi infarkti läbiteinul väljakirjutatud statiinid või nende kombinatsioonid**	**Statins or combinations thereof prescribed after myocardial infarction**
Definition	12 kuu jooksul välja kirjutatud vähemalt 4 soodusretsepti statiinidele (üksi või kombinatsioonis)	At least 4 discount prescriptions for statins prescribed over a 12-month period (alone or in combination)
Domain III		
Indicator	**E-konsultatsioon tervise infosüsteemi vahendusel**	**E-consultation via e-health information system**

Definition	12 kuu jooksul tervise infosüsteemi kaudu edastatud saatekirjade seas on/ei ole (kokkulepitud erialadel) e-konsultatsiooni saatekirju haigetele, kes on perearsti nimistus ja kelle seisund vastab e-konsultatsiooni teenuse suunamise/vastamise tingimustele.	Among the referrals forwarded through the e-health information system within 12 months, there are/are no e-consultation referrals (in agreed specialties) for patients who are in the practice list of a family physician and whose condition meets the conditions for directing/responding to the e-consultation service.
Indicator	**Perearsti poolt e-konsultatsioonile suunamise saatekirjade osakaal kõikidest saatekirjadest**	**Share of referrals to e-consultation in all referrals by family physicians**
Definition	12 kuu jooksul tervise infosüsteemi vahendusel saadetud e-konsultatsioonide saatekirjade osakaal tervise infosüsteemi vahendusel saadetud kõikidest saatekirjadest, millel on olemas e-konsultatsiooni võimalus.	Share of all e-consultation referrals sent through the e-health information system within 12 months from referrals that have an e-consultation option.
Indicator	**Erialane pädevus**	**Professional competence**
Specification	Perearst ja pereõde on läbinud pädevushindamise	The family doctor and family nurse have passed the competence assessment
Indicator	**Günekoloogiline läbivaatus**	**Gynecological examination**
Specification	Indikaatori hulka loetakse järgnevaid tegevusi:	The following activities are included:
	günekoloogiline läbivaatus koos preparaadi võtmisega (7359);	gynecological examination with the taking the sample (7359);
	emakasisese vahendi paigaldamine/instrumentaalne väljutamine, emakakaela laiendamine (7352);	installation/instrumental excretion of intrauterine device, cervical extension (7352);
	günekotsütoloogiline uuring (66807 või 66809 või 66811); perearsti poolt raseduse tuvastamine ja jälgimine (9045);	gynecocytological examination (66807 or 66809 or 66811); identification and monitoring of pregnancy by a family physician (9045);
	inimese papilloomviiruse test nukleiinhappe (DNA ja/või RNA järjestuse määramiseks)(66644);	human papillomavirus test for nucleic acid (DNA and/or RNA sequence) (66644);
	vedelikupõhine günekotsütoloogiline uuring HPV/NAT leiu täpsustamiseks (66821).	fluid-based gynecocytologic test to refine HPV/NAT findings (66821).
Indicator	**Kirurgilised manipulatsioonid ja pisioperatsioonid**	**Surgical manipulations and minor surgeries**
Specification	Indikaatori hulka loetakse järgnevaid tegevusi:	The following activities are included in the indicator:
	Pindmiste haavade ekstsisioon, kirurgiline korrastus (7115); Ambulatoorne pisioperatsioon (pindmise mädakolde avamine, panariitsiumi avamine jmt)(7116); Põletushaige ambulatoorne sidumine(7141); Kipslahase asetamine(7130); Biopsia võtmine (välja arvatud operatsiooni ajal) (7004); Diagnostilisel või ravi eesmärgil organi/õõne punktsioon(7005); Kateeteriseerimine (7159); Püsikateetri paigaldamine (7160); Epitsüstostoomi vahetus (7162); Kusepõie loputus ja ravimi viimine põide (ambulatoorselt) (7163), diatermokoagulatsioon (7025), krüoteraapia (protseduur ühele haigele)(7025); puurbiopsia (7006)	Excision of superficial wounds, surgical repair (7115); Minor outpatient surgery (opening of superficial rot, opening of panarithium, etc.) (7116); taking care of a burn patient burn (7141); Placement of cast (7130); Taking a biopsy (except during operation) (7004); Organ/cavity puncture for diagnostic or therapeutic purposes (7005); Catheterization (7159); Installation of a permanent catheter (7160); Change of epicystostomy (7162); Urinary bladder flushing and taking the medicine into the bladder (outpatient setting) (7163), diatermocoagulation (7025), cryotherapy (procedure for one patient) (7025); drill biopsy (7006)
Indicator	**60-69 aastaste isikute jämesoolevähi ennetus**	**Prevention of colon cancer in individuals aged 60-69**
Definition	% perearsti nimistus olevatest vastava eagrupi isikutest,	Share of the persons of the respective age group in the family physician's practice list,
	i. Keda on nõustatud (kood 9038) ja antud kätte peitveretesti komplekt (kood 9039),	i. Who has been advised (code 9038) and handed over a set of concealed blood tests (code 9039),
	ii. Keda on nõustatud (kood 9038) ja märgitud arvele sõeluuringust keeldumine (4048)	ii. Who has been advised (code 9038) and refusal (4048) has been recorded in claims
	iii. Kelle raviarvel on märgitud sõeluuringu laborianalüüs (kood 66224).	iii. Whose claim data indicates the laboratory analysis of the screening (code 66224).
Indicator	**Tervishoiuteenuse osutaja kvaliteedi hindamine**	**Quality assessment of the health care provider**
Specification	MTÜ Eesti Perearstide Selts poolt läbi viidud üldarstiabi ravi rahastamise lepingut omavate tervishoiuteenuse osutajate kvaliteedi hindamise tulemused. Hindamise tulemusel antakse kõigile osalejatele punktisumma, mille alusel paigutub perearstikeskus kvaliteedi hindamise skaalal A, B või C-tasemel	Results of the quality assessment of health care providers with a contract for financing general medical care carried out by the Estonian Society of Family Physicians. As a result of the evaluation, all participants will be awarded a score on the basis of which the family medicine centre will be placed on a quality assessment scale at A, B or C level
Indicator	**Teenuse osutaja kvaliteedijuhtimine**	**Quality management of the service provider**
Specification	MTÜ Eesti Perearstide Seltsi poolt läbi viidud üldarstiabi ravi rahastamise lepingut omavate tervishoiuteenuse osutajate kvaliteedi hindamise tulemused. Hindamise tulemusel antakse kõigile osalejatele punktisumma, mille alusel paigutub perearstikeskus kvaliteedi hindamise skaalal A, B või C-tasemel ja on täitnud tervishoiuteenuste loetelus koodiga 3061 või 3069 tähistatud haigusi ennetava ja krooniliste haigete jälgimise tulemusliku töö kriteeriumidest kokku vähemalt 80%	Results of the quality assessment of health care providers who have a contract for financing the treatment of general medical care carried out by the Estonian Society of Family Physicians. As a result of the evaluation, all participants will be given a score on the basis of which the family medicine centre will be positioned at level A, B or C on the quality assessment scale and has met at least 80% of the criteria for effective work on the prevention of diseases and chronically ill referred to in the list of health services with code 3061 or 3069
Indicator	**HIV indikaatorseisundiga patsientide HIV testimise määr**	**HIV testing rate for patients with HIV indicator status**
Definition	% HIV-indikaatorhaigusega haigetest, kellel on tehtud tervishoiuteenus „HIV1,2 antigeeni ja/või antikehade määramine“ (kood 66719) 1 kord aastas.	Share of patients with HIV indicator disease who have been tested HIV1.2 antigens and/or antibodies (code 66719) once a year.

Annex E. Estonian Indicators Reported for International Benchmarking

The list of Estonian Indicators Reported for International Benchmarking can be accesed by clicking on the following icon.

Estonia_International_indicators.xlsx

Annex F. Summary of HSPA development meetings and informative consultations

Date	Meeting/Interview Description
03 September 2021	Project Kick-Off Call
21 October 2021	Project Launch Workshop 1: Purpose and scope of the HSPA Framework. Workshop 2: HSPA Elsewhere
15 November 2021	Internal meeting of the principal working group (scope and purpose development)
24 November 2021	Internal meeting of the principal working group (scope and purpose development)
03 December 2021	Meeting of the OECD, EC, and principal working group to finalize the scope and purpose
03 February 2022	Workshop 3: Health data infrastructure
30 March 2022	Workshop 4: HSPA Governance
24-25 May 2022	Workshop 5: Developing the Estonian HSPA Framework Workshop 6: Developing the Estonian HSPA Framework II

Annex G. HSPA Development Workshop Summaries

Workshop 1: Purpose and scope of the HSPA Framework [21 October 2021].

- The workshop was opened by welcoming remarks from Agris Koppel, MoSA, Raluca Painter, European Commission, and Francesca Colombo, OECD.
- Niek Klazinga, OECD and Ulla Raid and Eleri Lapp, MoSA presented a high-level overview of the project plan and deliverables. Niek lead a round of introductions for the OECD team and Ulla Raid introduced representatives from stakeholder organizations in Estonia. The meeting included representatives from the following institutions.
    - Ministry of Social Affairs (MoSA)
    - National Institute for Health Development (NIHD)
    - Estonian Health Insurance Fund (EHIF)
    - Estonian Health and Welfare Information System Center
    - The Health Board
    - The State Agency of Medicines
    - University of Tartu: the Institute of Family Medicine and Public Health
    - DG REFORM
- Niek Klazinga presented a brief introduction to HSPA and an overview of the purpose and scope of HSPA in other countries.
- Eleri Lapp and Ulla Raid moderated a discussion on the scope and purposes of the HSPA framework in Estonia. Meeting participants were asked to discuss the following questions:
    - From your organizational perspective, what would be an important function of the HSPA? Potential purposes that will be discussed may include, for example:
        - Public reporting on the performance of the health care system (e.g. reports to parliament, publicly available reports/online dashboards)
        - Information to base strategic choices for policies and reforms on and/or monitor the reforms
        - Instrument to assess the performance of individual services in the context of the system as a whole
        - Health care services management and integrated care provision
    - Which sectors or settings of care should the HSPA incorporate? (e.g. clinical care, public health, long-term care)
    - What are other potential expectations that should be used as criteria in the selection of HSPA indicators? (e.g. indicators should only use existing data sources, potential to assess the performance of national strategies, including primary care accessibility and mental health, potential to assess health system resilience, linkages with other ongoing projects)

Workshop 2: HSPA Elsewhere [21 October 2021].

- An introduction was followed by of a number of brief presentations – including a discussion of common domains, indicators, functions/uses, and mechanisms for sustainability. Countries with developed HSPA's were asked to comment on their HSPA, including the contents, its governance, and lessons learned. This session was followed by Moderated discussion/Q&A with panel participants
- Panellists included the following:
    - EU HSPA Network/HSPA in Malta, Kenneth Grech
    - HSPA in Ireland, Alessandra Fantini/Martin Woods
    - HSPA in Latvia, Kristīne Kļaviņa
    - HSPA in Slovenia, Tit Albreht
- Revisiting the scope and purpose: Recap and next steps
    - Careful in scoping and explaining the purpose
    - Value proposal for policy makers
    - Linkages to ministries outside the health system
    - Citizen consultations
    - Importance of leadership and dedication
    - Main expenditure areas from the Estonian Health Insurance Fund – their input is needed
    - Review of existing strategies and indicators
    - Continuity
    - The roles and responsibilities will need to be clarified
    - Actionability/ Implementability

Workshop 3: Health Data Infrastructure [03 February 2022]

- Niek Klazinga, OECD and Ulla Raid and Eleri Lapp, MoSA lead a welcome and introduction.
- An overview of the Health data infrastructure in Estonia in the context of the OECD was presented by Jillian Oderkirk.
- Opportunities for building on Estonia's health data infrastructure for the purposes of HSPA was presented by Katre Väärsi.
- An overview of the New Generation National Health Information System (upTIS) was presented by Kertti Merimaa.
- Moderated discussion of representatives from institutions with key data generating or governance functions was conducted with feedback from the following represenatives. Each participant reflected on the strengths and weaknesses in data collection, use of collected data both inside your organizations and more widely, collaboration with other organizations (in the healthcare field), and other currently unused possibilities in data use
    - National Institute for Health Development, Piret Viiklepp and Ingrid Valdmaa
    - State Agency of Medicines, Ott Laius
    - Estonian Health Insurance Fund, Malle Avarsoo
    - Estonian Health and Welfare Information System Center, Kerli Linna
    - Health Board, Leena Albrecht
    - Statistics Estonia, Anet Müürsoo and Ethel Maasing

Workshop 4: HSPA Governance [30 March 2022]

- Niek Klazinga, OECD and Ulla Raid and Eleri Lapp, MoSA lead a welcome and introduction. This was followed by an overview of the current landscape of mandates and organizational roles related to the HSPA in Estonia presented by Katre Väärsi. An overview of the process and results of the Estonian E-health Governance Framework Project was presented by Kertti Merimaa, MoSA.
- Niek Klazinga provided a review of the key functions required of HSPA
- Ulla Raid and Eleri Lapp, MoSA lead a discussion on linking the HSPA scope and purpose to governance structures
    - As of January 2022, the scope and purpose are as follows:
        - A systematized, comprehensive and sustainable Estonia's health system performance assessment enables:
            - to set more common objectives and priorities for stakeholders to improve public health in Estonia.
            - to manage changes in the health system in a targeted manner, including monitoring and evaluating the impact of actions.
            - to increase public awareness of the population's health status and of the health system's performance.
            - to increase the transparency of the health system and accountability of the stakeholders.
            - to collect and use health data in a targeted manner.
    - Members of the principal working group note the importance of linking monitoring and evaluation processes, KPIs, and governance of digital infrastructure.
    - Participants noted the role of HSPA to monitor the health system as a whole, to track and assess reforms,
    - Participants noted infrastructure, including EHR, that would need to be implemented. National universities noted their willingness to support training for necessary skills, including continuing education.
    - Stakeholders noted the need to collaborate and share responsibilities in producing the HSPA, but noted that one organization could serve as the lead.
    - Participants noted that the governance system needs to be able to oversee continued refinement of the HSPA (and coordinate key stakeholders), including review and update of the indicators and overseeing future iterations of the HSPA.