

FACTSHEET

E-health in Estonia

Estonia has been an early adopter in terms of offering its citizens digital services of all kinds. The country has established **ID-card-based infrastructure** that allows **secure access and digital signatures** for all citizens. The backbone of e-Estonia is the [X-Road](#) (see the video on Youtube). It's the invisible yet crucial environment that allows the nation's various e-services databases, both in the public and private sector to link up and operate in harmony.

The **Estonian National Health Information System** that is in operation since 2008 is part of the X-road. Healthcare providers are connected to the health information system and patients health data is stored centrally. There are more than 20 million different health documents (case summaries, referrals, vaccinations, dental information, medical images etc.) and over 300 million events stored in the health information system.

Data belongs to the data subject is the fundamental principle of the Estonian e-governance. Health data and health care e-services are accessible to patients through the patient portal www.digilugu.ee.

E-health services in Estonia

Collecting health service reimbursement invoices, health insurance information, digital picture archiving services, EHR services for physician and patient, digital registration services, ePrescription, services for Social Insurance Board, eConsultation, Cross Border Data Exchange (epSOS), Data and Statistics services, Medical Certificate, eAmbulance, Services for Dental Care, Digital Referrals, Vaccination Passport (to be implemented)

e-Health Record

Each person in Estonia, that has been at a doctor, has their own online e-Health record that can be tracked. The National Health Information System integrates data from Estonia's different healthcare providers, creating a common record for each patient (since 2015, over 95% of data generated by hospitals and doctors has been digitized). This gives the doctors easy access to the patient's electronic records (i.e. test results, X-ray images). Patients have access to their own and their children's records. By logging into the Patient Portal (ID-card/m-ID), they can review their past doctor visits, current prescriptions, receive general health advice etc.

e-Prescription

E-Prescription is a centralised paperless system for issuing and handling medical prescriptions. 99% of all prescriptions to Estonian patients are issued using a digital prescription. It's a very efficient system connecting every hospital and pharmacy in Estonia, cutting down on paperwork and doctor visits and saving untold amounts of time and effort. Doctors can prescribe medicine electronically and at the



pharmacy all a patient needs to do is present their ID Card. The pharmacist then retrieves the patient's information from the system and fulfils the prescription.

The 6 main principles of security of Estonian eHealth system

- A secure authentication of all users with ID-card or Mobile ID
- Digital signing or stamping of all medical documents
- Maximum transparency: all actions will leave an unchangeable and unremovable secure trail
- Coding of personal data: separating personal data from medical data
- Encrypted database that allows to remove the confidentiality risk from the technical administrators
- Monitoring of all actions together with the corresponding counter-measures, both organizational and technical

Facts

- There are more than 20 000 000 health documents in the e-Health system
- There are more than 300 000 000 events documented in the e-Health system
- 50% of doctors' referrals in Estonia are digital
- 99% of total prescriptions in Estonia are digital
- Estonian Genome Center has collected the genome data of 51 515 persons
- Blockchain technology is used in the Estonian national health information system to ensure data integrity

Frequently Asked

Q: What kind information and e-services are provided in the patient portal?

A: Overview of case summaries, immunization data, dental care documents, examination results, health certificates and access to medical bills reimbursed by the Estonian Health Insurance Fund.

Q: How is the patient data securely accessed?

A: Authentication is based on the national universal public key infrastructure (PKI) that enables secure digital authentication and signing. The infrastructure also allows forwarding data by using an encrypting key pair: a public encryption key and a private decryption key. In Estonia this technology is used for electronic identity (ID card, mobile ID, digital ID). To ensure the transparency and public accountability of the system in ehealth, the patient can control the access to the data by allowing or restricting access to it and also see everyone who has access to the data.

Patient Portal:

www.digilugu.ee

