

HEALTH TECH AND MEDICINE IN ESTONIA



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ESTONIA

Population: 1.3 Million

Size: 45 227 km²

Capital: Tallinn

Language: Estonian

Member of EU

Currency: Euro

GDP: 17 BEUR





Information
society
indicators

Internet access
is a social right

Information society indicators

99,8% of bank
transfers are
performed
electronically



ID-Card

2002 - introduction of national electronic ID-Card

More than 93% of the population has one

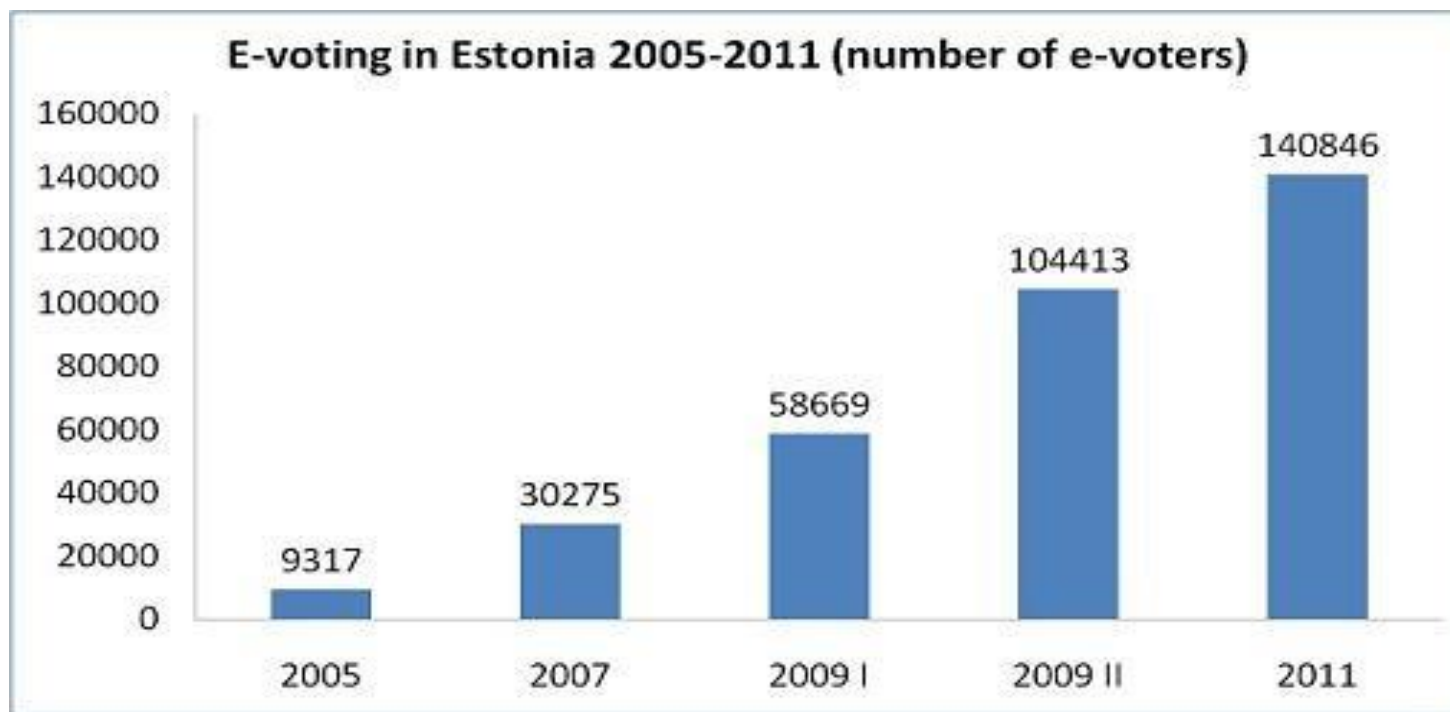
Compulsory for all residents



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E-solutions are trusted in Estonia... because they are trustworthy



2005 – local elections
2007 – parliamentary elections
2009 I – local elections
2009 II – European Parliament elections
2011 – parliamentary elections



Special in Estonia

- Strong educational basis in medicine starting from 17th century (K.E. von Baer, L. Puusepp, A. Schmidt)
- Nationwide health information exchange system
- Unique digital security layer (X-road)
- GMP facility to manufacture cells for clinical applications
- Gene-bank with access to more than 60 000 samples

5 key features of Estonian healthcare*

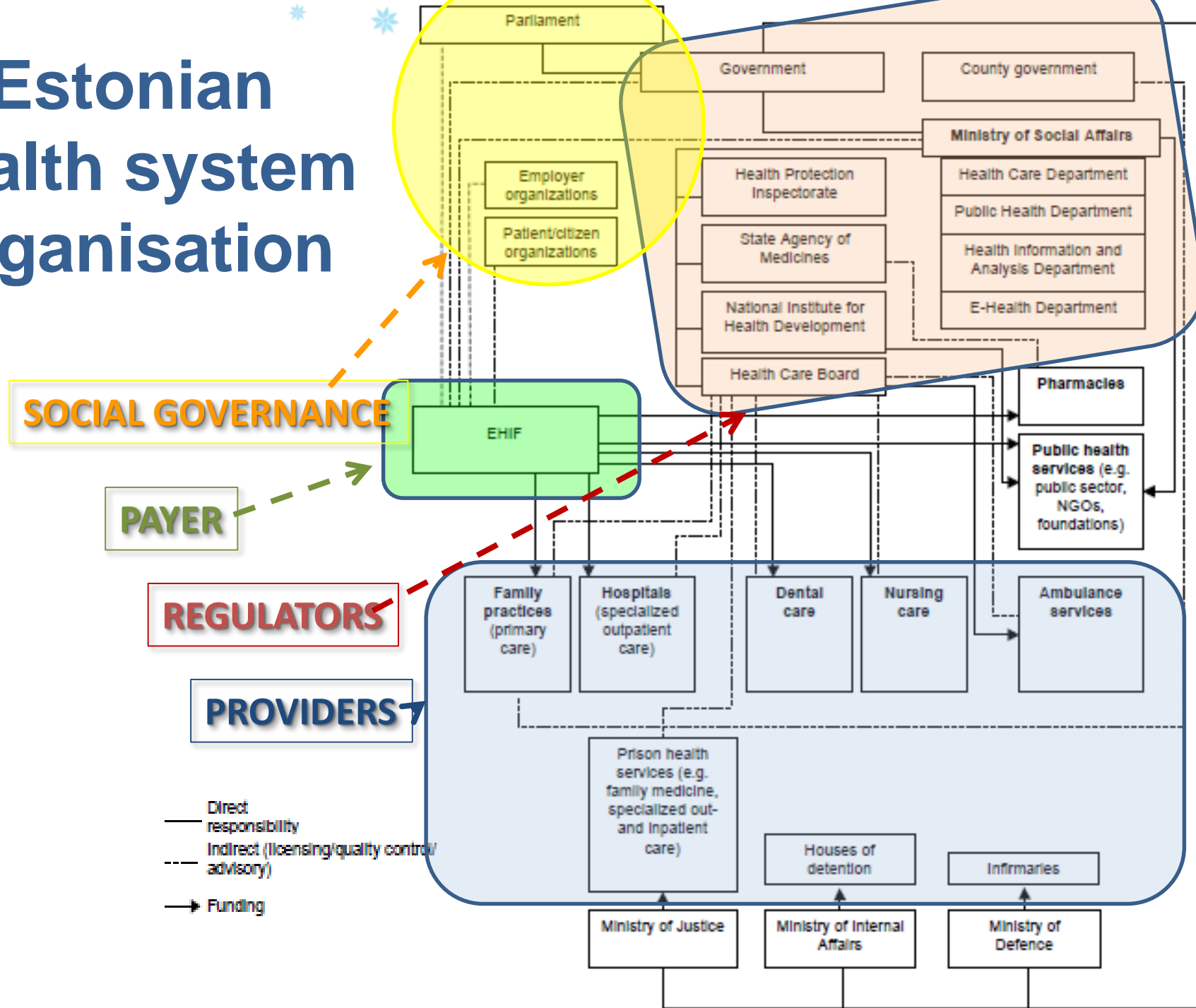


- **Earmarked social insurance tax**
 - 13% flat rate top-up to all salaries
- **State responsibility for insurance coverage**
 - Single public purchaser of services (Health Insurance Fund)
- **Decentralized provider network**
 - private operators governed mostly by public entities
- **Strong primary care**
 - Universal free access
 - >50% of outpatient contacts
- **One of the most cost-effective health care systems (perhaps)**
 - 3-time champion of “bang-for-the-buck” prize by Health Consumer Powerhouse (SWE)

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Estonian health system organisation



Snapshot of Estonian health care financing

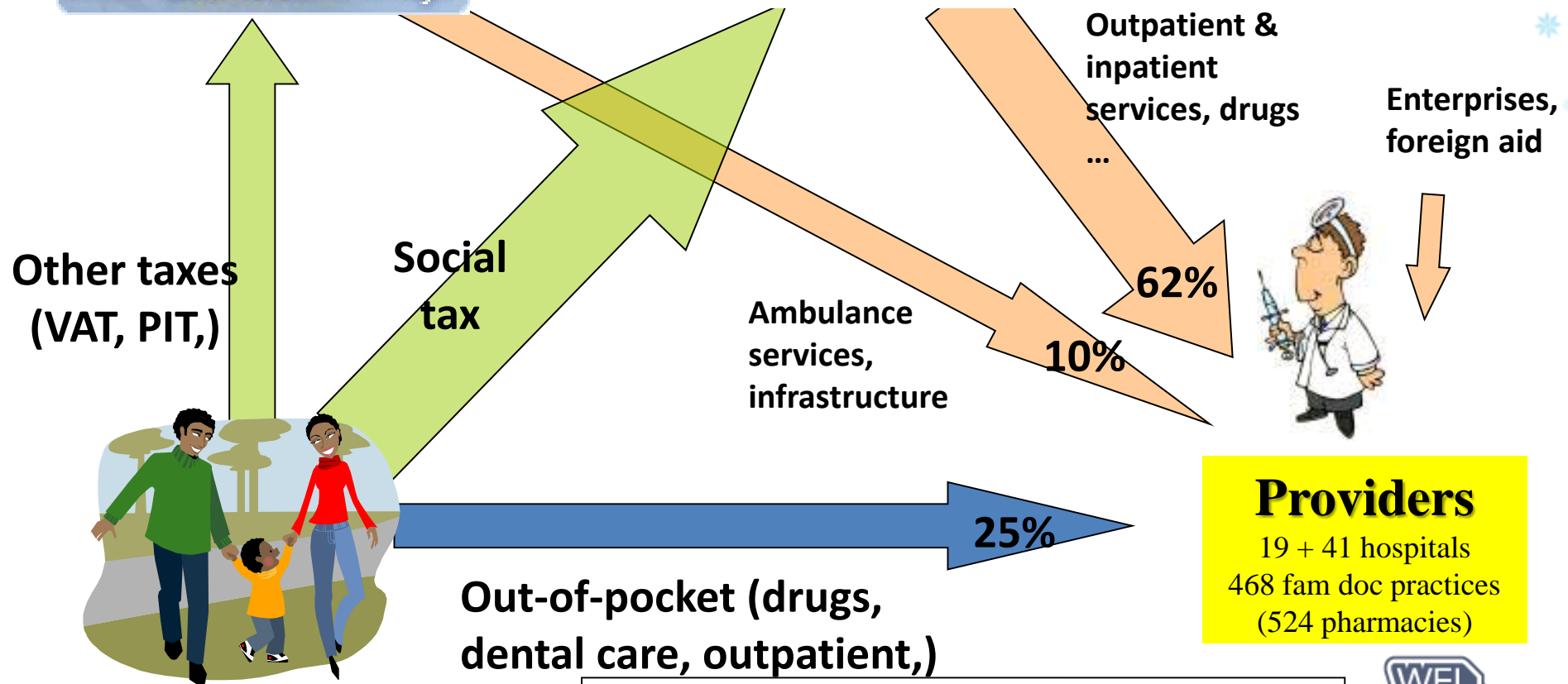
Government



EHIF

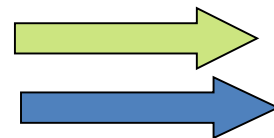


Eesti Haigekassa
Estonian Health Insurance Fund



Providers

19 + 41 hospitals
468 fam doc practices
(524 pharmacies)



Pre-financed via taxes

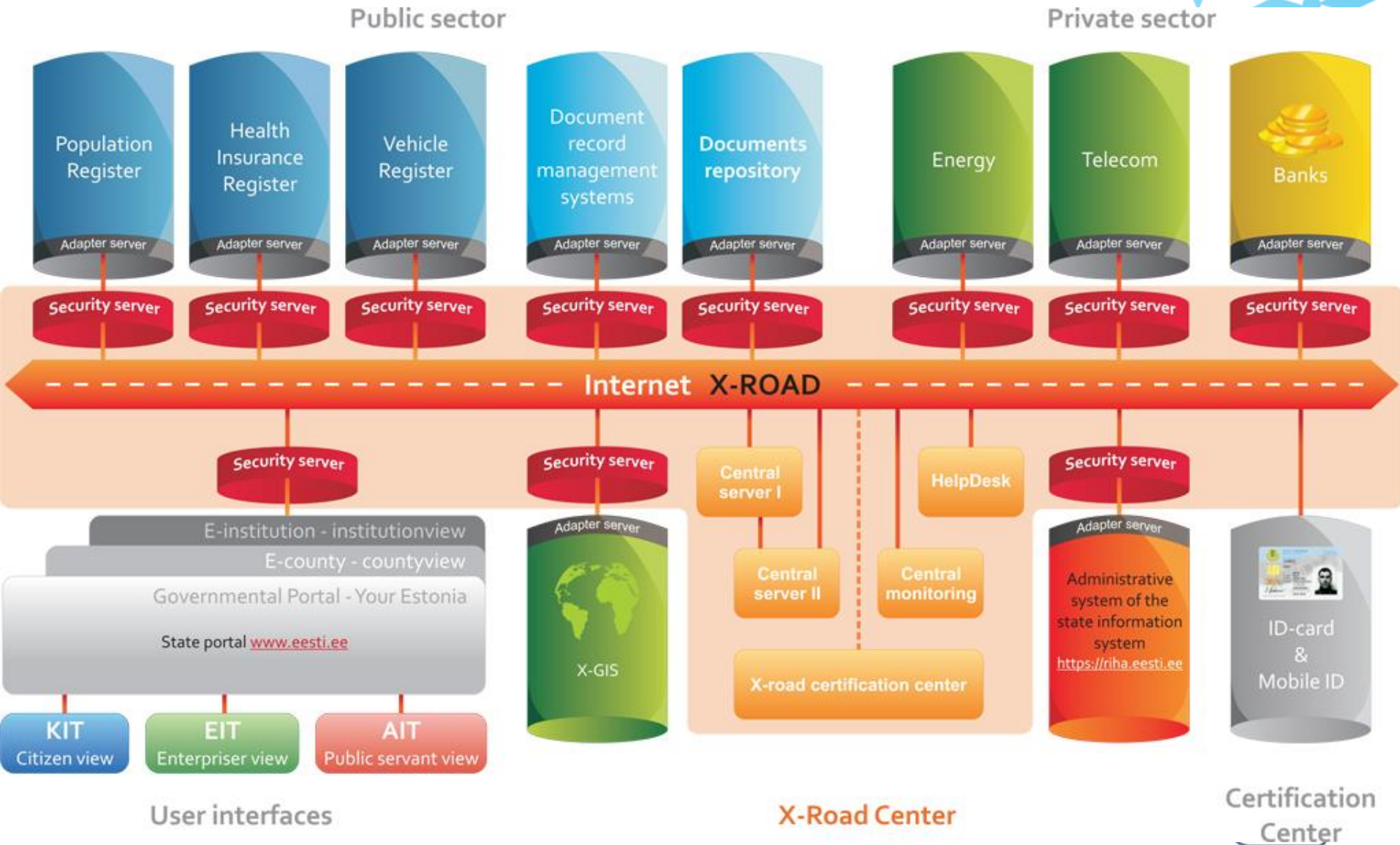
Out-of-pocket payments



Adapted from A Võrk, PRAXIS 2008

Estonian health care system

Estonian Information System

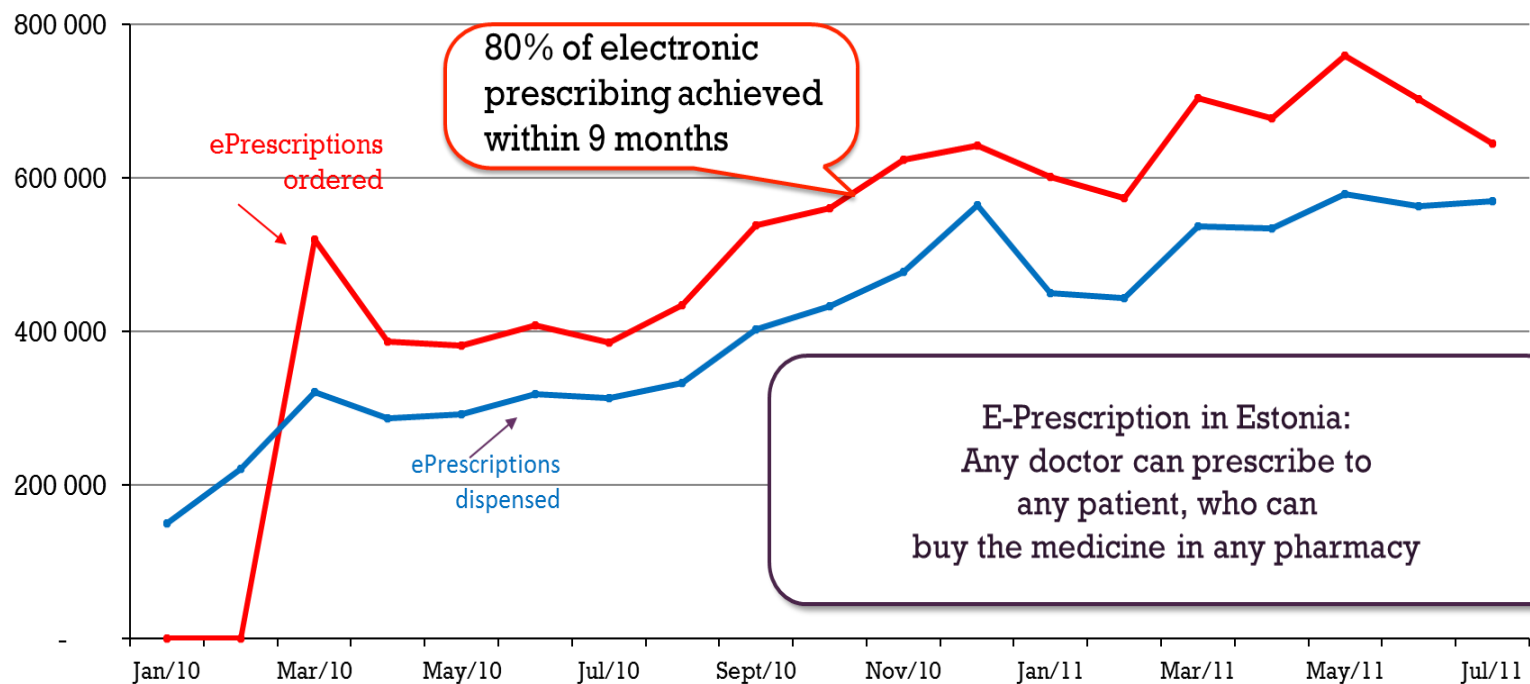


X-Road was launched in 2001

Estonian e-health



Very fast system-wide adoption of e-services: the case of ePrescription



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Estonian National Health Information System is successful

Nationwide medical data exchange platform launched in 2008

- ✓ **95% of data** by hospitals and family doctors is **digital**
- ✓ up to 30% process efficiency - **more services for the same money**
- ✓ 94% of prescriptions digital - **citizen satisfaction**
- ✓ 100% insurance claims digital - **precise state oversight and planning**
- ✓ 97% of patients have countrywide digital record - **exponential demand for new services**
- ✓ **60%** of limited workability assessments based on HIS documents only
(i.e. without any additional paperwork or medical investigations)
- ✓ /.../

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Strategic Goals

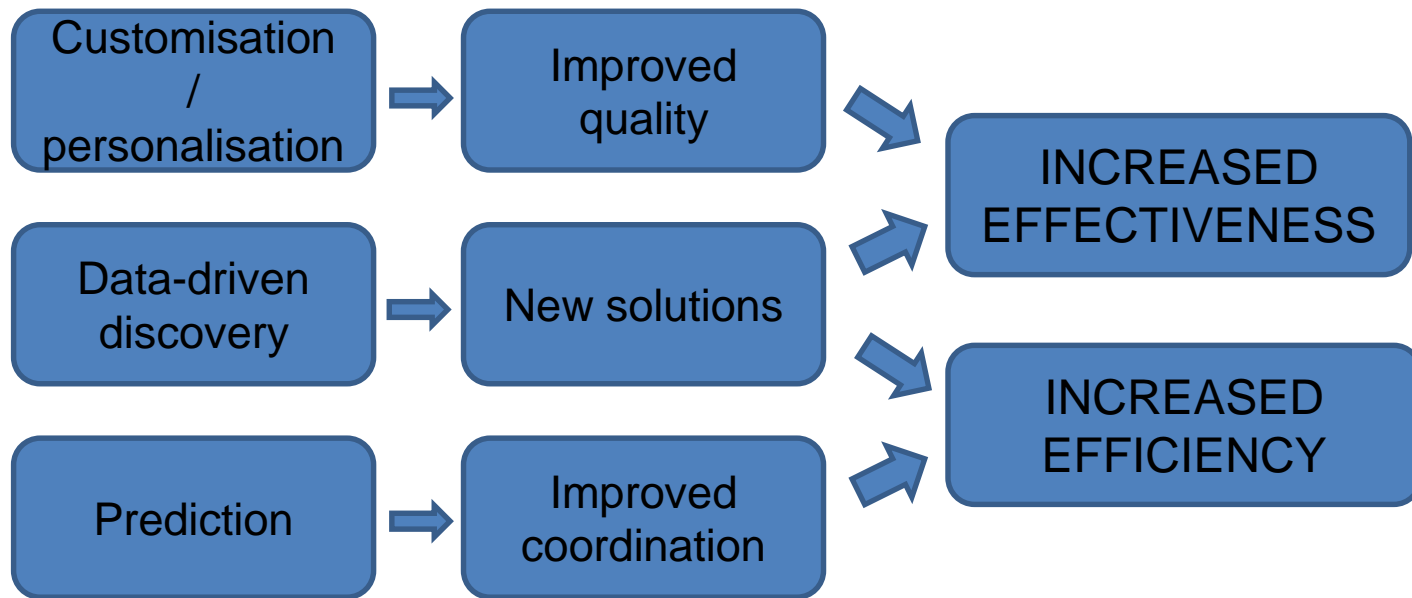
To offer more services with the current level of resources

- Estonian Health Insurance Foundation budget deficit termination by 2020
- By 2022 additional resources available to reinvest in the healthcare sector

More efficient, faster provision of healthcare services

- Serving same amount patients in shorter time
- Serving more patients during the same period of time
- Better quality of healthcare services
- Better accessibility

Where would it come from?



Impact of e-services

Research implemented by WB in 2014

- **avoidable**
 - 17% pulmonary-, endocrine- and circulatory system related inpatient cases
 - 69% high blood-pressure and 18% diabetes outpatient visits
- **insufficient**
 - monitoring after hospital treatment 47-62% of patients
 - medication after leaving hospital 98% of patients

ICT impact on healthcare system:

- Better monitoring of high risk patients
- Better integration of services
- More effective prevention of high risk cases

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Connected Health Cluster

- Accelerating connected health solutions in, from and to Estonia
- We involve 40+ health companies (startups, health IT, medtech, biotech and pharma), R&D partners and user groups (hospitals, GPs, sportsmen, spas, people)
- Find out more: <http://connectedhealth.ee/>
- Cluster is lead by [Tallinn Science Park Tehnopol](#)



Connected Health Cluster

COMPANIES

STARTUPS

HEALTH IT

BIOTECHNOLOGY

**MEDICAL
EQUIPMENT**

PUBLIC SECTOR

STRATEGIES

REGULATIONS

FINANCING

R & D

UNIVERSITIES

TECH R&D CENTRES

USER GROUPS

**HOSPITALS, FAMILY
PHYSICIANS, MEDICAL
SPECIALISTS**

CLINICS, LABORATORIES

**PHARMACEUTICAL
INDUSTRY**

ATHLETES, SPAs

QUANTIFIED SELF



Estonian HealthTech Cluster

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Digital Health companies

- [Cognuse](#) – brain rehabilitation tools for homecare
- [DentiLink](#) - online dental sourcing platform
- [DietBooster](#) – smart dieting tool based on influence of habits
- [HealthCircle](#) - platform to help people with heart diseases to make health behaviour change easy and professionally supported
- [HealthDiary](#) – tool for parents to manage their kids health information
- **Help2Health** – psychiatric assessment and treatment management
- [LabToWellness](#) – lab data visualization tool
- [MotionChart](#) - decision support system to support patients and physicians in condition management
- [Netiarst](#) – videoconsultations with doctors
- [SportID](#) – sport service for companies

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Health IT companies

- [Abtram29](#) – health information exchange solution
- [Affecto](#) – developer of eHealth systems
- [Bait Partners](#) – solution for hospital Operating Rooms
- [Celsius Healthcare](#) – e-services for doctors
- [Consulting Software](#) – solutions for online health services
- [Helmes](#) – hospital workflow software, complex integrations
- [Ignite](#) – patient portal for whole Estonia
- [Intelsys](#) – e-prescription and SAP
- [Luminord](#) – mHealth solutions

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Health IT companies

- [MediSoft](#) – health board information system, gene bank software
- [Nortal](#) – Patient Portal and mobile app; HL7 FHIR data exchange server
- [Quretec](#) - bioinformatics, health registries, biobanks and clinical trials data management software
- [Telia Estonia](#) – telecom as e-health mediator
- **ThinkLab** – e-GP software
- [Upitech](#) – ePharmacy, eFamilyDoctor
- [Wiseman Interactive](#) – tailor made eHealth solutions
- [Estonian E-health Foundation](#) – country wide EHR and e-health services

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MedTech companies

- **Capster** - a nasal irrigation device
- **DermTest** – teledermoscopy combining a digital dermoscope, specific application software and a specialist diagnosis
- **Genosity** - gene testing study sets for schools
- **I Can Move** - power assist wheels for manual wheelchairs that boost the thrusting and breaking force of weak hands
- **SelfDiagnostics** – a home use self diagnostic tests
- **Streago** – secure 3D printing software for personalised prothesis
- **SEMU** – home automation for visually impaired people

BioTech companies

- [Cellin Technologies](#) – novel stem cell based technologies
- [EGeen](#) - full service CRO
- [Icosagen Group](#) – fast production of recombinant proteins and quick generation of production cell banks
- [IVEX Lab](#) - contract research company specializing in preclinical drug efficacy studies
- [Kevelt](#) - prostaglandin-based obstetric, peripheral cardiovascular and glaucoma pharmaceuticals, research in treatment of endometrial cancer
- **Mitogro** – personalized treatment in oncology

Biotech Companies

- **Protopios** – immunome based biomarkers, immunoprofiling, decoding of immune system
- **Synlab** – private clinical diagnostics laboratory
- **TBD Biodiscovery** – active and high potent pharmaceutical ingredients manufacturing, synthetic organic chemistry contract services
- **Teligent** - development and production of topical prescription and cosmetic products
- **Vitale XD** - medical products in cold water solvable form

Main Hospitals and Clinics

Public hospitals:

- [North Estonian Medical Centre](#)
- [Viljandi Hospital](#)
- [Haapsalu Neurological Rehabilitation Centre](#)

Private clinics:

- [NovaVita](#)
- [Elite](#)
- [Fertilitas](#)
- [Hospital for Reconstructive Surgery](#)

Clusters and competence centres

- [Connected Health Cluster](#)
- [Medicine Estonia](#)
- [Sports Medicine Cluster](#)
- [Bio-Competence Centre for Health Diary Products](#)
- [Competence Centre on Health Technologies](#)
- [Competence Center of Food and Fermentation Technologies](#)
- [ELIKO Technology Competence Centre](#)
- [Centre of Excellence in Health Promotion and Rehabilitation](#)
- [Estonian Genome Center](#)
- [Estonian Health Foundation](#)

Business support

- Tallinn Science Park Tehnopol with
 - Incubation for health technology startups
 - Export boost for growth companies in health
 - Office and laboratory space, virtual office
 - Cell manufacturing lab
- Tartu Biotechnology Park
 - BioMed incubator for biotechnology, medical and veterinary businesses
 - Laboratory and office space, virtual office
 - Business development and consultancy services to companies and R&D institutions

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Welcome to join Life Science
Community Estonia in [Google+](#)