



Digital in Health Finance: Estonian Use Case

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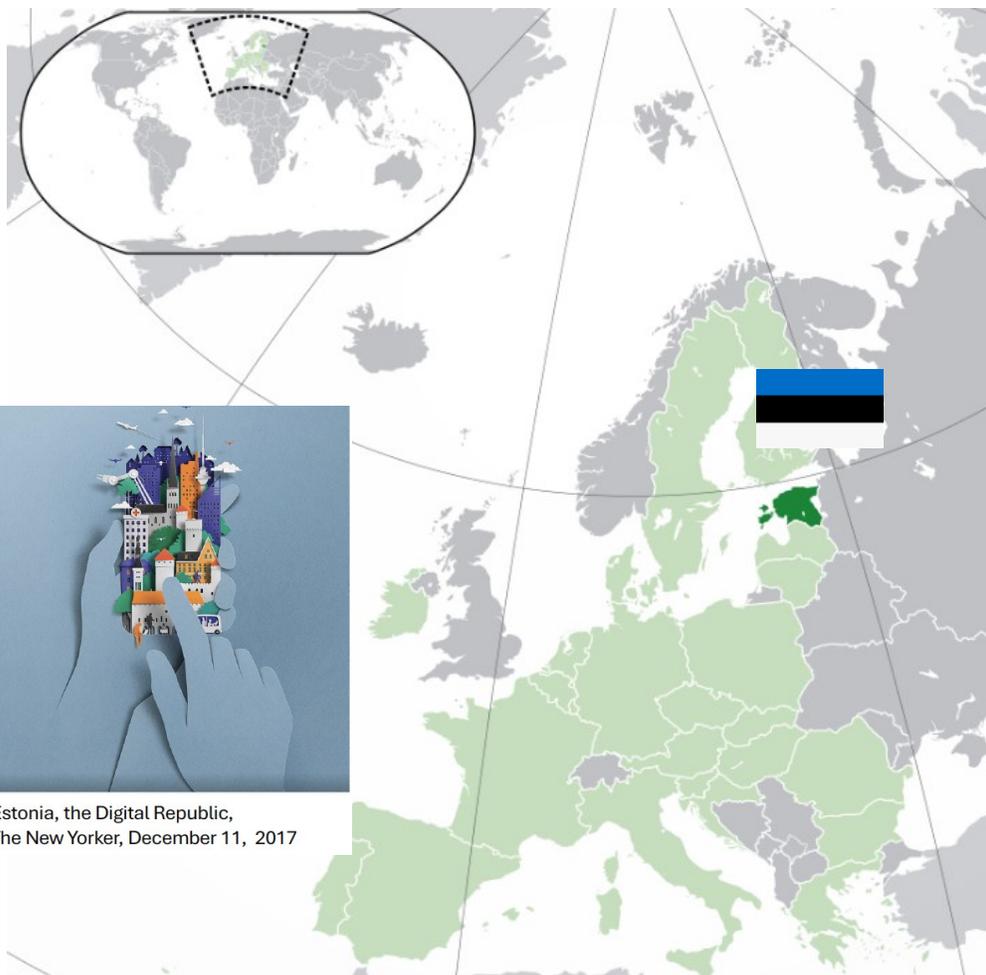
What to expect in this presentation?



- Digital claim management by Estonian Health Insurance Fund (EHIF)
- Digital in improving financial protection
- Impact and enablers
- Content draws on case studies by WHO, sources in EHIF, TALTECH eHealth post-graduate training program

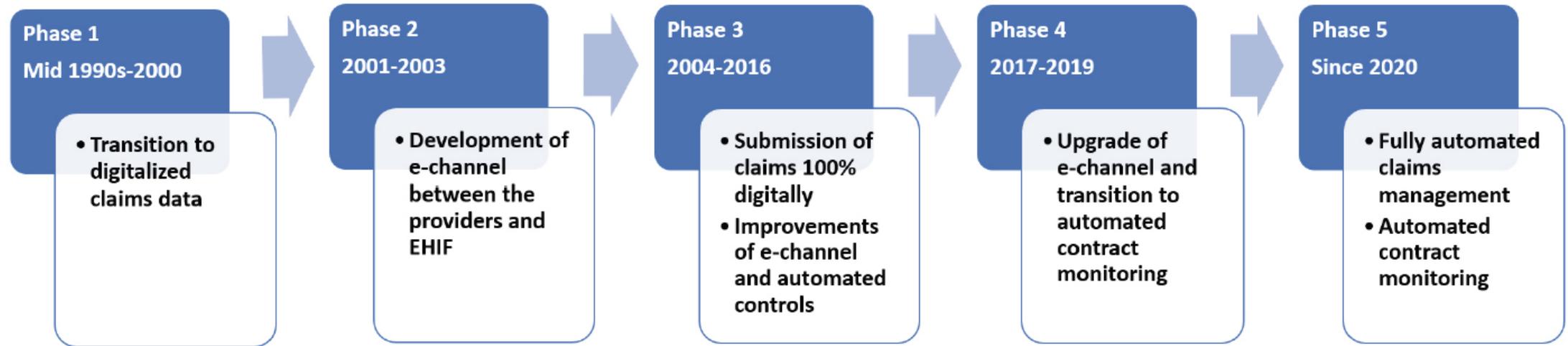


Estonia, the Digital Republic



Estonia, the Digital Republic,
The New Yorker, December 11, 2017

- Population: 1.3 million
- GDP per capita: 29,824 USD (2023)
- 99% of public services are online, #1 in unicorns per capita (7.5/1M)
- Current health expenditures 7.1% of GDP, 75% public, 23% OOPs, 2% other (2022)
- Single purchaser - Estonian Health Insurance Fund (EHIF)
 - Contracts with 1,400 health care providers
 - 8 million claims annually
 - 10 million prescriptions to subsidize
 - 2023 expenditure - EUR 2.1B, admin costs 0.9%



Evolution of EHIF claims management business processes

- Leadership and incentives from purchaser important
- Consolidation of EHIF databases and business management platform
- From build and maintain your own to use of eGovernment eco-system and standard platforms
- Patient have opportunity to review and dispute claims
- Evolution and revolutions



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	e-channel up to 2019	e-channel since 2020
Claims submission	Usually at the end of the month	Continuously
Information management system	Separate/isolated e-channel between single provider and the EHIF	X-tee MISP
Summary invoices	Created and submitted by provider (up to 2500 single invoices)	Created by the EHIF and paid without the need for the provider to submit a summary invoice
Making changes in the claims forms	Difficult	Easy
Payment	Usually once a month (other than for bigger hospitals)	Several times per month (for large hospitals)
Claims control prior to submission	No	Yes
Automatic post payment verification	No (mostly manual)	Yes
Use of machine learning for claims review	Not in place, but could have been used in view of the existence of digital claims	Yes
Use of unified software	No	Integrated into the principal software platform

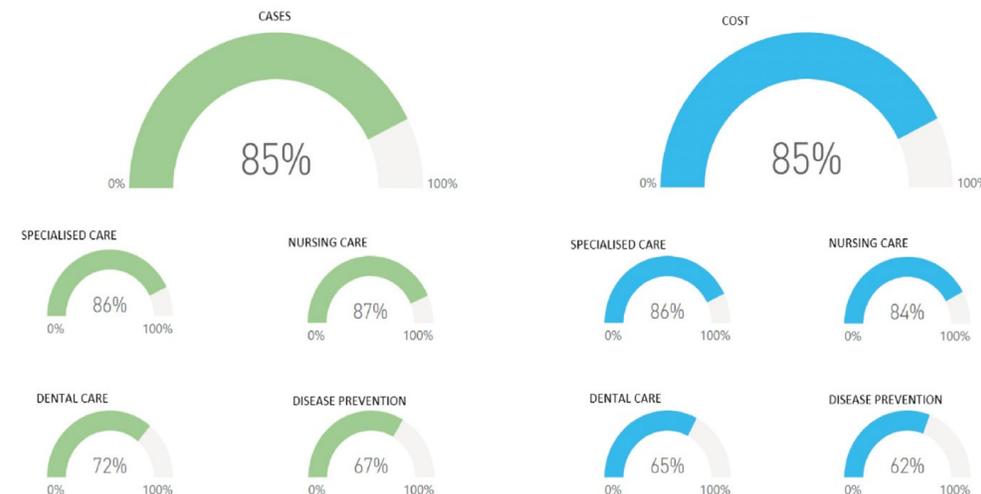
EHIF claims management – sophisticated and automated



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Monitoring Contract Volumes

Provider	Actual no. of cases	Planned no. of cases	Actual vs planned cases (%)	Actual amount (EUR)	Planned amount (EUR)	Actual vs. planned amount (%)	Actual average cost per case (EUR)	Planned average cost per case (EUR)
Inpatient	11,229	11,446	98%	28,245,206	31,486,197	90%	2515	2,746
Surgery	11,229	11,446	98%	28,245,206	31,486,197	90%	2515	2,746
Otorhinolaryngology	3,010	2,801	107%	2,118,024	2,365,785	90%	704	845
General surgery	2,169	2,195	99%	5,470,914	6,231,606	88%	2522	2,839
Orthopedics	1,437	1,377	104%	3,547,721	4,093,745	87%	2469	2,973
Neurosurgery	1,009	1,149	88%	2,957,209	3,329,800	89%	2931	2,898
Children's surgery	750	812	92%	911,343	1,062,954	86%	1215	1,309
Urology	715	774	92%	1,920,888	2,155,880	89%	2687	2,785
Vascular surgery	685	762	90%	3,279,168	3,719,003	88%	4787	4,881
Cardiac surgery	655	735	89%	5,964,405	6,159,976	97%	9106	8,381
Face and jaw surgery	438	502	87%	629,144	675,258	93%	1436	1,345
Thoracic surgery	361	359	101%	1,446,390	1,692,190	85%	4007	4,714
TOTAL	11,229	11,446	98%	28,245,206	31,486,197	90%	2515	2,746



- Cost and volume contracts with some flexibility for reallocation
- Real time monitoring, public information
- Marginal pricing
 - 30% for inpatient cases
 - 70% for outpatient cases

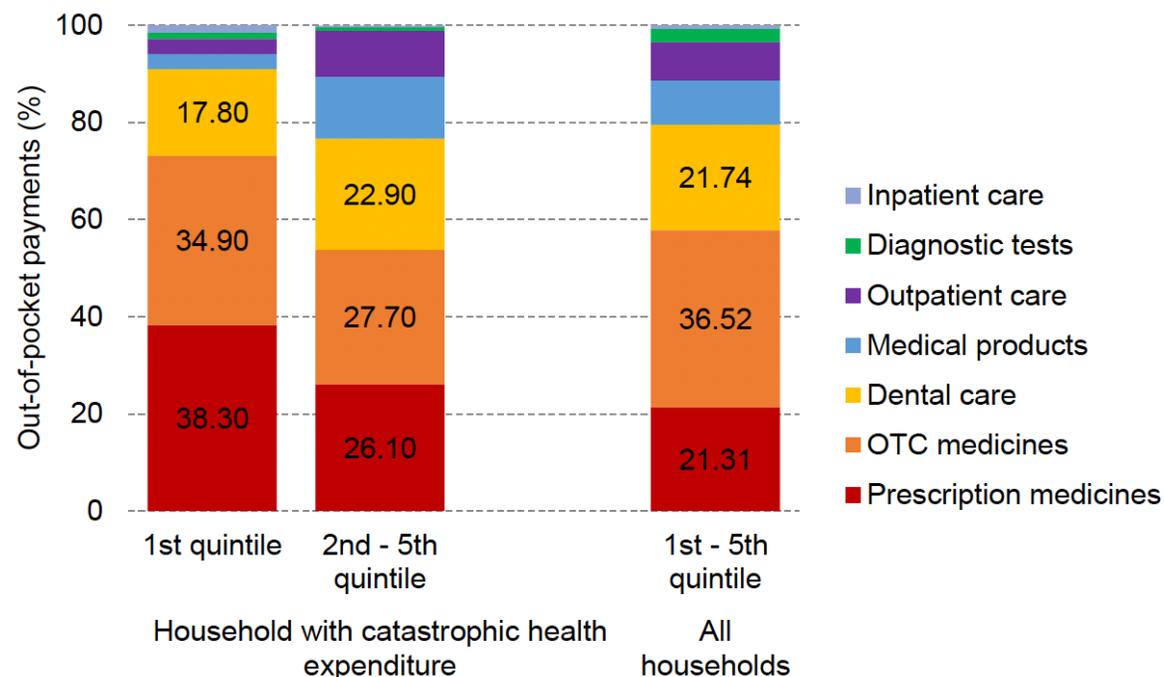
WHO, 2023

[EHIF Dashboard](#)



Improving financial protection via digital in finance

Composition of OOPs for health in 2020



Policy problem

- OOPs 23% of THE (2023)
- Outpatient medicines and dental care driving OOPs
- The poor affected most

Policy solution

- Revision of cost-sharing policies with better targeting
- Empowered by eHealth digital solutions and automation

Vörk et al, 2023



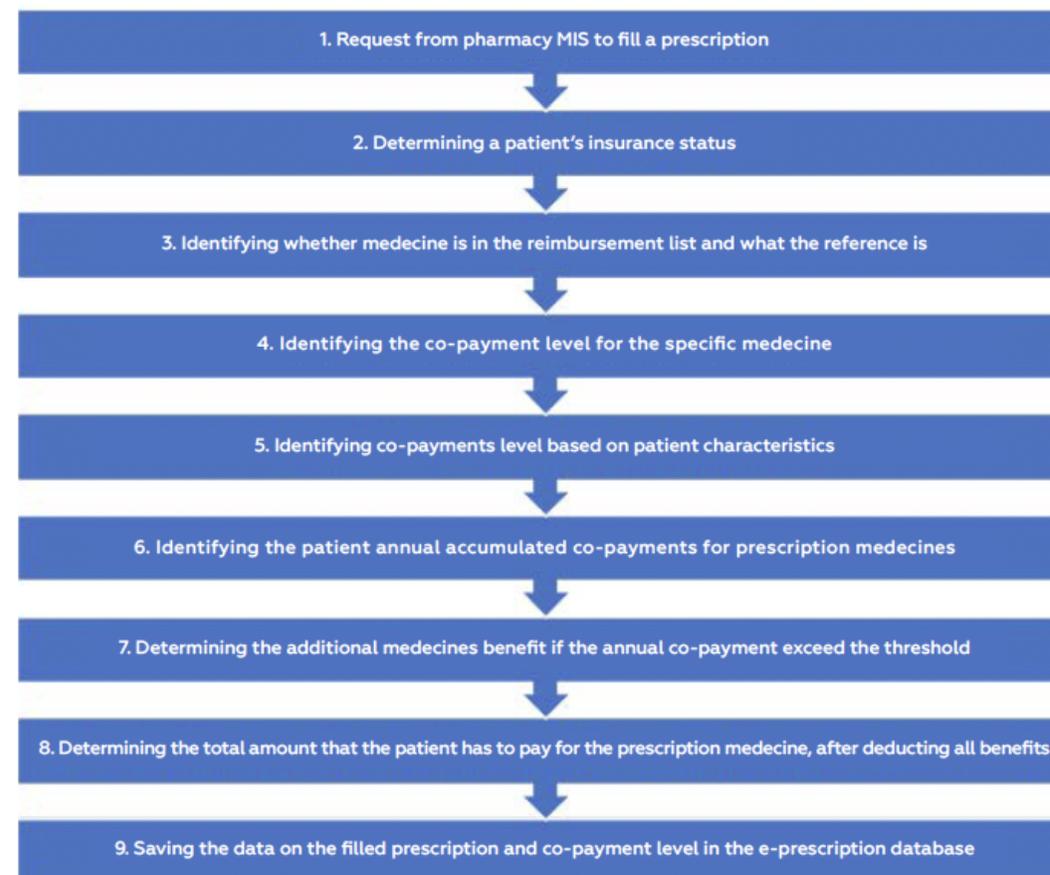
Policy changes and automation for managing cost-sharing of outpatient medicines

Evolution coverage policy and user charges for outpatient medicines

Year	Change in coverage of outpatient prescription medicines
1993	Introduction of a medicine reimbursement scheme: <ul style="list-style-type: none"> – Patient co-payment is obligatory for each purchase. – The level of reimbursement depends on the disease and population group (see WHO Regional Office for Europe, 2000): <ul style="list-style-type: none"> • Standard prescription medicines: 50% if the co-payment exceeds € 3.19 • Medicines for serious diseases: 90-100% if the co-payment exceeds € 1.27
2002	Introduction of a positive list of prescription medicines and of reference prices. Introduction of a dual system of fixed co-payments and percentage co-payments, with reimbursements by EHIF depending on the medicine and age group: <ul style="list-style-type: none"> • Standard prescription medicines (with a cap of € 12.79 per prescription): 50% • Medicines for specific conditions: 75% • Medicines for specific conditions, for children aged 4–16 years, people receiving a state pension, aged over 63 years or with partial or no capacity to work: 90% • Medicines for children aged under 4 years and for severe or life-threatening conditions and epidemics (for all insured): 100%
2003	Introduction of the “additional medicine benefit”, for insured people who spend more than a certain amount on percentage co-payments for prescription medicines in a year: <ul style="list-style-type: none"> • For patient expenditure between € 384 and € 639: 50% • For patient expenditure between € 639 and € 1,278: 75% • For patient expenditure above € 1,278: 0%
2012	Removal of the benefit cap (of € 12.79) per prescribed medicine with a 50% co-payment.
2015	Decrease of the annual thresholds for additional medicines benefit: <ul style="list-style-type: none"> • For patient expenditure between € 300 and € 500: 50% • For patient expenditure between above € 500: 90%
2018	Further decrease of the annual threshold for additional medicines benefit, which now also covers the fixed co-payments. Reimbursement by EHIF for percentage and fixed co-payments (per year): <ul style="list-style-type: none"> • For patient expenditure between € 100 and € 300: 50% • For patient expenditure between above € 300: 90% Fixed co-payments are now also harmonized across all medicines, at € 2.50 per prescription.

WHO, forthcoming

Process of identifying co-payment for a prescription



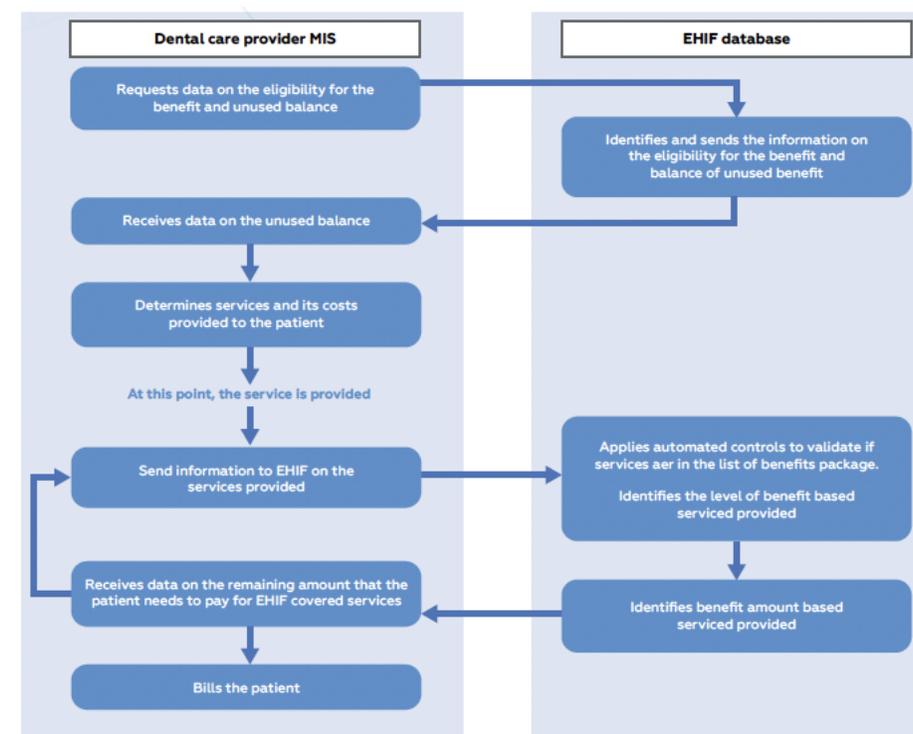


Policy changes and automation for managing cost-sharing of dental care coverage

Evolution coverage policy for dental benefits

Year	Change in coverage of outpatient prescription medicines
2002	<p>Free dental care introduced for all individuals below the age of 19 years. Retrospective cash benefits for other population groups (per year):</p> <ul style="list-style-type: none"> Persons 19 years of age and older: € 9.80 (increased to € 19.20 in 2007) People with increased dental care need because of defined medical conditions⁷: € 19.20 (increased to € 28.80 in 2007) Pregnant women and mothers with children under 1 year of age: € 28.80
2009	<p>Abolishment of the cash benefit for persons between 19 and 63 years of age (except pensioners). Cash benefits for all other population groups remained in place as stated above.</p>
2017	<p>Reintroduction of the in-kind benefit (at the point of care) for a defined benefit package. In-kind benefits (per year):</p> <ul style="list-style-type: none"> Persons 19 years of age and older: € 30 with 50% co-payment (increased to € 40 in 2018 and to € 60 in 2024) Pregnant women, mothers with children under 1 year of age, people with increased dental care need because of defined medical conditions, pensioners and people above 63 years of age: € 85 with 15% co-payment (increased to € 105 with 12.5% co-payment in 2024)
2022	<p>Expansion of the increased in-kind benefit (€ 85 with 15% co-payment; € 105 with 12.5% co-payment as of 2024) to registered unemployed and people receiving subsistence allowance.</p>

Automated process of implementing dental benefits



Impact and enablers for policy implementation



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Impact of outpatient medicine coverage changes

Indicator	2017 (before the reform)	2018 (after the reform)
Impact of lowering the annual spending threshold from €300 to €100		
Number of people eligible for reduced co-payments	8,000	134,000
Impact of automating protection from user charges		
Share of eligible people benefiting from reduced co-payments	37.5%	100%
Combined impact		
Share of patients filling a prescription benefiting from reduced co-payments	0.4%	15.6%
Number of people spending more than €250 a year on outpatient prescribed medicines	24,000	1,000
Average out-of-pocket payments per person for covered outpatient prescribed medicines	€6.83	€6.34

Impact of dental benefit coverage changes and automation

Indicator	Before (2016)	After (2018)
Number of adults eligible for the increased dental benefit of €85*	430,000	430,000
Number of eligible adults getting this benefit	96,000	119,000
Share of eligible people benefiting	22%	28%
Number of adults eligible for the benefit of €40**	-	529,000
People getting the benefit	-	130,000
Share of eligible people benefiting	-	25%

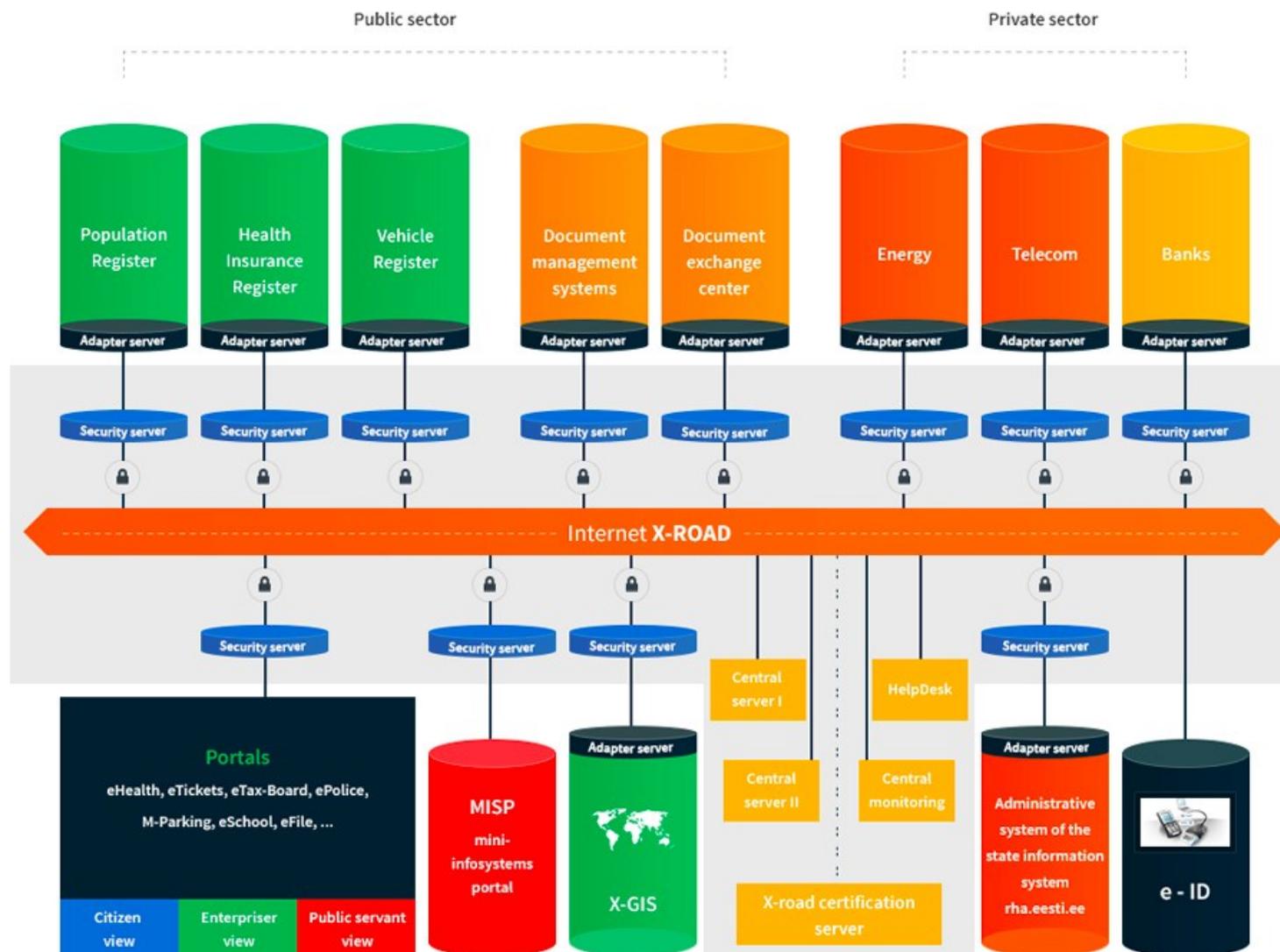
Enablers

- e-Government foundations
 - Unique ID
 - IT infrastructure - X-tee providing for secure data exchange
 - Interoperability
- Political will and leadership



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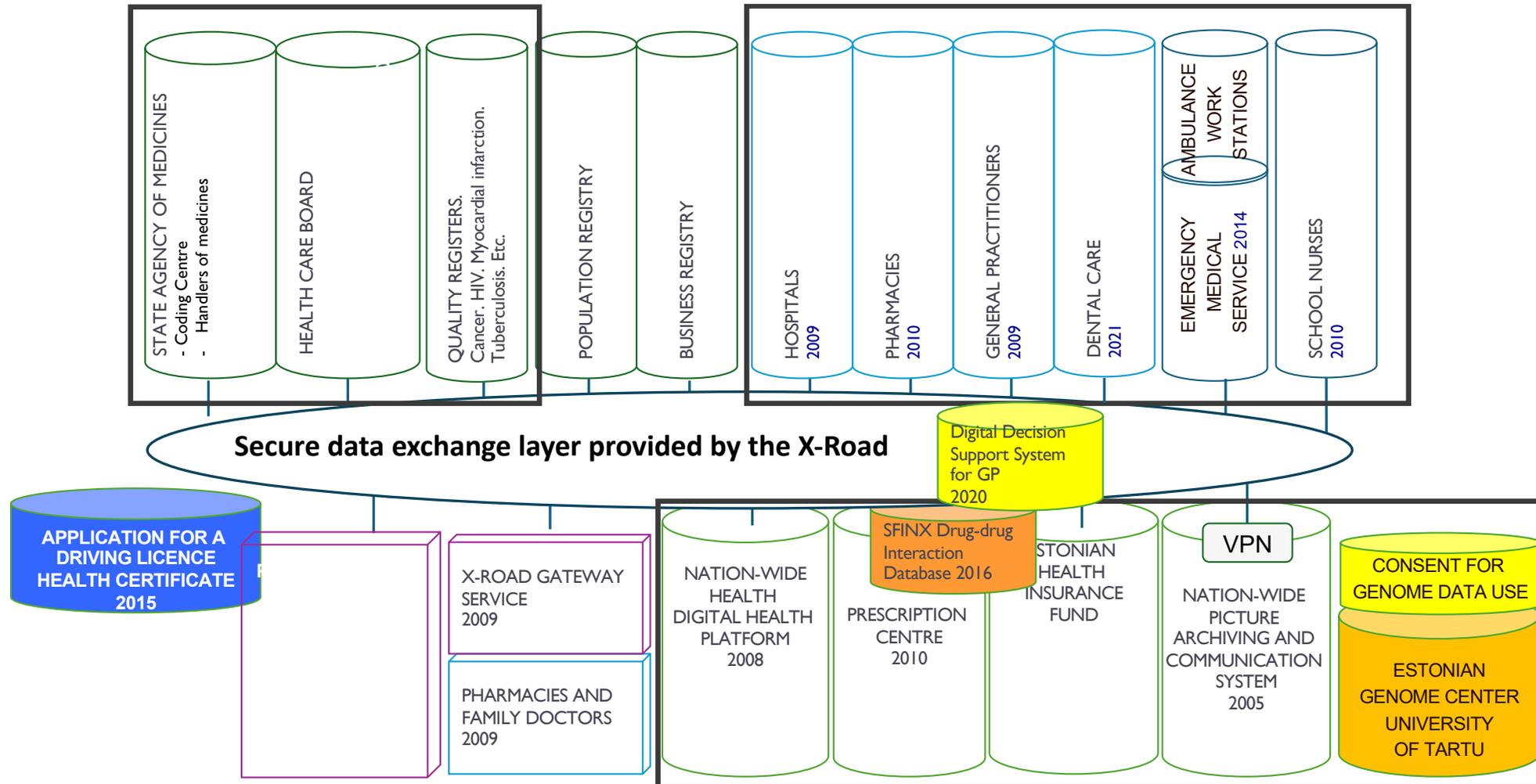
e-Estonia digital architecture



e-Health digital architecture in e-Estonia



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Lessons learned



- Fundamentals for data quality, security, interoperability matter
- Continuous agenda for improvements and expansion
- Other uses for claims data
 - Public health: direct costs of health determinants
 - Risk stratification for health system follow-up

Thank you!

[Reports available here](#)

The role of digital claims management for Estonia's health insurance

A leverage for making healthcare purchasing more strategic

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