

eHealth strategy and implementation steps – experience report from Finland

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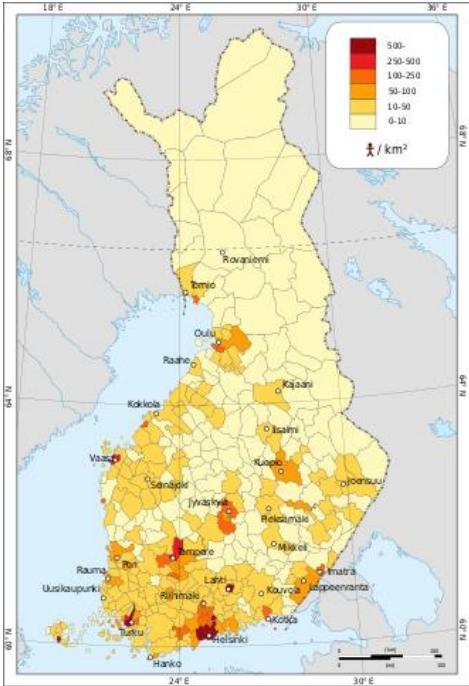
Service System Unit

Department of Clients and Services in Healthcare and Social Welfare
Ministry of Social Affairs and Health

January 27, 2026



Area: 338,424 km²
Population: 5,549,807
Density: 16 / km²



**Population
(5,608,218)**



**Regions
(18+1)**



**Municipalities
(293+16)**

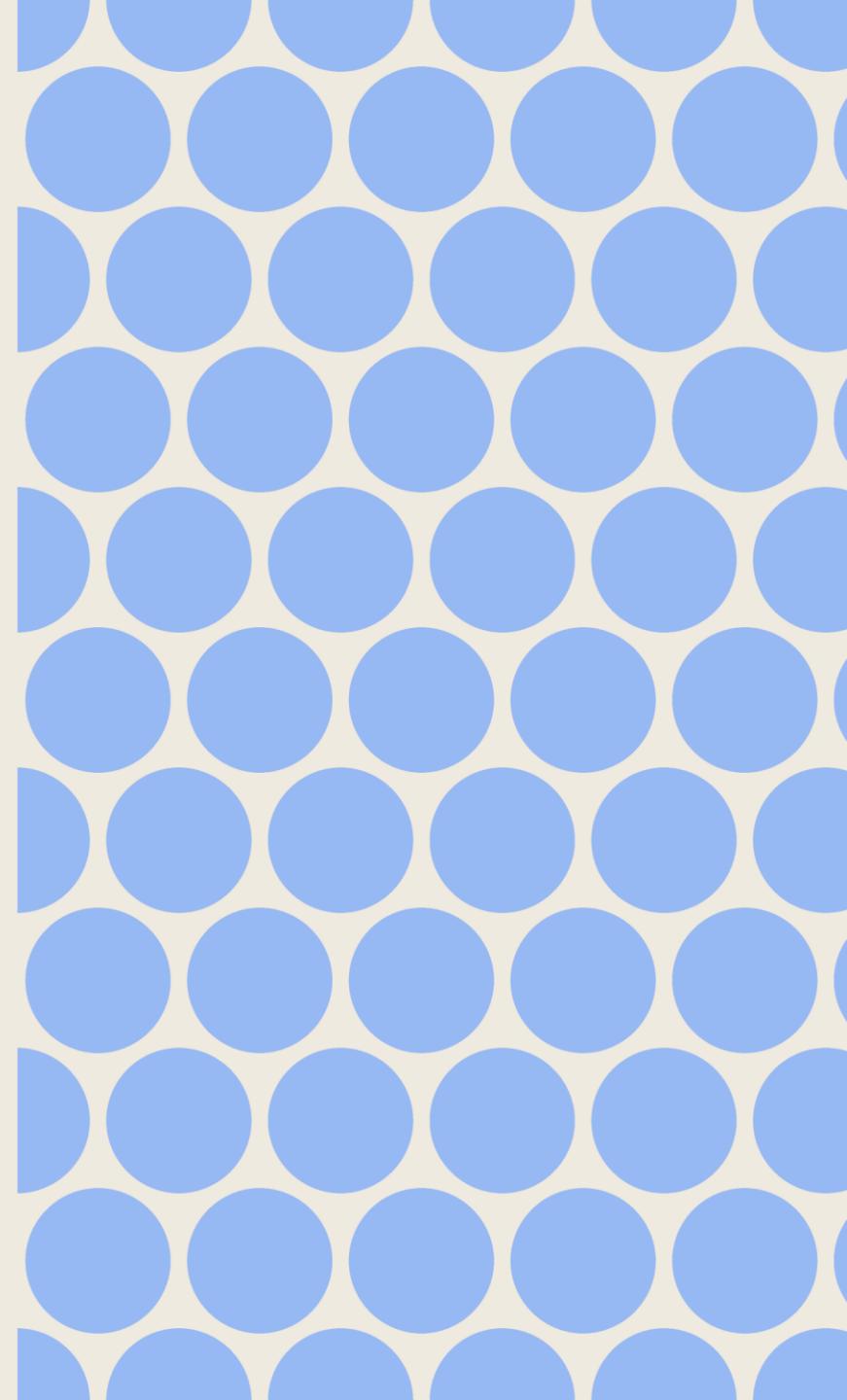


**Wellbeing Services Counties
(22+1)**

- Eight-largest country in Europe
- Most sparsely populated country in the European Union
- Parliamentary republic of 309 municipalities, and one autonomous region, the Åland Islands
- Over 1.4 million people live in the Greater Helsinki metropolitan area, which produces one third of the country's GDP
- GDP (PPP) USD 299 billion ~ USD 48,937 per capita

Healthcare, social welfare and rescue services reform: the Wellbeing Services Counties and city of Helsinki since January 2023

Transformation of the Finnish health and social service
system



Healthcare, social welfare and rescue services reform 2023



- **The goal of the reform** is to safeguard equal and quality healthcare and social welfare services for all and reduce inequalities in health and wellbeing. Healthcare and social welfare services will use the best and most efficient practices
- **The aim** is to ensure the availability of skilled labour, improve safety and respond to the challenges arising from changes in society

New wellbeing services county structure

1 January 2023

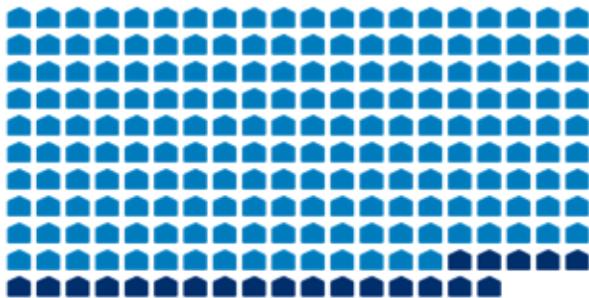


Structure now

195

22

195 health and social services
organisations
+ 22 rescue departments



New structure

22+1

22 health, social and rescue
services organisations
+ Hospital District of
Helsinki and Uusimaa



Sote-uudistus
Health and
social services reform

Division of duties under the reform, as of 1 January 2023

State
• guidance and direction
• funding

22+1
health, social and rescue services organisations
+ Hospital District of Helsinki and Uusimaa

5
collaborative areas
division of responsibilities in specialised services

Strong role for the public sector
Private and third sectors complement public services



Sote-uudistus
Health and social services reform



What will the wellbeing services counties do?



Social welfare

- Social work
- Social guidance
- Social rehabilitation
- Family care
- Family work
- Home services
- Home care
- Housing services
- Services in institutions
- Services supporting mobility
- Substance abuse services
- Mental health services
- Child guidance and family counselling
- Family law services
- Services for people with disabilities (incl. special care services)
- Preventive and supplementary social assistance
- Social lending
- Rehabilitative work
- Support for informal care
- Child welfare
- Services of school social workers in student welfare



Rescue services

- Rescue services
- Oil spill prevention and response
- Fire investigation
- Alerting the population
- Emergency warnings
- Security communication
- Monitoring activities
- Chemicals monitoring
- Guidance and advice
- Preparing for civil defence



Healthcare

- Promotion of health and wellbeing
- primary healthcare, specialised medical care
- Health checks
- Maternity and child health clinic services
- School and student healthcare
- Services of psychologists in student welfare
- Screening
- Outpatient care
- Home nursing
- Medical rehabilitation
- Mental health services
- Substance abuse services
- Oral healthcare
- Mariner healthcare
- Occupational healthcare
- Prehospital emergency medical care
- Emergency care
- Hospital/inpatient care
- Teaching and research

Guidance of information management in healthcare and social welfare services

OECD 2016

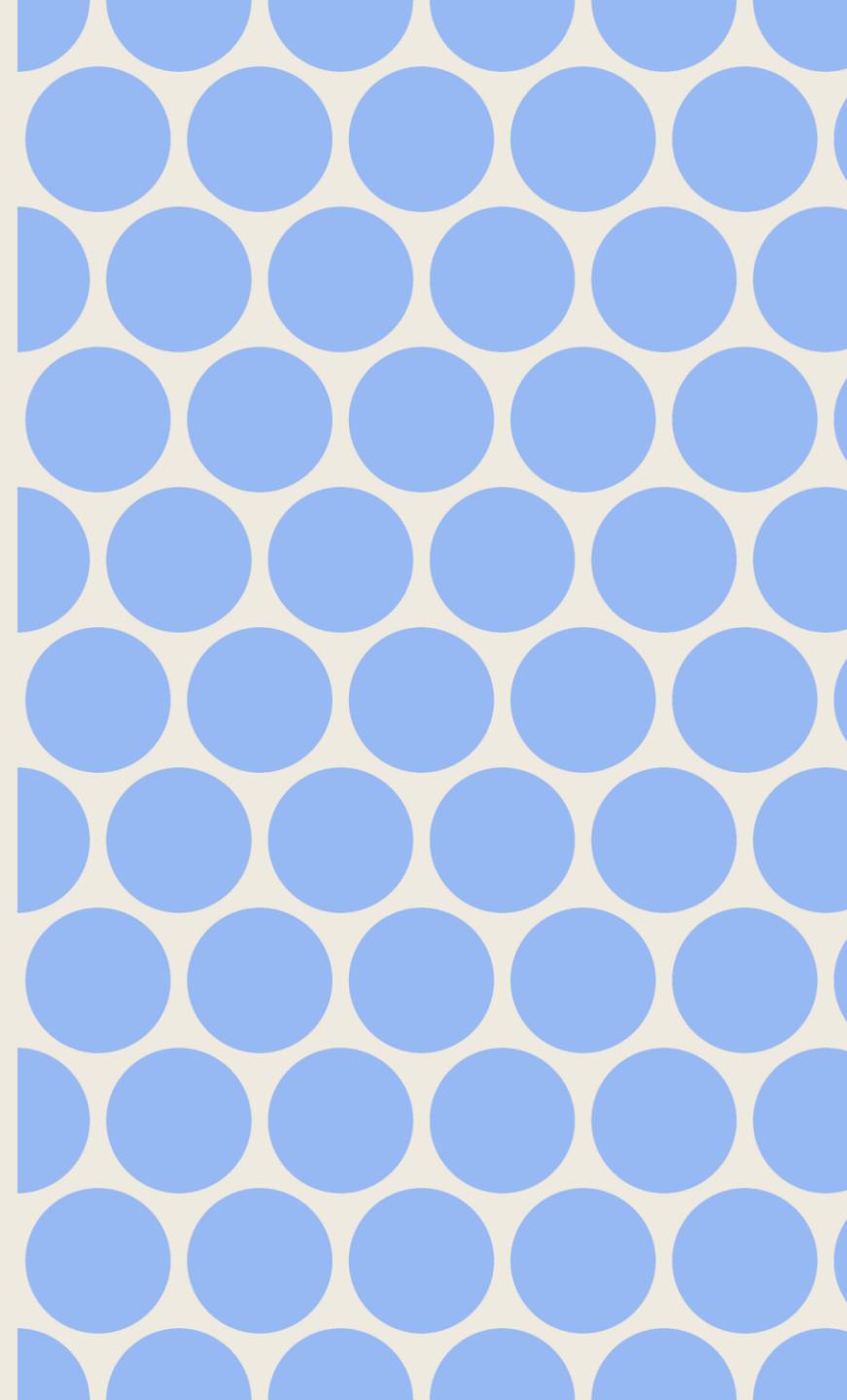
DESI 2022

Governance

Central government actors for nationwide HIS and HIE

Interoperability

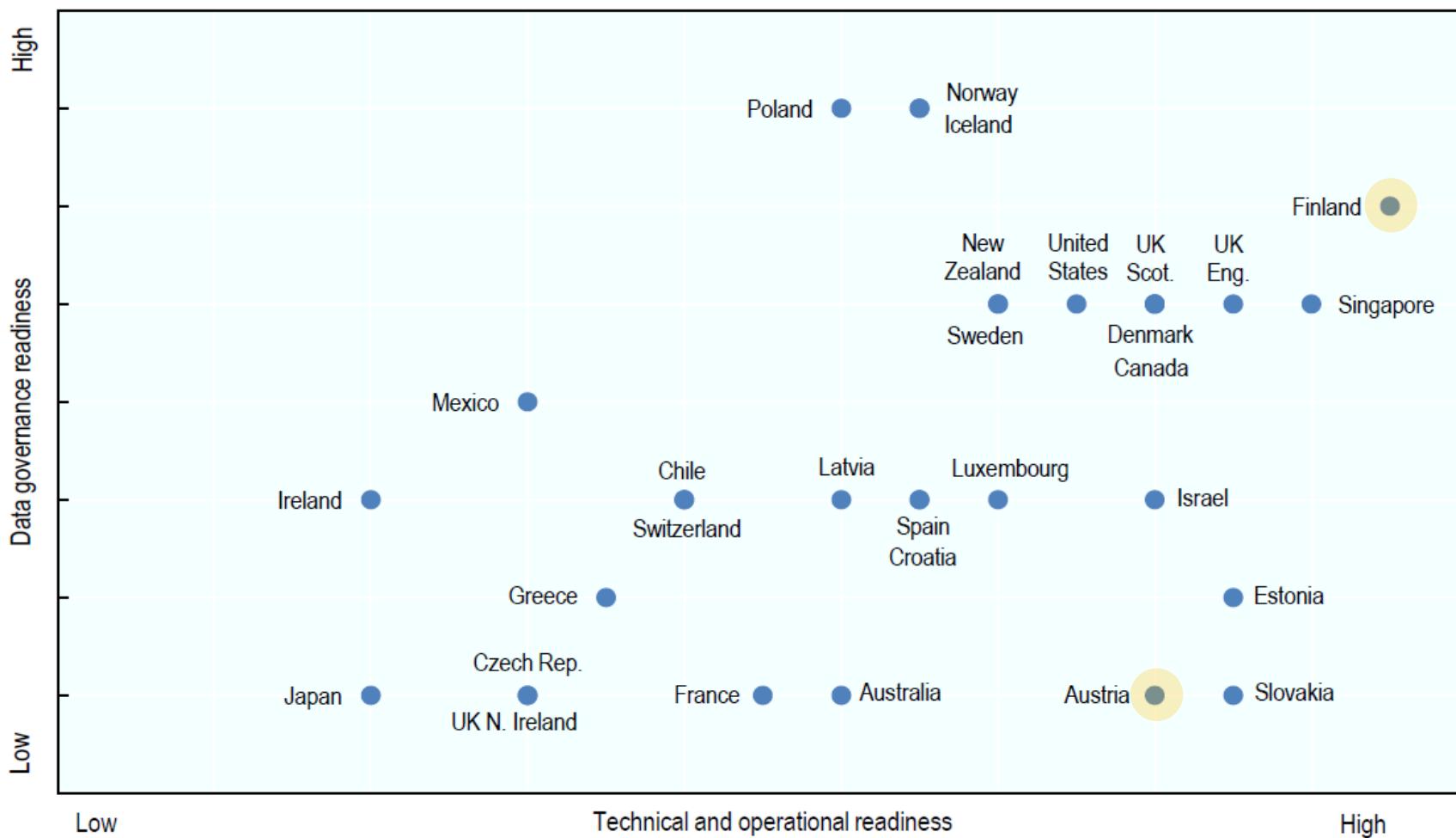
Standards





2016
OECD

Technical and Operational Readiness and Data Governance Readiness



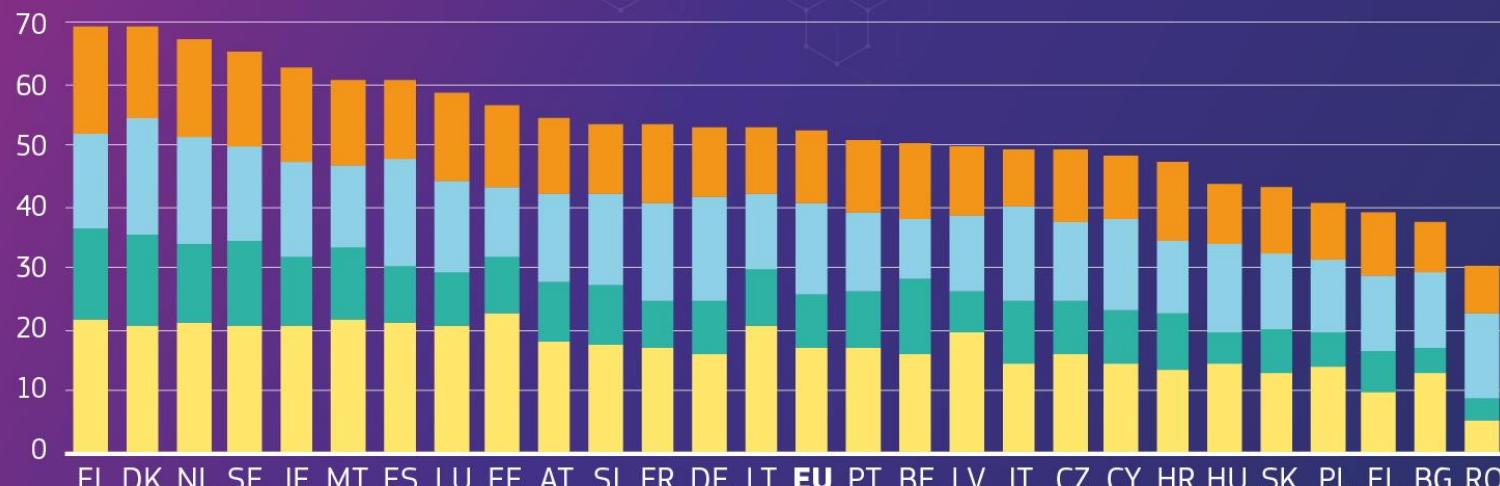
Note: Technical and operational readiness is the cumulative score of nine indicators each valued at one point: EMR coverage, information sharing among physicians and hospitals, defined minimum dataset, use of structured data, unique record identification, national standardisation of terminology and electronic messaging, legal requirements for adoption, software vendor certification and incentives for adoption. Data governance readiness is the cumulative score of four indicators: national plan or priority for secondary data use, dataset creation, and contribution of EHR data to monitoring and research which are each valued at one point; and legal issues impeding dataset creation which subtracts one point. See Table 1 for technical and operational readiness indicators and Table 12 for EHR data governance indicators.



DESI

Digital Economy and Society Index

2022



#DESIeu #DigitalEU



HUMAN
CAPITAL



CONNECTIVITY



INTEGRATION
OF DIGITAL
TECHNOLOGY



DIGITAL PUBLIC
SERVICES

Finland's Ranking

2022:	1.
2021:	2.
2020:	1.
2019:	1.
2018:	3.
2017:	2.
2016:	2.

Governance model in 2010



Ministry of Social Affairs and Health (STM) Legislation, Strategy, Financing

Finnish Institute for Health and Welfare (THL)

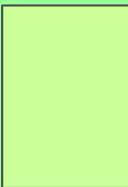
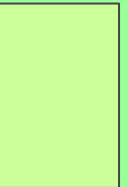
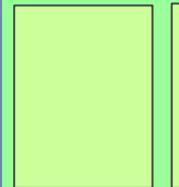
Information Department

OPER Unit

Planning, Control & Monitoring,
Implementation & Use, and
Defining Information Content

Information Structures and Classifications Unit

Organisation OID & Valveri
Registry Information for SOTE
Organisation Registry



Social Insurance Institution of Finland (Kela)

Record Holder of the National
Prescription Centre, Archiving
Service(s), Technical Definitions

Digital and Population Data Services Authority (DVV)

Certification Services

National Supervisory Authority for Welfare and Health (Valvira)

Valveri Registry, Terhikki
Registry, Attribute Services,
VRK support

Pharmacies

SAL
YA

Finnish Medicines Agency (Fimea)

Medication Database,
Control of Pharmacy
Operations

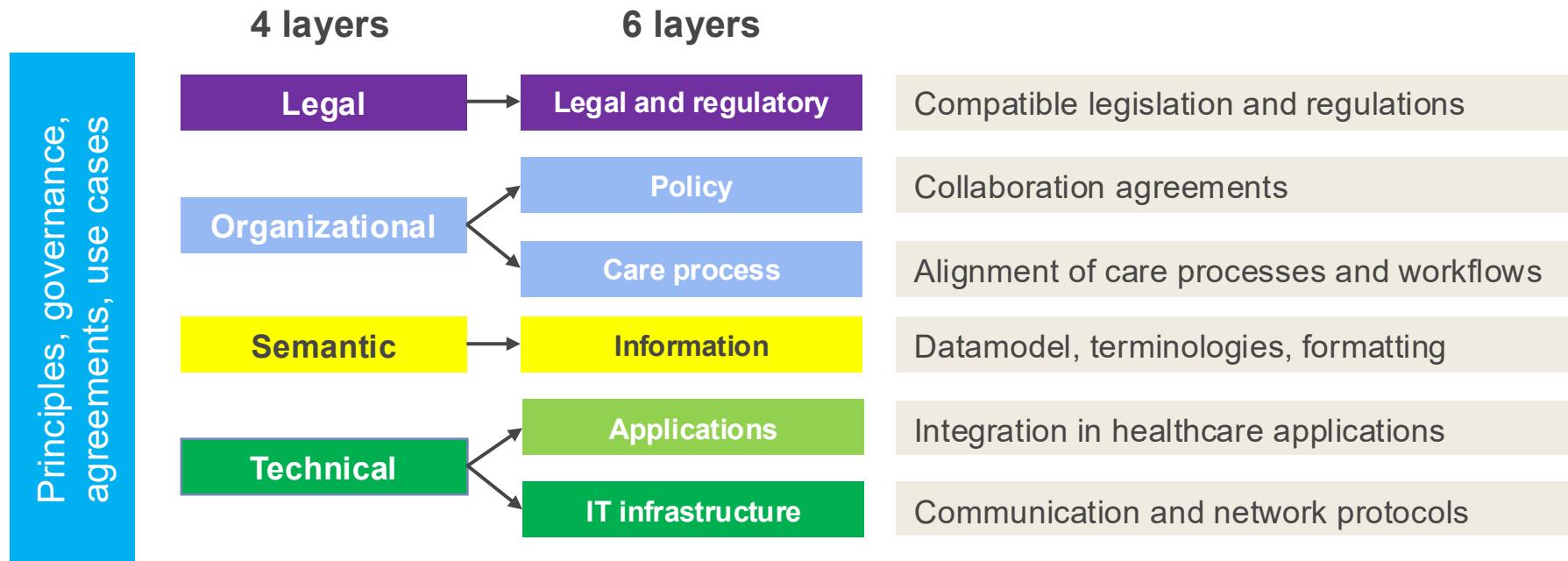
Public & Private Healthcare Service Providers

Patient & Pharmacy Information Data System Manufacturers

Interoperability



- In Finland, we support Refinement of the European Interoperability Framework (ReEIF)



Interoperability is only established when information is exchanged, understood and used by actors for the purposes it is shared, by policy level decision

eHealth Network. Refined eHealth European Interoperability Framework. Brussels, 23 November 2015. (ReEIF)

Main standards for the nationwide Kanta Services

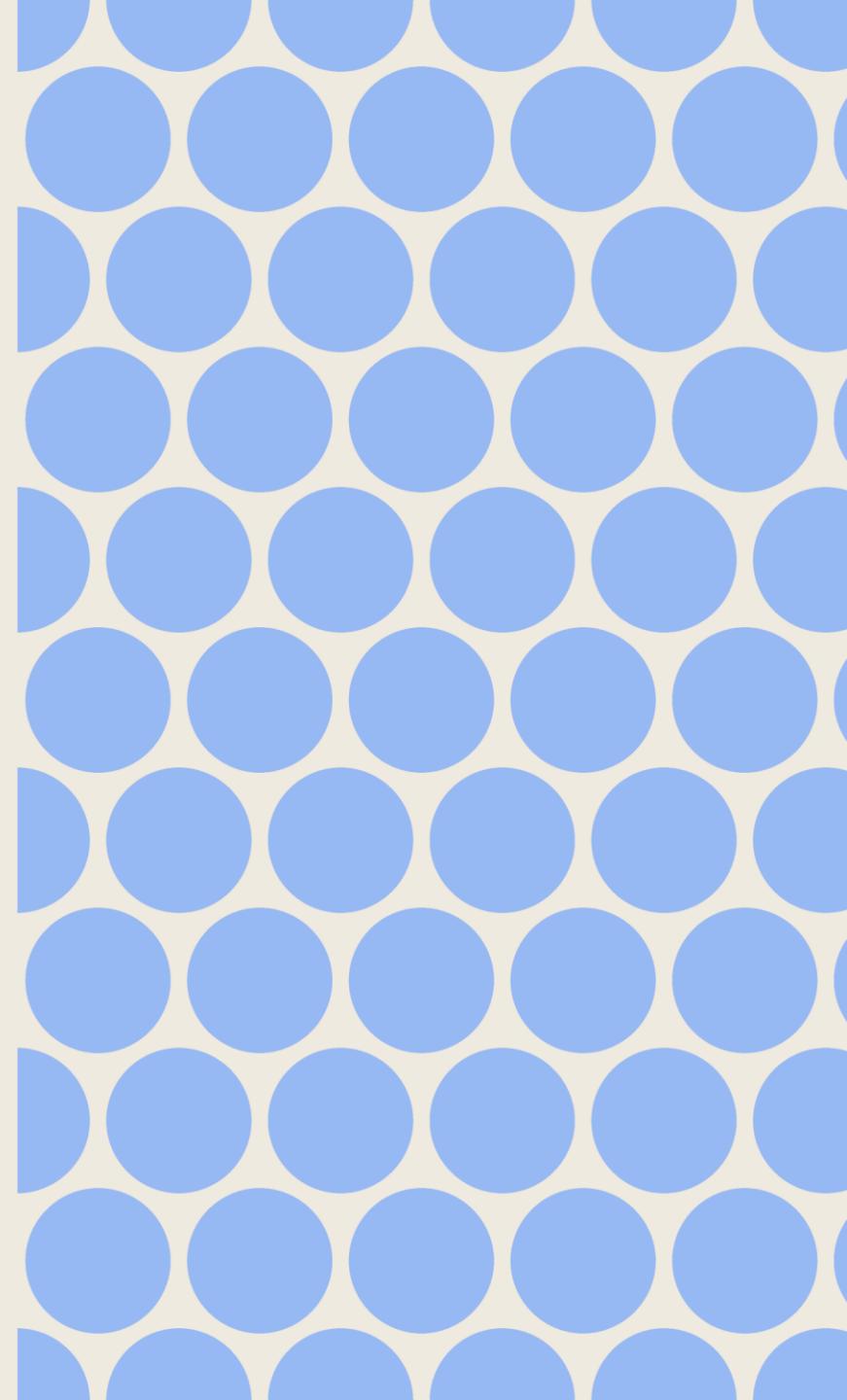


- **Medical records**: Health Level Seven (HL7 V3: CDA R2)
- **Kanta Personal Health Record**: Health Level Seven (HL7 FHIR), JavaScript Object Notation (JSON), eXtensible Hypertext Markup Language (XHTML)
- **Legacy patient records**: Portable Document File A (PDF/A)
- **Imaging, eHealth Digital Service Infrastructure operations**: Integrating the Healthcare Enterprise profiles (IHE IT-profiles)
- **Digital signatures**: (W3C XML DSig)
- **Interoperability between web services**: Web Services Adressing (WS-Adressing, WS-I)
- **Communications security**: Transport Layer Security (TLS)
- **Public Key Certificate Formats**: Cryptographic standard (X.509)

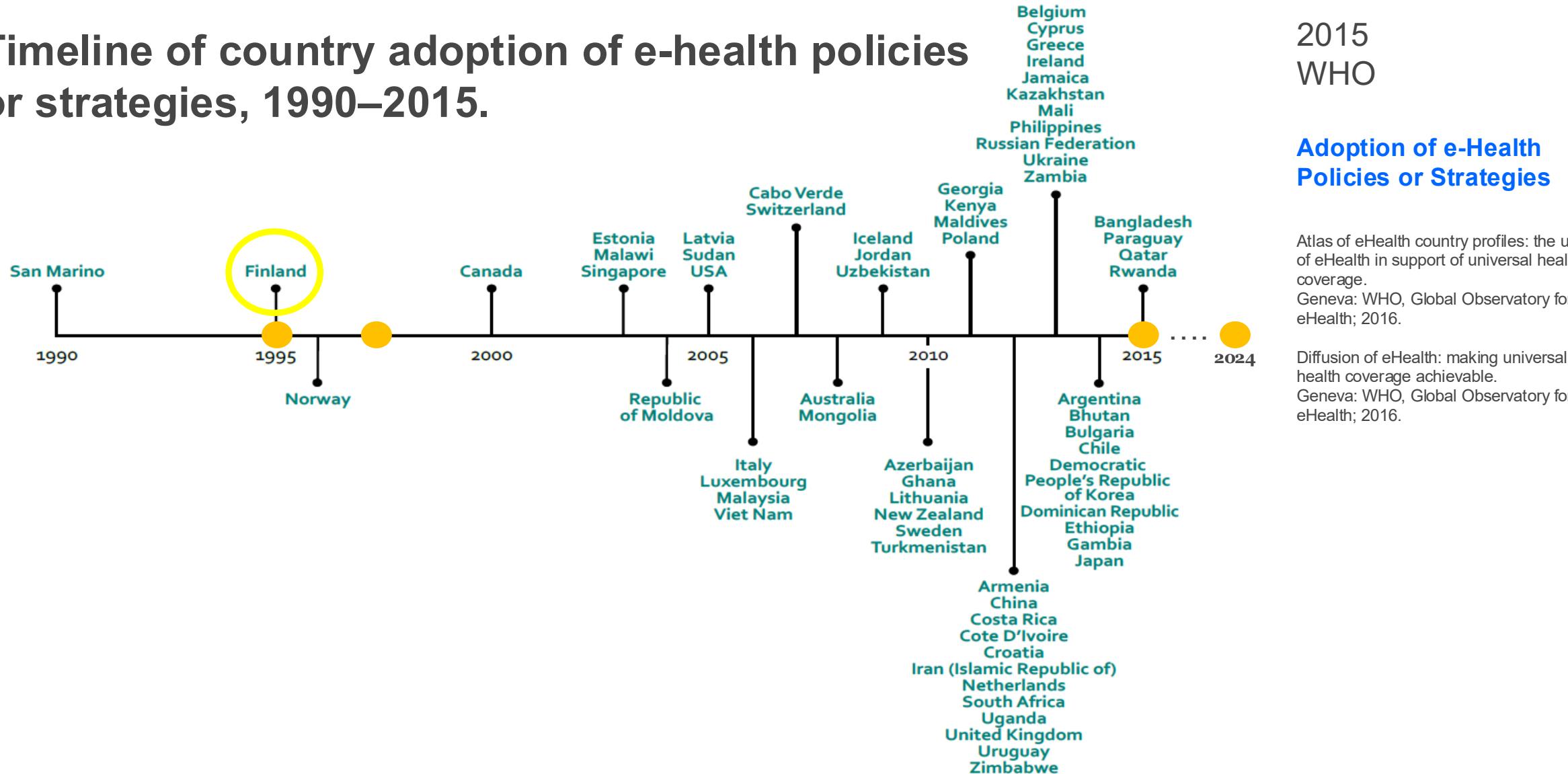
<https://www.kanta.fi/en>

Guidance of information management in healthcare and social welfare services

Strategies for information management in healthcare
and social welfare (1995, 1998, 2015, 2024)
eHealth roadmap – Finland (2007)



Timeline of country adoption of e-health policies or strategies, 1990–2015.





The eHealth Roadmap – Finland (2007)

The Ministry of Social Affairs and Health (MSAH) made two strategic choices on national level:

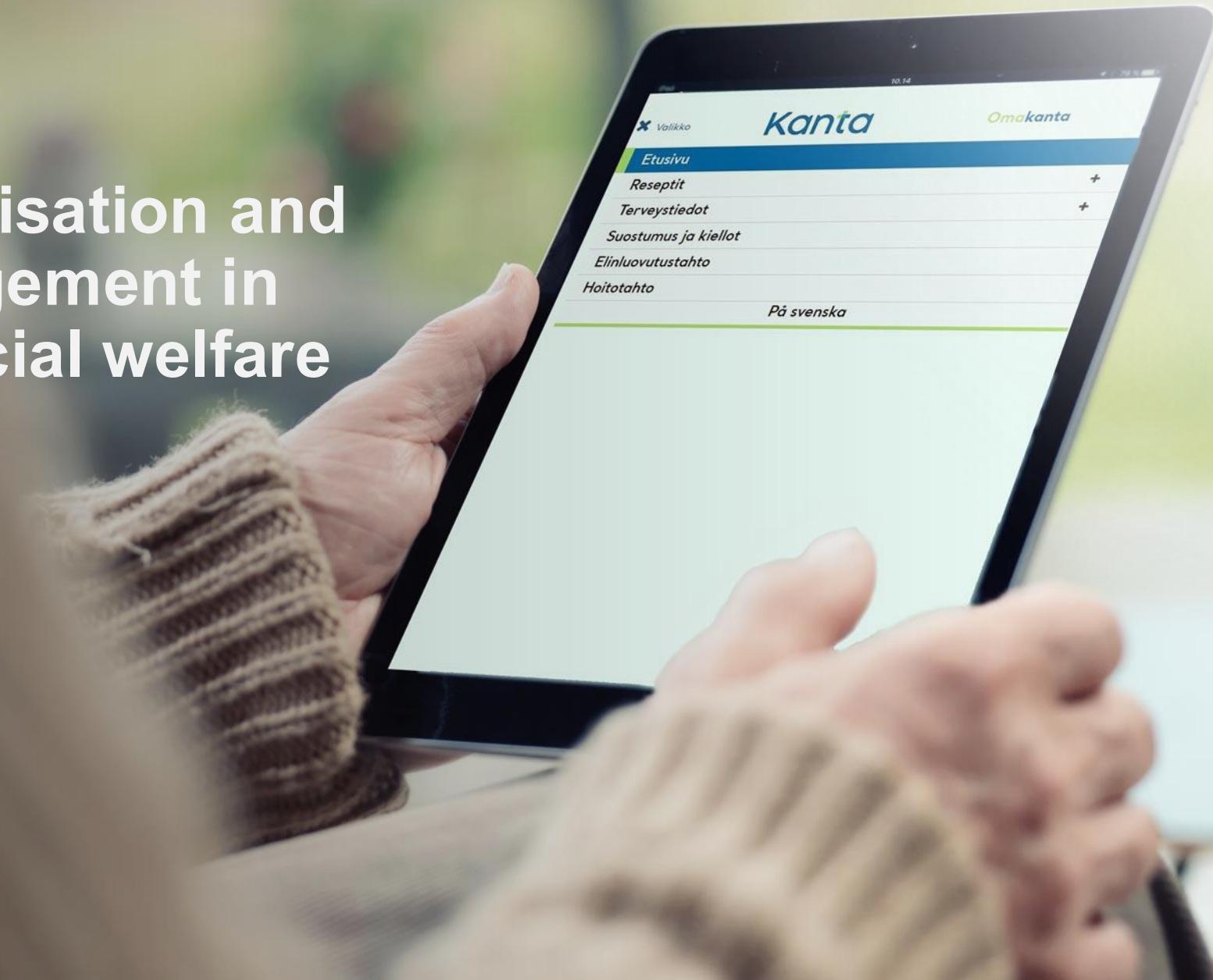
- **First, to ensure the availability of information for patients undergoing treatment, regardless of time or place, in public and private healthcare**, MSAH decided to include
 - comprehensive digitization of customer data
 - development of the semantic and technical compatibility of electronic health record data systems for the entire contents of patient records
 - development of the national healthcare infrastructure and information network solutions
 - identification and authentication solutions
 - electronic signatures, and
 - the maintenance of online information to support decision-making
- **Second, to enable the participation of citizens and patients and ensure that citizens' access to more and higher-quality health information**, MSAH decided to include
 - the development of a citizen's health information portal
 - citizens' access to their own patient records
 - health information and log data, and
 - development of electronic services (booking of appointments, electronic discussions, electronic document transfer, online consultation).

Ruotsalainen P, Iivari A-K. eHealth Roadmap – Finland. Reports 2007:15. Helsinki: Ministry of Social Affairs and Health; 2007.

<https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/74737/Selv200715.pdf?sequence=1>

Strategy for digitalisation and information management in healthcare and social welfare

January 15, 2024





Building a digital foundation for healthcare and social welfare services

- Citizens will be provided with better opportunities to independently take care of their wellbeing and health as individuals, service customers or as persons managing the affairs of their close family members
- The flexibility and efficiency of healthcare and social welfare services will be enhanced through customer and service counselling and the introduction of advanced technology, while at the same time, the workload of the personnel will be reduced
- Health and social services will be organized on the basis of effectiveness data and evidence (research findings or evaluated data) on a higher quality basis and in a socially, economically and ecologically sustainable manner

Vision 2035: four key objectives



To put the vision into practice, four key objectives have been identified and achieving them provides the basis for making the vision a reality:

- Individuals are able to independently take care of their wellbeing, health and functional capacity with the support of information-based anticipation and digital services
- In all wellbeing services counties, digital channels are the primary choice whenever appropriate or for customers that are able to use digital services
- The workload of healthcare and social welfare personnel has been eased by making better use of information and by introducing advanced technological solutions
- Senior managers, decision-makers and researchers have extensive access across administrative boundaries to information accumulating on services and benefits

Vision 2035: six success factors

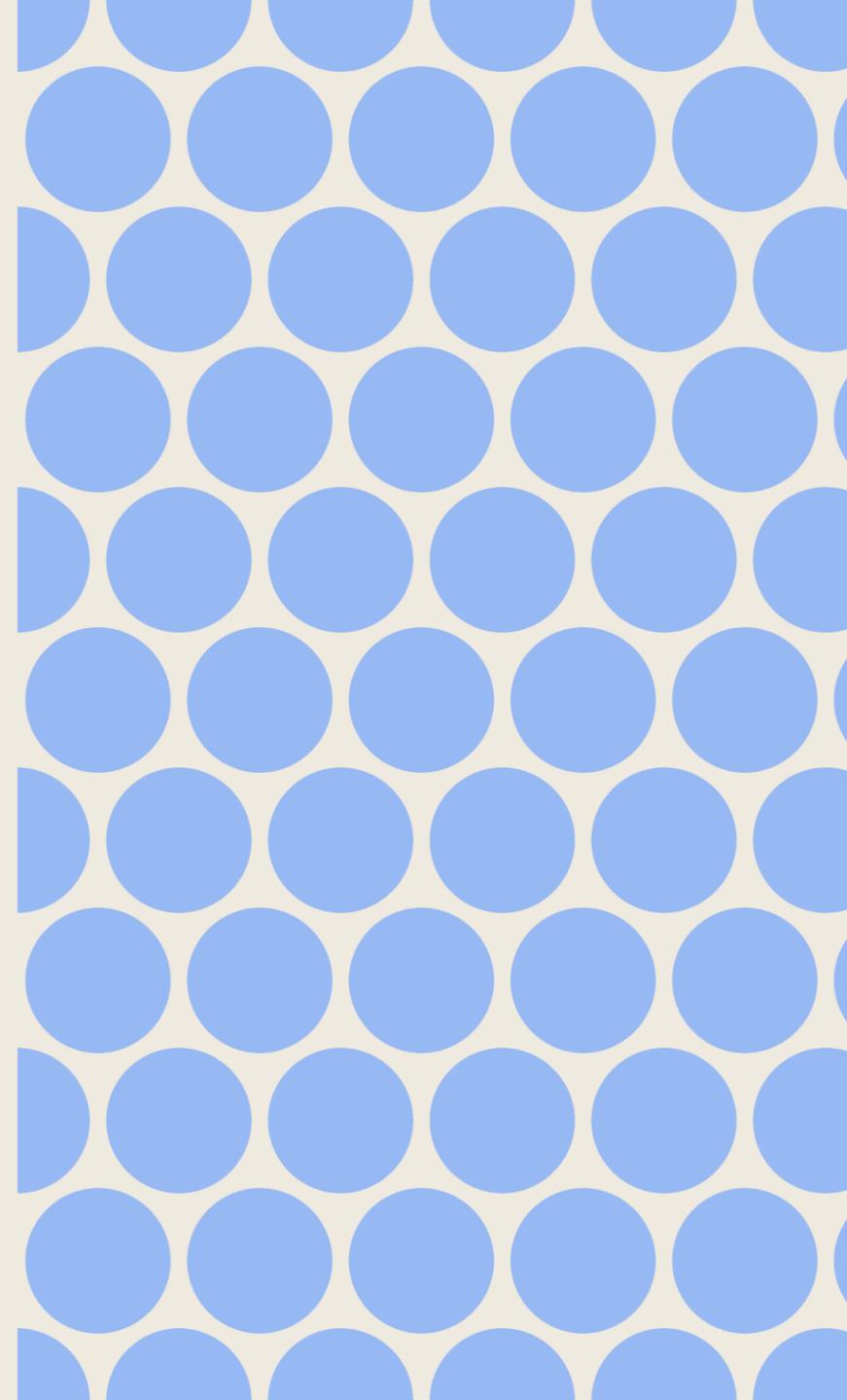


Six success factors have also been identified as a prerequisite for making the vision and the objectives a reality:

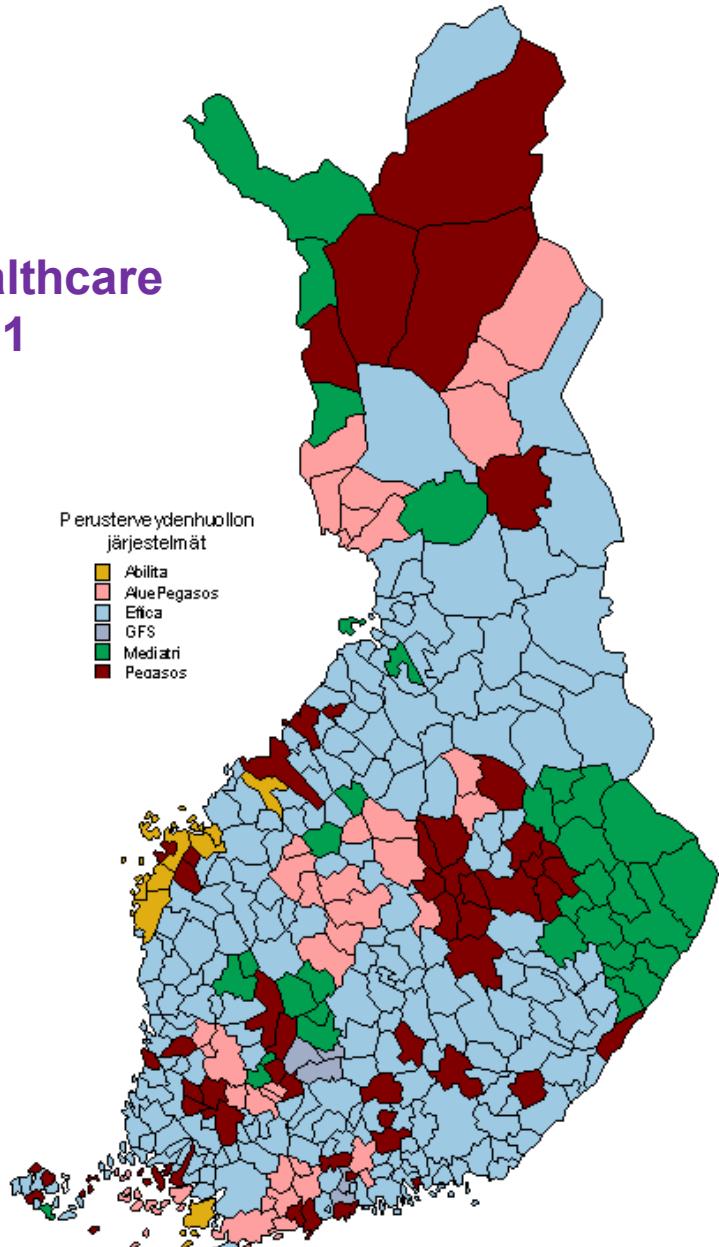
- Enabling legislation
- Roles and responsibilities specified at national level (development of the steering model for digitalization and information management in healthcare and social welfare)
- Information management policies
- Enhancing digital competence
- Ethical aspects and sustainability of digital healthcare and social welfare services and their development (responsibility)
- Utilizing technological advances

Guidance of information management in healthcare and social welfare services

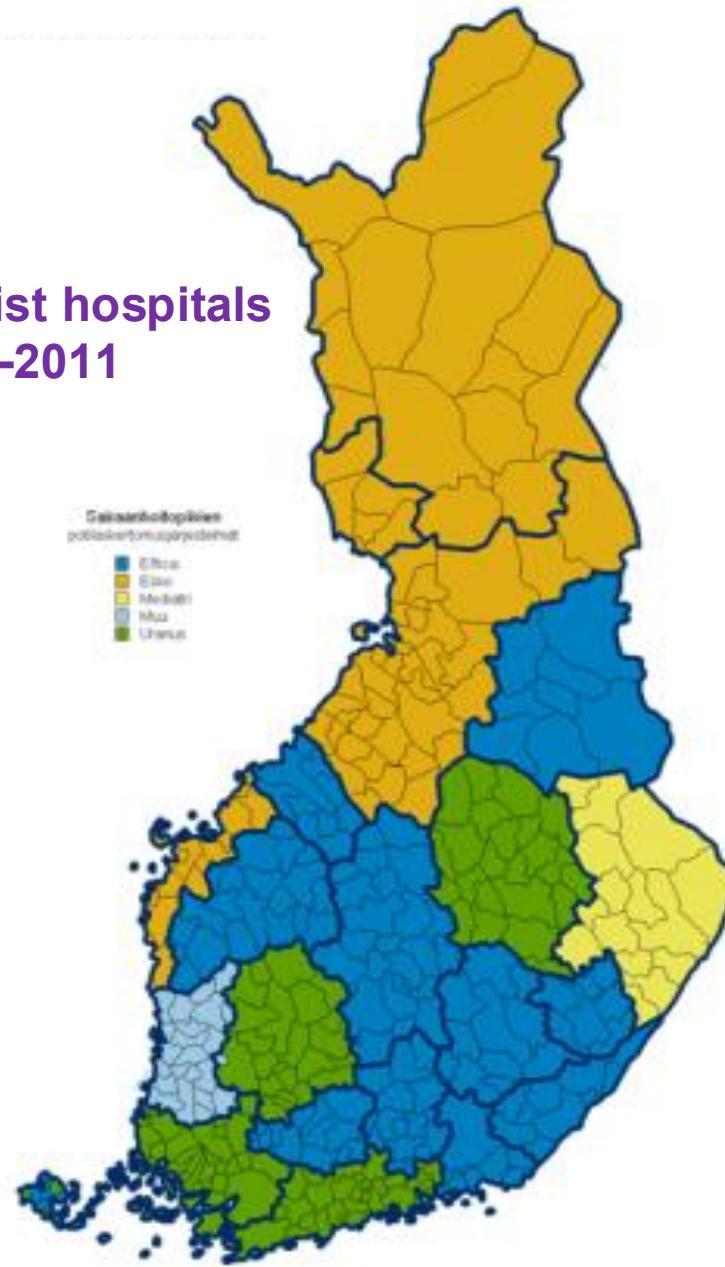
Electronic health and customer records



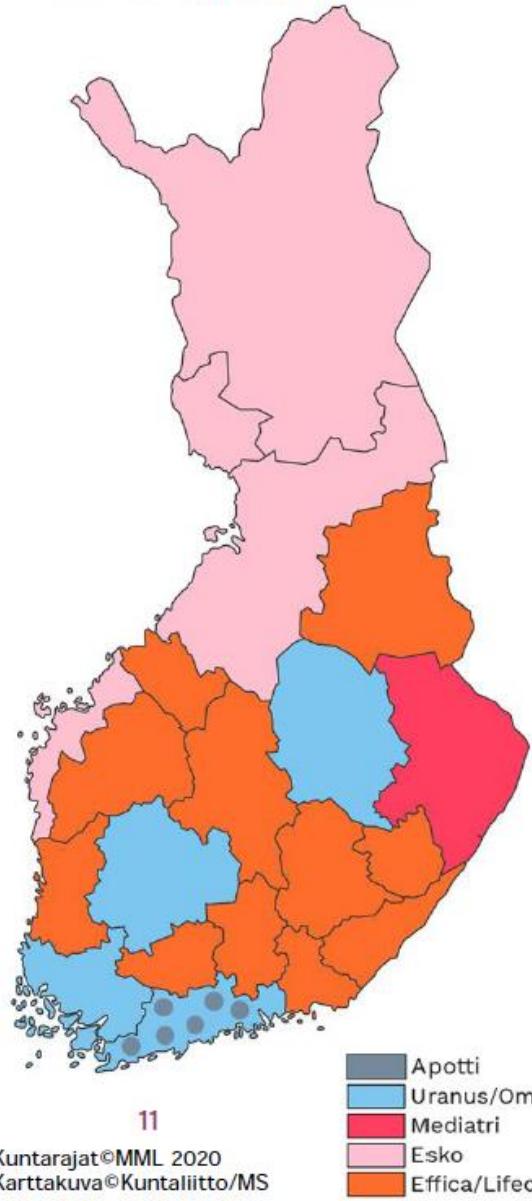
Primary healthcare in 2010–2011



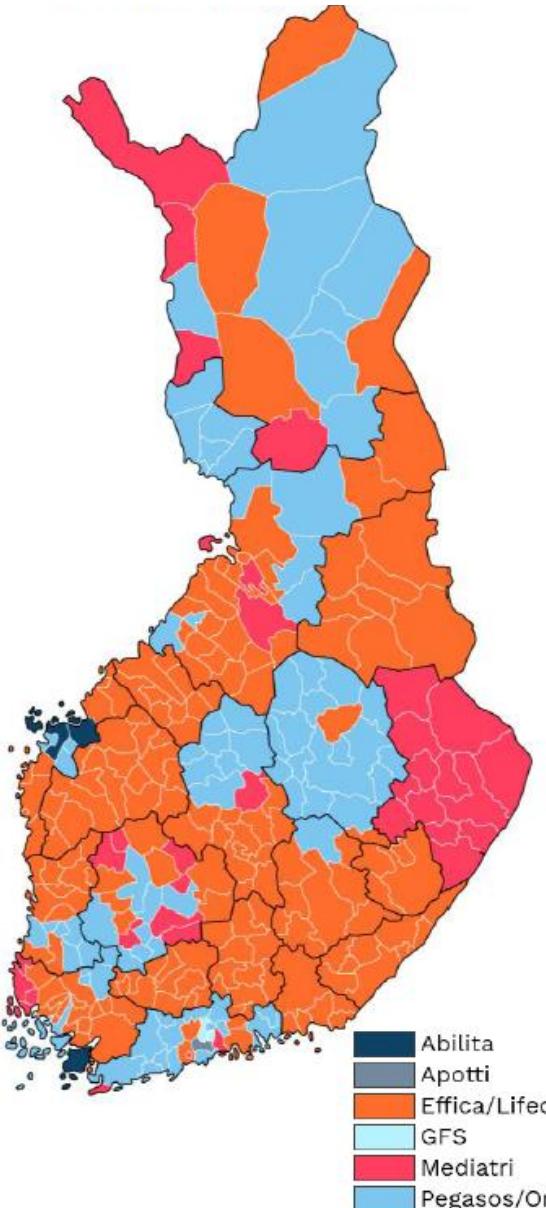
Specialist hospitals in 2010–2011



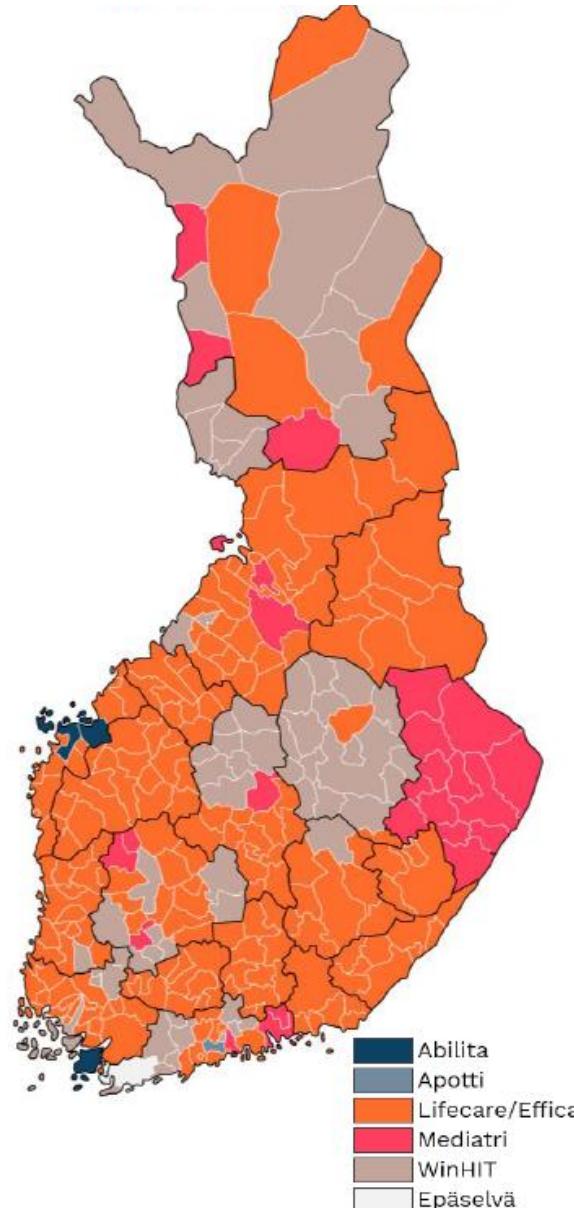
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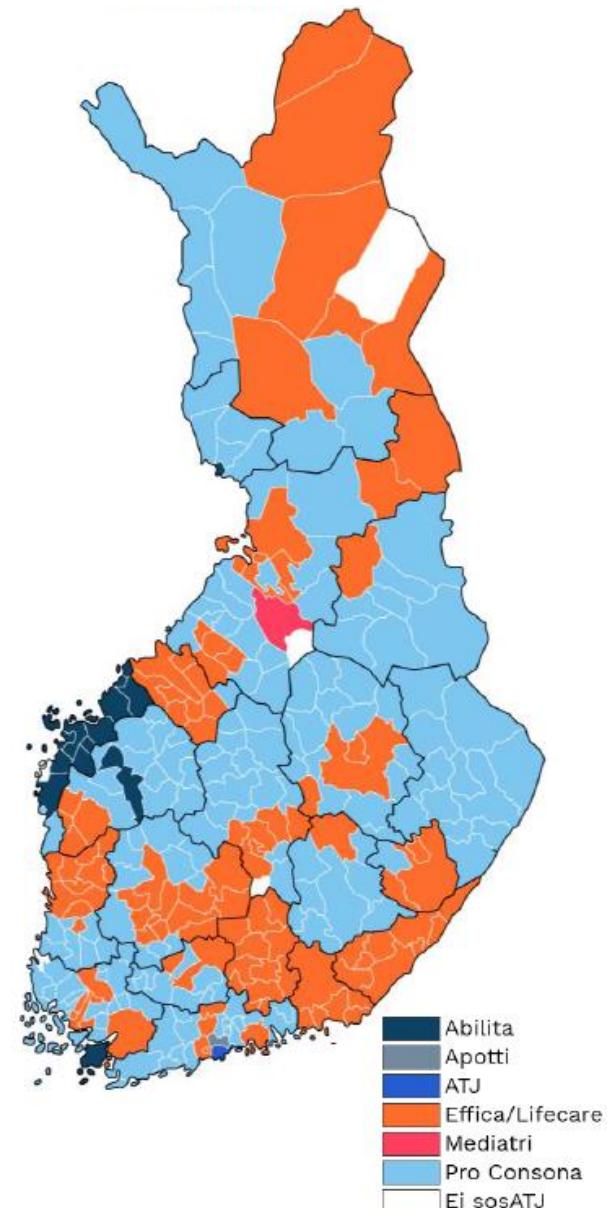
Public primary healthcare



Oral healthcare

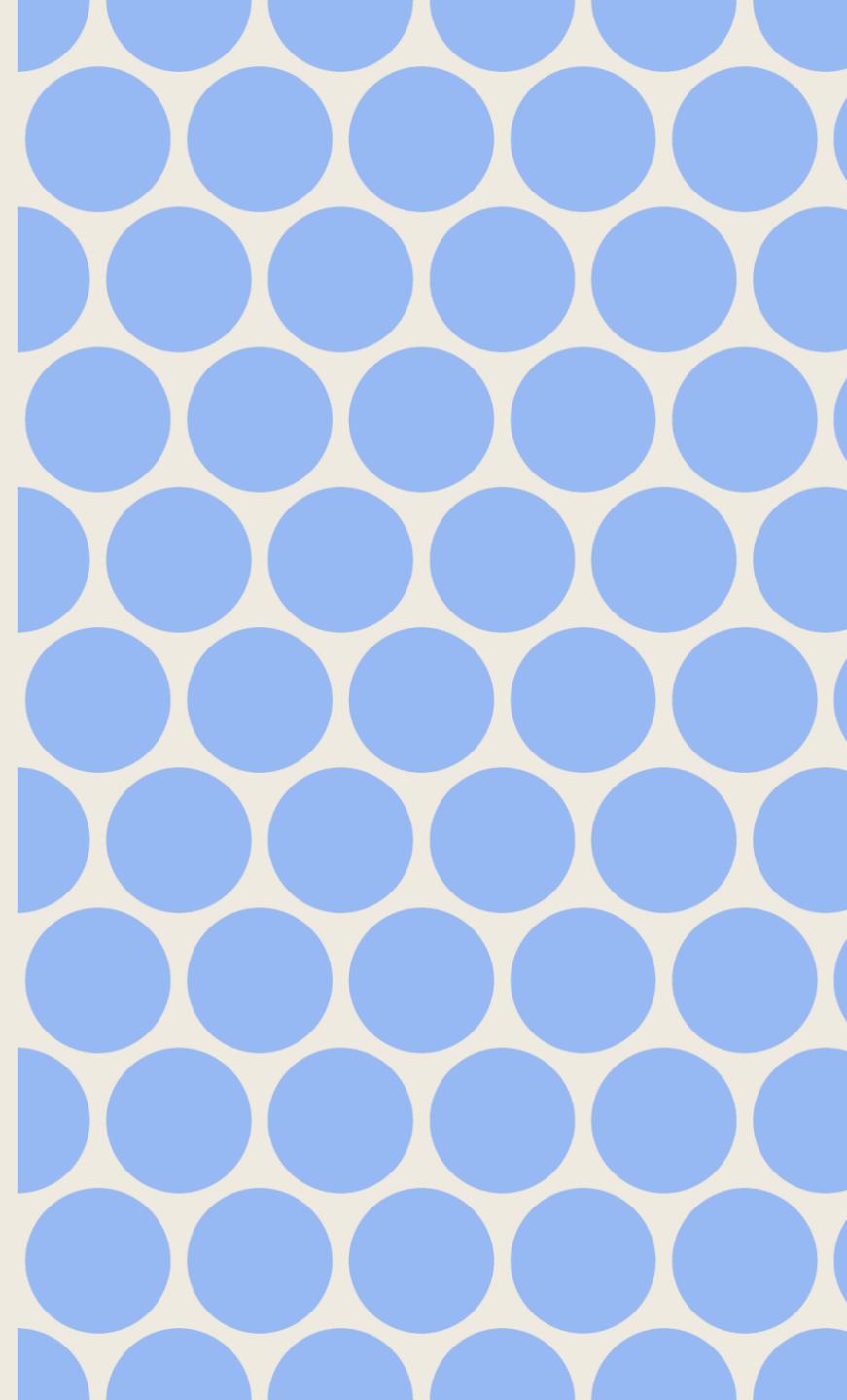


Social welfare services



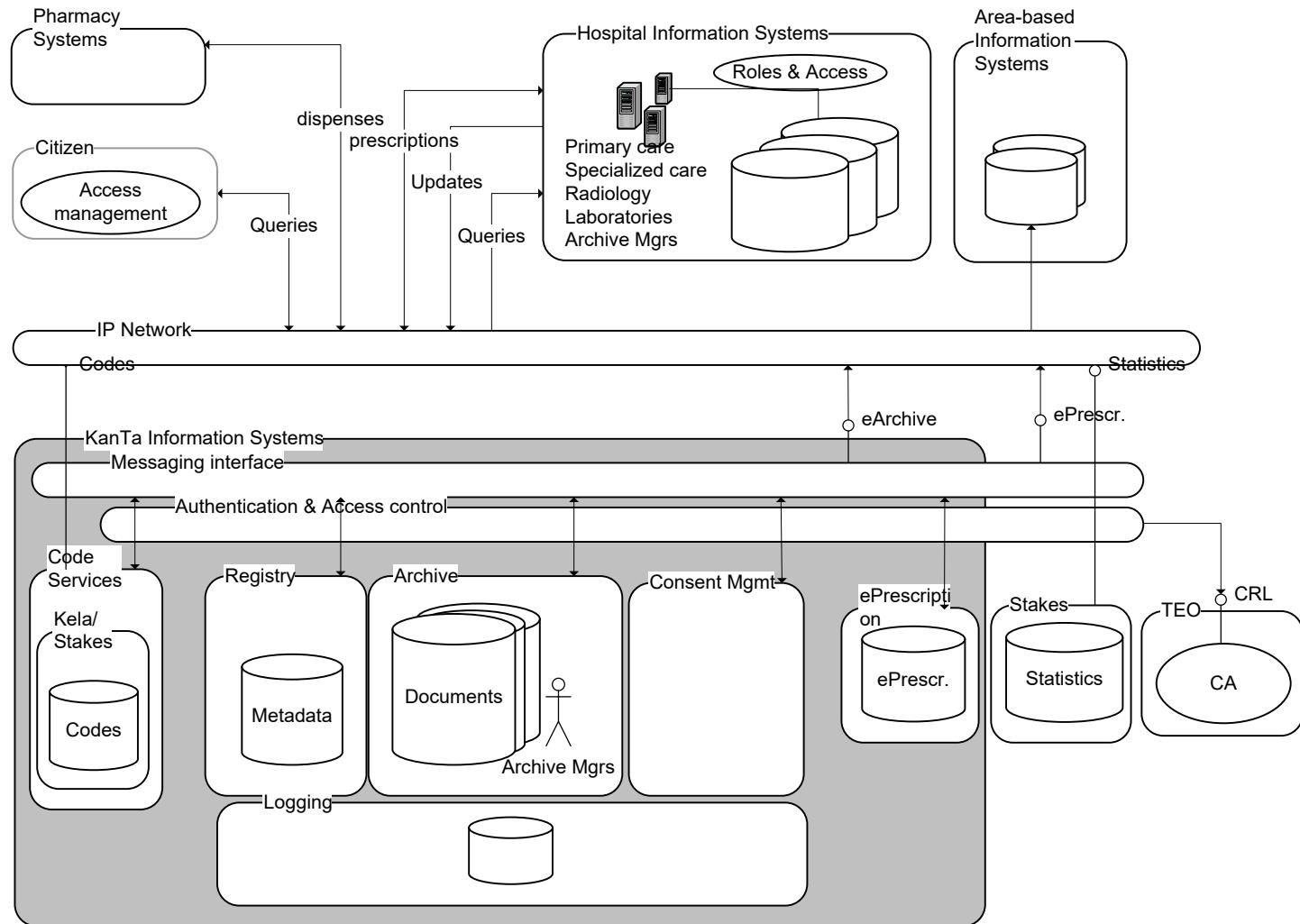
Nationwide Kanta Services

Information management in healthcare and social welfare



Kanta Services is a unique nationwide solution
for safe recording and seamless use of
social welfare, healthcare and wellbeing data.

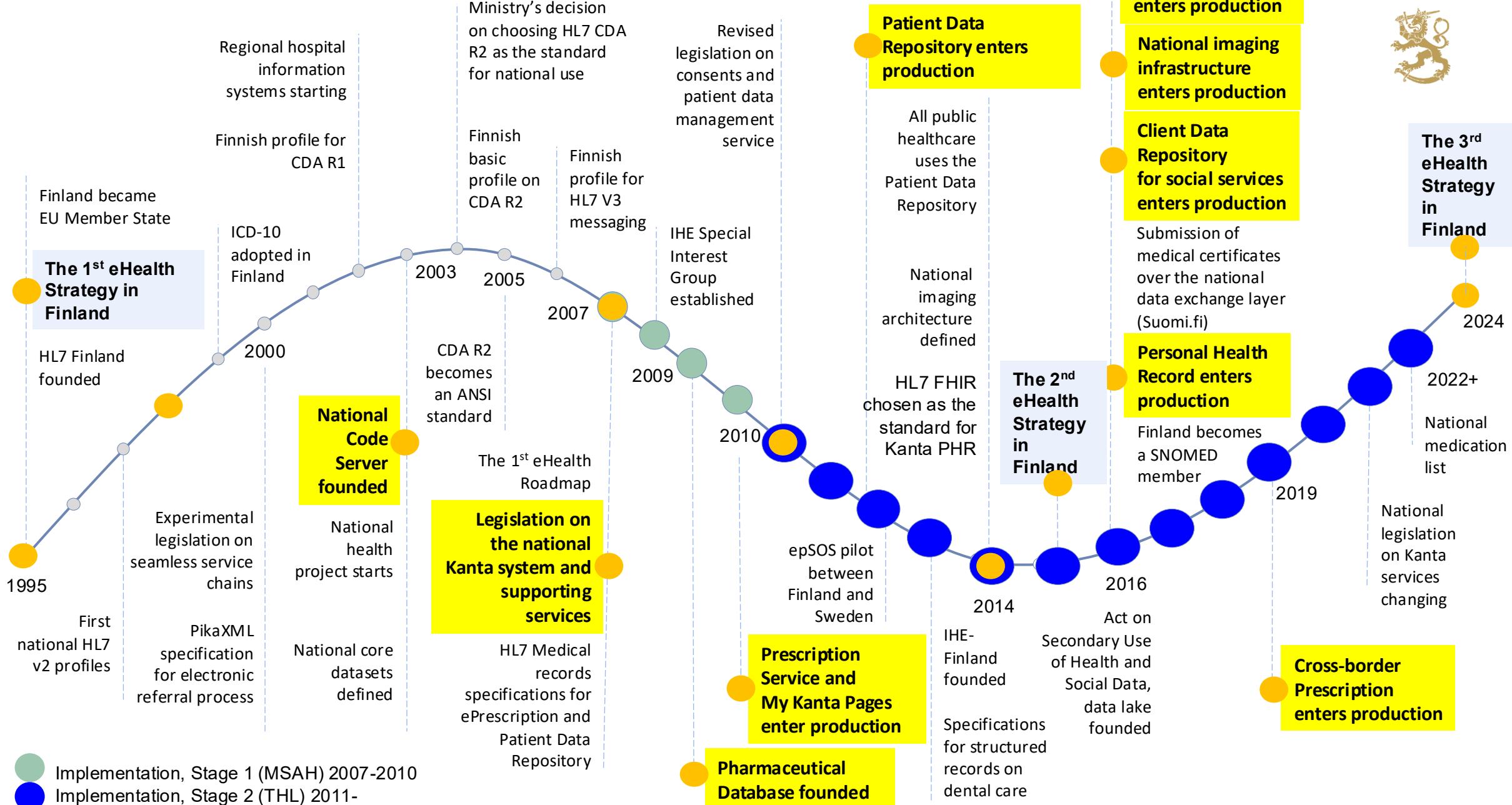
Kanta Services: original gross architecture in 2006



National e-health surveys 2001–2021

Survey	Focus	Informants	Years
1) e-Health	e-health implementation, adoption and use	Public primary healthcare and secondary and private healthcare provider organisations	2003, 2005, 2007, 2011, 2014, 2017, 2020
2) e-Welfare	e-welfare implementation, adoption and use	Public and private social welfare service organisations	2001, 2010, 2014, 2017, 2020
3) Physicians' experiences	usability, experienced benefits and challenges	Public and private physicians	2010, 2014, 2017, 2021
4) Registered nurses' experiences	usability, experienced benefits and challenges	Registered nurses working in public and private healthcare and social welfare services	2017, 2020
5) Social welfare professionals' experiences	usability, experienced benefits and challenges	Social welfare professionals' working in public and private social welfare services	2020
6) Citizens' experiences	use, experienced benefits and challenges	Representative sample of adult population	2014, 2017, 2020

Pathway of the nationwide Kanta Services



The 3rd
eHealth
Strategy
in
Finland

Healthcare service providers

Primary care organizations
Hospital districts
Private healthcare providers

Providers of social services**Pharmacies****Healthcare professionals****eHealth digital service infrastructure****Receivers of medical certificates****Citizens and users**

and apps used by them

Main standards

HL7 V3: CDA R2 L3 and Medical Records
HL7 FHIR (Kanta Personal Health Record)
JSON, XHTML (PHR and social services)
PDF/A (old patient data and social services)
IHE IT-I Profiles (imaging and eHDSI)
W3C XML DSig
WS Addressing, WS-I
TLS, X.509

Kanta services

Kelain
Web-based prescription service

National Contact Point for eHealth

National service bus

MyKanta Pages

Kanta messaging layer

Prescription Centre

Prescriptions
Renewals

Dispensations
Reservations

Pharmaceutical database

Medicinal products details
Substitution rules

Prices
Reimbursement rules

Patient Data Repository

Health records
Encounter data
Structured health records

Imaging infrastructure
Imaging data

Archive of legacy patient data
Legacy health records

Data management service

Consent data
Information notices
Consents
Consent restrictions

Will expressions
Living wills
Organ donation wills

Summary service

Problems
Procedures
Lab results
Customer summary for social services

Vaccinations
Imaging studies
Physiological findings

Risks

Client Data Repository for social services

Customer relationships
Customer documents

Service items
Legacy data

Personal Health Record (PHR)

Observations
Other data stored by citizens

Questionnaire responses

Other national services

Population register
Demographic data

Suomi.fi
Authentication
e-Authorizations
Message exchange

HCP and SCP register
Professional rights

Certification service
Certificates
Smart cards

National code server

Code systems
Pharmacy register
Organization register

Data lake for health and social welfare

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Primary care organizations
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Data lake for health and social welfare

2019

Information available in the nationwide Kanta Services



Patient Data Repository services	Client Data Repository services for social welfare	Prescription Centre services	MyKanta
<ul style="list-style-type: none">Care records in patient documents, e.g..<ul style="list-style-type: none">patient recordsexamination data (e.g. laboratory, imaging)medical certificates and reportsConsents, refusals, declarations of intentSummaries of key health data (e.g. risk data, diagnoses)	<p>Basic client data</p> <ul style="list-style-type: none">Client documents, e.g.<ul style="list-style-type: none">client recordsdecisions and reports in social welfareassessments of service need and client plansConsents, refusals, declarations of intent	<ul style="list-style-type: none">Prescription dispensing data from pharmaciesPrescription renewal requestsPrescription corrections and invalidationsDispensing reservations for prescriptions in pharmaciesDispensing of prescriptions issued overseas	<ul style="list-style-type: none">Health data and prescriptionsOrgan donation testament and living willConsents and refusalsLog data of sharing of health dataActing on behalf of another personInformation entered in the wellbeing data by the client
Kanta Personal Health Records	Archive of imaging data	Pharmaceutical database	
<ul style="list-style-type: none">Measurement dataPreliminary data notified by the citizenQueries and responses	<ul style="list-style-type: none">ECG and imaging studies	<ul style="list-style-type: none">Basic data of preparationsGeneric substitution dataPricesSubstitutability data	A blue circular icon containing a white icon of a computer monitor displaying a 3D cube.



Thank you!