

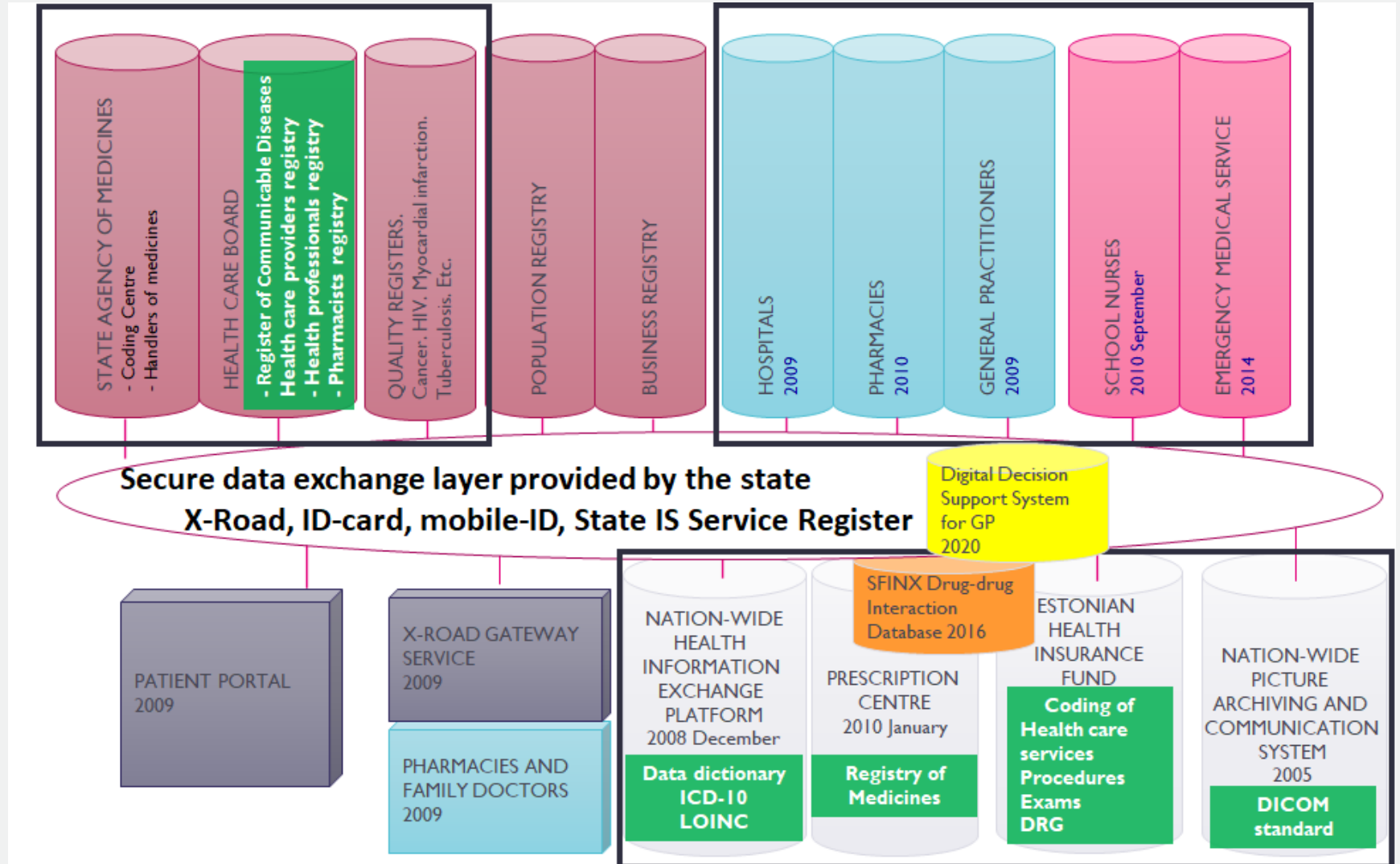


enter e-Estonia - the coolest digital society

# Digital health and telemedicine in Estonia

PRIIT KRÜS / DERMTEST CEO / TALTECH DIGITAL HEALTH MSC PROGRAM DIRECTOR

# Health Information System runs on the busiest highway: x-road

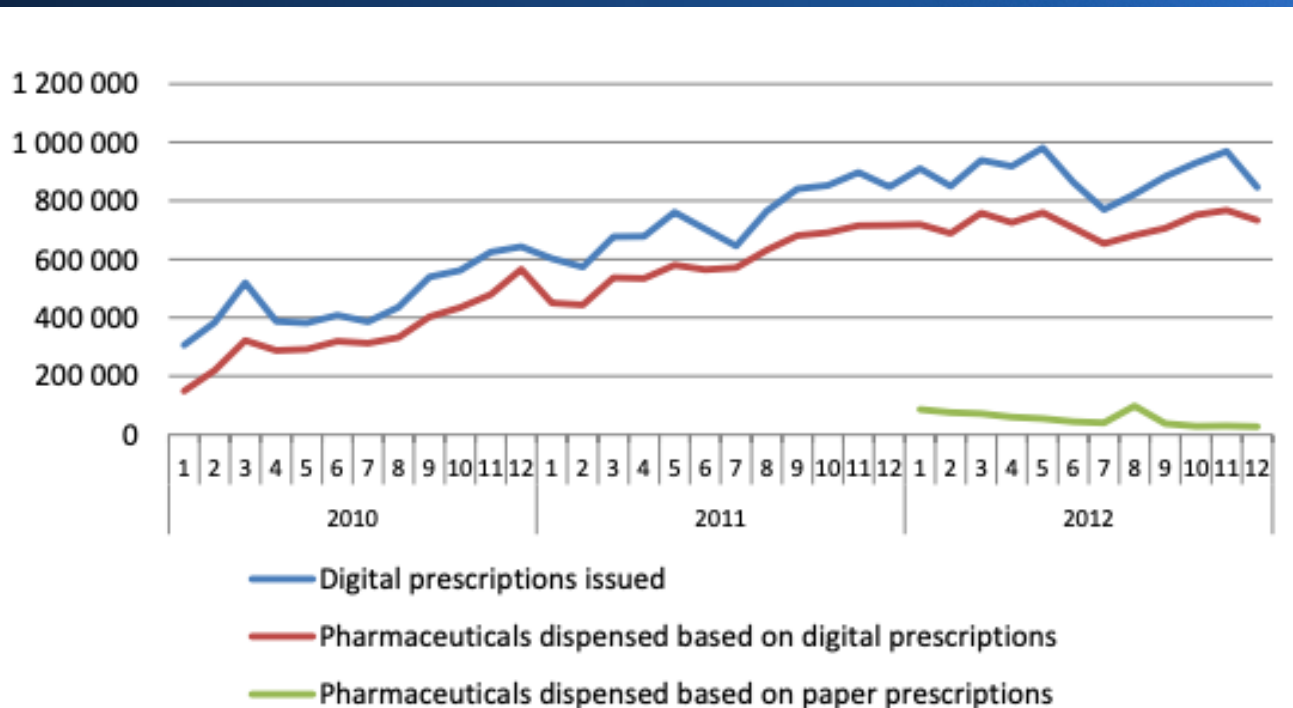


- + open source data exchange layer
- + decentralised and distributed network



# Star service #1 e-prescribing

the strongest identity since 2002



- + electronic ID is compulsory
- + 70% use ID-card regularly
- + 17% use people use mobile-ID
- + 34% use smart-ID

> Inform Health Soc Care. 2016;41(1):78-95. doi: 10.3109/17538157.2014.948170. Epub 2014 Aug 12.

## An evaluation of e-prescribing at a national level

Liisa Parv<sup>1</sup>, Prit Kruus<sup>2</sup>, Kale Mõtte<sup>3</sup>, Peeter Ross<sup>1</sup>

Affiliations + expand  
PMID: 25115948 DOI: 10.3109/17538157.2014.948170

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ACTIONS

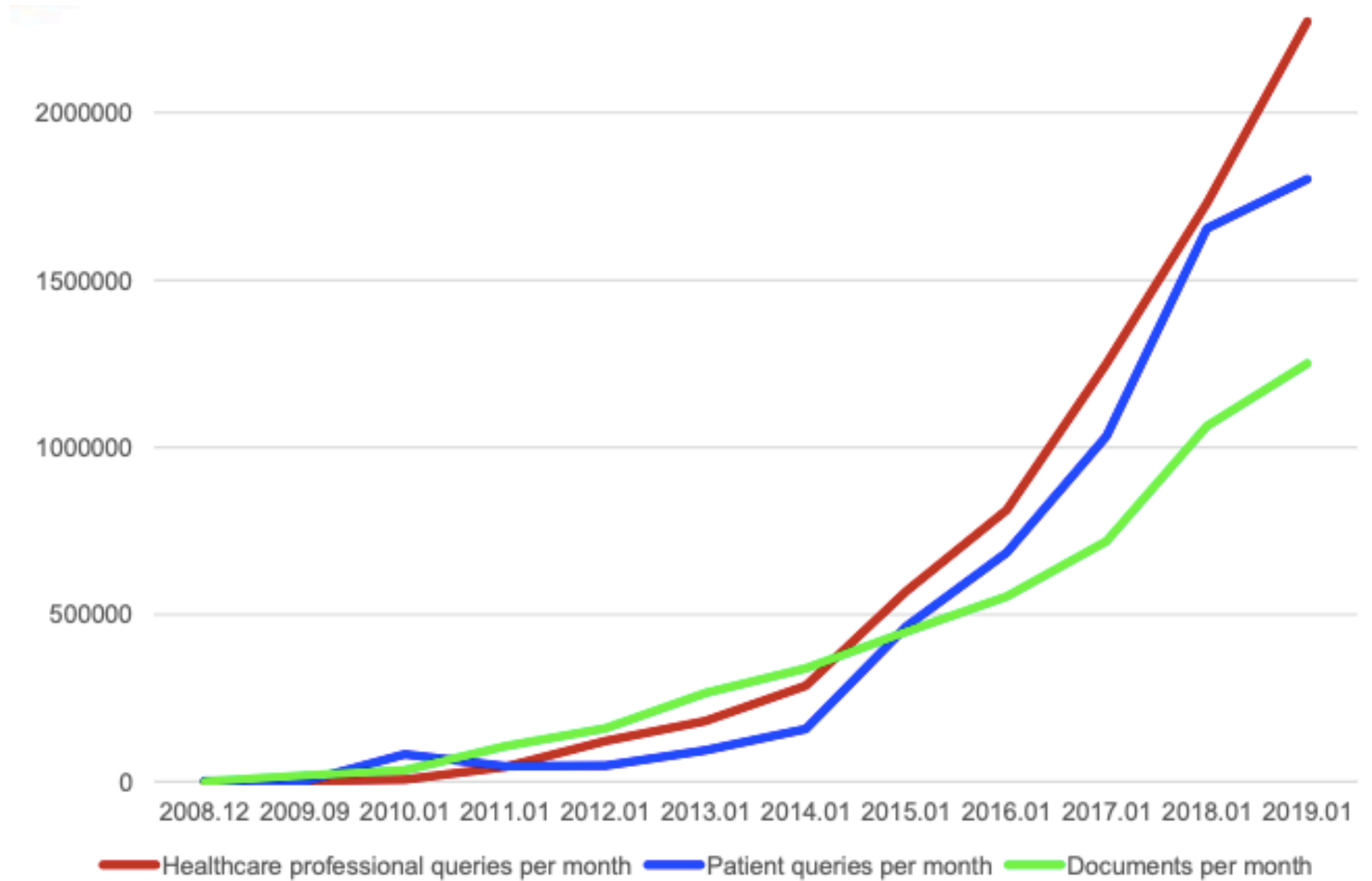
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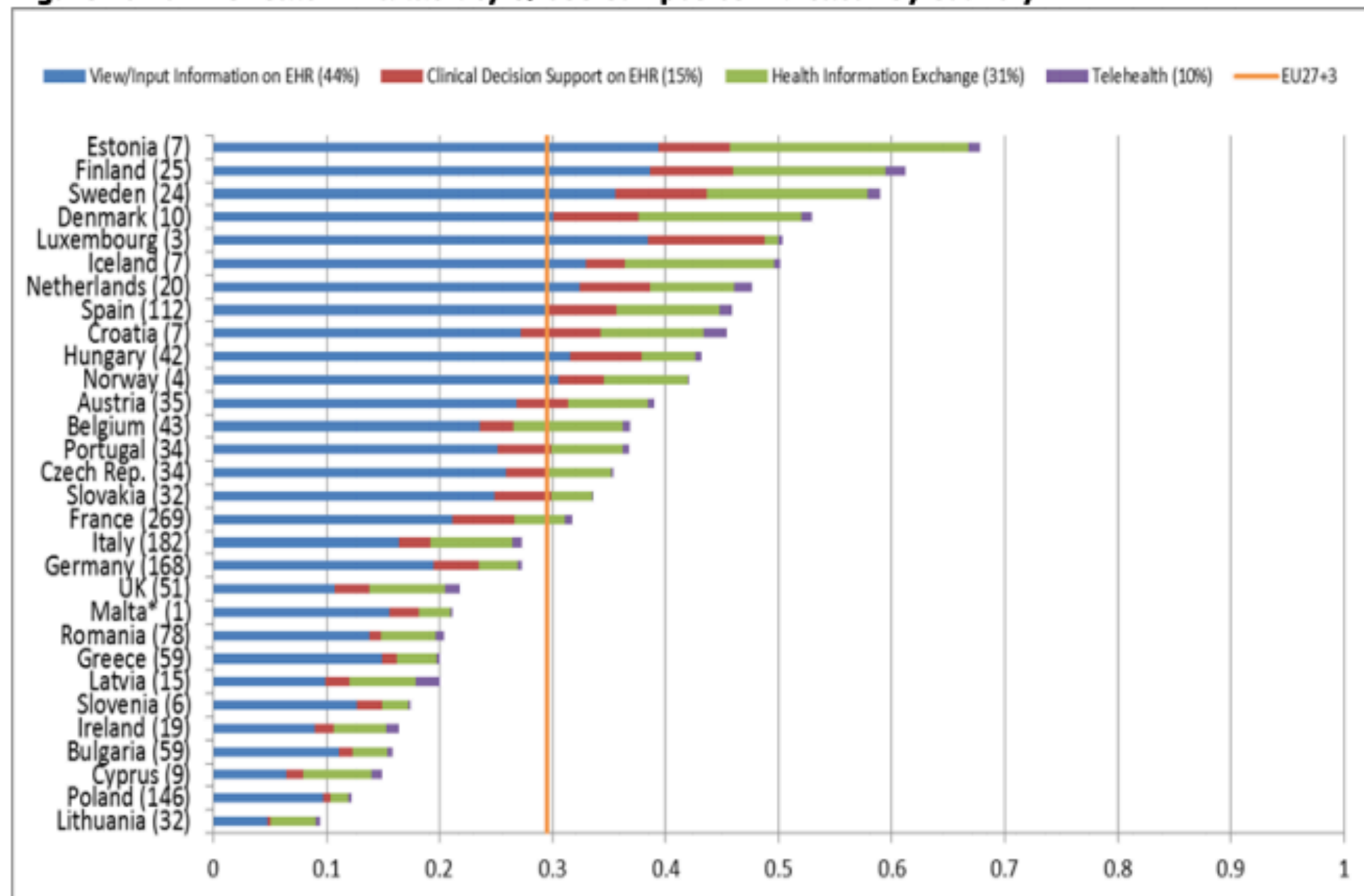
- 1
- 17
- 0

## #2 Health information exchange

*By Ross et al*



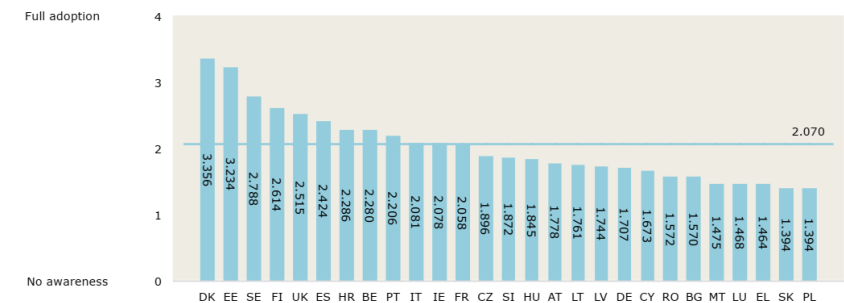
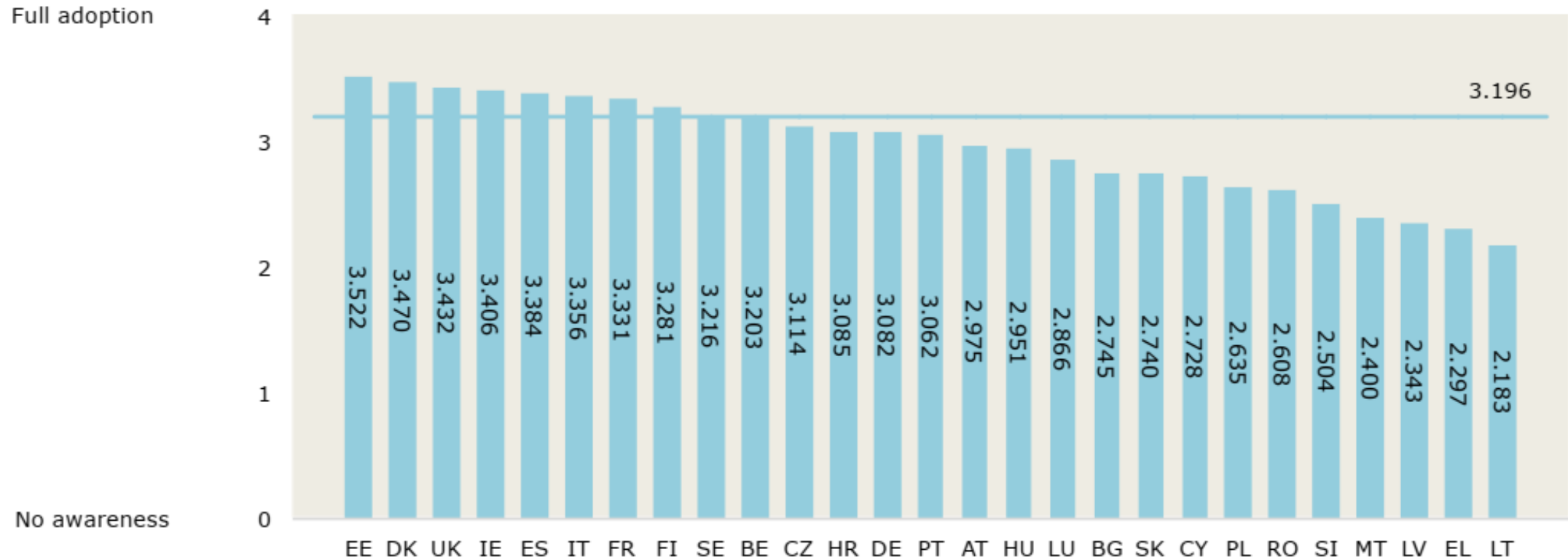
**Figure 4: 2012 eHealth Availability & Use composite indicator by country<sup>8</sup>**



\*Scores are based on data from only 1 hospital.

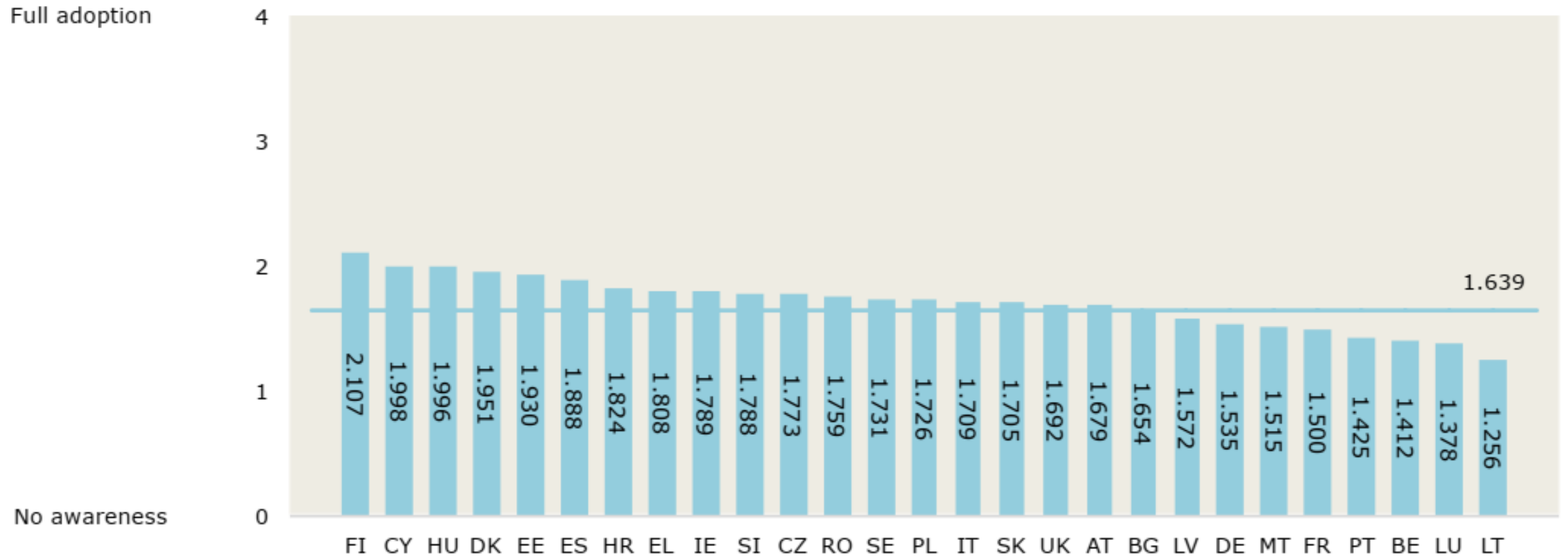
# Benchmarking Deployment of e-Health among General Practitioners.

## EU (2018) – EHR (1<sup>st</sup>) and HIE (2<sup>nd</sup>)



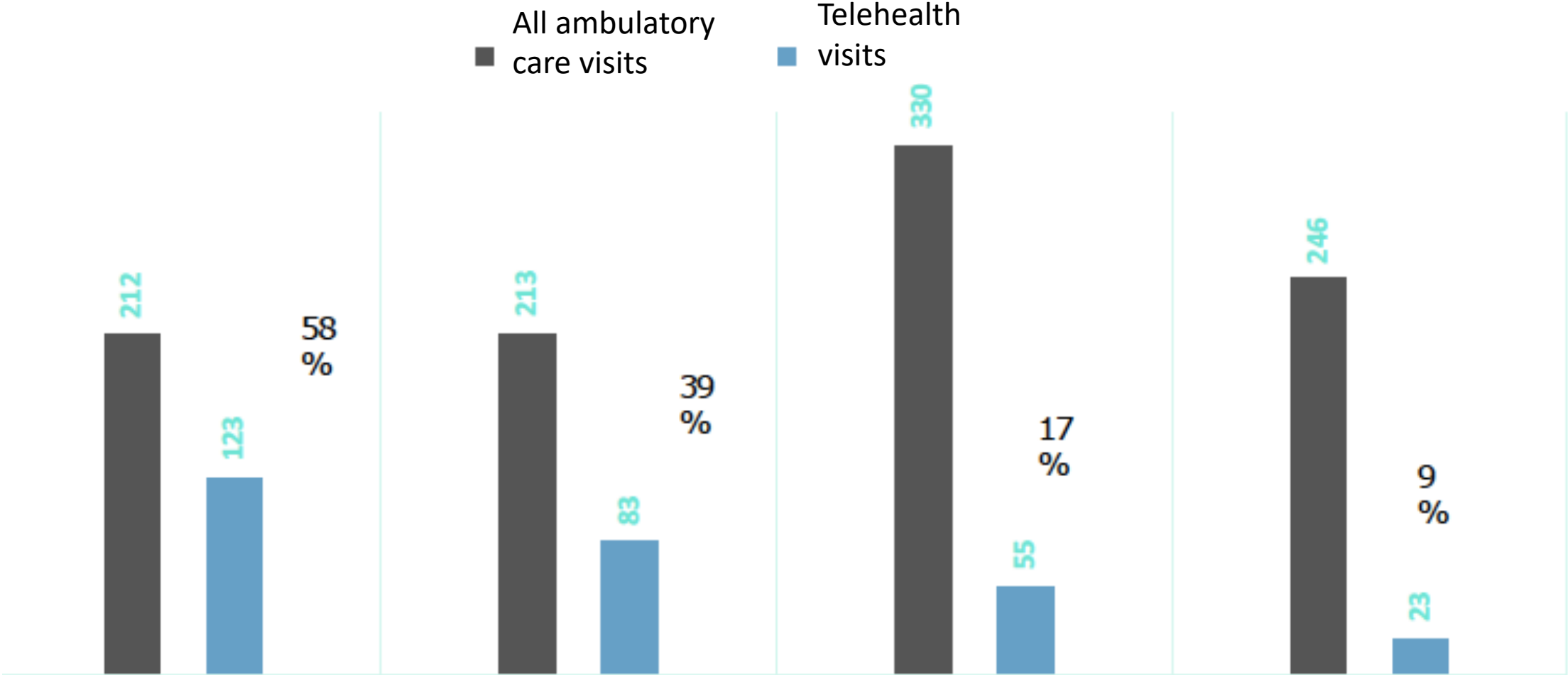
# Benchmarking Deployment of e-Health among General Practitioners.

## Telemedicine in 2018 (5th), but still low



# COVID as a catalyst

Telehealth / remote consultation uptake in 16.03-17.07.2020 (thousands)





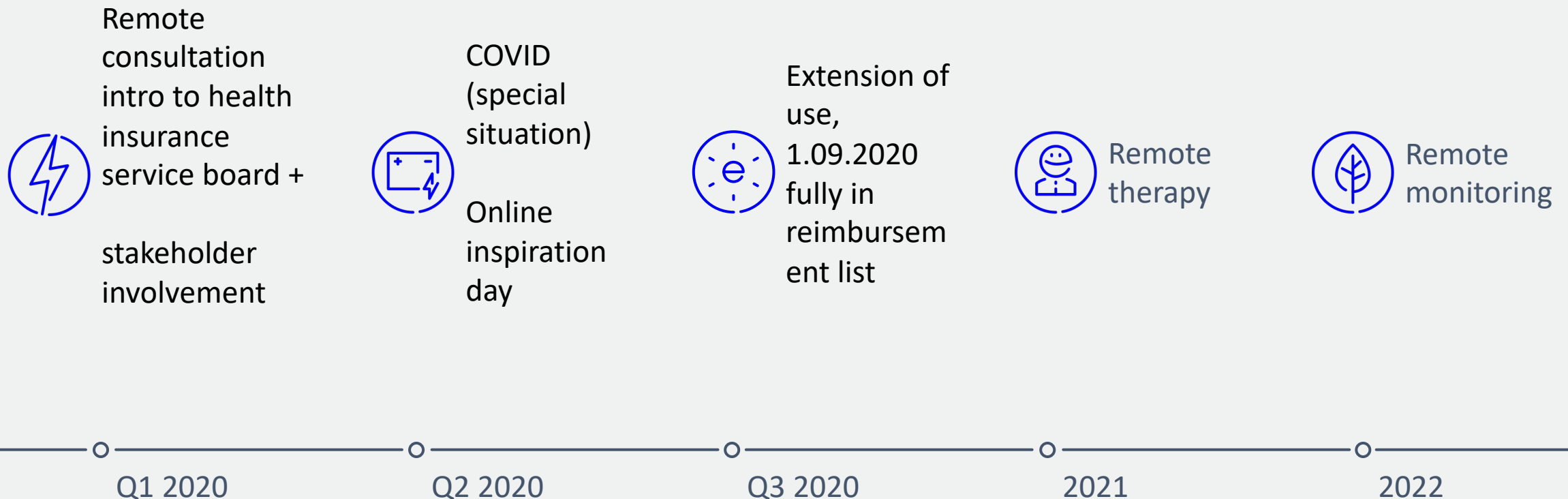
# Results

- + Fast
- + Telephone 95%
- + Low level of laptops, microphones, cameras
- + Skype, messenger, phone ruling
- + Flexible adoption
- + Satisfaction high
- + Doesn't substitute face-to-face
- + Will continue



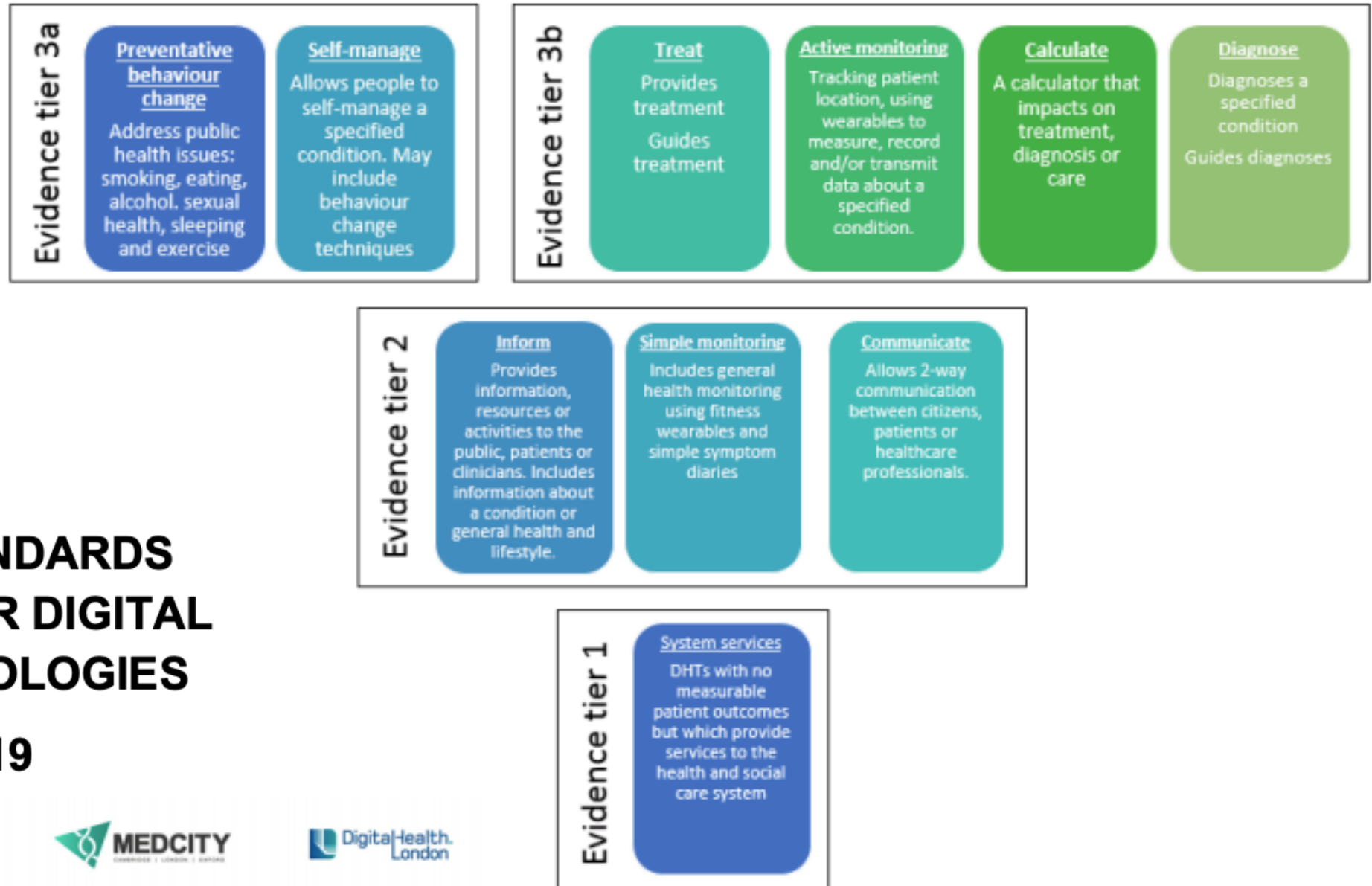


# Forward with monitoring and online therapy: led by health insurance fund



# DEFINING DIGITAL HEALTH (2019)

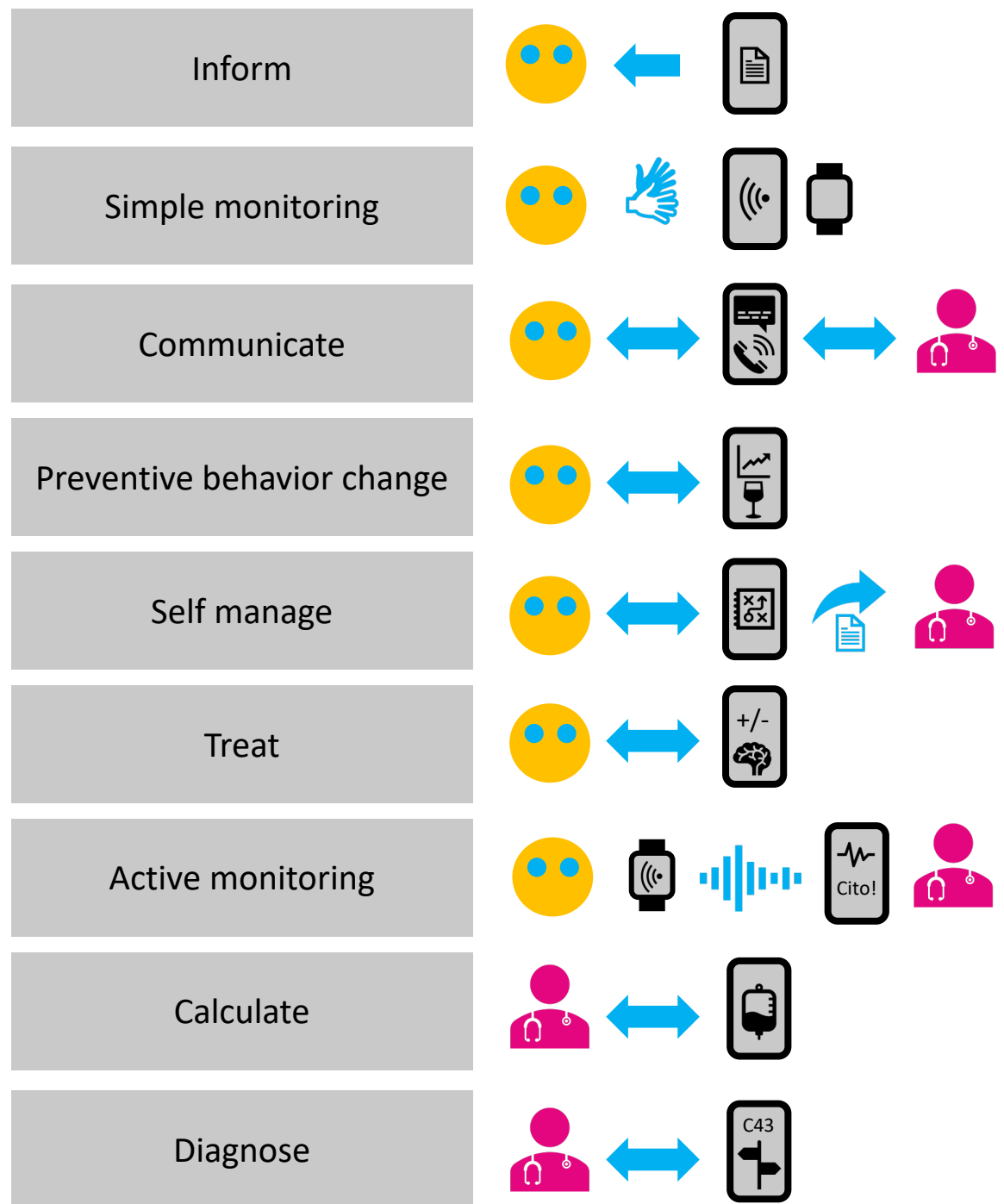
Figure 1 DHTs classified by function and stratified into evidence tiers



## EVIDENCE STANDARDS FRAMEWORK FOR DIGITAL HEALTH TECHNOLOGIES

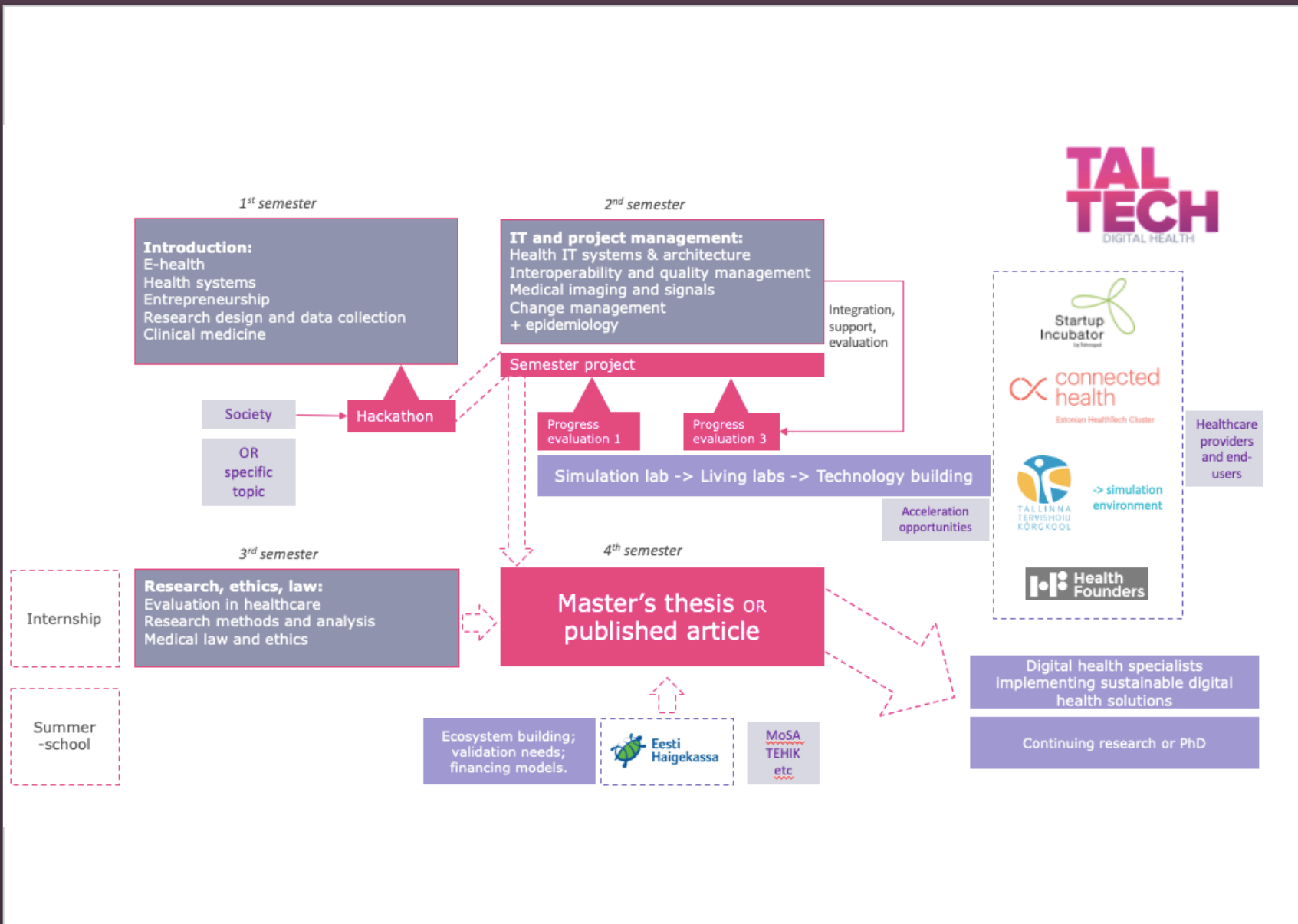
March 2019

# DEFINING DIGITAL HEALTH (2019)



Incentives for  
each functional  
case!

Source: Classification by NICE (Evidence Standard...2019),  
visual representation by TalTech (Kruus et al 2019).



Supported by

a dedicated digital health curriculum and research center

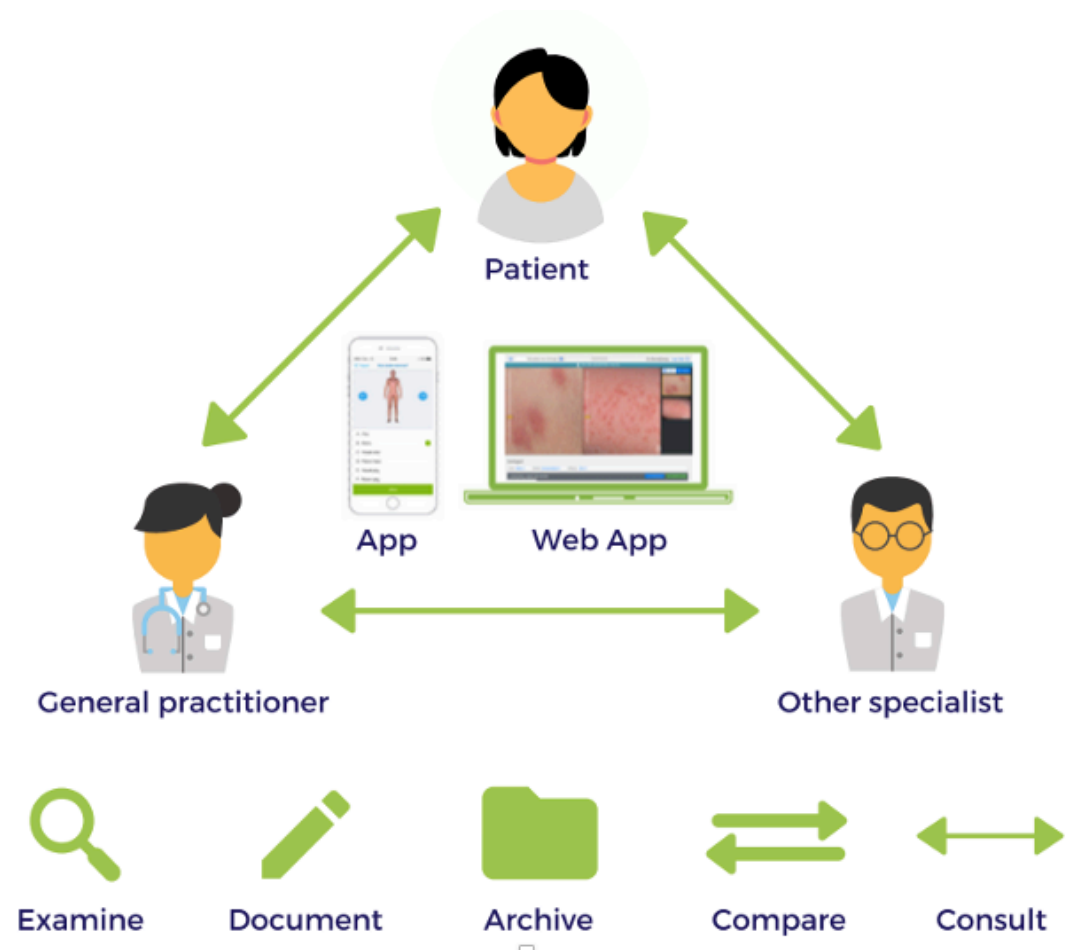
at Tallinn University of Technology



# dermtest

## MOST EASY & FUNCTIONAL MEDICAL PHOTO MANAGEMENT SOFTWARE

- 55** care providers have implemented Dermtest tools in 3 countries
- 100%** of Estonian regions covered by Dermtest enabled providers, 15% of primary providers
- 30** value-providing use-cases for small & large care providers
- 5** EHR integrations through powerful API



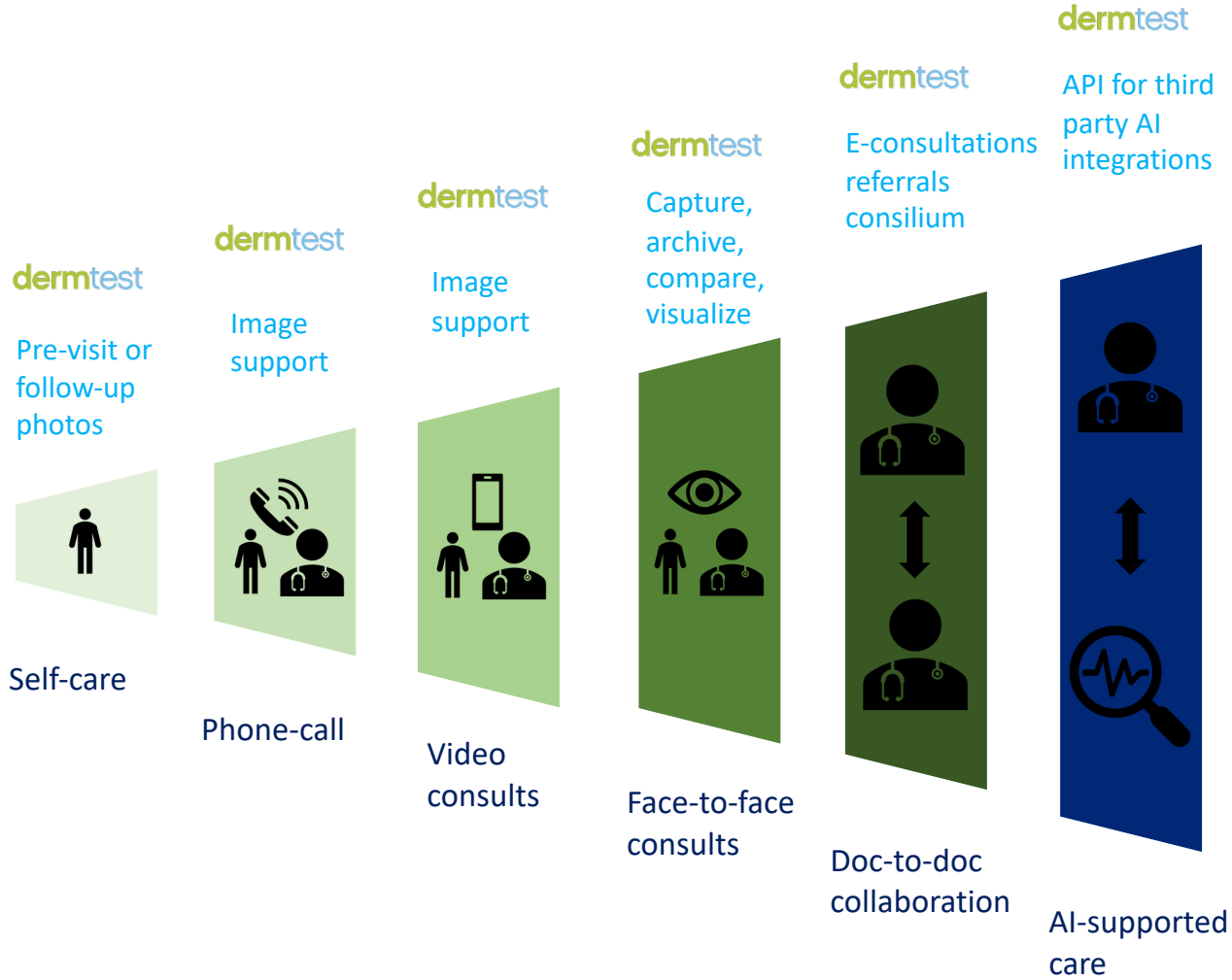
# How it fits into the Estonian digital health framework?

- + Complementary service to main components
  - + super-fast implementation (no integration needed to start)
  - + enables all types of telehealth with quality photo management
- Security framework (TARA authentication)
  - Standards (HL7, FHIR, DICOM)
  - Research and evaluation -> 7-year study



# Dermtest enables medical photo management

across the full pathway of digitalization





# Future for e-health in Estonia

the healthiest system

- + Interoperability of 3<sup>rd</sup> party services (gov API)
- + Making use of 200,000 sample biobank
- + Data quality: CDA HL7 -> FHIR
- + Document-based -> Event-based
- + Value based care
- + Once-only principle

## Problems:

- many projects at once, more evaluation and visioning needed
- financing incentives have a huge impact

Contact: [priit.kruus@dermtest.com](mailto:priit.kruus@dermtest.com)

