Digital Future Health & Care

I~HD conference Madrid

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Financing of health & care systems is unsustainable...

People demand more and personalised care...

New growth of health industry shall be data-driven (and it will be strongly redistributive)...

Health & care do not fit into existing institutions & locations...

Similar tough challenges...
Visioning the future as it seems from Estonia: Care (data) combined with data-driven R&D
Estonia is a digital society

- Internet banking (99%)
- Digital signature
  - ID-ticket
- E-court & justice
- E-voting (30%)
- E-school
- E-Business registry
- E-pensions account
- E-residency (135 countries)
- E-tax and customs service (97% income tax)
- E-state service portal
- E-health record (99% population)
- E-land Registry
- E-police
- M-parking
- E-self-services
- E-prescription (99% population)
But what does it take to deliver?
It takes ...

- lots of **information** from various sources
- powerful **information systems** to process the data
- smart **people** to find the meaning from noise or random (though sometimes beautiful) patterns

and ...

... a lot of **trust** (from data subjects)
Personalised approach using existing assets

Genome Bank (est. 2001) 52 000 donors (5% of the population) + Digital health data from 9 sources (+10y history) + International investments for personalized medicine

Estonian National Personalised Medicine Programme
2016-2020

1. Feasibility and value in clinical environment
2. ICT infrastructure build-up
3. Innovation ecosystem for collaborative R&D, clinical and business development

Internationally open research and business development collaboration platform
Rapid clinical application of personalized medicine approach & decision-support tools
International business collaboration

Personalized medicine centre of excellence

Digital Health Future (Aaviksoo)
Precision screening of breast cancer

Clinical pilots of personalised medicine in Estonia 2017 - 2019

Precision screening of CVD for high-risk patients
Public support to Estonian Genome Foundation rises over time

- **In favor of the idea of EGCUT**: 18% in June, 2001, increasing to 70% in July, 2011, and then decreasing to 61% in April, 2017.
- **Need more information**: 16% in June, 2001, increasing to 55% in July, 2011, and then decreasing to 5% in April, 2017.
- **Cannot comment**: 19% in March, 2003, increasing to 27% in September, 2014, and then decreasing to 3% in April, 2017.
- **Never heard of EGCUT**: 16% in March, 2004, increasing to 22% in July, 2005, and then decreasing to 6% in April, 2017.
- **Wait-and-see-attitude**: 18% in September, 2002, increasing to 28% in April, 2008, and then decreasing to 1% in April, 2017.
- **Against it**: 1% in September, 2002, increasing to 3% in April, 2017.

**Digital Health Future (Aaviksoo)**
What does the future bring?
Future healthcare and care is strongly influenced by digital approach.
Estonian EU Presidency on digital health
Legal conundrum

Does data protection prevent personal data use for sophisticated IT-services in health and social care?
EU General Data Protection Regulation facilitates **better use** of personal data.

Reform of EU data protection rules

The new Regulation will also guarantee **free and easy access** to your personal data, making it **easier** for you to see what personal information is held about you by companies and public authorities, and make it easier for you to **transfer your personal data** between service providers – the so-called principle of ‘data portability’.

Privacy means that **personal data** should not be secured from being used, but to be used **securely**.
EU has already several important legal acts to support eGovernment across all MS, but these must be implemented for the benefit of all European citizens fully making use of the opportunities and advantages of the single market.
Free movement of data in healthcare makes difference through hitting the triple aim

1. **Increased access and safety in healthcare** can be achieved through empowered citizens and adequate data availability at the point of care.

2. **Sustainability of health systems** will be supported by value-based approach.

3. **New economic opportunities**, jobs and investment will be created using data-driven health care innovation.

Health data should be used securely, not to be secured from being used.
Citizens truly in control of their health and the data + system that support it

Health care as an asset not cost item for public budgets
Access and control of health data becomes crucial

Fundamental principle:
Health data belongs to the data subject

1. Access to my data
2. Control of my data use
3. Delegation of my access and control rights
4. Individual monitoring of requests for my data
A precise and learning system with constant clinical/care knowledge creation

**Care flow**

Health & social service encounters:
(health, treatment & care data, molecular data, sequencing/genotyping other individual data)

Individualized data in Health Information System

Care decision support algorithms & engine

**Knowledge flow**

Pseudonymization

Anonymized data warehouse for R&D

Digital Health Future (Aaviksoo)
Tallinn 2017
high level eHealth conference
„Health in the digital society
Digital society for health”

**October 16–18, 2017 | Tallinn, Estonia**

- Real-world experience of the benefits and value of digital tools for health, care and prosperity of the societies

- State-of-art and practical solutions for advancing, implementing and funding health into digital society

Digital Health Society

- Tallinn Declaration on eHealth
- Task Forces for action commitments

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Digital Health Society - building future with EVERYBODY in the same room.

- Digital Health Society Tallinn Declaration
- Task Forces to deliver action commitments
- Sustained energy to support large-scale digital health implementation in Europe
estonishing –
dare to fulfill your desires safely!

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