TRANSFORMING HEALTH SYSTEM WITH IT

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To be discussed

1. From data accumulation to information processing

2. From technology adoption to service redesign

3. The cornerstone for future healthcare
From data accumulation to information processing
Almost everyone has arrived to eSociety!
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)

✓ /.../
Digital data availability drives the use

Growth of Estonian Health Information System Usage 2011-2014

- Users among health care professionals +90%
- Users among citizens +100%
- No of services available +275%
- Data queries by professionals +450%
- Data queries by citizens +400%

Queries by Citizens

Queries by HC professionals
Vision since 2005...

- **Shared Care**
  - Simulation
  - Environment Tracking
  - Behaviour Tracking
  - Online Intervention
  - Lifestyle Value Added

- **Decision Support**
  - Personal Guidelines
  - Care Paths
  - Service Brokering
  - Integrated Statistics
  - Social Networking

- **Information Exchange**
  - Central EHR
  - Health Portal
  - Registries Integration
  - Standardization

- **Local EHRs**
  - Digital Claims & Reimbursement

Time:
- 1992
- 2010
- 2015
- 2020

Impact
Key strategic success factors

(1) Universal mandatory digital data capture by all care providers

(2) Universal mandatory secure data exchange platform (“X-road” for everybody: all sectors and databases, private & public)

(3) Data exchange requirement from day one

(4) Clear and robust legal framework

(5) Societal trust towards (health) data exchange
From technology adoption to service redesign
CASE 1: ePrescription - very fast system-wide adoption of e-services

E- Prescription in Estonia:
Any doctor can prescribe to any patient, who can buy the medicine in any pharmacy.

80% of electronic prescribing achieved within 9 months

- ePrescriptions ordered
- ePrescriptions dispensed
Inspiration from Mayo Clinic: Well-designed eServices are loved by everyone

98% of patients with mean age 68y used actively patient educational tool with iPad after heart surgery

CASE 2: Digital Health Certificate - integrating services beyond health system

- Health Certificates exchanged digitally between issuing physician and Road Administration
- Pilot start in July 2014
- Digital certificates outnumbered paper-based certificates in 6 months
- Mandatory digital processing in 9 months

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The cornerstone for future healthcare
Strategic transformation goals in Estonia’s eHealth Strategy for 2015-2020*

Better information - more health!

1. Citizen-centered & **Personalized medicine**
2. Holistic case management and **integrated health & social service network**
3. **Quality & outcome based** service and health policy management
4. **Teleservices** & increased service efficiency
5. Data capture and **information infrastructure** for clinical services, R&D, economic development

*draft, to be adopted by November 2015
Personalized Medicine Pilot Project

An example of the impact of e-health in one strategic focus area

- **Genome Bank (Est 2001)**
  - 52,000 donors (5% of the population)

- Digital **health data** from 5 sources (>10y history)

- International **investments** for personalized medicine

Government decision for Nationwide Personalized Medicine Pilot Project in 2015-2018 (Dec ’14)

- personalized services and stratified health system planning
- growth-factor for healthcare R&D and business development

**Internationally open R&D and collaboration platform**

**Rapid clinical application** of personalized medicine approach and decision-support tools

**Regional Personalized Medicine centre of excellence**

**International business collaboration**
The time of digital health has only begun…
THANK YOU

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