

# DigiHealth Hub

## Digital and data skills development

SAPHIRe - Making data usable: regional considerations, best practices and examples, 26.11.2020

**Satu Väinämö**

Development Manager, DigiHealth Hub and ecosystem collaboration  
Faculty of Medicine, University of Oulu

**Maritta Perälä-Heape, PhD**

Professor of practice, University of Oulu, Faculty of Medicine,  
Director, Center for health and technology,  
R&D&I management, OuluHealth ecosystem  
OuluHealth program manager



# OULUHEALTH ECOSYSTEM

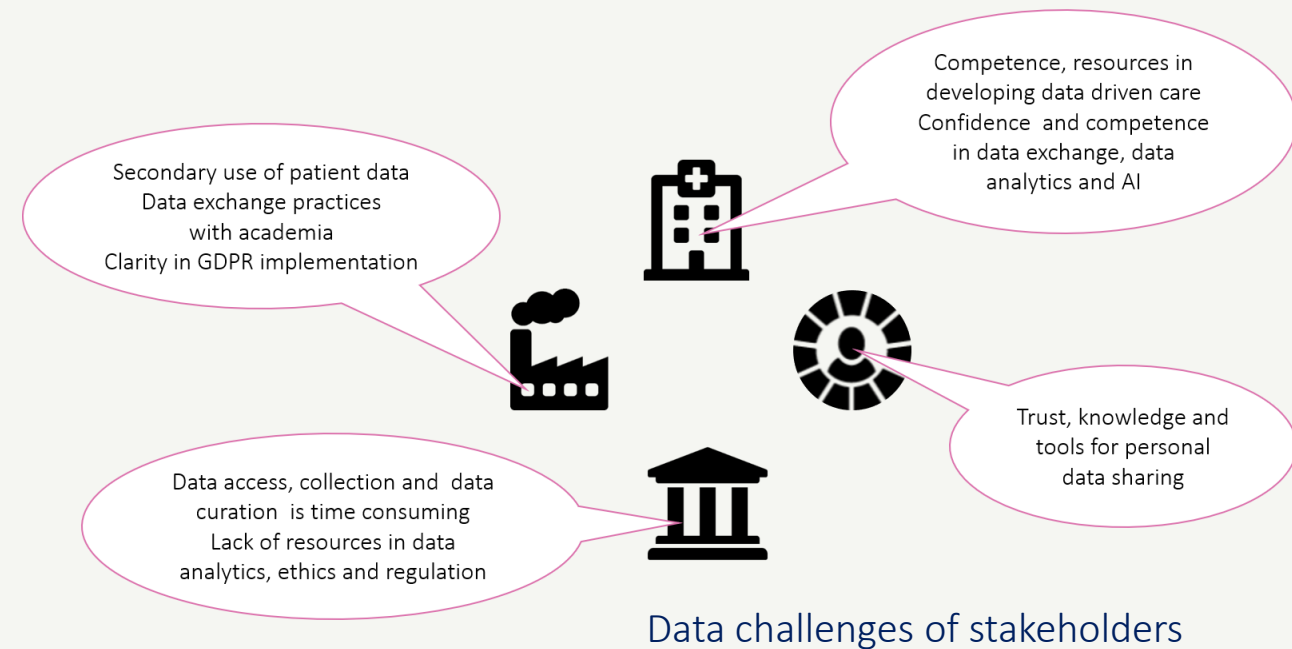
- Accelerates the implementation of health innovations, boosts the health-tech business and creates better solutions for the benefit of citizens
- The main stakeholders are from academia, the public sector, and the private sector
- Activities are collaborative
  - business development
  - testing and piloting
  - research and innovation
  - outreaching activities



New technologies are changing the healthcare by enabling streamlining the services, enhancing personal care and restraining the continuous growth of healthcare costs.

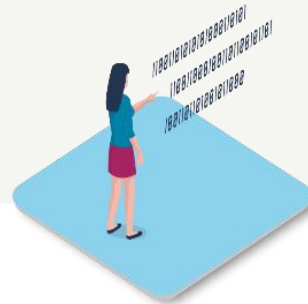
However there is a need

- to increase the expertise and the capability in the health data management and data modelling
- to investigate the operating models in data sharing and knowledge transfer between higher education, research, and businesses
- to build competencies in the start-up and SME ecosystem to use data analytics and AI tools in the data driven economy



# DIGIHEALTH HUB

Is a focal point of support for innovation and research in the fields of



**Health data practices and competences in analytics (incl. AI) for the data driven health and wellbeing innovations**  
Led by prof Perälä-Heape



**Deployment and assessing digital health services (mHealth, Artificial Intelligence, and Robotics)**  
Led by prof Jarmo Reponen



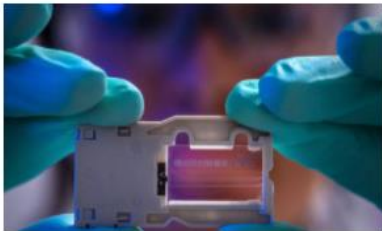
**Ecosystem collaboration and strategic partnerships**  
Led by Satu Väinämö



# TOOLS AND GUIDANCE FOR HEALTH DATA EXPLOITATION

## Health Data Guide

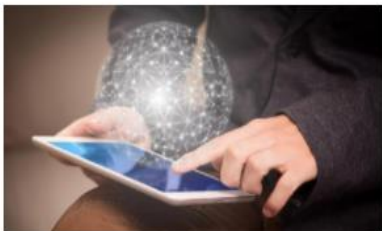
This guide is designed to provide practical information on healthcare data and analytics for researchers and companies alike. Focus is in the context of machine learning and artificial intelligence, which require effective handling of big data from multiple data sources.



Sources of Health Data



Data Preprocessing

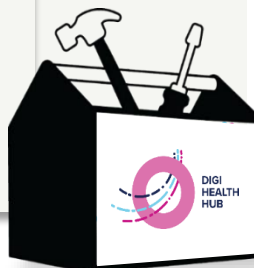
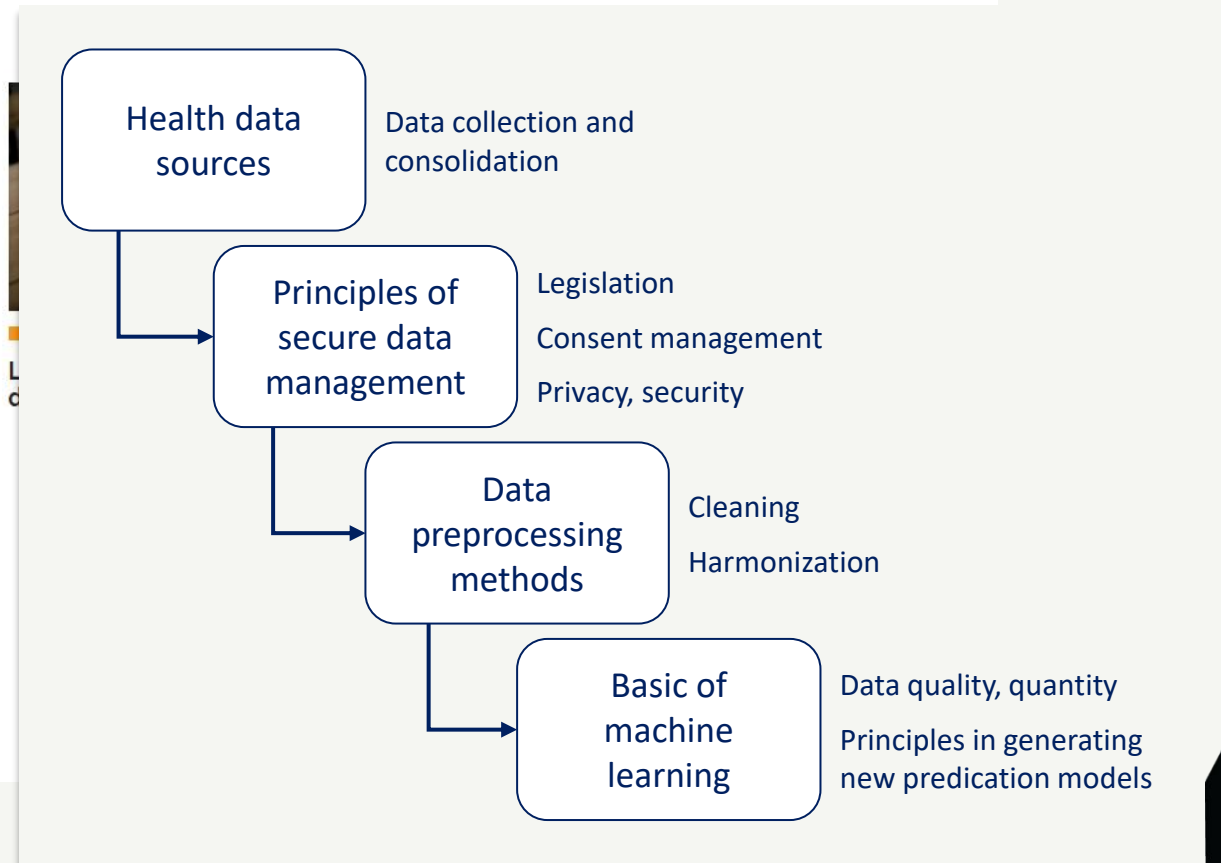


Basics of machine learning



Secure data management

<https://www oulu.fi/cht/digihealthhub/healthdataguide>



# TOOLS AND GUIDANCE FOR HEALTH DATA EXPLOITATION

## Health data assessment (HDA)

- A **checklist** for assessing the quality, quantity, and usability of the (health) data for research and business.
- It goes through the most critical aspects of **accessing data, data quality, and reusability**.

### **Health Data Assessment** Checklist for research and business



#### Getting Started

##### 1. Create data management plan.

See [instructions by the Academy of Finland](#) for research projects. In business context, create a **data strategy plan** which involves business goals. For introduction, see more [here](#).

##### a. Plan what kind of data is needed and how it can be collected or retrieved.

Plan what kind of variables are needed to answer your questions and check if you can use existing datasets. Consult a domain expert and get familiar with previous studies.

##### b. Estimate how much data is needed to complete your project.

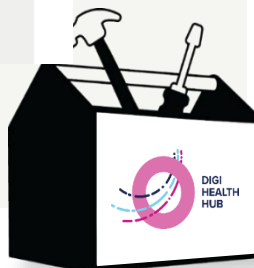
Consult a statistician or a data analyst to estimate the needed dataset size. If you want to use a machine learning approach, you generally need much more data than for a statistical approach. *Template for assessing the amount of data coming soon.*

##### c. Check if you can exploit already existing data, such as open access datasets.

See more about accessibility to health datasets in the [Health data guide](#).

##### d. Figure out what is your role in data management (e.g. data owner or data processor).

<https://www oulu.fi/cht/digihealthhub/healthdataassessment>



# NATIONAL HEALTH DATA ANALYTICS NETWORK

within The Well-being and Health Sector's Artificial Intelligence and Robotics Programme (Hyteairo)

## OBJECTIVES

- Awareness raising by gathering existing best practices
  - Webinars, studies, surveys
- Competence building towards AI-assisted knowledge management and predictive, data-based service models
  - Building network partnerships
  - Peer learning methods

## FOCUS

- To accelerate secondary use of health data in research and development focusing on exploitation of AI



The banner features the AIRO logo on the left, a robot character in the center, and a list of focus areas on the right. Below the banner is a row of partner logos.

**WELL-BEING AND HEALTH**  
**AIRO**  
ARTIFICIAL INTELLIGENCE AND ROBOTICS -programme  
#hyteairo

- Living at home
- Care and logistics in the hospital environment
- Pharmacotherapy and pharmaceutical service
- Well-being coaching and rehabilitation
- Analytics

**More info at**  
[www.thl.fi/hyteairo](http://www.thl.fi/hyteairo)

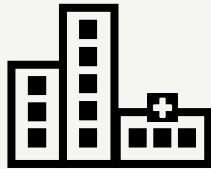
thl | OULUN YLIOPISTO | DIGI HEALTH HUB | VTT | Kela | A! Aalto-yhteisö | FCAI | FINDATA | Metropolia | DigiFinland | ksshp

# AGENDAS TO BUILD COMPETENCES ON DIGITAL AND DATA SKILLS





# THE ROLE OF REGIONAL ACTORS IN MAKING HEALTH DATA (MORE) USABLE



## City of Oulu

Open access to data  
Creation of regional data strategy  
Local MyData Hub



## University of Oulu

Supportive data services  
Best practices  
Guidance on regulatory and data sharing contracts  
Access to scientific knowledge, etc.  
Northern Finland Birth cohorts' services



## University hospital

Future social and health care program and data governance models for the smart decision systems  
Data lakes  
Biobank services: Biobank Borealis of Northern Finland



## Some topics of interest for possible common initiatives and future projects

- 1) Strong collaborations with other Health DIHs
- 2) Horizon Europe program topics
  - Setting up a European Smart Health Innovation Hub
  - Innovative tools for use and re-use of health data
  - Data-driven decision-support tools for better health and care delivery and policy-making

**Contact:**

Maritta Perälä-Heape,  
maritta.perala-heape(at)oulu.fi  
+358 406734159  
<http://ouluhealth.fi/>  
<https://www.oulu.fi/cht/>

Satu Väinämö,  
Satu.vainamo(at)oulu.fi  
+358 504370978  
<http://ouluhealth.fi/>  
<https://www.oulu.fi/cht/digihealthhub>

