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## Health *research* will be more data intensive



- To improve individual health outcome, detailed knowledge is needed:
  - Genetic and biological mechanisms
  - Effect of combinations of risk factors
  - Tailored prevention/intervention studies
- This requires Big Data:
  - Great detail (genomics, imaging, biomarkers)
  - Multiple sources (biobanks, clinical studies, social-economic surveys, health records, wearables)

## What is Health-RI

- Connecting research facilities and research data in health and disease
- National research infrastructure: “Public utility”
  - BBMRI-NL, ELIXIR-NL, EATRIS-NL
  - NFU, Health~Holland, VSNU
  - DTL, Lygature
  - >30 Dutch research institutes, funds, ...
- Part of the European Open Science Cloud

## Why this public utility?

- Health is more than absence of disease
  - Big Data in Health: combine data from different sources
  - Open Data
- Understanding health & disease starts with fundamental research
  - Healthy ageing, disease processes
  - Results in personalized medicine
- Health-RI will enhance:
  - Translational research
  - Multidisciplinary investigations
  - Multicenter studies

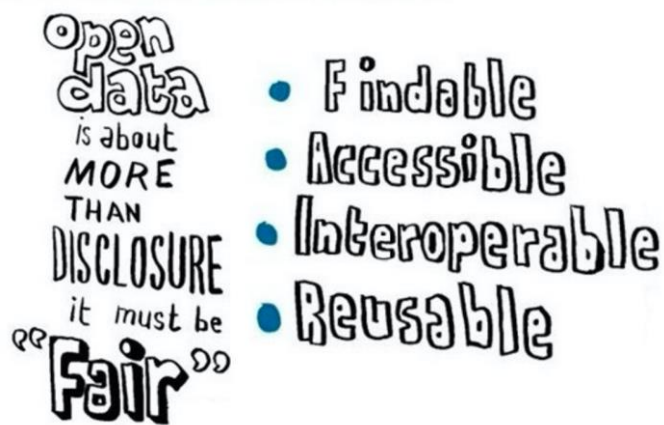


## Layout of Health-RI

- Suite of facilities, tools and data (“app store”)
  - “Linked data” backbone
  - FAIR data
  - Big Data technologies
- Components
  - Biobanks, data collections (human & animals)
  - Imaging centers, image collections
  - Experimental facilities (e.g. microscopy, “omics”, biomarkers)
  - Wearables, eHealth
  - eHumanities
  - ...



## FAIR for data sharing

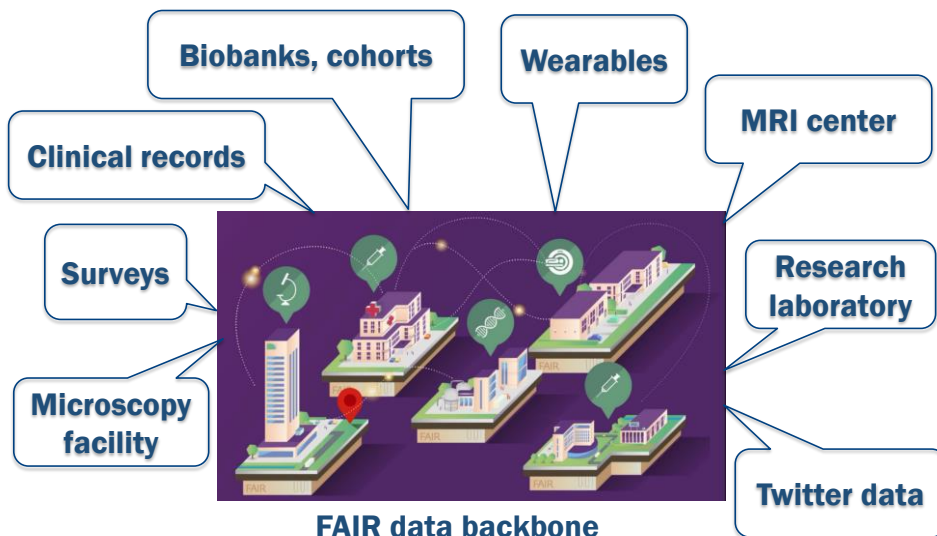


Wilkinson et al. 2016 Nature Scientific Data  
doi:10.1038/sdata.2016.18

## Health-RI in national perspective

- Royal Dutch Academy of Sciences (KNAW)
  - Call for “dreams” 2025
- National Science Agenda (NWA)
  - Priorities based on societal input
- Ministry of Health
  - Health Deal
- NWO roadmap research infrastructures
  - Proposal
- Strategic agenda of universities, UMC's

## Internet of Data



# Thanks for your attention



[www.dtls.nl/Health-RI](http://www.dtls.nl/Health-RI)  
[www.rug.nl/HSRdataservice](http://www.rug.nl/HSRdataservice)  
[ec.europa.eu/research/openscience](http://ec.europa.eu/research/openscience)

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