

# SPHN & PHRT: present state



Strategic Focus Area  
**Personalized Health  
and Related Technologies**

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# Mission

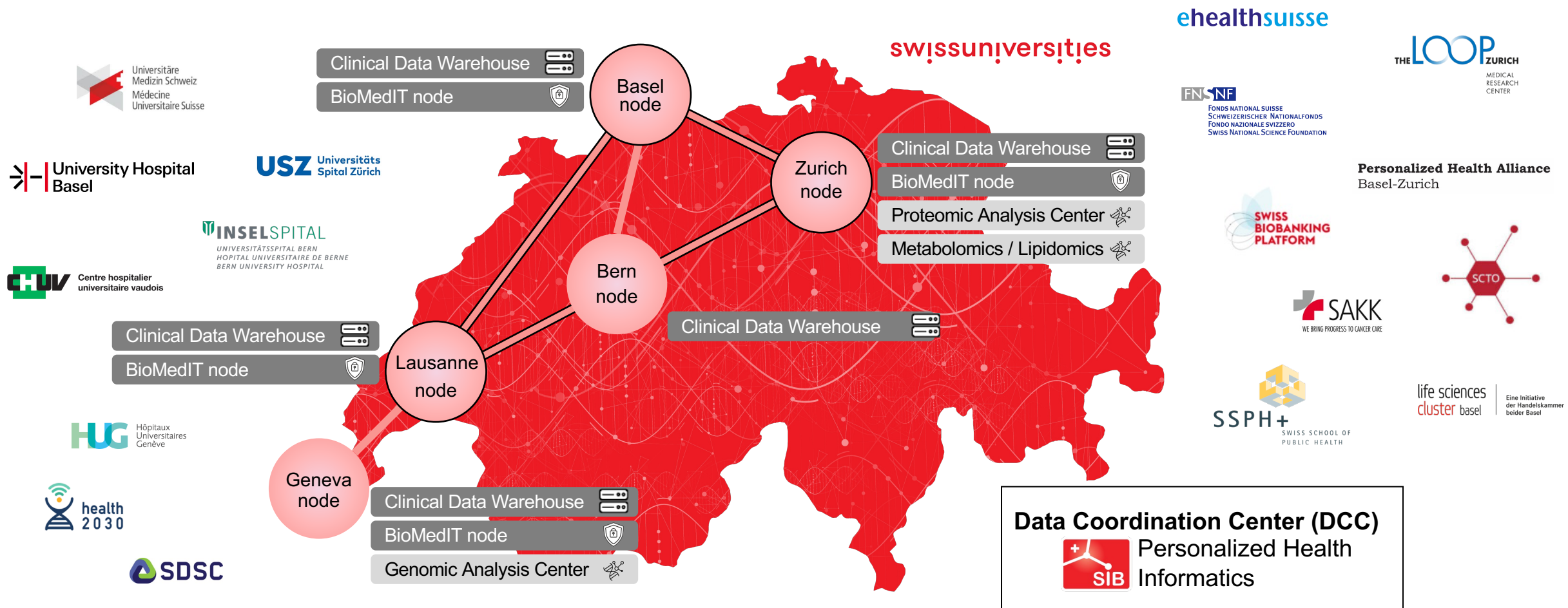
## SPHN:

*Promote the development, implementation, and validation of **coordinated infrastructures** to make **health data interoperable and shareable** for research in Switzerland.*

## PHRT:

*Support innovative research in ETH Domain institutions to improve the quality of personalized health and precision medicine by providing a choice of individual therapeutic strategies for patients, by developing new tools for diagnosis, disease prognosis, treatment prediction and by identifying new drug targets.*

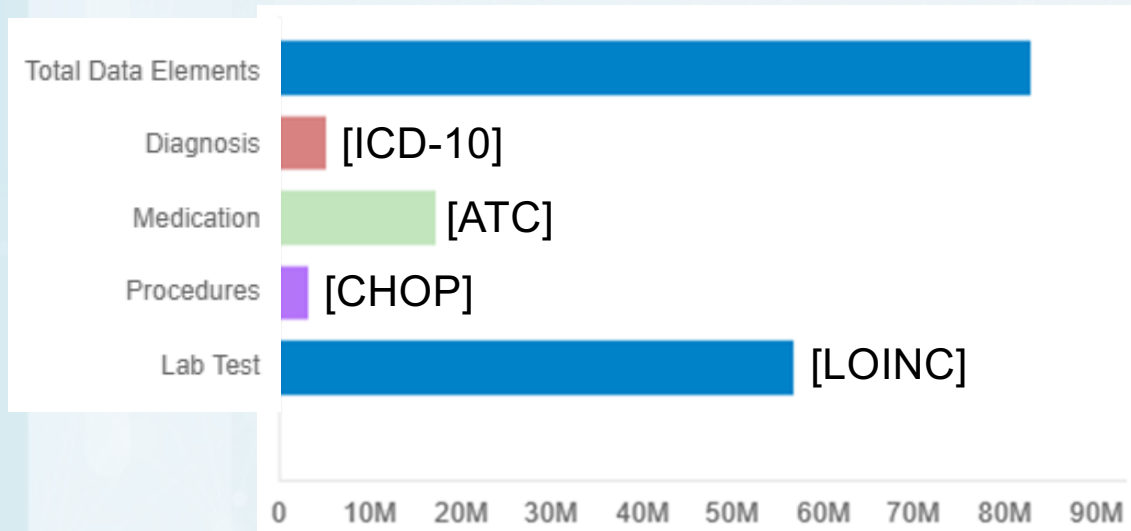
# Collaboration based on shared benefits



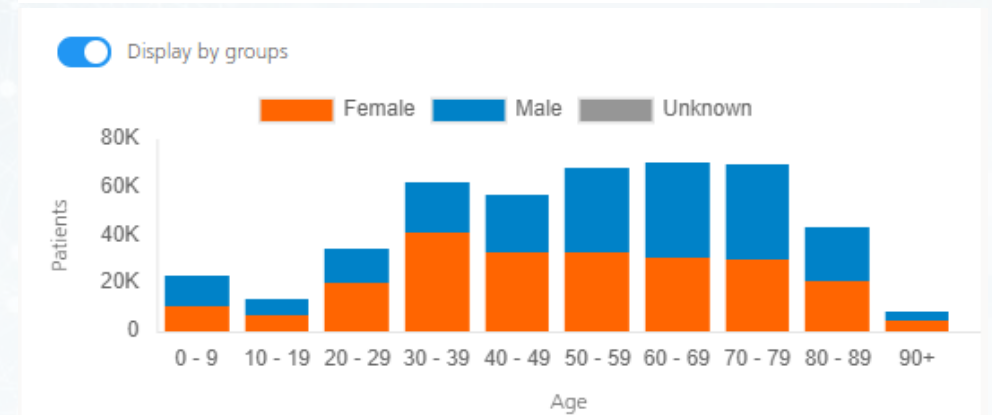
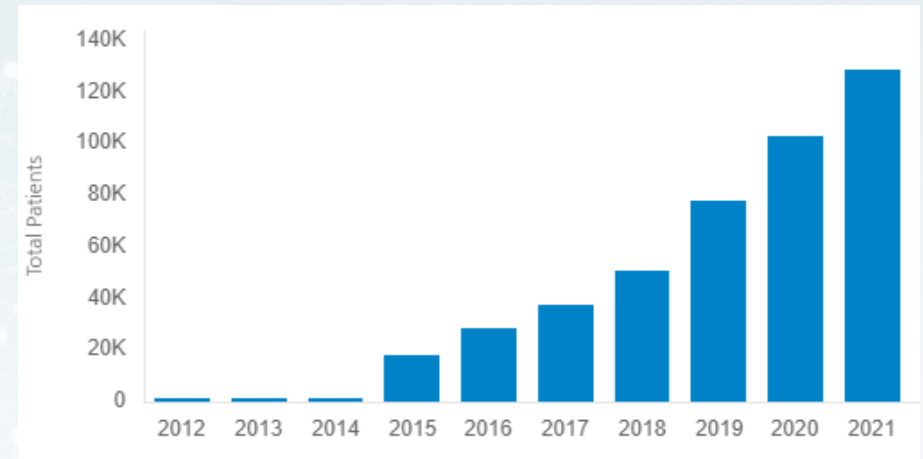
# Feasibility: the SPHN Federated Query System

Data from the Clinical Data Warehouses of all five Swiss university Hospitals

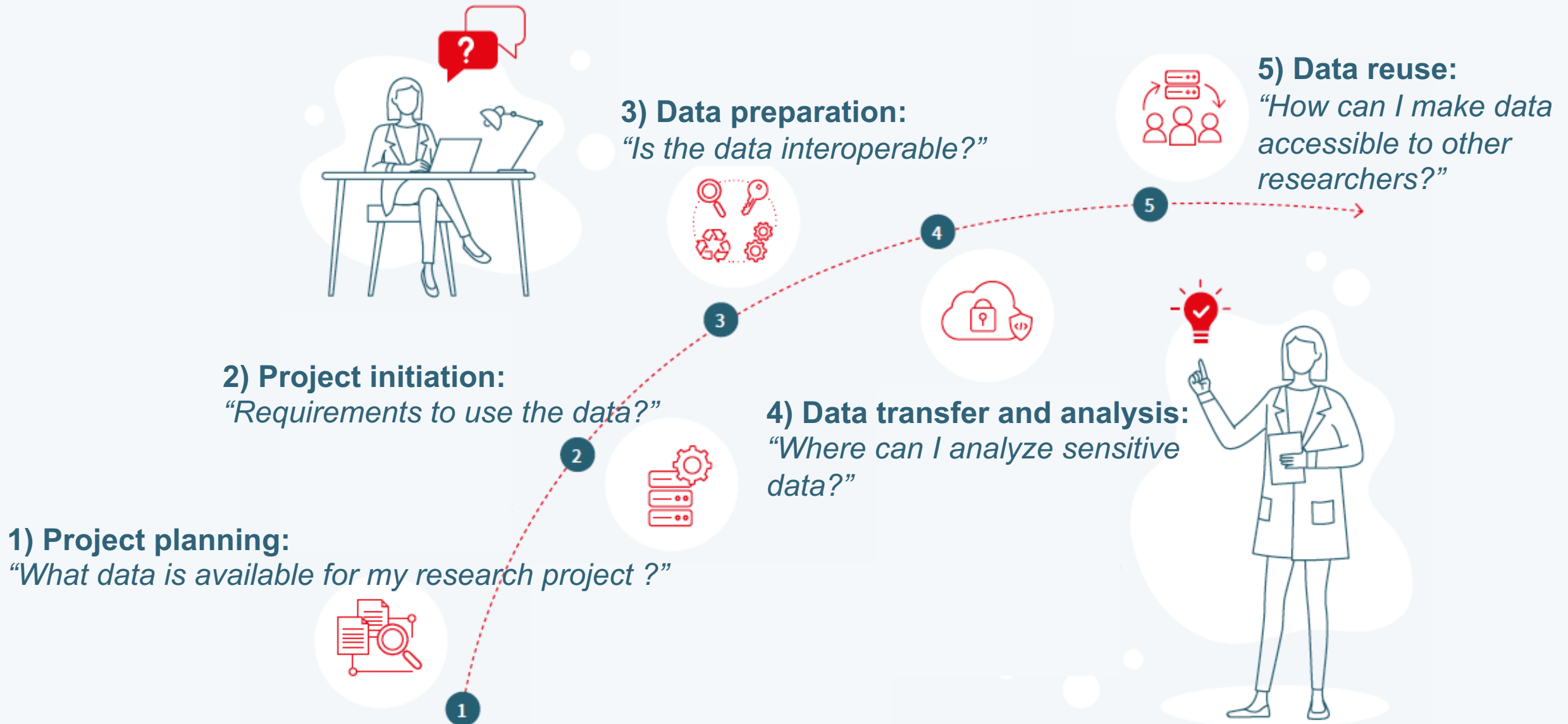
Total >100'000'000 data elements



Total 495'000 patients (with general consent)



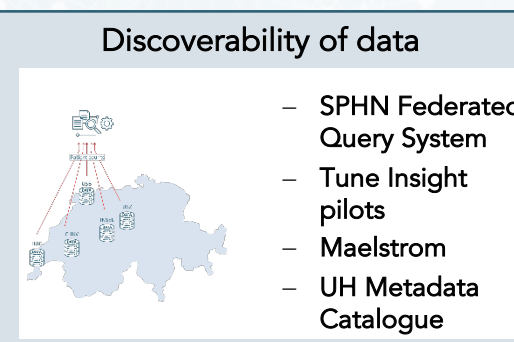
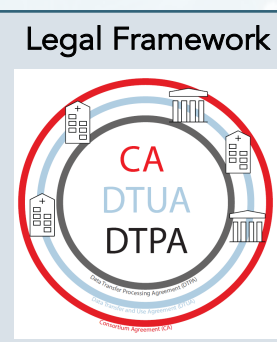
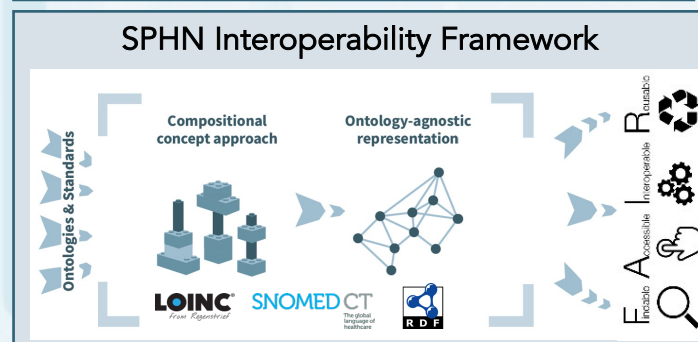
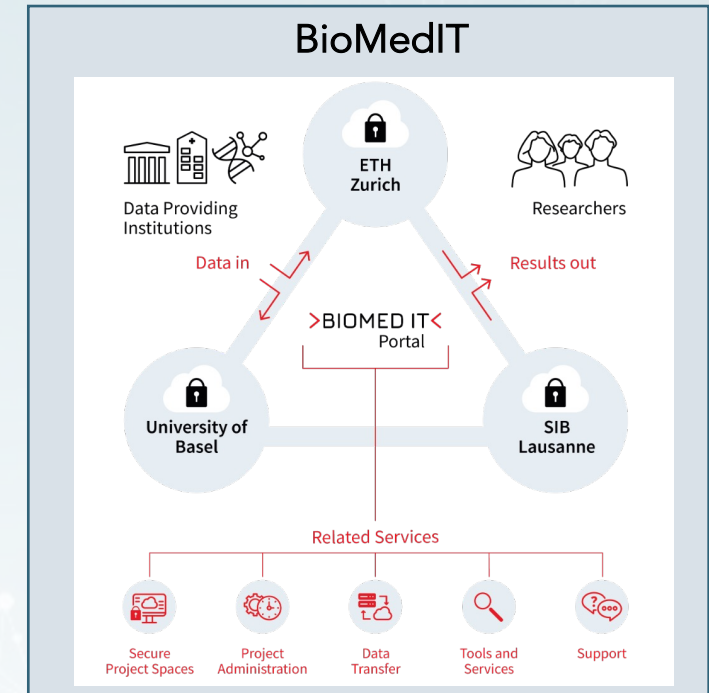
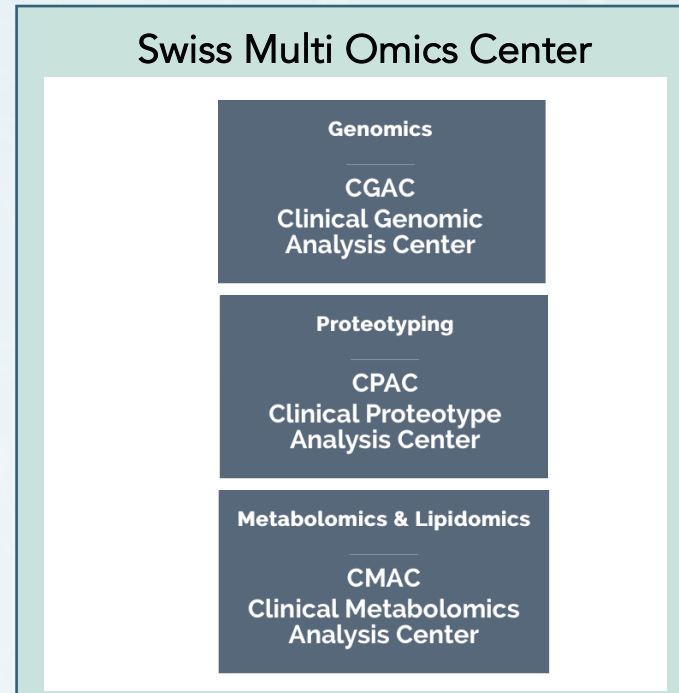
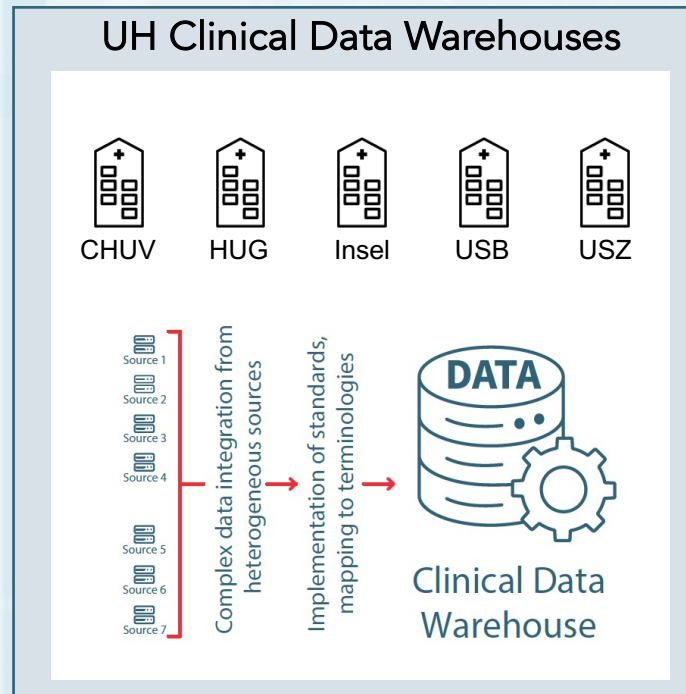
# SPHN-PHRT value chain for researchers



# Data sharing principles

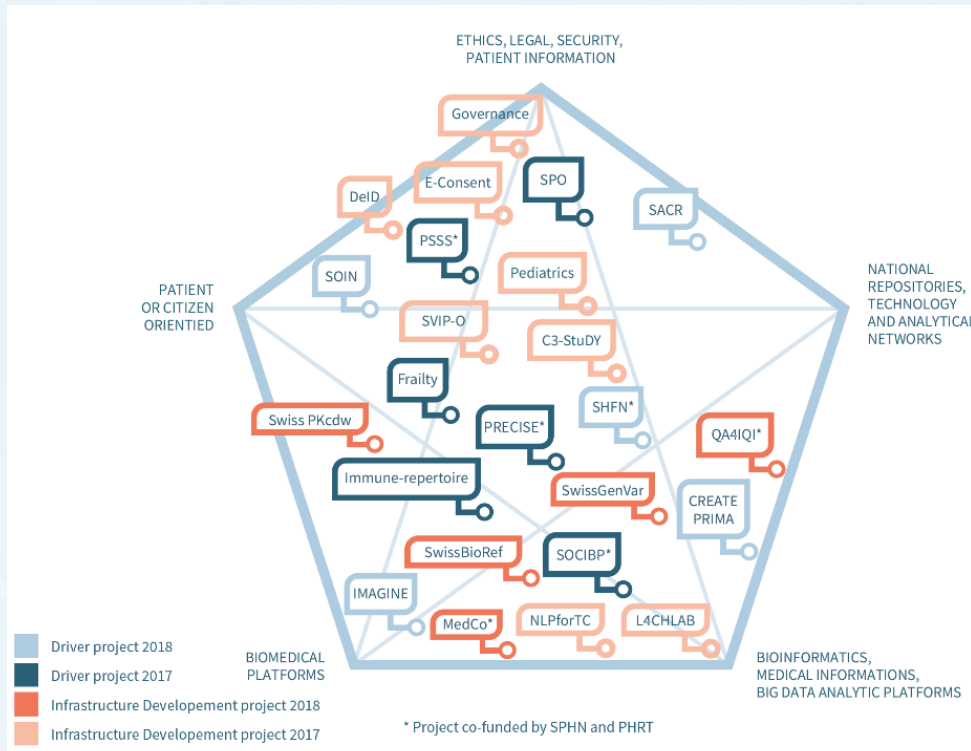
- Data access is typically given on a **project basis, authorized by data subjects/ data providers/ ethics committees**, and ruled by a Data Transfer and Use Agreement (DTUA)
- DTUAs for long-term large-scale projects (e.g., NDS) shall define a **process for data access approved by data providers, research consortia, and ethics committees**
- **Single points of contact** at UH ensure timely processing (30 working days)

# Infrastructures for efficient and secure data processing



# Project funding

SPHN: 24 Driver and Infrastructure Development Projects (6 jointly funded with PHRT)



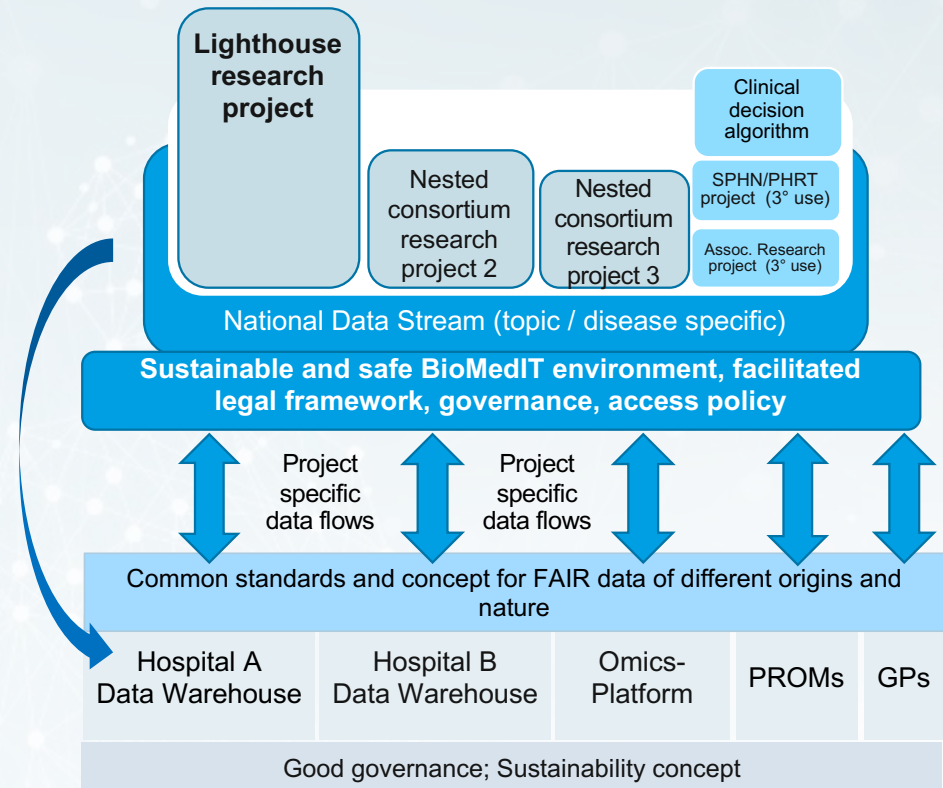
PHRT: 120 projects - from PhD projects to large consortium research projects including technology

2021-2024	2017-2020	Category	Key Features
28	25	Education/fellowships	<ul style="list-style-type: none"> <li>Interdisciplinary doctoral student and postdoctoral fellowships</li> <li><b>next generation of PH researchers</b></li> </ul>
6*	3*	Technology platforms	<ul style="list-style-type: none"> <li>SMOC (genomics, proteomics, metabolomics)</li> <li>Precision Medicine Imaging Hub</li> <li>Computational Health Data Analysis Hub (tbe)</li> <li><b>technology user facility</b></li> </ul>
12	16	Technology translation projects	<ul style="list-style-type: none"> <li>Translate pioneering technologies to "clinical level" of performance</li> <li><b>clinical tool, new technology platform</b></li> </ul>
6	10	PM/H research projects	<ul style="list-style-type: none"> <li>Research projects with high direct clinical relevance</li> <li><b>impact human health</b></li> </ul>
	4	Pioneer multi-omics projects	<ul style="list-style-type: none"> <li>Clinical sample cohorts with a clinical question sequenced on for multi -omics. Interdisciplinary computational data analysis</li> <li><b>application of interdisciplinary and inter-institutional collaboration</b></li> </ul>
4		National Data Streams (NDS)	<ul style="list-style-type: none"> <li>multidisciplinary research structures of clinical and science/engineering partners generating a pipeline clinical data sets incl analysis (w SPHN)</li> <li><b>sustainable cohort research</b></li> </ul>
3		Artificial Intelligence and PM/H	<ul style="list-style-type: none"> <li>Collaborative Data Science and PM/PH projects benefiting from the expertise of the SDSC</li> <li><b>AI and data science heavy health research</b></li> </ul>
<b>56+6*</b>	<b>55+3*</b>		

# SPHN-PHRT National Data Streams (NDS)

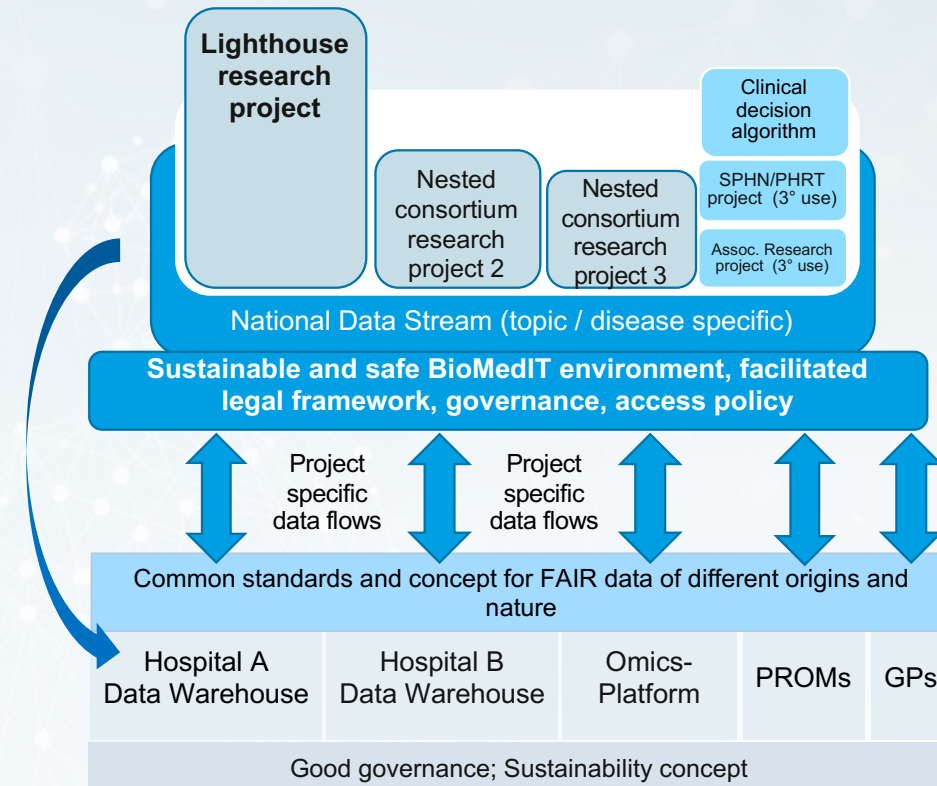
Research Consortia: shared benefit through combined expertises

- Growing, data-rich research platforms for the next generation of researchers and clinicians
- Facilitated processes and data governance
- Cornerstones and main use cases for the SPHN FAIR data ecosystem
- Crystallization points for additional activities

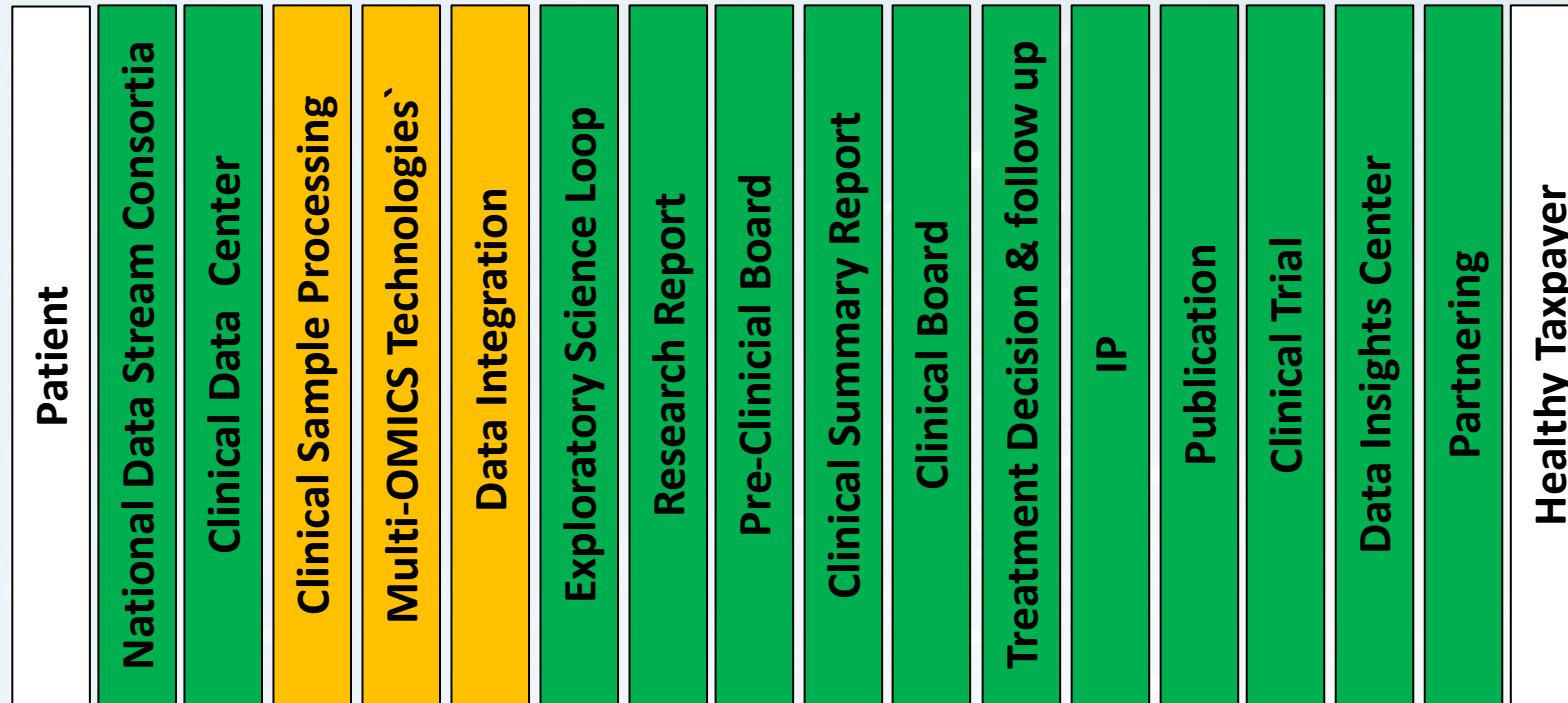


# SPHN-PHRT National Data Streams (NDS)

- 4 National Data Streams
  - Personalized, data-driven prediction and assessment of **infection-related** outcomes in Swiss ICUs (IICU)
  - Swiss Personalized Oncology National Data Stream (SPO-NDS)
  - **Pediatric** personalized research network Switzerland (SwissPedHealth) – a Joint Pediatric National Data Stream
  - LUCID, **Low Value of Care** in Hospitalized Patients, a National Data Stream on Quality of Care in Swiss university hospitals



# Outlook: Turning research into health across Switzerland for every patient



NDS consortia concept enables funding and execution of internationally competitive Swiss data-driven medicine projects across the value chain, across research institutions and across hospitals for the benefit of patients.

# Outlook: The future DCC

*Separation of governance level from the technical-organizational level*

