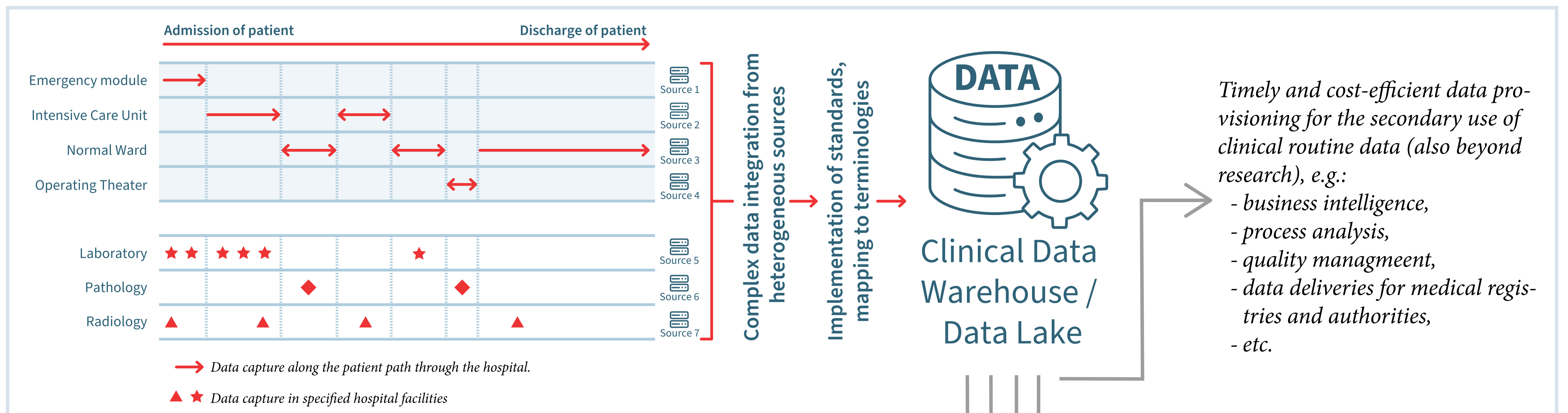


Clinical Data Management at the Swiss University Hospitals

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During healthcare processes, the patient story is captured through multiple processes and applications, harbouring a wealth of data. However, the data is stored in various disparate systems or databases. To leverage the potential of healthcare data for both patient treatment and medical research, it is necessary to obtain an overall view of a patient's data across the various systems, and to ensure the availability of data for repeated and continuous use. With support from SPHN, the five Swiss university hospitals have built up clinical data management systems to ensure sustainable data availability for the various steps along a research project journey (and beyond). A further, laborious work-step in the hospitals concerns the implementation of standardized encoding or mapping to terminologies/ontologies of the data according to the SPHN Interoperability Framework. Thanks to the infrastructure established and the efforts made, it is now possible to exchange and merge interoperable data from different sites.



In close collaboration with the five university hospitals, SPHN establishes a data ecosystem to overcome the hurdles of using data for research purposes, and enables the (re)use and exchange of health data for research.

What is now possible that wasn't previously?

- Gain easy and fast access to an enormous breadth and depth of patient data.
- Make data quality visible and measurable.
- Ensure data availability for a wide variety of purposes also outside of research.
- Standardized de-identification of structured clinical data, images and genomic files.
- Professionalized data delivery pipelines that enable fast export of data in different formats.

SPHN Meta-data Catalogue

A first proxy of an SPHN meta-data catalogue provides researchers with a good overview of what the university hospitals can deliver in a timely and cost-effective manner.

...
FOPH Diagnosis	discharge diagnosis given respecting the rules of FOPH and used for building the DRGs, e.g. K35 ICD10 acute appendicitis
Healthcare Encounter	an interaction between an individual and a specific unit or service of a healthcare provider institute, e.g. emergency, intensive care unit, for the purpose of providing healthcare service(s) or assessing the health status of an individual	SNOMED CT	...
Heart Rate	frequency of the heart beats, i.e. the number of time a heart beats per unit of time	SNOMED CT	...
ICD-O Diagnosis	ICD-O diagnosis	ICD-O3	...
Lab Result	laboratory analysis transmitted	LOINC	...
...



sphn.ch/document/sphn-metadata-catalogue/

DATA REUSE

3 DATA TRANSFER AND PROCESSING

2 PROJECT DATA RECRUITMENT

1 PROJECT PLANNING

SPHN Federated Query Tool

Allows researchers to assess whether and where patients or patient data potentially suitable for a specific research question exists

- > 0.5 million patients (consented data)
- > 100 million data elements



sphn.ch/fqs

Digital data cohorts

National Data Streams

Federated data exploration, e.g.

TUNE INSIGHT