Data-driven medical practices and enhanced patient care through OMOP CDM and federated learning in 9 Belgian hospitals

Title: Federated Health Innovation Network (FHIN).

Background: In collaboration with 9 hospitals, FHIN (Federated Health Innovation Network) was established in Belgium. This initiative aims to create a qualitative data platform adhering to FAIR principles (Findable, Accessible, Interoperable, Reusable). The overarching objective is to facilitate data-driven medical practices and enhance patient care through a robust multi-centric data platform using federated technology to exchange insights.

Result: We equip nine hospitals with a standardized and automated ETL (Extract, Transform, Load) tool, RiaB®, designed to transform EMR (Electronic Medical Record) data into OMOP CDM (Observational Medical Outcomes Partnership Common Data Model) format, alongside benchmarking and training AI models via federated learning.

Methods

Result 1: FHIN data flow

Result 2: FHIN Federated infrastructure with local nodes and central servers

Result 3: Mapping tool Keun®

Conclusion: 9 hospitals align & standardize data flow & tooling in order to collaborate. The goal is to effectively address any research question, starting with lung and prostate demonstrators in a multicenter setting. Our ultimate aim is to integrate these advancements into new decision support tools for healthcare professionals.