

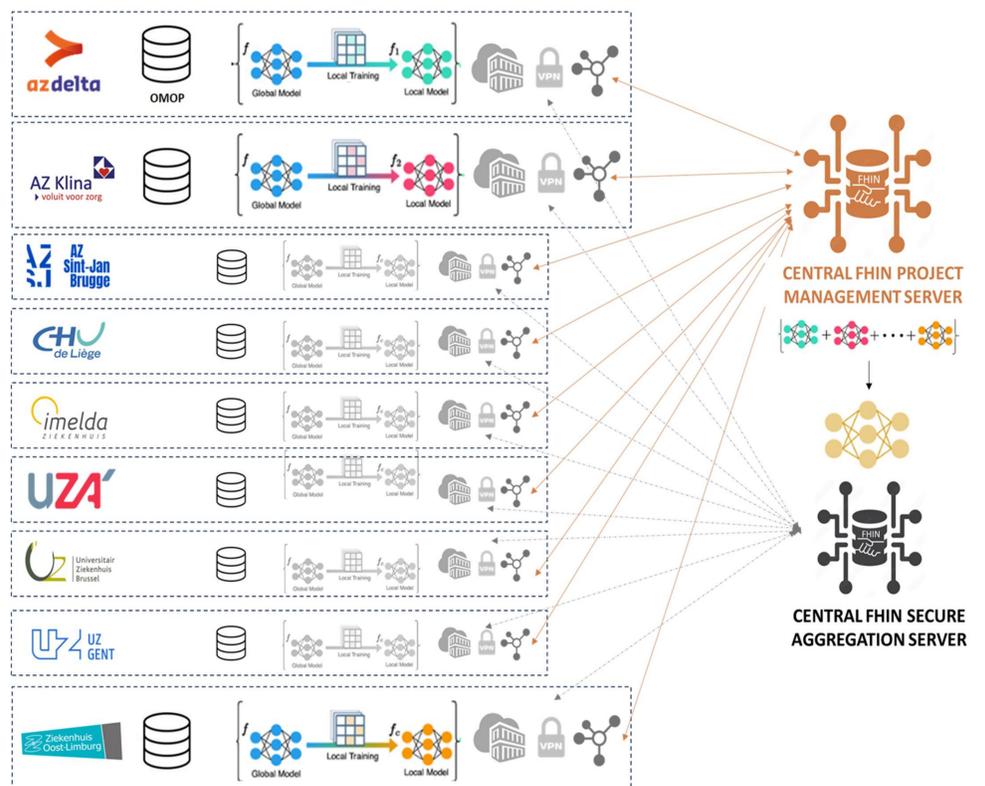
Data-driven medical practices and enhanced patient care through OMOP CDM and federated learning in 9 Belgian hospitals

Title: Federated Health Innovation Network (FHIN).

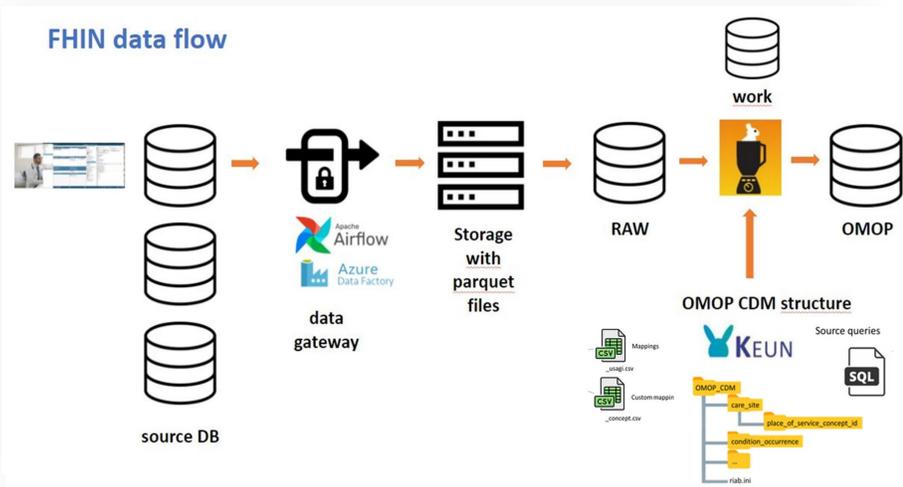
Background: In collaboration with 9 hospitals, FHIN (Federated Health Innovation Network) was established in Belgium. This initiative aims to create a qualitative data platform adhering to FAIR principles (Findable, Accessible, Interoperable, Reusable). The overarching objective is to facilitate data-driven 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 2: FHIN Federated infrastructure with local nodes and central servers



Result 1: FHIN data flow

sourceCode	sourceName	concept	conceptName	mappingStatus	domain	vocabulary
L480_8502002	Heringsolie	300783	Heringsolie (Medicijn) in Bazel	APPROVED	Measurement	ICDNC
L480_8502006	Wolvenbier	3013813	Wolvenbier (Medicijn) in Bazel	APPROVED	Measurement	ICDNC
L480_8502078	Wolvenbier	3008381	Wolvenbier (Medicijn) in Bazel	APPROVED	Measurement	ICDNC
L480_8502013	Heringsolie	3023174	Heringsolie (Medicijn) in Bazel	APPROVED	Measurement	ICDNC
L480_8502071	MCH	3072550	MCH (Basis) (Medicijn) in Bazel	SEMI-APPROVED	Measurement	ICDNC
L480_8502073	MCHC	3028744	MCHC (Medicijn) in Bazel	SEMI-APPROVED	Measurement	ICDNC
L480_8502073	MCH	3023398	MCH (Basis) (Medicijn) in Bazel	SEMI-APPROVED	Measurement	ICDNC
L480_8502086	Overdine	3016862	Overdine (Medicijn) in Bazel	PLANNED	Measurement	ICDNC
L480_8502028	Varium	2148733	Varium (Medicijn) in Bazel	SEMI-APPROVED	Measurement	ICDNC
L480_8502072	Varium	3000285	Varium (Medicijn) in Bazel	SEMI-APPROVED	Measurement	ICDNC
L480_8502089	Wolvenbier	3007481	Wolvenbier (Medicijn) in Bazel	APPROVED	Measurement	ICDNC
L480_8502070	Urea	3034204	Urea (Medicijn) in Bazel	SEMI-APPROVED	Measurement	ICDNC
L480_8502044	Urea	3018186	Urea (Medicijn) in Bazel	APPROVED	Measurement	ICDNC
L480_8502070	Urea	3017732	Urea (Medicijn) in Bazel	APPROVED	Measurement	ICDNC
L480_8502070	Urea	3017176	Urea (Medicijn) in Bazel	APPROVED	Measurement	ICDNC

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.



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