

FH University of Applied Sciences

TECHNIKUM

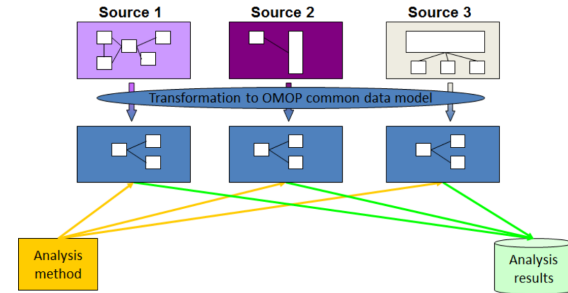
WIEN

FHIR to OMOP or Primary Use to Secondary Use of Data

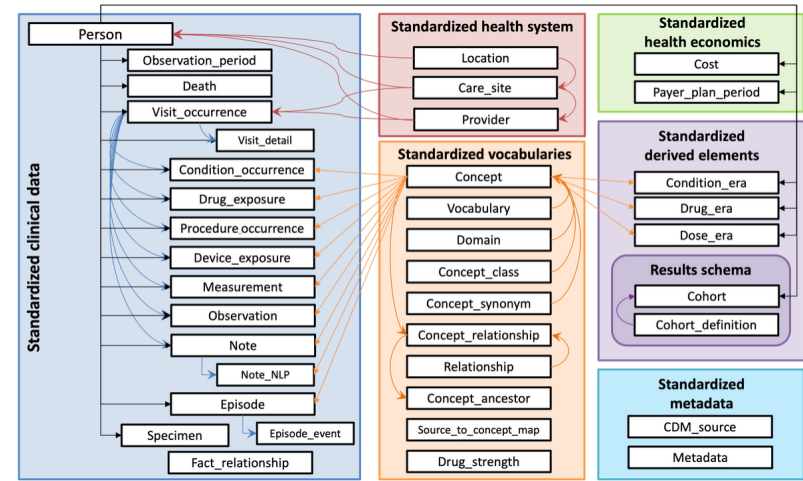
HL7 Jahrestagung 2024 / Matthias Frohner

OMOP – Observational Medical Outcomes Partnership

- Harmonisierung der Repräsentation von medizinischen Daten für Beobachtungsstudien
- Spezifikation eines Datenmodells (CDM) sowie Vereinheitlichung der Terminologie vorhanden
- Pflege des OMOP CDM durch Observational Health Data Sciences and Informatics (OHDSI)



Graphik von <https://www.ohdsi.org/data-standardization/>



Graphik von <https://ohdsi.github.io/CommonDataModel/>

FHIR to OMOP or Primary Use to Secondary Use

- Patientenzentrierter Datenaustausch
 - Primäre Nutzung der Daten (primary use)
 - Basis von MyHealth@EU
- Nutzung dieser Daten für Forschung, Innovation und politische Entscheidungen
 - Secondary use
 - Basis für HealthData@EU

The screenshot shows the FHIR Structure tool interface. On the left, the 'Structure' view displays the 'Observation' resource with its fields: 'subject' (0..1), 'focus' (Σ TU 0..*), 'encounter' (Σ 0..1), 'effective[x]' (Σ 0..1), 'issued' (Σ 0..1), 'performer' (Σ 0..*), and 'value[x]' (Σ C 0..1). A green arrow points from the 'subject' field to the 'person_id' field in the OMOP table. The table lists various OMOP data types such as 'observation_id', 'person_id', 'observation_concept_id', 'observation_date', 'observation_datetime', 'observation_type_concept_id', 'value_as_number', 'value_as_string', 'value_as_concept_id', 'qualifier_concept_id', 'unit_concept_id', 'provider_id', 'visit_occurrence_id', 'visit_detail_id', 'observation_source_value', 'observation_source_concept_id', 'unit_source_value', 'qualifier_source_value', 'value_source_value', 'observation_event_id', and 'obs_event_field_concept_id'.

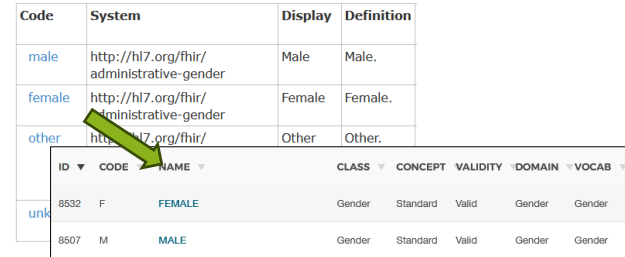
Field Name	OMOP Data Type
observation_id	INT
person_id	INT
observation_concept_id	INT
observation_date	DATE
observation_datetime	DATETIME
observation_type_concept_id	INT
value_as_number	FLOAT
value_as_string	VARCHAR
value_as_concept_id	INT
qualifier_concept_id	INT
unit_concept_id	INT
provider_id	INT
visit_occurrence_id	INT
visit_detail_id	INT
observation_source_value	VARCHAR
observation_source_concept_id	INT
unit_source_value	VARCHAR
qualifier_source_value	VARCHAR
value_source_value	VARCHAR
observation_event_id	INT
obs_event_field_concept_id	INT

FHIR to OMOP or Primary Use to Secondary Use

- Mapping auf struktureller Ebene notwendig
 - FHIR Resources und Elemente → OMOP Tables und Columns
- Mapping auf inhaltlicher/semantischer Ebene notwendig
 - Konzepte, genutzt in FHIR-Implementierungen → OHDSI Vokabular



Name	Flags	Card.	Type
Person		N	DomainResource
gender			
person_id			INT
gender_concept_id			INT



Code	System	Display	Definition
male	http://hl7.org/fhir/administrative-gender	Male	Male.
female	http://hl7.org/fhir/administrative-gender	Female	Female.
other	http://hl7.org/fhir/	Other	Other.

ID	CODE	NAME	CLASS	CONCEPT	VALIDITY	DOMAIN	VOCAB
8532	F	FEMALE	Gender	Standard	Valid	Gender	Gender
8507	M	MALE	Gender	Standard	Valid	Gender	Gender

Kontext

- Repräsentation mittels OMOP und Potential des Mapping von FHIR auf OMOP CDM wird u.a. im Projekt IDERHA (<https://www.iderha.org/>) untersucht.



IDERHA overview

IDERHA (Integration of Heterogeneous Data and Evidence towards Regulatory and HTA Acceptance) is a European public-private partnership launched in April 2023. This pioneering project addresses the obstacles in accessing, integrating and analysing health data to maximize their value for patient care and medical research.

