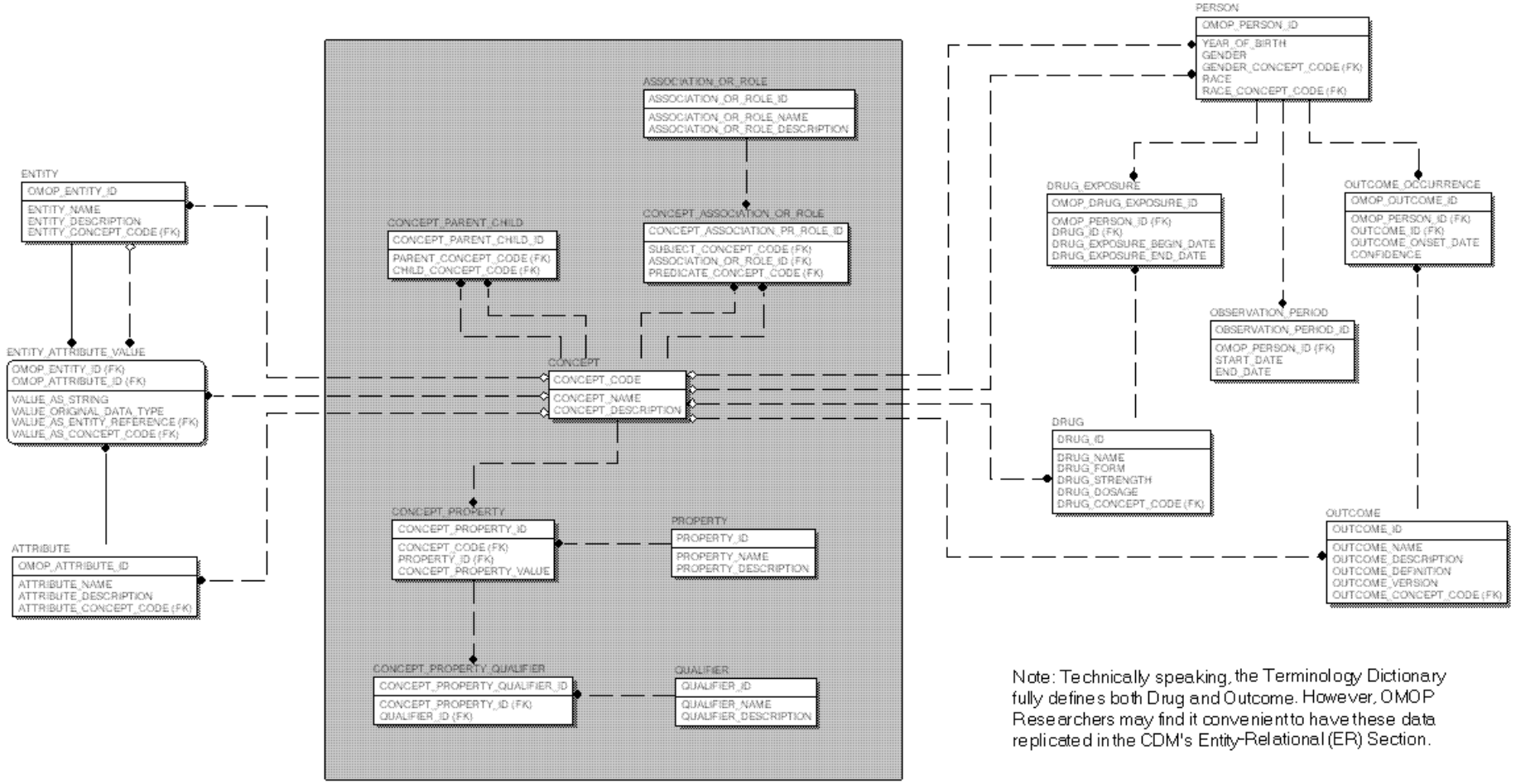
Common Data Model History and Progress

Clair Blacketer

Observational Medical Outcomes Partnership

2009

2014



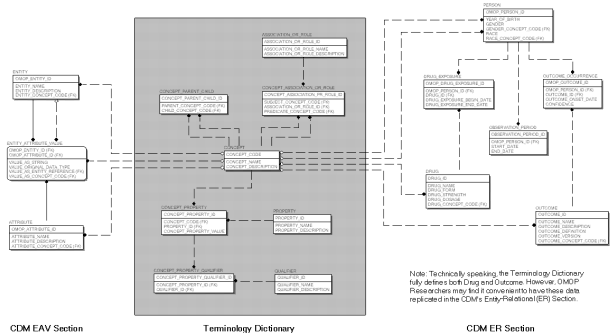
Note: Technically speaking, the Terminology Dictionary fully defines both Drug and Outcome. However, OMOP Researchers may find it convenient to have these data replicated in the CDM's Entity-Relational (ER) Section.

CDM EAV Section

Terminology Dictionary

CDM ER Section

Observational **M**edical **O**utcomes **P**artnership

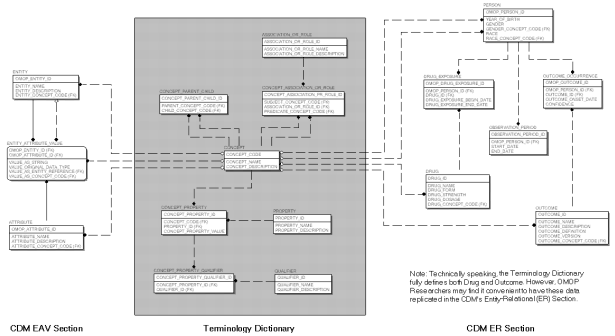


CDM v1

2009

2014

Observational Medical Outcomes Partnership

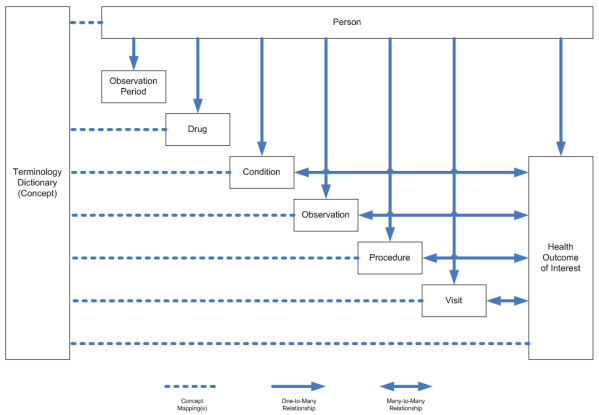


CDM v1

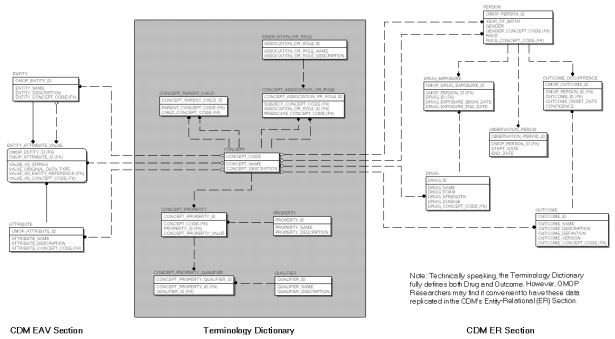
CDM v2

2009

2014



Observational Medical Outcomes Partnership



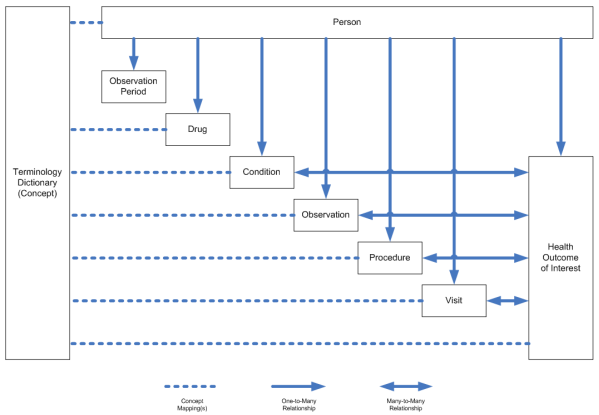
CDM v1

CDM v3

CDM v2

2009

2014



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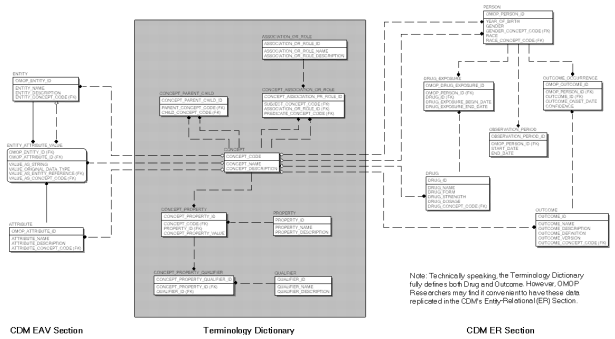
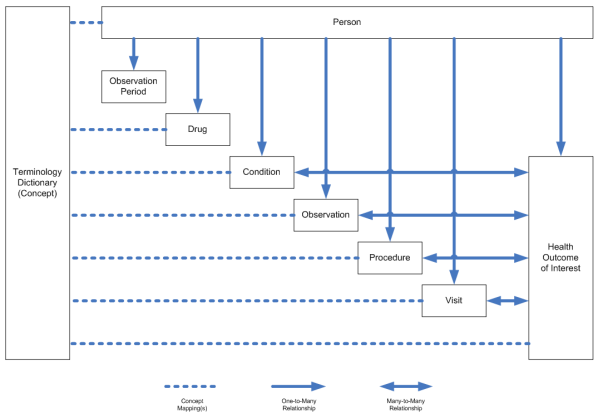


CDM v1

CDM v3

CDM v2



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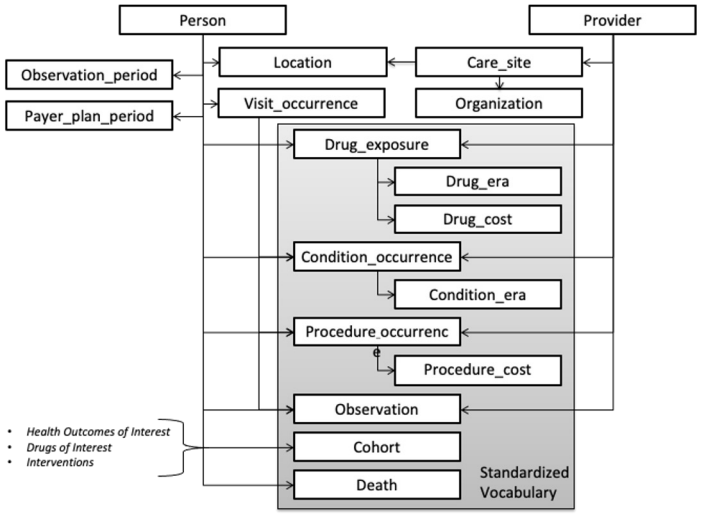
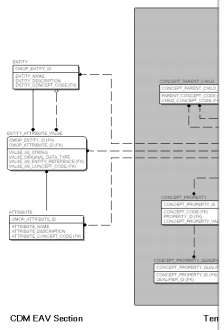


2009

2014

Observational Medical Outcomes Partnership



CD

2009

2014

Standardized clinical data

Person

Observation_period

Specimen

Death

Visit_occurrence

Procedure_occurrence

Drug_exposure

Device_exposure

Condition_occurrence

Measurement

Observation

Fact_relationship

Standardized health system data

Location

Care_site

Provider

Standardized health economics

Payer_plan_period

Cost

Standardized derived elements

Cohort

Cohort_attribute

Condition_era

Drug_era

Dose_era

Standardized meta-data

CDM_source

Standardized vocabularies

Concept

Vocabulary

Domain

Concept_class

Concept_relationship

Relationship

Concept_synonym

Concept_ancestor

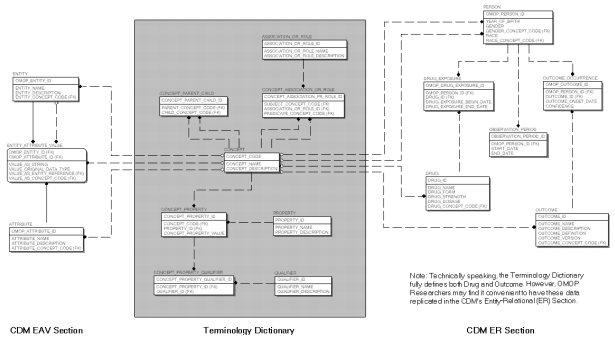
Source_to_concept_map

Drug_strength

Cohort_definition

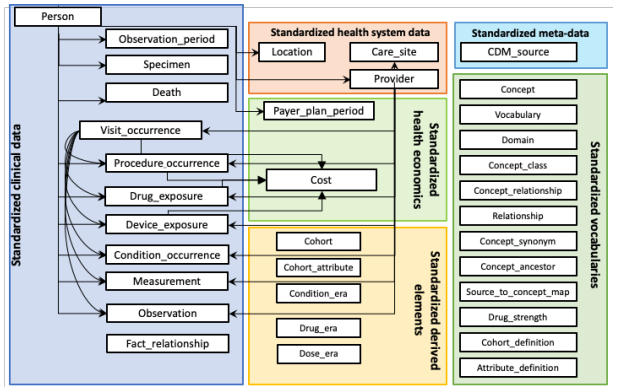
Attribute_definition

Observational Medical Outcomes Partnership



CDM v1

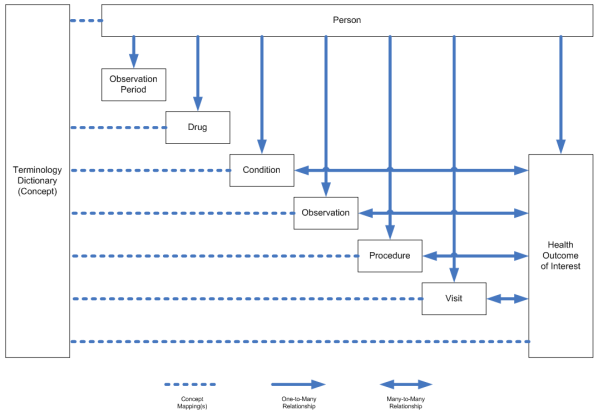
CDM v3



CDM v5.0

CDM v2

2009



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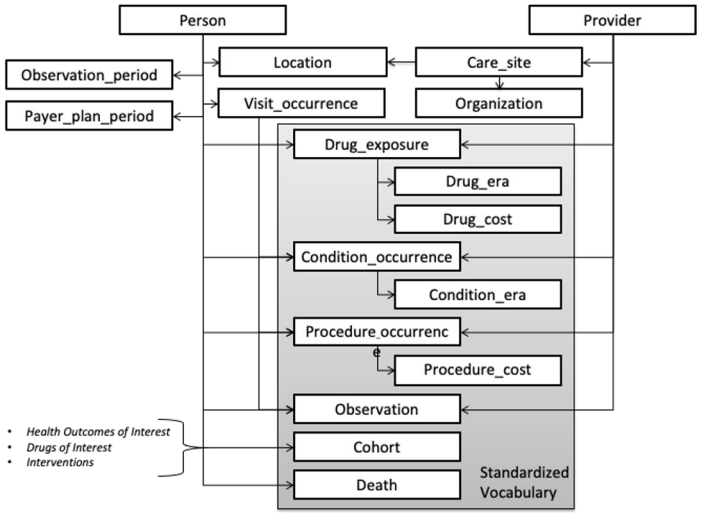
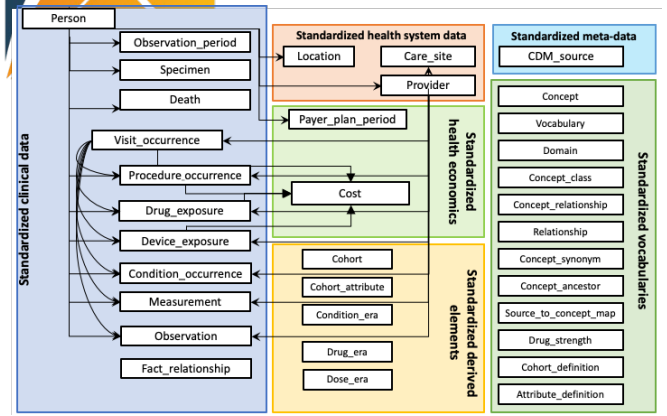
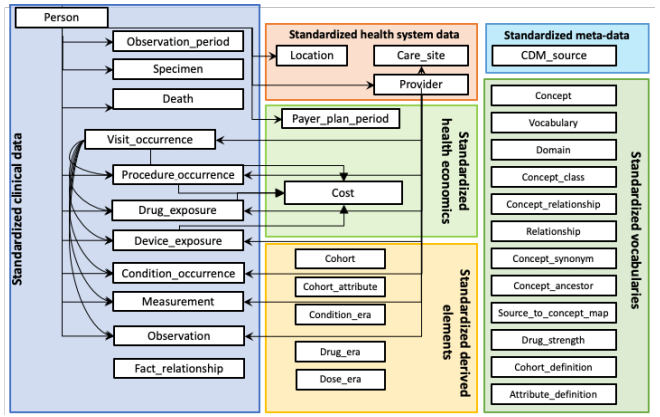


OHDSI



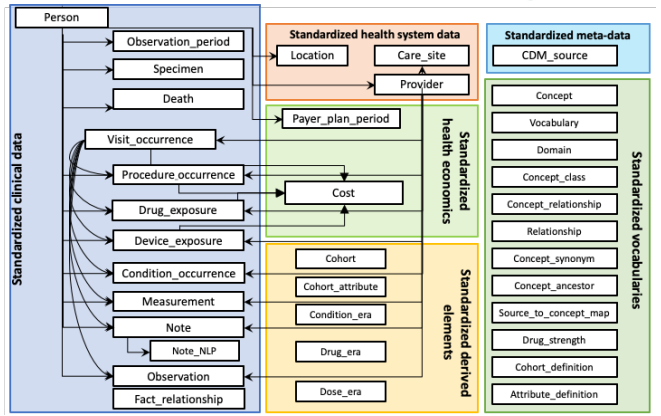
CDM v5.0.1

2016



CDM v5.1

2017



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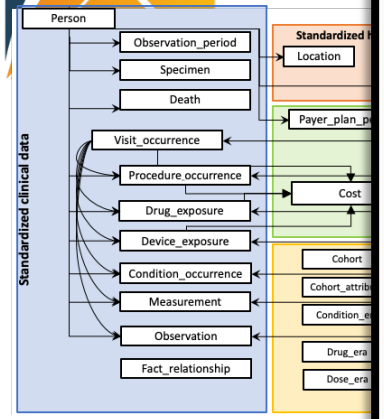
2020



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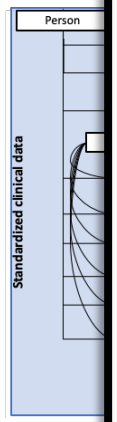

2020

Common Data Model

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  - Changes from Version 4.0
  - Glossary of Terms
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  - MEASUREMENT (V5.1 and up)
  - NOTE
  - NOTE_NLP (V5.2)

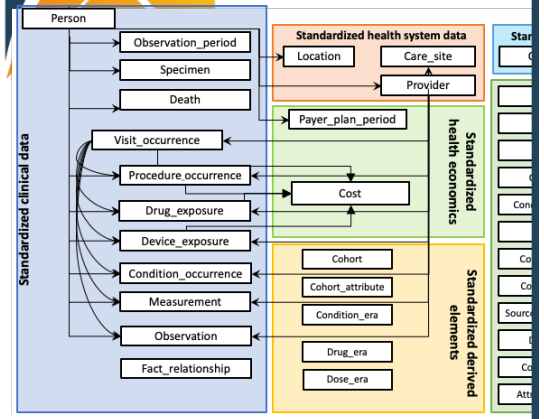
PERSON table

THIS IS OUTDATED. All documentation is now on the github wiki. Please refer there or to the CDM working group for more information

This table changed in version 5.1 of the OMOP CDM. The name of the field time_of_birth was changed to birth_datetime.

The Person Domain contains records that uniquely identify each patient in the source data who is time at-risk to have clinical observations recorded within the source systems.

Field	Required	Type	Description
person_id	Yes	integer	A unique identifier for each person.
gender_concept_id	Yes	integer	A foreign key that refers to an identifier in the CONCEPT table for the unique gender of the person.
year_of_birth	Yes	integer	The year of birth of the person. For data sources with date of birth, the year is extracted. For data sources where the year of birth is not available, the approximate year of birth is derived based on any age group categorization available.
month_of_birth	No	integer	The month of birth of the person. For data sources that provide the precise date of birth, the month is extracted and stored in this field.
day_of_birth	No	integer	The day of the month of birth of the person. For data sources that provide the precise date of birth, the day is extracted and stored in this field.
birth_datetime	No	datetime	The date and time of birth of the person.
race_concept_id	Yes	integer	A foreign key that refers to an identifier in the CONCEPT table for the unique race of the person.
ethnicity_concept_id	Yes	integer	A foreign key that refers to the standard concept identifier in the Standardized Vocabularies for the ethnicity of the person.
location_id	No	integer	A foreign key to the place of residency for the



CDM v5.0.1

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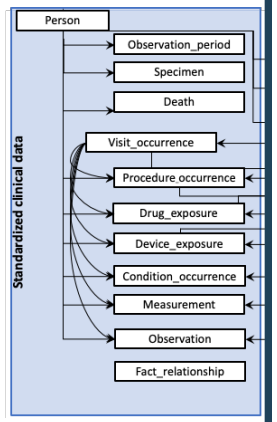

Home

clairblacketer edited this page on Jul 12, 2017 · 26 revisions

OMOP Common Data Model v5.1.1 Specifications

Authors: Christian Reich, Patrick Ryan, Rimma Belenkaya, Karthik Natarajan, Clair Blacketer

12 July 2017

Welcome to the Common Data Model wiki! This wiki houses all of the documentation for the late
changes added with each release. You can find a pdf added to each release with a historical ver
the time of the release. You can navigate the pages using the table of contents below or the link

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Glossary of Terms

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VOCABULARY
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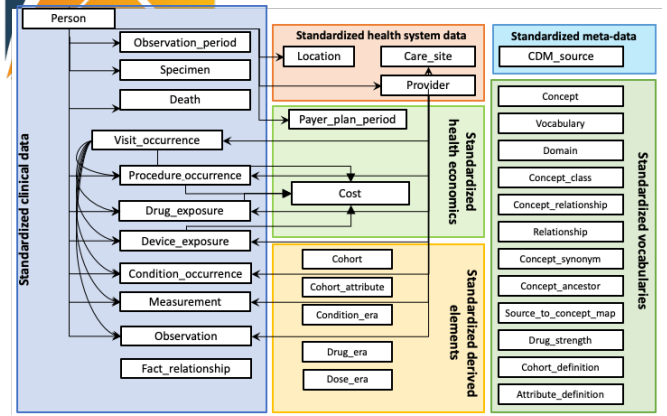
CONCEPT_CLASS

2024

OHDSI



CDM v5.0.1

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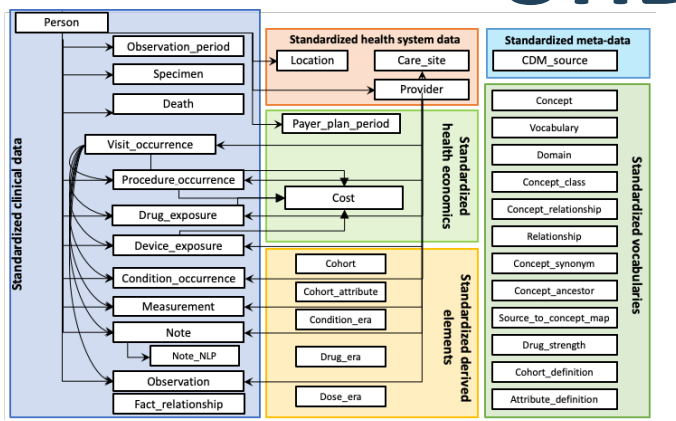

2017

CDM v5.2

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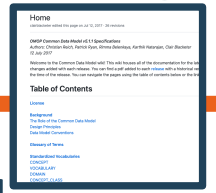

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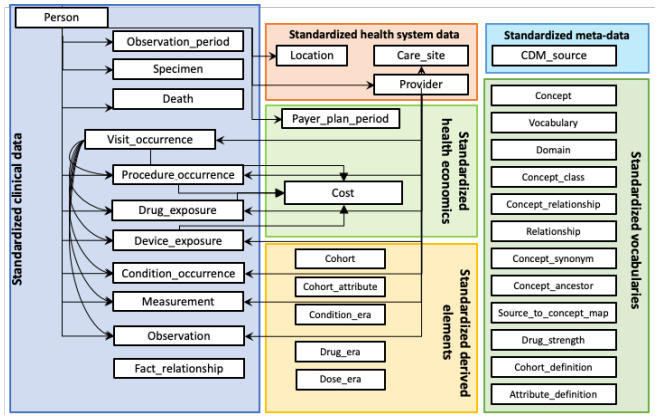

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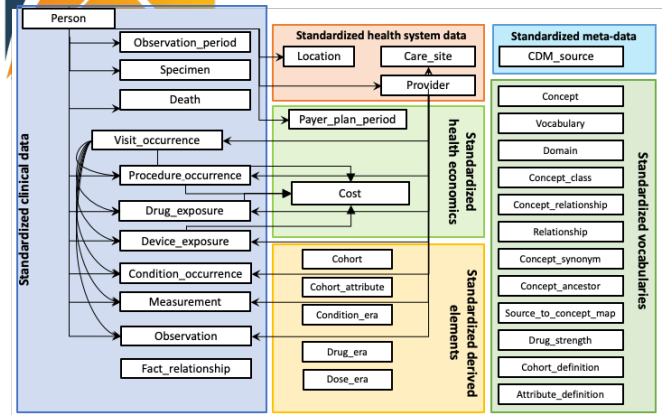

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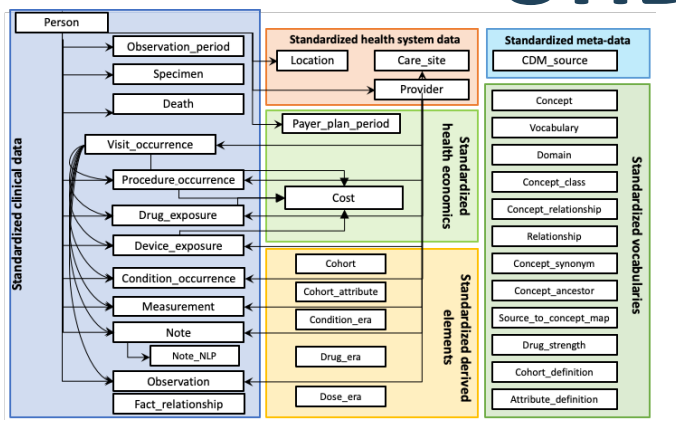

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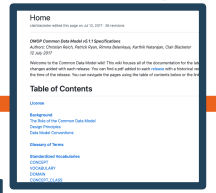

CDM v5.1

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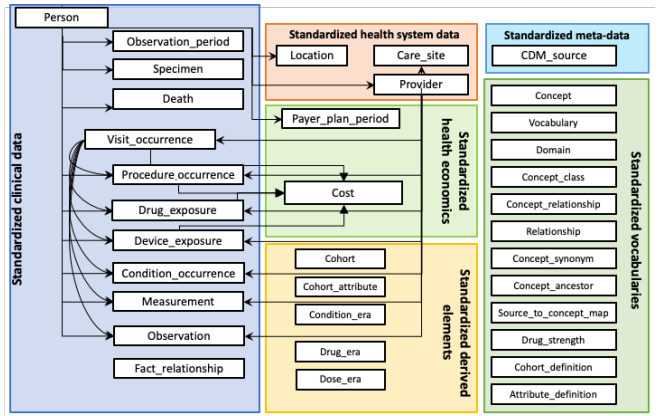
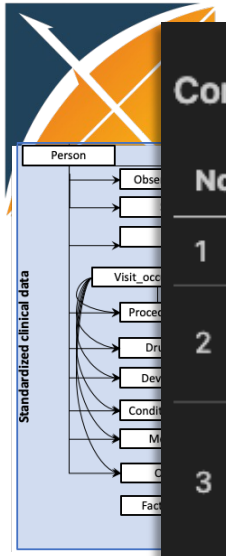


CDM v5.3

2018

2024



CDM

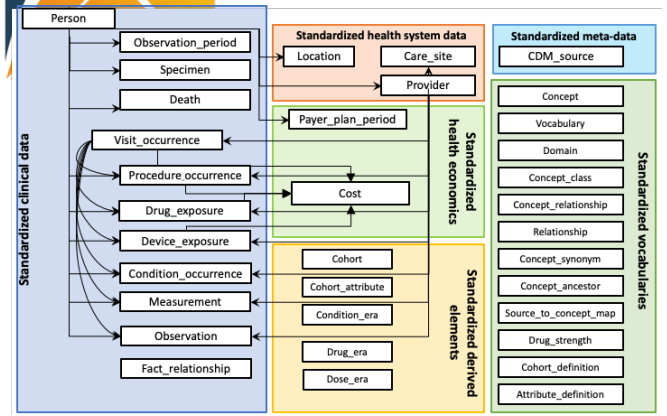
20

024

Conventions

No.	Convention Description
1	All tables representing patient-related Domains have a foreign-key reference to the person_id field in the PERSON table.
2	Each person record has associated demographic attributes which are assumed to be constant for the patient throughout the course of their periods of observation. For example, the location or gender is expected to have a unique value per person, even though in life these data may change over time.
3	The GENDER_CONCEPT_ID should store what is believed to be the biological or sex assigned at birth. If the data set does have gender identification information, this should be stored in the OBSERVATION table (using the gender concepts 8532-Female or 8507-Male in OBSERVATION_CONCEPT_ID)THEMIS issue #32.
4	If we do not know the month or day of birth, we do not guess. A person can exist without a month or day of birth. If a person lacks a birth year that person should be dropped(THEMIS issue #30).
5	Living patients should not have a value in PERSON.DEATH_DATETIME, nor should they have any records relating to death either in the CONDITION_OCCURRENCE or OBSERVATION tables
6	Only one death date per individual can be used. If a patient has clinical activity (e.g. prescriptions filled, labs performed, etc) more than 60+ days after death you may want to drop the death record as it may have been falsely reported. If multiple records of death exist on multiple days you may select the death that you deem most reliable (e.g. death at discharge) or select the latest death date.
7	If multiple death records occur, the date and the person have to be the same, but the cause can be different. Can be reported by different sources as well.
8	If PERSON.DEATH_DATETIME cannot be precisely determined from the data, the best approximation should be used.
9	The DEATH_DATETIME in the PERSON table should not be used as the way to find all deaths • `select * from PERSON where death_datetime is not null` should not be the practice • Rather, deaths should be found through the OBSERVATION table and the PERSON table is only used to determine which death date should be used in analysis

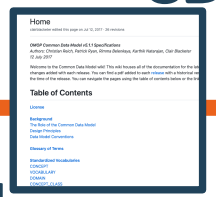
OHDSI



CDM v5.0.1

2016

2017



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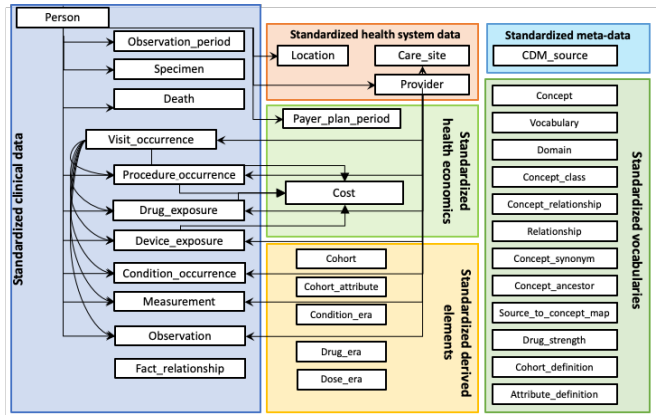
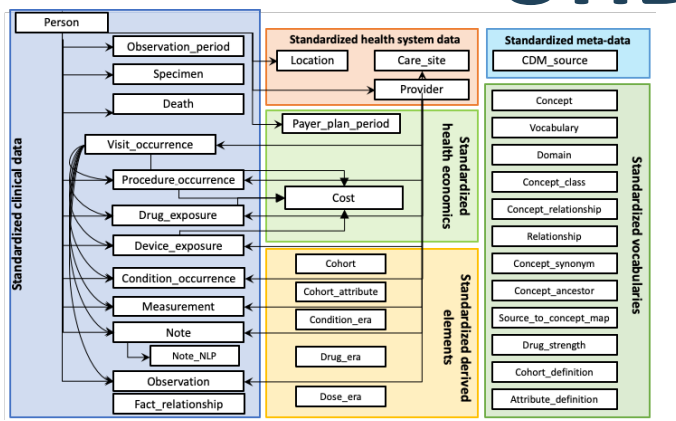
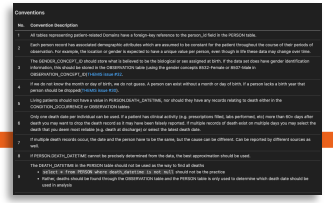


2017



CDM v5.2

2018



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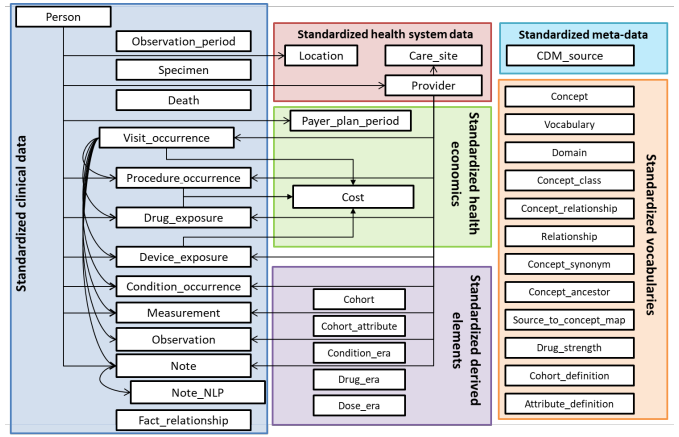
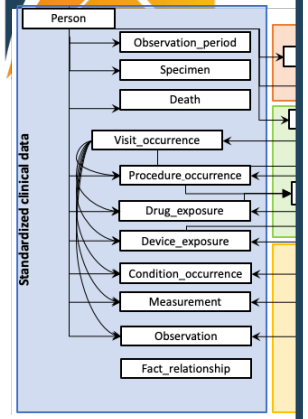


2024



CDM v5

2016

OMOP Common Data Model | Background | Conventions | CDM Versions

OMOP Common Data Model

The Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM) is an op
standardize the structure and content of observational data and to enable efficient analyses th
component of the OMOP CDM is the OHDSI standardized vocabularies. The OHDSI vocabularie
terms to be used across the various clinical domains of the OMOP common data model and en
knowledge base when constructing exposure and outcome phenotypes and other features wit
estimation, and patient-level prediction studies.

This website is meant to serve as a resource describing the specification of the available versio
structure of the model itself and the agreed upon conventions for each table and field as decid
tables are part of the model and, as such, are detailed here. To download the vocabulary itself,
information about the OHDSI suite of tools designed to implement best practices in characteri
patient-level prediction, please visit https://ohdsi.github.io/Hades/.

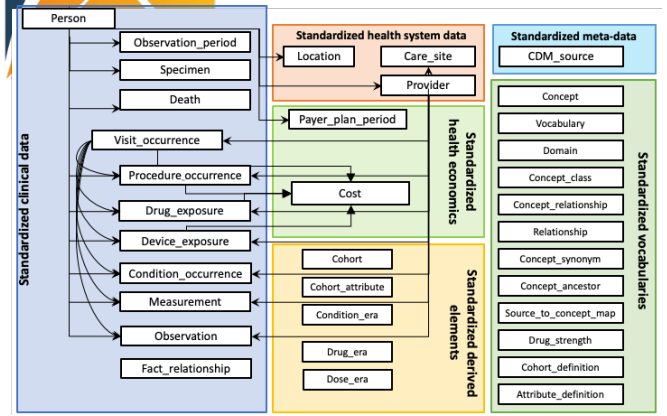
Current CDM Version

The current CDM version is CDM v5.4, depicted below. This CDM version was developed over th
sent via our issues page. The list of proposed changes was then shared with the community in
OHDSI Community calls, discussions with the OHDSI Steering Committee, and discussions with
changes were then delivered to the Community through a new R package designed to dynamic
supported SQL dialects.

- Link to DDLs for CDM v5.4
- Link to ReadMe for instructions on how to use the R package

2024

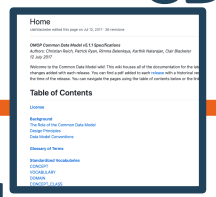
OHDSI



CDM v5.0.1

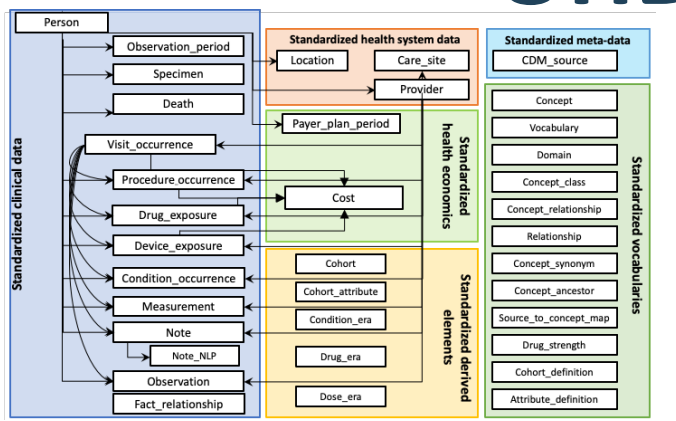
2016

2017



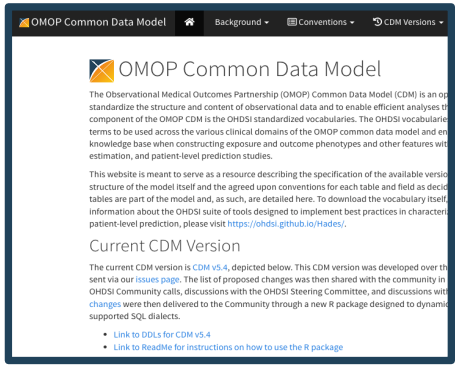
CDM v5.1

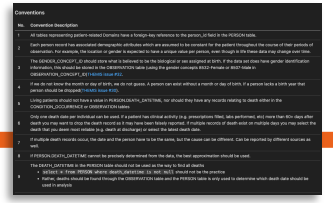
2017



CDM v5.2

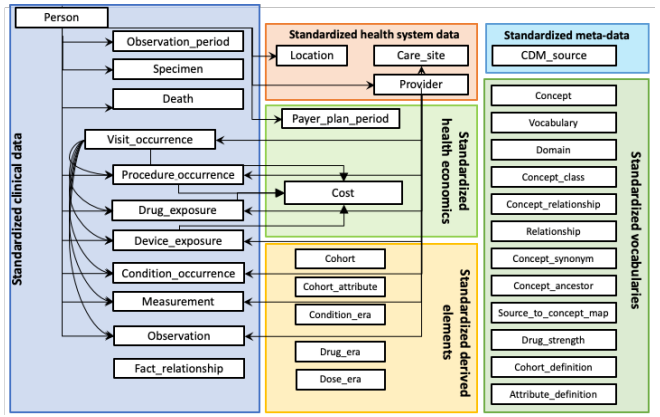
2018

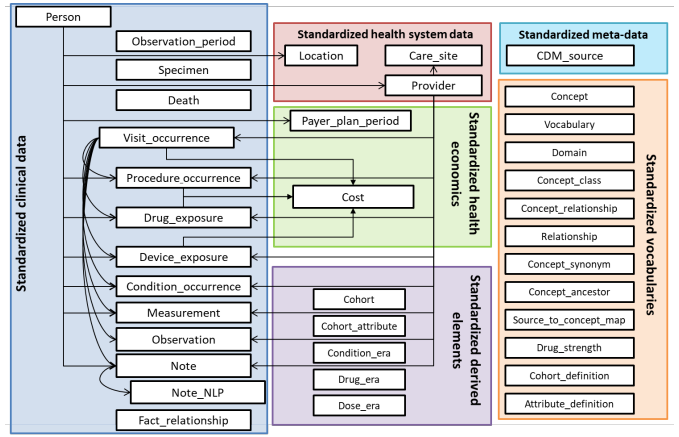


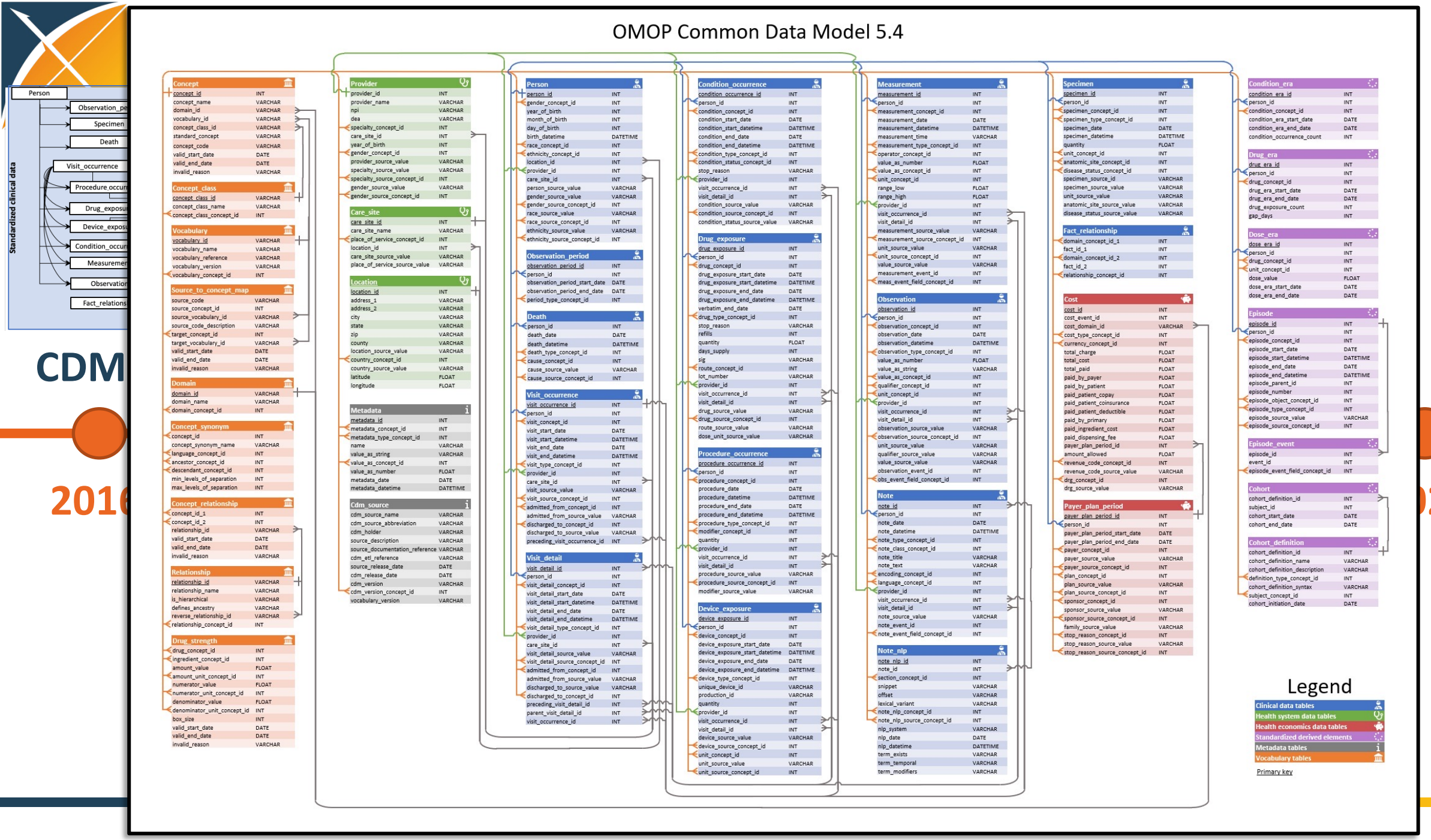


CDM v5.3

2024






OMOP Common Data Model 5.4
Person
Observation_pe
Specimen
Death
Visit_occurrence
Procedure_occur
Drug_exposu
Device_exposu
Condition_occur
Measuremer
Observatior
Fact_relations
Standardized clinical data
CDM
2016
024
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Health system data tables
Health economics data tables
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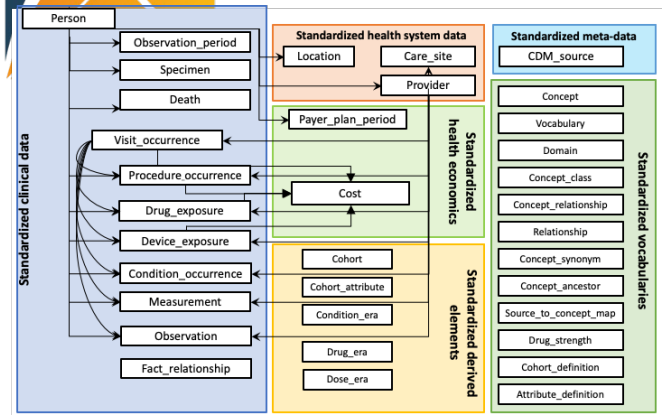
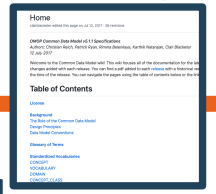
Vocabulary tables
Primary key

OHDSI



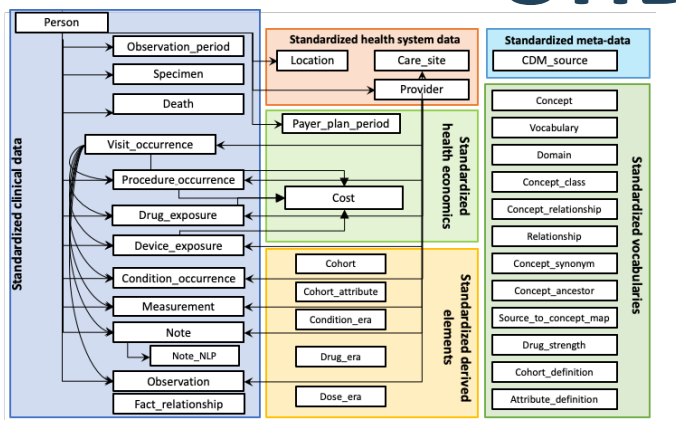
CDM v5.0.1

2016



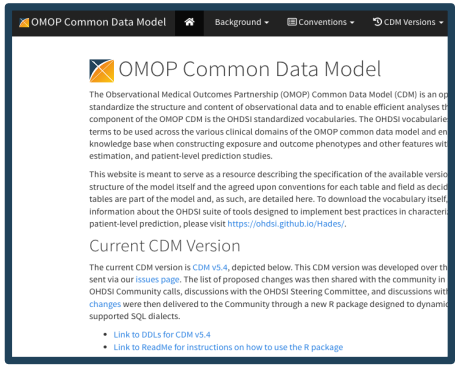
CDM v5.1

2017

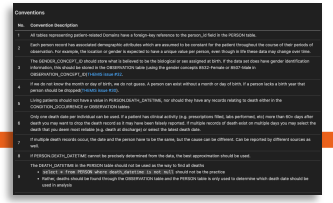


CDM v5.2

2017



2018

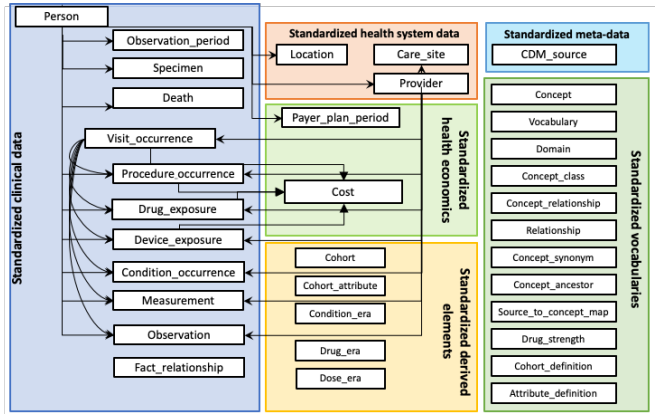


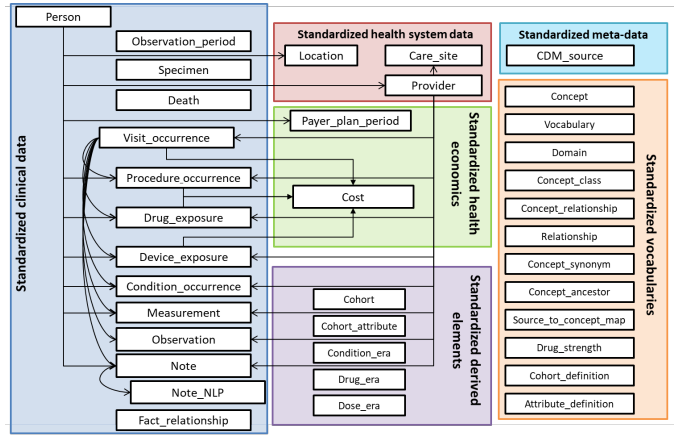
CDM v5.3

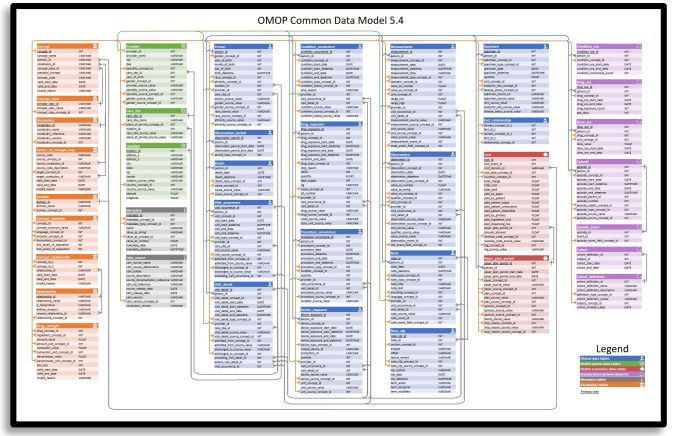
2022

CDM v5.4

2024







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THEMIS

Summary: This page provides an overview of the THEMIS project.

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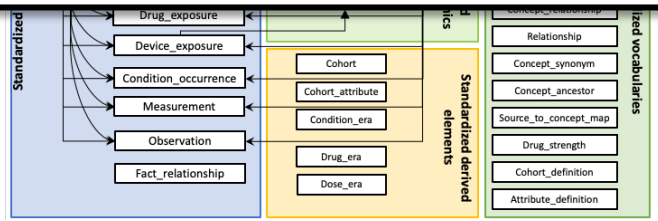
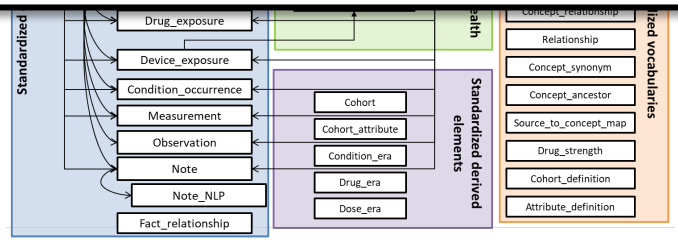
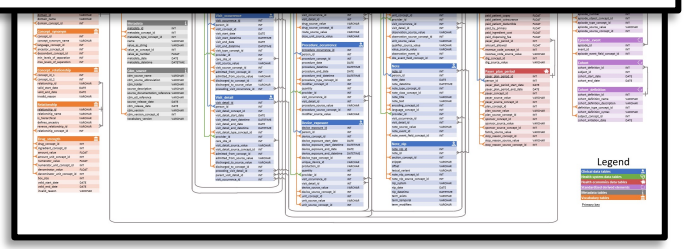
  - What falls under Themis and what does not
- Topic Processing
- Getting Involved







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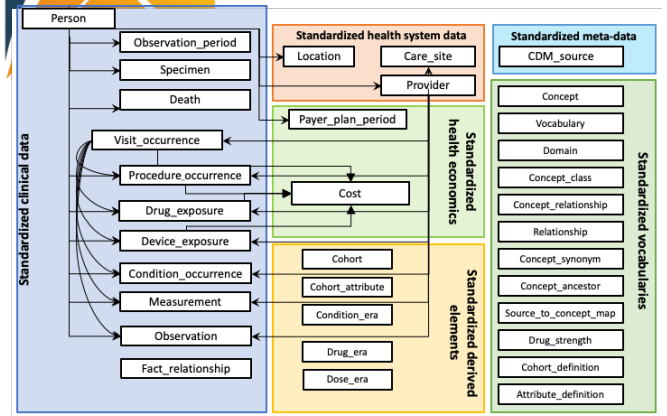
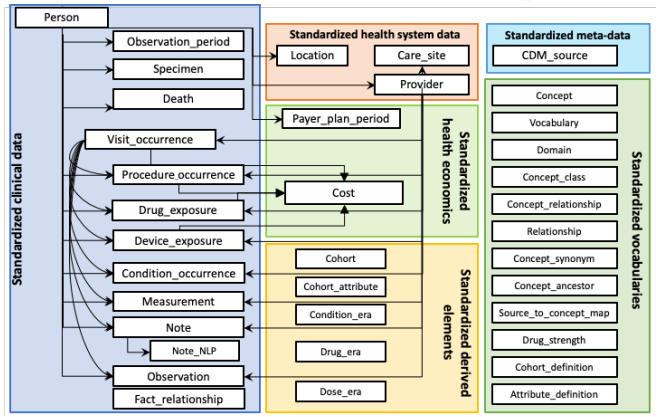


CDM v5.0.1

2016



CDM v5.2

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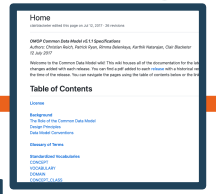

CDM v5.1

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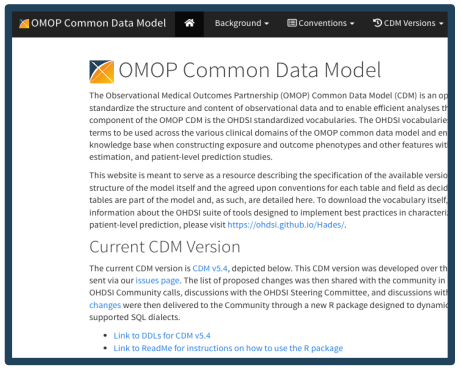

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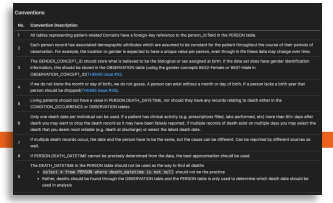

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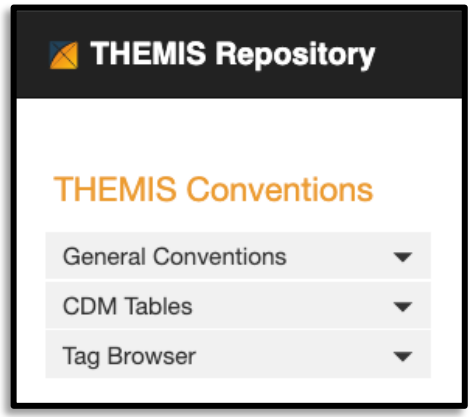
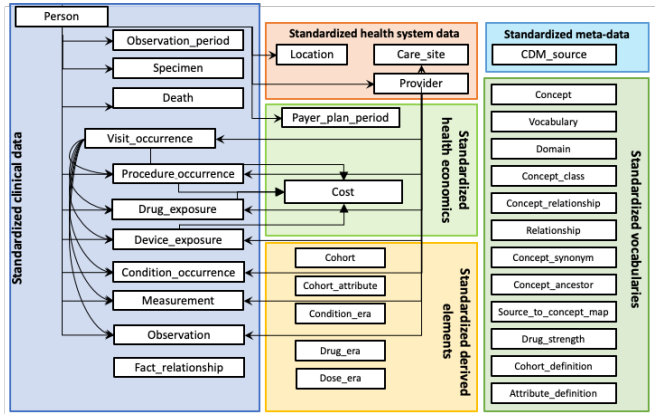
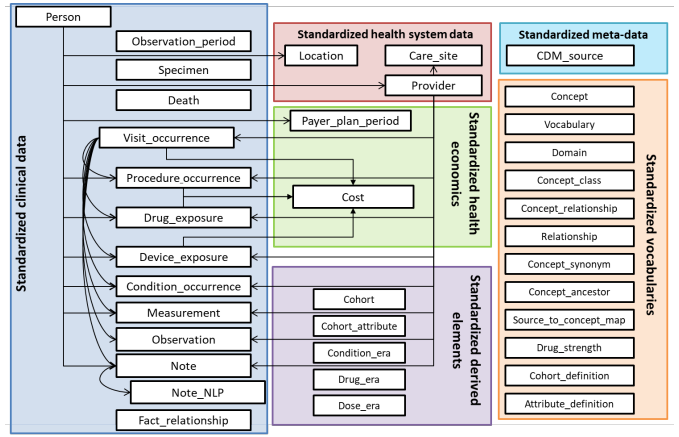
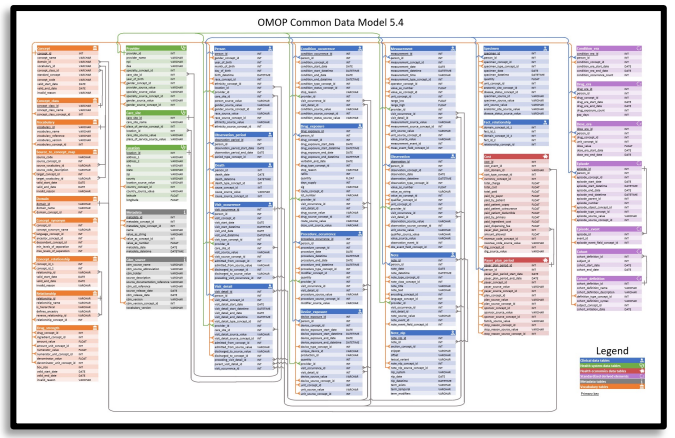


2022

CDM v5.4

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