OMOP Common Data Model and Vocabulary
OHDSI APAC Symposium 2022

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Why a Common Data Model

Why a Common Data Model

Break of Gauge: https://en.wikipedia.org/wiki/Break_of_gauge

Why a Common Data Model - A Singapore Story

Why a Common Data Model - A Singapore Story

5,000
T2DM Patients

10,000
T2DM Patients

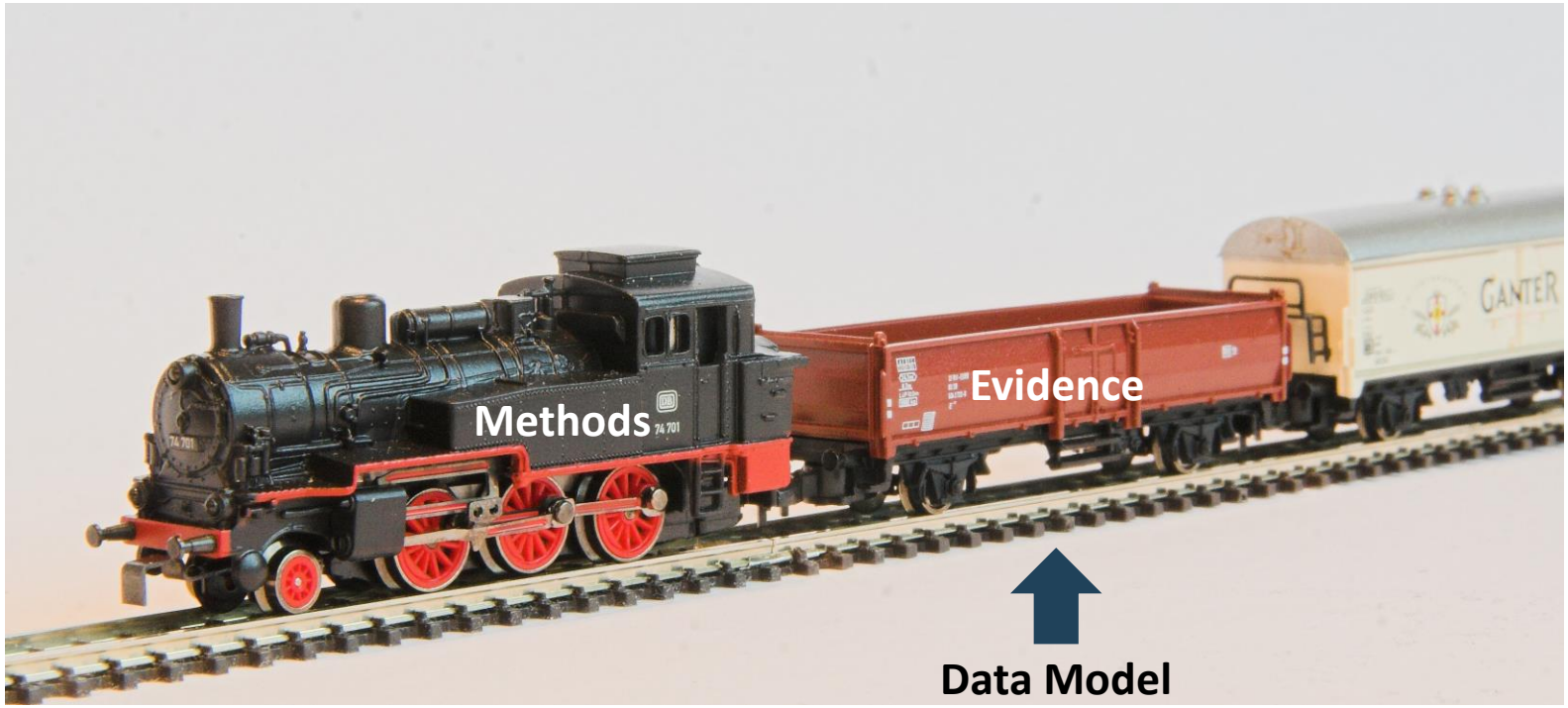
Why a Common Data Model - A Singapore Story

What was the solution?

OHDSI

OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

Why a Common Data Model - CDM is the foundation



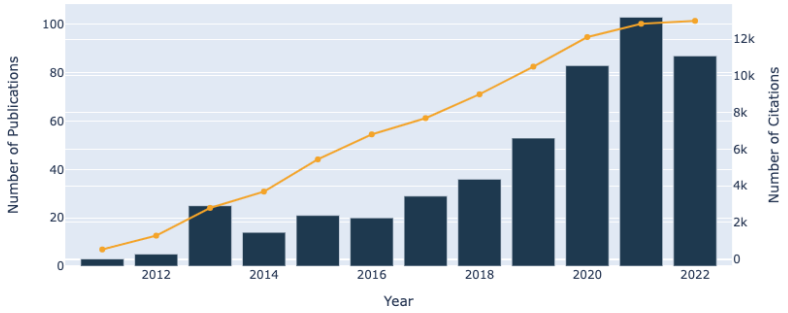
Why a Common Data Model - Fruits came after CDM

OHDSI Community Dashboard Dashboards

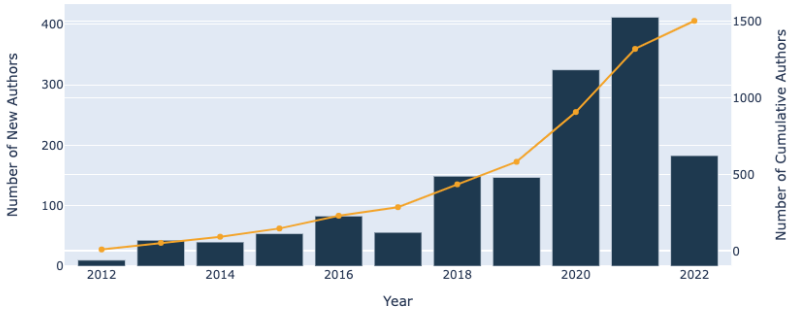
Publication Analysis

PubMed Publication Tracking highlights scholarship generated using the OMOP Common Data Model, OHDSI tools, or the OHDSI network. These publications represent scientific accomplishments across areas of data standards, methodological research, open-source development, and clinical applications. We provide the resource to search and browse the catalogue of OHDSI-related publications by date, author, title, journal, and SNOMED terms. We monitor the impact of our community using summary statistics (number of publications and citations), and the growth and diversity of our community with the number of distinct authors. Searches for new papers are performed daily, and citation counts are updated monthy.

OHDSI Publications & Cumulative Citations



New and Cumulative OHDSI Researchers



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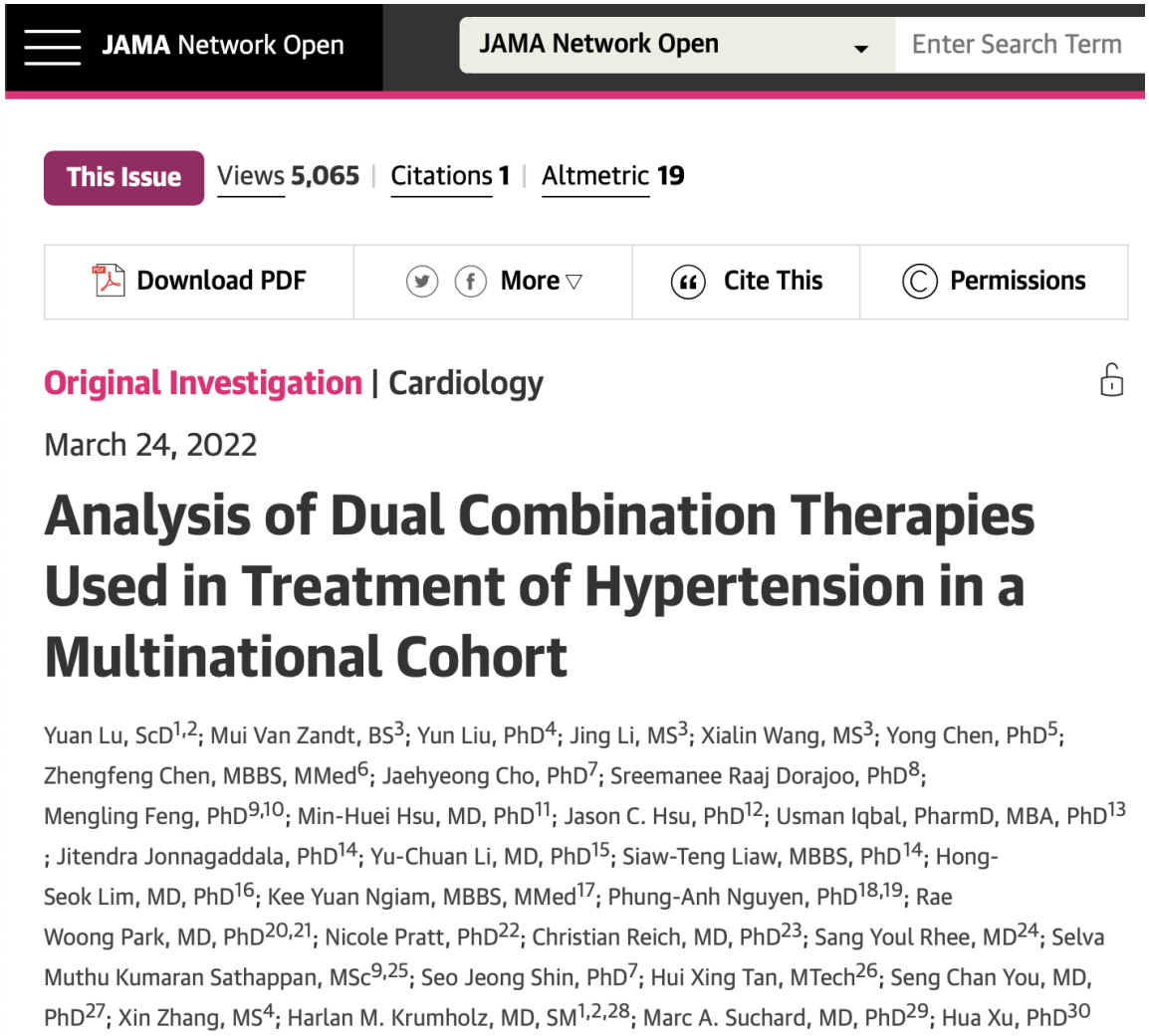
Why a Common Data Model - Fruits came after CDM



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Original Investigation | Cardiology

March 24, 2022

Analysis of Dual Combination Therapies Used in Treatment of Hypertension in a Multinational Cohort

Yuan Lu, ScD[1,2]; Mui Van Zandt, BS[3]; Yun Liu, PhD[4]; Jing Li, MS[3]; Xialin Wang, MS[3]; Yong Chen, PhD[5]; Zhengfeng Chen, MBBS, MMed[6]; Jaehyeong Cho, PhD[7]; Sreemanee Raaj Dorajoo, PhD[8]; Mengling Feng, PhD[9,10]; Min-Huei Hsu, MD, PhD[11]; Jason C. Hsu, PhD[12]; Usman Iqbal, PharmD, MBA, PhD[13]; Jitendra Jonnagaddala, PhD[14]; Yu-Chuan Li, MD, PhD[15]; Siaw-Teng Liaw, MBBS, PhD[14]; Hong-Seok Lim, MD, PhD[16]; Kee Yuan Ngiam, MBBS, MMed[17]; Phung-Anh Nguyen, PhD[18,19]; Rae Woong Park, MD, PhD[20,21]; Nicole Pratt, PhD[22]; Christian Reich, MD, PhD[23]; Sang Youl Rhee, MD[24]; Selva Muthu Kumaran Sathappan, MSc[9,25]; Seo Jeong Shin, PhD[7]; Hui Xing Tan, MTech[26]; Seng Chan You, MD, PhD[27]; Xin Zhang, MS[4]; Harlan M. Krumholz, MD, SM[1,2,28]; Marc A. Suchard, MD, PhD[29]; Hua Xu, PhD[30]

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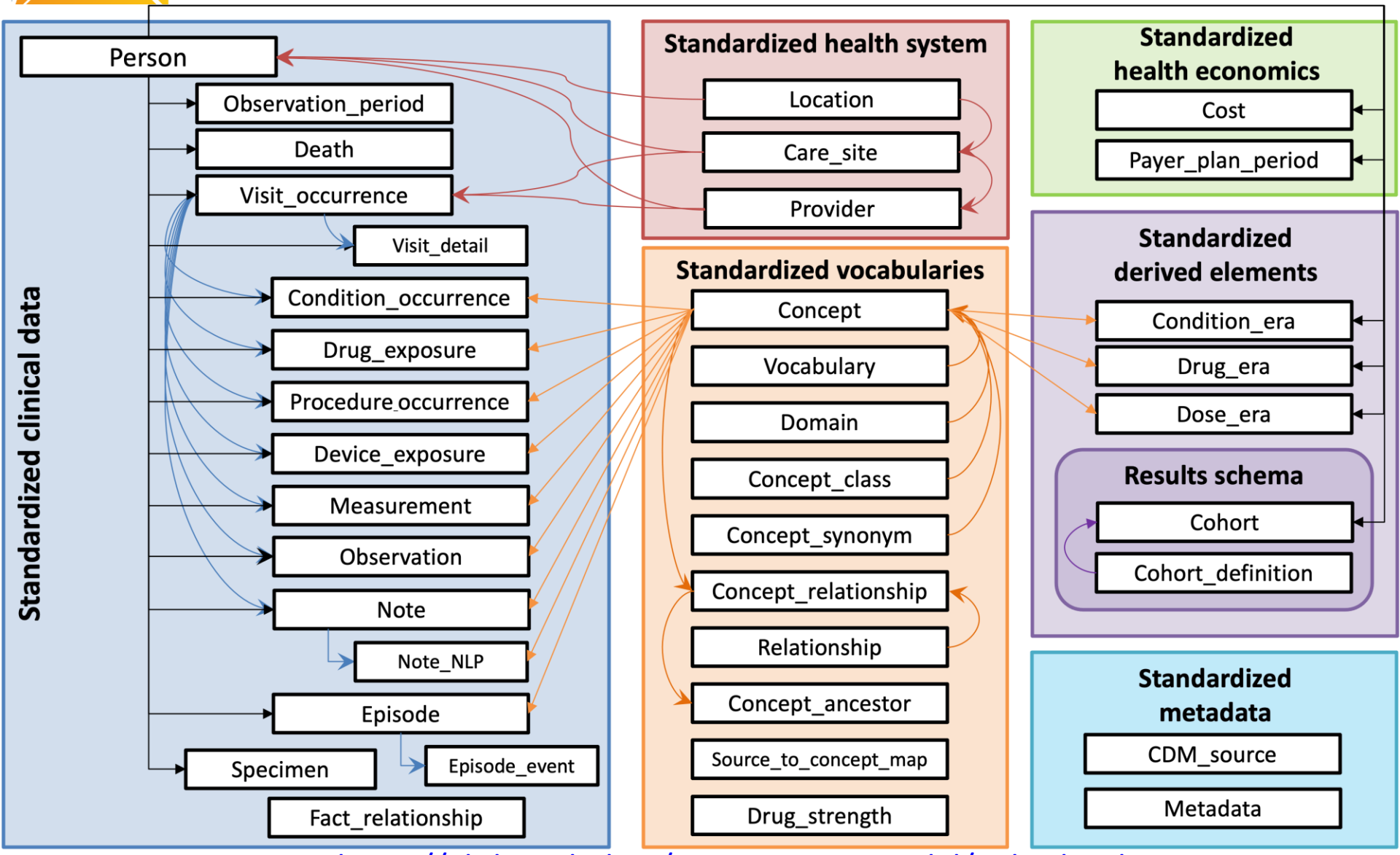
OMOP CDM

The OMOP CDM is a system of tables, vocabularies, and conventions that allow observational health data to be standardized. It is this standard approach that facilitates rapid innovation in the areas of open-source development, methods research, and evidence generation.

https://ohdsi.github.io/CommonDataModel/index.html

OMOP CDM & Vocabulary



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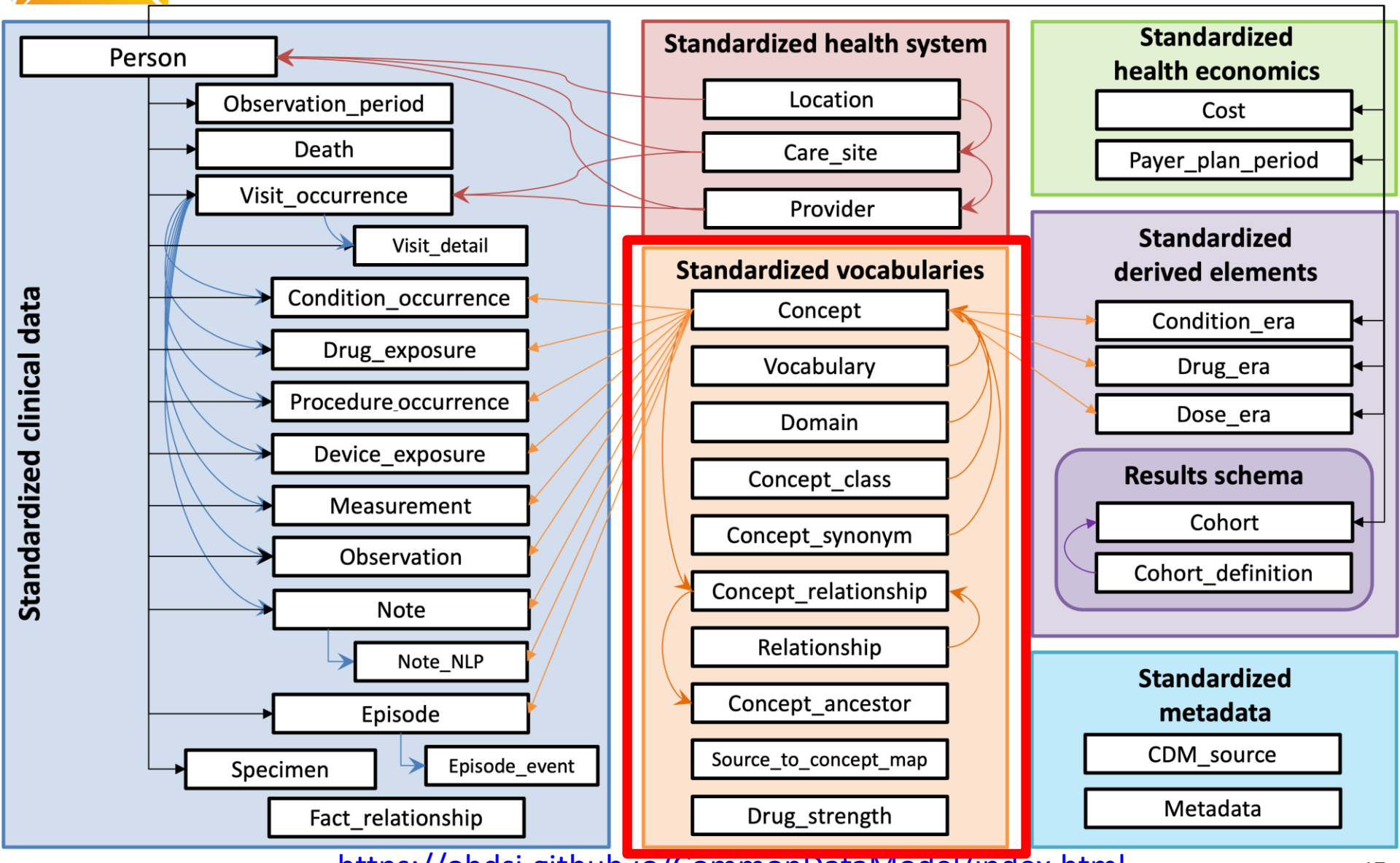
OMOP CDM & Vocabulary



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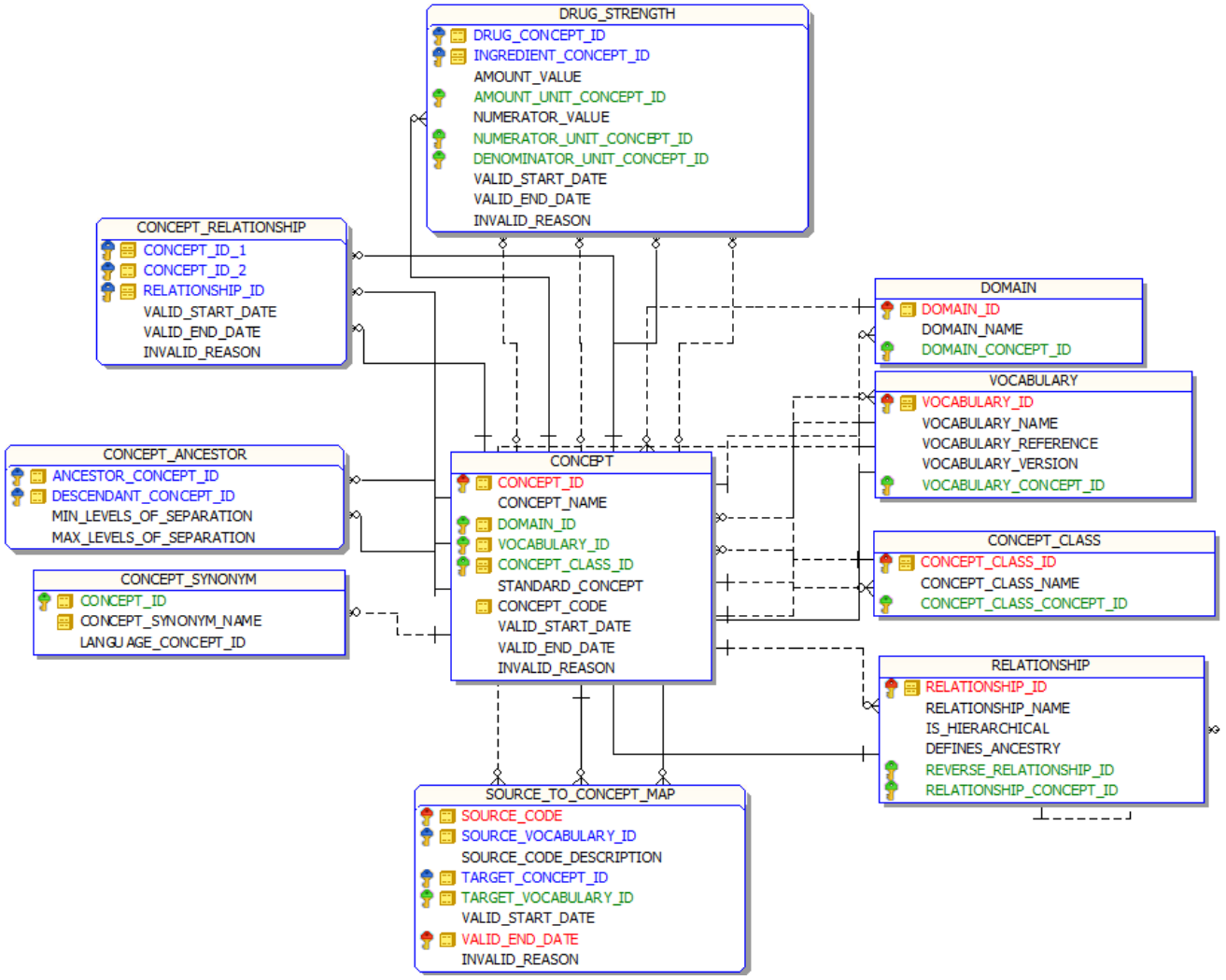
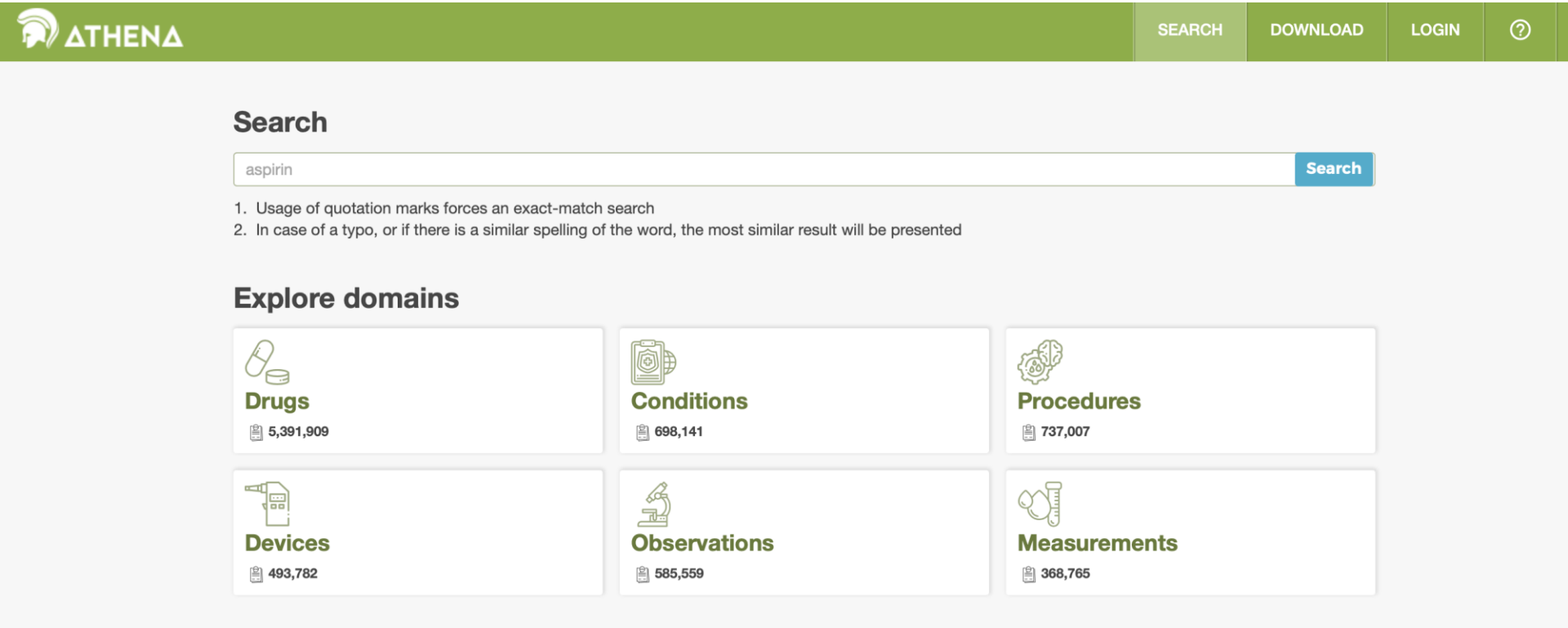
OMOP Vocabulary
More than 8 Million concepts



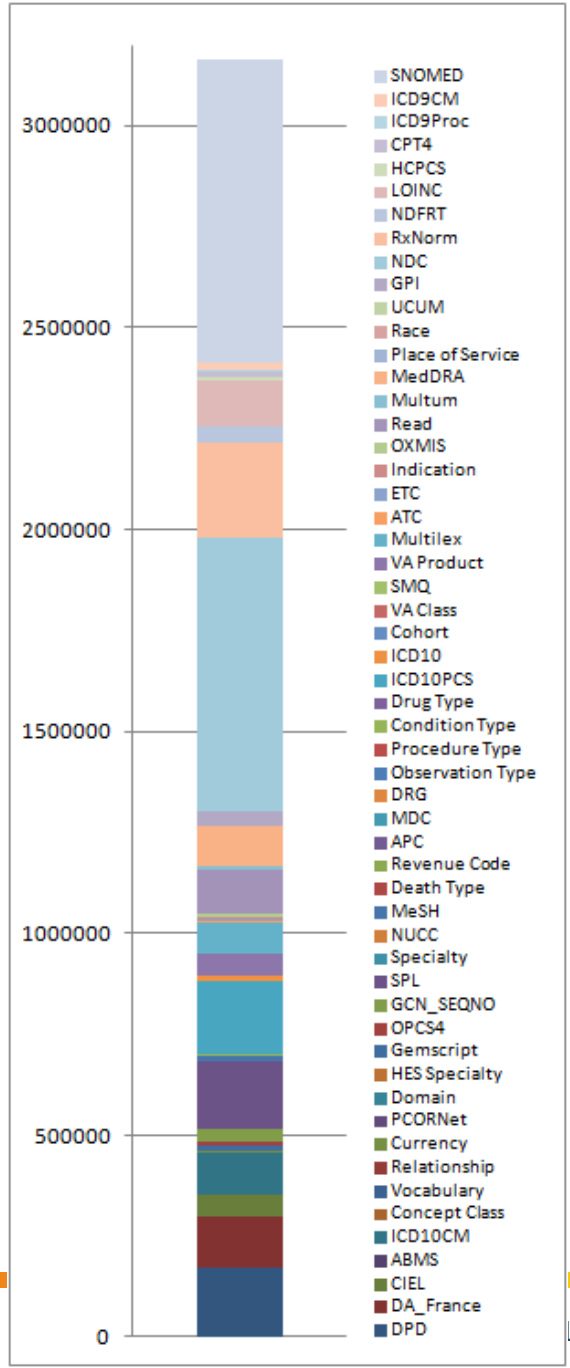
OMOP Vocabulary
- A Quick Demo



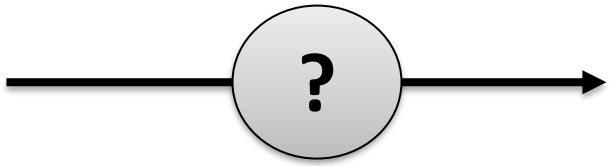
OMOP Vocabulary

- If your source data's codes are in the OMOP Vocab you can use it to translate to a standard

- For example:
  - ICD9 → SNOMED
  - NDC → RxNORM



Vocabulary Mapping



What is standardized:

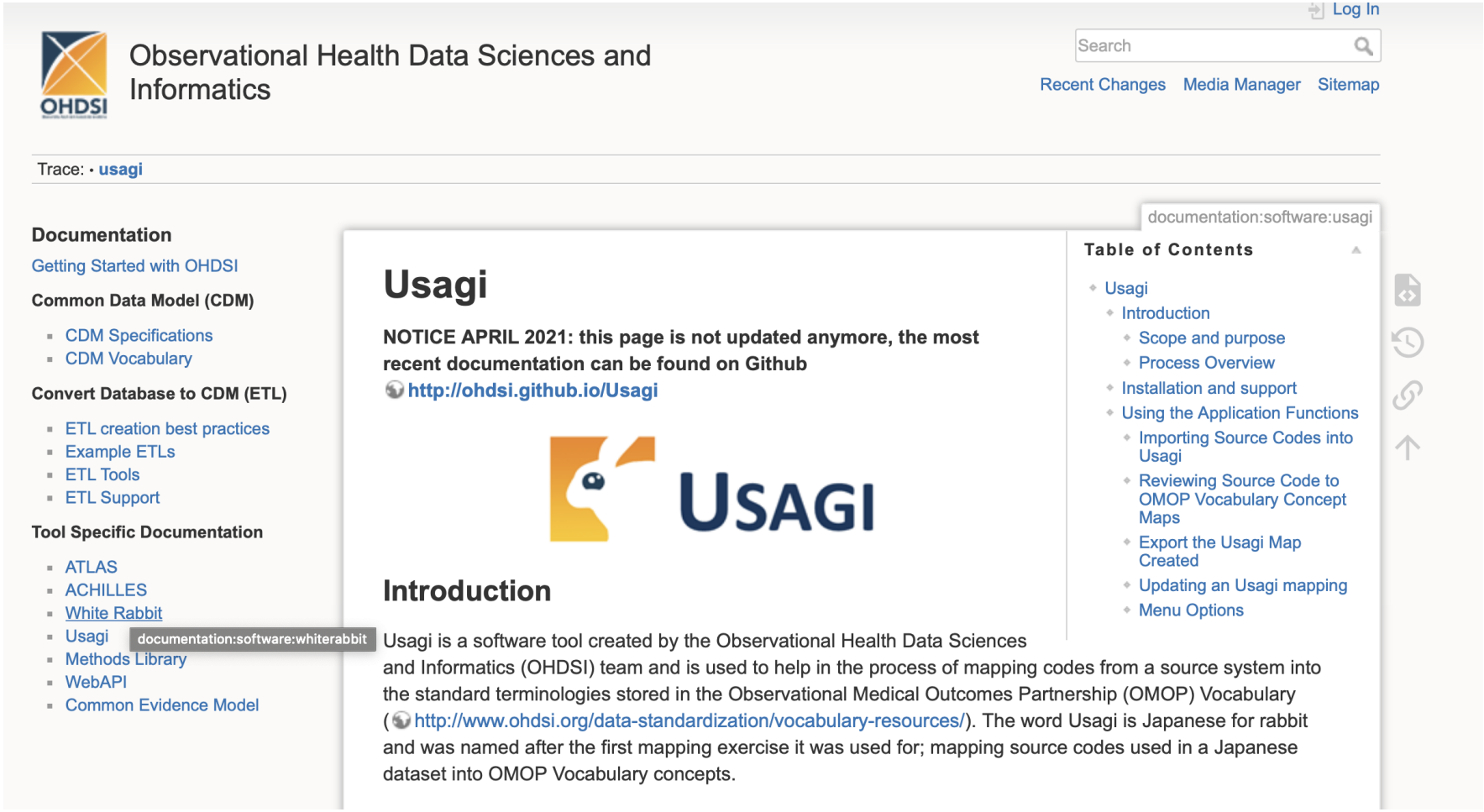
1. *TABLE*_CONCEPT_ID
   standard concept the source code maps to, **used for analysis**
2. *TABLE*_SOURCE_CONCEPT_ID
   concept representation of the source code, **helps maintain tie to raw data**
   a. *TABLE*_SOURCE_VALUE
      original source code as given in the source table, **helps to review data quality**

Ways to get a source code to standard code:

1. OMOP Vocabulary (Concept_Relationship)
2. USAGI

Vocabulary Mapping

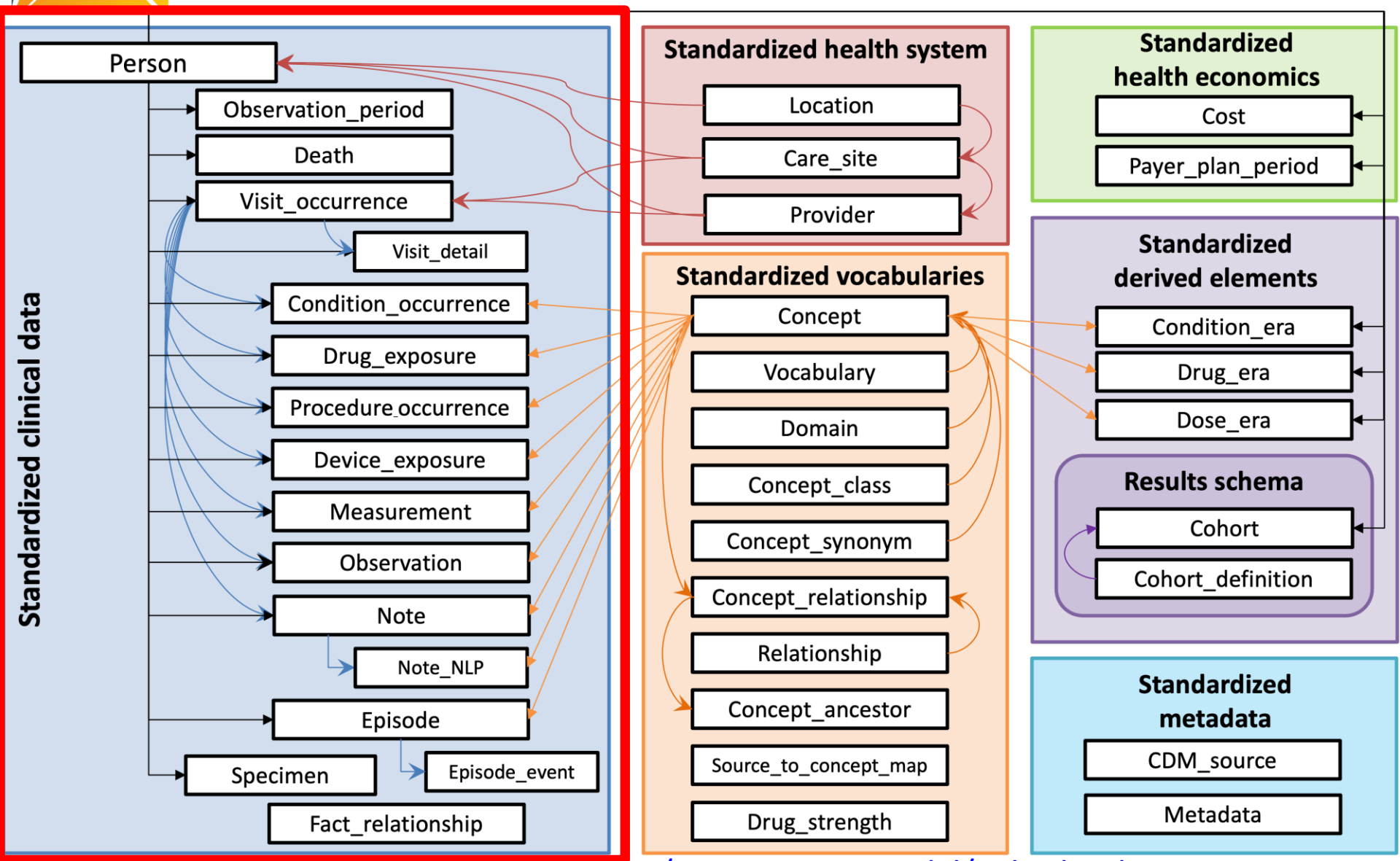
https://www.ohdsi.org/web/wiki/doku.php?id=documentation:software:usagi



Vocabulary Mapping - USAGI

- Mapping process
  - Load codes from your source system ”source codes”
  - USAGI will map the “source codes” into OMOP vocabulary concepts based on term similarity matching
  - One then can use the USAGI user interface to check, adjust or create mapping
  - Load the finalized mapping to the SOURCE_TO_CONCEPT_MAP

OMOP CDM - Data Schema



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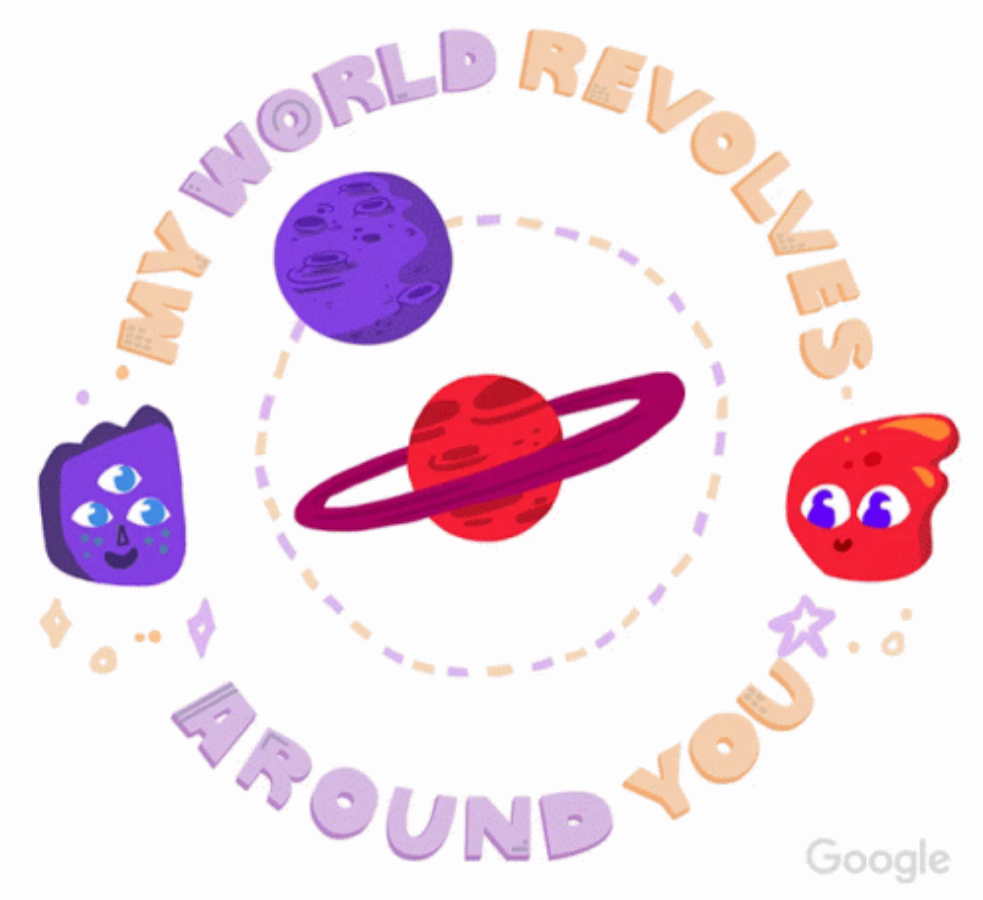
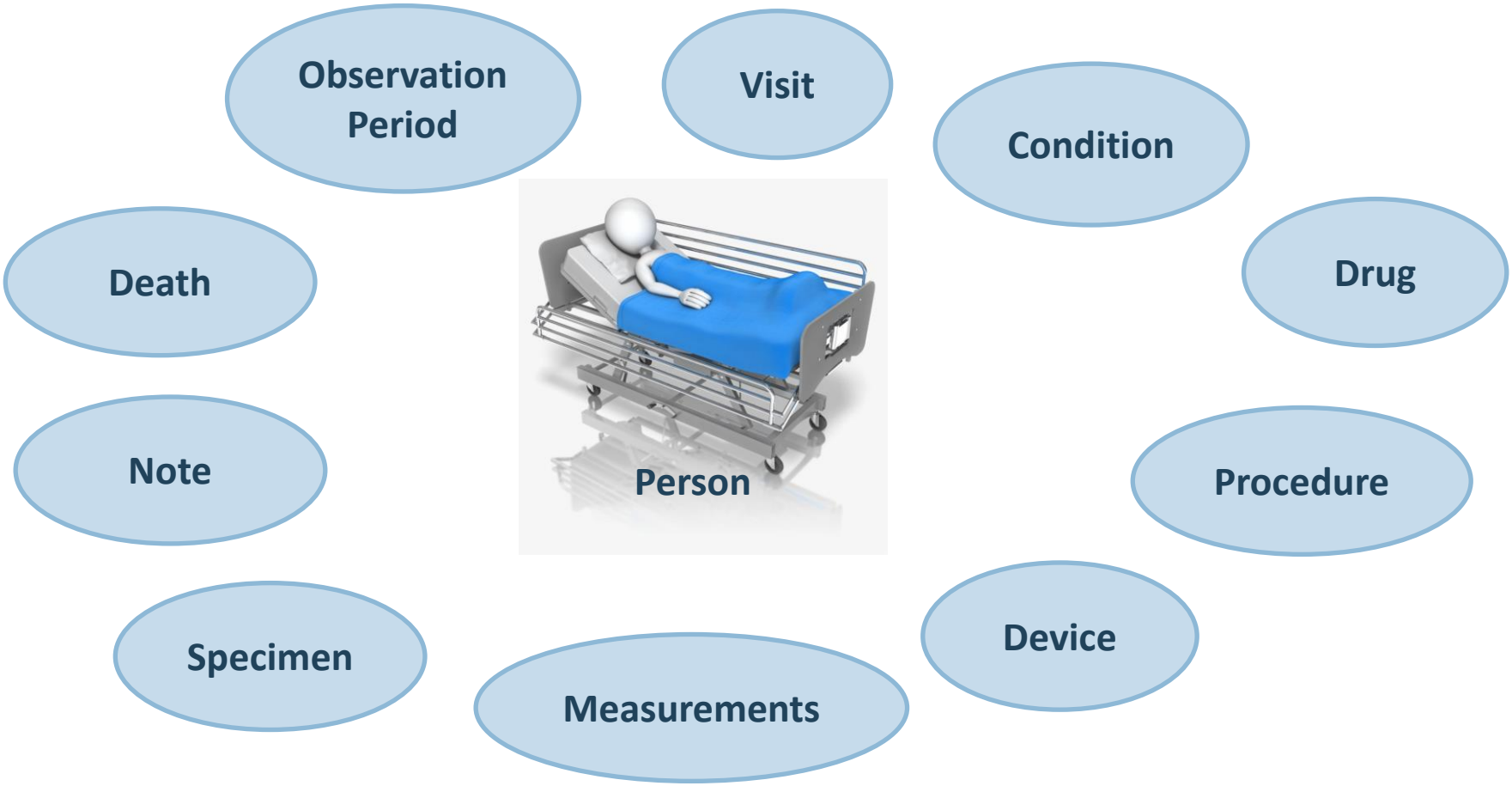
OMOP CDM - Data Schema

The OMOP CDM is a Patient Centric Model

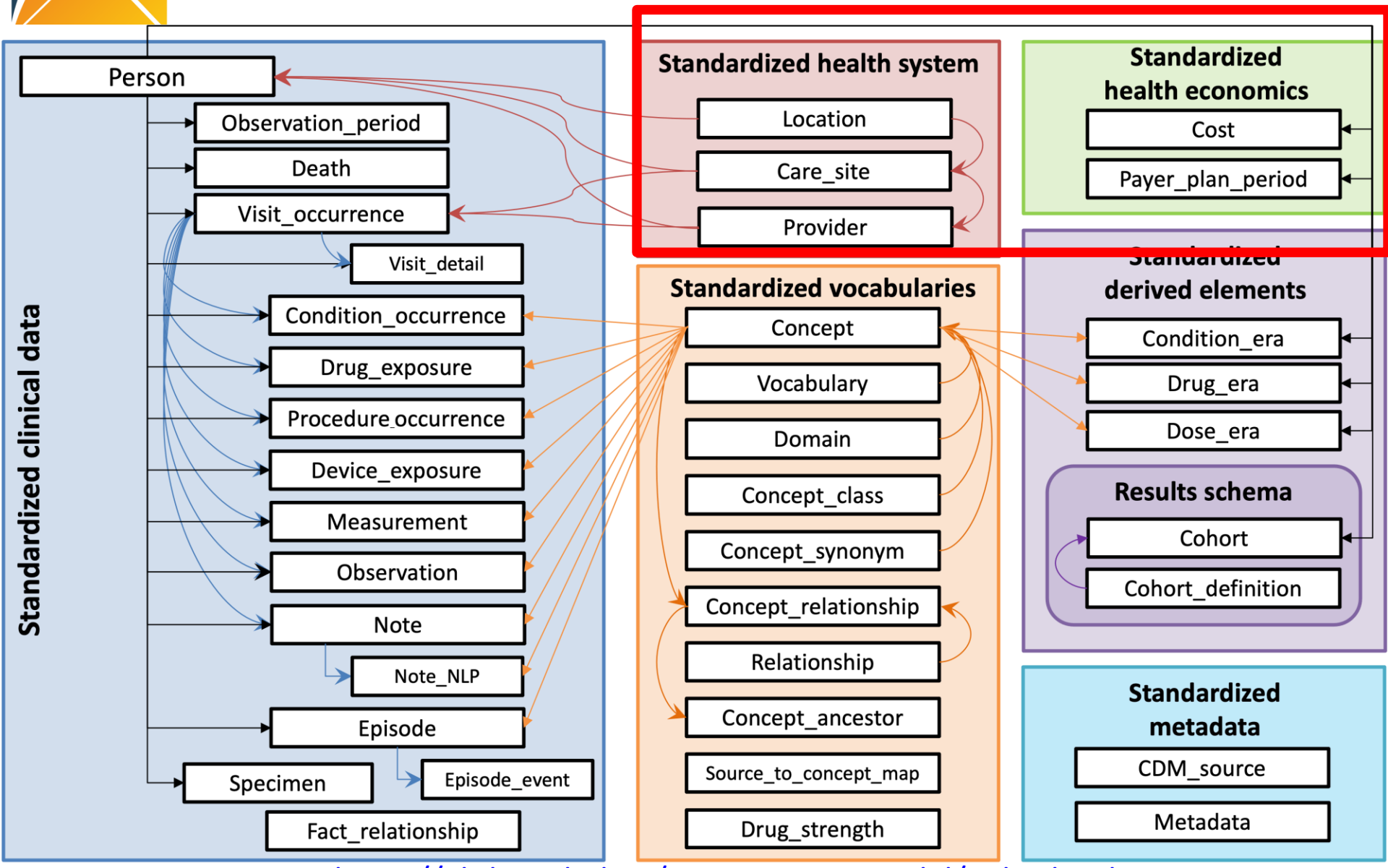


OMOP CDM - Data Schema

The OMOP CDM is a Patient Centric Model



OMOP CDM - Data Schema



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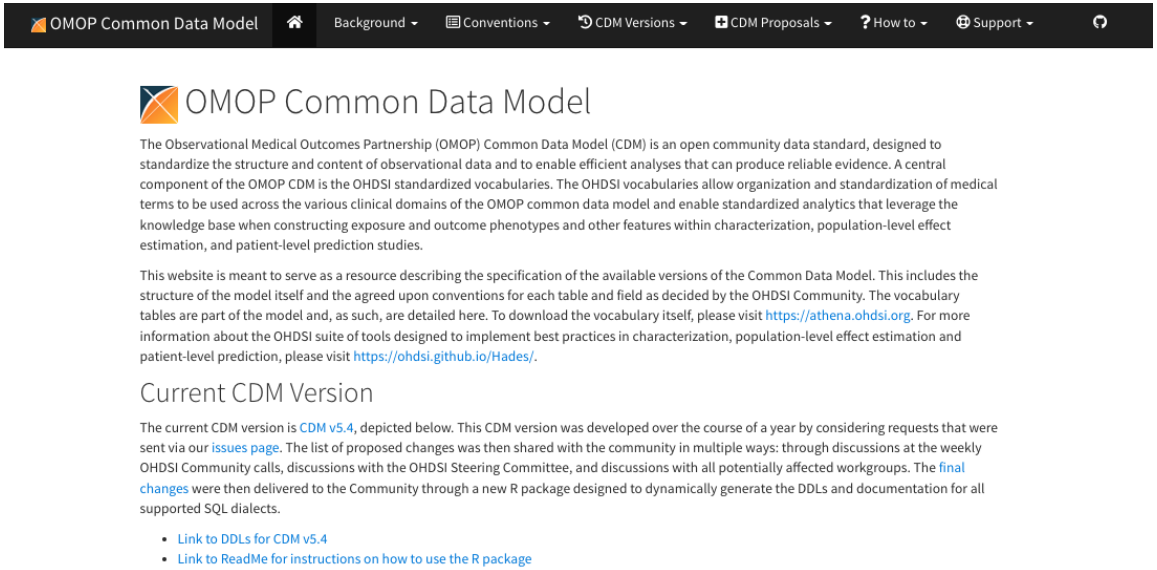
Helpful Bookmarks

https://ohdsi.github.io/CommonDataModel/



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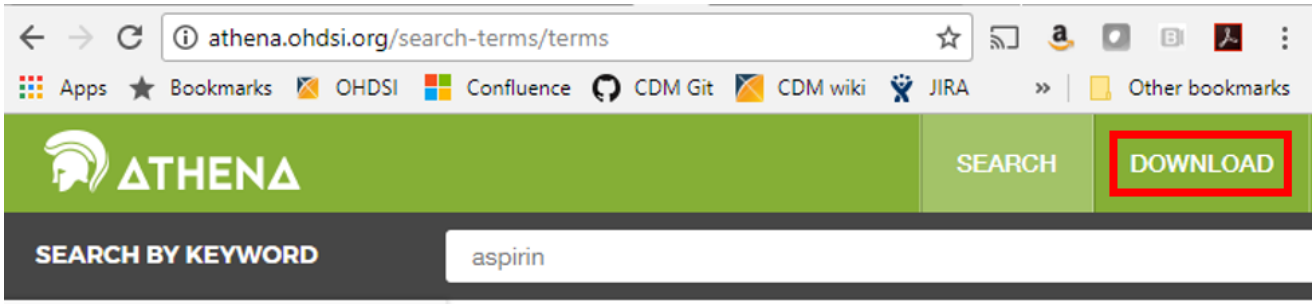

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