

OBSERVATIONAL MEDICAL OUTCOMES PARTNERSHIP

OMOP Common Data Model (CDM V4.0) ETL Mapping Specification Template

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1.0 Introduction

This document reflects the requirements, assumptions, business rules and transformations for the implementation of the Common Data Model Version 4.0 (CDM) as implemented by [REDACTED] (enter name of your organization). The initial ETL process was built using data and transformations as applicable to GE and Thomson.

The purpose of this document is to describe the ETL mapping of the proprietary or licensed data from [REDACTED] into the OMOP Common Data Model.

It is based on the OMOP ETL Specifications. General information that is covered by the OMOP ETL Specification will not be covered in this document, but a detailed discussion of the [REDACTED]-specific aspects of mapping and converting data to the standard CDM is provided.

The document is composed of two main sections:

- Source Data Mapping. Describes major tables of the CDM schema and special data handling required for each table.
- Source Independent Data Mapping. Describes mapping process of the Drug and Condition Era's..

In each section, the tables and their mapping are individually reviewed along with any source specific rules and exceptions.

The intended audience for this document will include both researchers that want to use the experience and learning in order to incorporate them into their own CDM construction.

2.0 Source Data Mapping Approach

In the OMOP ETL Specifications, this section covers the high-level assumptions and approach to extraction, transformation and loading (ETL) of raw source data into the Common Data Model (CDM). This high-level approach should be equivalent between the data sources obtained by OMOP and [REDACTED]. However, if a significant divergence becomes necessary and meaningful, it should be discussed here.

3.0 Source Data Mapping

This section will describe mapping process and ETL conversions of data received from your data into Common Data Model.

3.1 Data Mapping

Describe here how your data are provided, and in what technology (relational database system, SAS files etc.) the CDM will be represented.

3.1.1 TABLE NAME: PERSON

Describe how the Person mapping and transformations are designed.

The field mapping is performed as follows:

Destination Field	Source Field	Applied Rule	Comment
PERSON_ID			
GENDER_CONCEPT_ID			
YEAR_OF_BIRTH			
MONTH_OF_BIRTH			
DAY_OF_BIRTH			
RACE_CONCEPT_ID			
ETHNICITY_CONCEPT_ID			
LOCATION_ID			
PROVIDER_ID			
CARE_SITE_ID			
PERSON_SOURCE_VALUE			
GENDER_SOURCE_VALUE			
RACE_SOURCE_VALUE			

Destination Field	Source Field	Applied Rule	Comment
ETHNICITY_SOURCE_VALUE			

3.1.2 TABLE NAME: DRUG_EXPOSURE

Describe how the Drug_Exposure mapping and transformation are designed.

The field mapping is performed as follows:

Destination Field	Source Field	Applied Rule	Comment
DRUG_EXPOSURE_ID			
PERSON_ID			
DRUG_CONCEPT_ID			
DRUG_EXPOSURE_START_DATE			
DRUG_EXPOSURE_END_DATE			
DRUG_TYPE_CONCEPT_ID			
STOP_REASON			
REFILLS			
QUANTITY			
DAYS_SUPPLY			
SIG			
PRESCRIBING_PROVIDER_ID			
VISIT_OCCURRENCE_ID			
RELEVANT_CONDITION_CONCEPT_ID			
DRUG_SOURCE_VALUE			

3.1.3 TABLE NAME: CONDITION_OCCURRENCE

Describe how the Condition_Occurrence mapping and transformation are designed.

The field mapping is performed as follows:

Destination Field	Source Field	Applied Rule	Comment
CONDITION_OCCURRENCE_ID			
PERSON_ID			
CONDITION_CONCEPT_ID			
CONDITION_START_DATE			
CONDITION_END_DATE			
CONDITION_TYPE_CONCEPT_ID			
STOP_REASON			
ASSOCIATED_PROVIDER_ID			
VISIT_OCCURRENCE_ID			
CONDITION_SOURCE_VALUE			

3.1.4 TABLE NAME: VISIT_OCCURRENCE

Describe how the Visit_Occurrence mapping and transformation are designed.

The field mapping is performed as follows:

Destination Field	Source Field	Applied Rule	Comment
VISIT_OCCURRENCE_ID			
PERSON_ID			
VISIT_START_DATE			

Destination Field	Source Field	Applied Rule	Comment
VISIT_END_DATE			
PLACE_OF_SERVICE_CONCEPT_ID			
CARE_SITE_ID			
PLACE_OF_SERVICE_SOURCE_VALUE			

3.1.5 TABLE NAME: PROCEDURE_OCCURRENCE

Describe how the Procedure_Occurrence mapping and transformation are designed.

The field mapping is performed as follows:

Destination Field	Source Field	Applied Rule	Comment
PROCEDURE_OCCURRENCE_ID			
PERSON_ID			
PROCEDURE_CONCEPT_ID			
PROCEDURE_DATE			
PROCEDURE_TYPE_CONCEPT_ID			
ASSOCIATED_PROVIDER_ID			
VISIT_OCCURRENCE_ID			
RELEVANT_CONDITION_CONCEPT_ID			
PROCEDURE_SOURCE_VALUE			

3.1.6 TABLE NAME: OBSERVATION

Describe how the Observation mapping and transformation are designed.

The field mapping is performed as follows:

Destination Field	Source Field	Applied Rule	Comment
OBSERVATION_ID			
PERSON_ID			
OBSERVATION_CONCEPT_ID			
OBSERVATION_DATE			
OBSERVATION_TIME			

Destination Field	Source Field	Applied Rule	Comment
VALUE_AS_NUMBER			
VALUE_AS_STRING			
VALUE_AS_CONCEPT_ID			
UNIT_CONCEPT_ID			
RANGE_LOW			
RANGE_HIGH			
OBSERVATION_TYPE_CONCEPT_ID			
ASSOCIATED_PROVIDER_ID			
VISIT_OCCURRENCE_ID			
RELEVANT_CONDITION_CONCEPT_ID			
OBSERVATION_SOURCE_VALUE			
UNITS_SOURCE_VALUE			

3.1.7 TABLE NAME: OBSERVATION_PERIOD

Describe how the Observation_Period mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
OBSERVATION_PERIOD_ID			
PERSON_ID			
OBSERVATION_PERIOD_START_DATE			
OBSERVATION_PERIOD_END_DATE			

3.1.8 TABLE NAME: DRUG_COST

Describe how the DRUG_COST mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
DRUG_COST_ID			
DRUG_EXPOSURE_ID			
PAID_COPAY			
PAID_COINSURANCE			
PAID_TOWARD_DEDUCTIBLE			
PAID_BY_PAYER			
PAID_BY_COORDINATION_BENEFITS			
TOTAL_OUT_OF_POCKET			
TOTAL_PAID			
INGREDIENT_COST			
DISPENSING_FEE			
AVERAGE_WHOLESALE_PRICE			
PAYER_PLAN_PERIOD_ID			

3.1.9 TABLE NAME: PROCEDURE_COST

Describe how the PROCEDURE_COST mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
PROCEDURE_COST_ID			
PROCEDURE_OCCURRENCE_ID			
PAID_COPAY			
PAID_COINSURANCE			
PAID_TOWARD_DEDUCTIBLE			
PAID_BY_PAYER			
PAID_BY_COORDINATION_BENEFITS			
TOTAL_OUT_OF_POCKET			
TOTAL_PAID			
DISEASE_CLASS_CONCEPT_ID			
REVENUE_CODE_CONCEPT_ID			
PAYER_PLAN_PERIOD_ID			
DISEASE_CLASS_SOURCE_VALUE			
REVENUE_CODE_SOURCE_VALUE			

3.1.10 TABLE NAME: PAYER_PLAN_PERIOD

Describe how the PAYER_PLAN_PERIOD mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
PAYER_PLAN_PERIOD_ID			
PERSON_ID			
PAYER_PLAN_PERIOD_START_DATE			
PAYER_PLAN_PERIOD_END_DATE			
PAYER_SOURCE_VALUE			
PLAN_SOURCE_VALUE			
FAMILY_SOURCE_VALUE			

3.1.11 TABLE NAME: PROVIDER

Describe how the PROVIDER mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
PROVIDER_ID			
NPI			
DEA			
SPECIALTY_CONCEPT_ID			
CARE_SITE_ID			
PROVIDER_SOURCE_VALUE			
SPECIALTY_SOURCE_VALUE			

3.1.12 TABLE NAME: LOCATION

Describe how the LOCATION mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
LOCATION_ID			
ADDRESS_1			
ADDRESS_2			
CITY			
STATE			
ZIP			
COUNTY			
LOCATION_SOURCE_VALUE			

3.1.13 TABLE NAME: ORGANIZATION

Describe how the ORGANIZATION mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
ORGANIZATION_ID			
PLACE_OF_SERVICE_CONCEPT_ID			
LOCATION_ID			
ORGANIZATION_SOURCE_VALUE			
PLACE_OF_SERVICE_SOURCE_VALUE			

3.1.14 TABLE NAME: CARE_SITE

Describe how the CARE_SITE mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
CARE_SITE_ID			
LOCATION_ID			
ORGANIZATION_ID			
PLACE_OF_SERVICE_CONCEPT_ID			
CARE_SITE_SOURCE_VALUE			
PLACE_OF_SERVICE_SOURCE_VALUE			

3.1.15 TABLE NAME: DEATH

Describe how the DEATH mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
PERSON_ID			
DEATH_DATE			
DEATH_TYPE_CONCEPT_ID			
CAUSE_OF_DEATH_CONCEPT_ID			
CAUSE_OF_DEATH_SOURCE_VALUE			

3.1.16 TABLE NAME: COHORT

Describe how the COHORT mapping and transformation are designed.

The field mapping is as follows:

Destination Field	Source Field	Applied Rule	Comment
COHORT_ID			
COHORT_CONCEPT_ID			
COHORT_START_DATE			
COHORT_END_DATE			
SUBJECT_ID			
STOP_REASON			

3.2 Source Independent Data Mapping

The following mapping processes ought to work independent of the source feed. Describe here if significant changes have to be made.

Unless otherwise specified in the sections below, Source Independent Data Mapping will follow specifications as defined in ETL Mapping Specification document.

3.2.1 TABLE NAME: DRUG_ERA

All Drug Eras are recorded in the DRUG_ERA table based on the following field mapping:

Destination Field	Source Field	Applied Rule	Comment
DRUG_ERA_ID			
PERSON_ID			
DRUG_CONCEPT_ID			
DRUG_ERA_START_DATE			
DRUG_ERA_END_DATE			
DRUG_TYPE_CONCEPT_ID			
DRUG_EXPOSURE_COUNT			

3.2.2 TABLE NAME: CONDITION_ERA

Condition Era table is constructed through an aggregation of individual Condition Occurrences recorded in the CONDITION_OCCURRENCE table.

All Condition Eras are recorded in the CONDITION_ERA table based on the following field mapping:

Destination Field	Source Field	Applied Rule	Comment
CONDITION_ERA_ID			
PERSON_ID			

Destination Field	Source Field	Applied Rule	Comment
CONDITION_CONCEPT_ID			
CONDITION_EVENT_START_DATE			
CONDITION_EVENT_END_DATE			
CONDITION_TYPE_CONCEPT_ID			
CONDITION_OCCURRENCE_COUNT			