

**Document Version History**

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# OVERVIEW

This document describes the ETL specifications/conventions that enable data stored in OMOP CDM v4 to be mapped to PCORnet v1 model. In particular, this document describes the business logic corresponding to the ETL code in the “*OMOP-PCORNet r3.1.sql*” file. In this process, we assume that an OMOP CDM v4 instance is already available for transformation to the PCORnet model instance.

This document should be used in conjunction with the “*omop\_pcornet\_mappings.csv*” file (referred to as the “vocabulary mapping document” hereafter). The vocabulary mapping document is implemented into the table “*cz\_omop\_pcornet\_concept\_map,”*

referred to as the “source-to-concept mapping table” hereafter.

Each (destination) field in the target PCORnet table is described based on the following dimensions:

1. Source Table: the OMOP table to be referred
2. Source Field(s): the field(s) in the source table that is used for deriving the value of the destination field; the value could also be a concatenation of values from multiple source fields, e.g. the value for the BIRTH\_DATE field in the PCORnet table DEMOGRAPHIC.
3. Transformation Logic: the following dimensions describe the logic to map the OMOP field to PCORnet field.
   1. General: Any general comment on transformation, such as formatting or re-computation
   2. Concept Class for mapping to PCORnet vocabulary: the concept class for the destination field in the vocabulary mapping document that maps the OMOP concept identifiers to PCORnet values; this dimension is only applicable for the destination fields that are required to be coded in the PCORnet vocabulary. If empty, the source value should be copied to the destination value without any transformation.
   3. OMOP Concept ID for Observations: The OMOP concept identifier for any destination field that represents an observable concept, e.g. height, weight, etc.
   4. Required Joins: The SQL JOIN operations required to derive the correct value for the destination field, e.g. total five join operations are required to generate the DEMOGRAPHIC table.

# PCORnet Table: DEMOGRAPHIC

Reading from OMOP tables: Person and Observation

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Destination Field  (PCORnet) | Source table  (OMOP) | Source Field(s)  (OMOP) | Transformation Logic | | | |
| General | Concept Class for mapping to PCORnet vocabulary | OMOP Concept\_ID for observations | Required Join |
| PATID | person | person\_id | The Data Coordinating Center (DCC) is responsible to compile and re-assign PATID into common schema. |  |  |  |
| BIRTH\_DATE | person | year\_of\_birth,  month\_of\_birth,  day\_of\_birth | Concatenate the source fields |  |  |  |
| BIRTH\_TIME |  |  |  |  |  |  |
| SEX | person | gender\_concept\_id |  | ‘Gender’ |  | Person and source-to-concept mapping table (1st instance) |
| HISPANIC | person | ethnicity\_concept\_id |  | ‘Hispanic’ |  | Person and source-to-concept mapping table (2nd instance) |
| RACE | person | race\_concept\_id |  | ‘Race’ |  | Person and source-to-concept mapping table (3rd instance) |
| BIOBANK\_FLAG | observation | value\_as\_concept\_id |  | ‘Biobank\_flag’ | 4001345 | Person and Observation, Observation and source-to-concept mapping table (4th instance) |
| RAW\_SEX | person | gender\_source\_value |  |  |  |  |
| RAW\_HISPANIC | person | ethnicity\_source\_value |  |  |  |  |
| RAW\_RACE | person | race\_source\_value |  |  |  |  |

# PCORnet Table: ENCOUNTER

Reading from: OMOP tables, Visit\_Occurrence, Person, Location, Observation, Concept

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Destination Field  (PCORnet) | Source table  (OMOP) | Source Field(s)  (OMOP) | Transformation Logic | | | |
| General | Concept Class for mapping to PCORnet vocabulary | OMOP Concept\_ID for observations | Required Joins |
| PATID | Visit\_occurrence | person\_id |  |  |  |  |
| ENCOUNTERID | Visit\_occurrence | visit\_occurrence\_id |  |  |  |  |
| ADMIT\_DATE | Visit\_occurrence | visit\_start\_date |  |  |  |  |
| ADMIT\_TIME |  |  |  |  |  |  |
| DISCHARGE\_DATE | Visit\_occurrence | visit\_end\_date |  |  |  |  |
| DISCHARGE\_TIME |  |  |  |  |  |  |
| PROVIDERID | Person | provider\_id |  |  |  | Visit\_occurrence and Person |
| FACILITY\_LOCATION | Location | Zip |  |  |  | Visit\_occurrence and Care\_Site, Care\_Site and Location |
| ENC\_TYPE | Visit\_occurrence | Place\_of\_service\_concept\_id |  | ‘Encounter\_type’ |  | Visit\_occurrence and source-to-concept mapping table (1st instance) |
| FACILITY\_ID | Visit\_occurrence | care\_site\_id |  |  |  |  |
| DISCHARGE\_DISPOSITION | Observation  (1st instance) | value\_as\_concept\_id |  | ‘Discharge Disposition’ | 44813951 | Visit\_occurrence and Observation (1st instance), Observation (1st instance) and source-to-concept mapping table (2nd instance) |
| DISCHARGE\_STATUS | Observation  (2nd instance) | value\_as\_concept\_id |  | ‘Discharge Status’ | 4137274 | Visit\_occurrence and Observation (2nd instance), Observation (2nd instance) and source-to-concept mapping table (3rd instance) |
| DRG | Concept | Concept\_code |  |  | 3040646 | Visit\_occurrence and Observation (3rd  instance), Observation (3rd instance) and Concept |
| DRG\_TYPE |  |  | Corresponds to the field DRG;  ‘01’ if concept\_class is ‘DRG’, else ‘02’ |  |  |  |
| ADMITTING\_SOURCE | Observation  (4th instance) | value\_as\_concept\_id |  | Admitting source | 4145666 | Visit\_occurrence and Observation (4th instance), Observation (4th instance) and source-to-concept mapping table (4th instance) |
| RAW\_ENC\_TYPE | Visit\_occurrence | place\_of\_service\_concept\_id | Corresponds to the field DISCHARGE\_DISPOSITION |  |  |  |
| RAW\_DISCHARGE\_DISPOSITION | Observation  (1st instance) | value\_as\_concept\_id | Corresponds to the field DISCHARGE\_STATUS |  |  |  |
| RAW\_DISCHARGE\_STATUS | Observation  (2nd instance) | value\_as\_concept\_id | Corresponds to the field DRG\_TYPE |  |  |  |
| RAW\_DRG\_TYPE |  |  | Corresponds to the field ADMITTING\_SOURCE |  |  |  |
| RAW\_ADMITTING\_SOURCE | Observation  (4th instance) | value\_as\_concept\_id |  |  |  |  |

# PCORnet Table: ENROLLMENT

Reading from OMOP tables: Payer\_plan\_period, and Observation

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Destination Field  (PCORnet) | Source table  (OMOP) | Source Field(s)  (OMOP) | Transformation Logic | | | |
| General | Concept Class for mapping to PCORnet vocabulary | OMOP Concept\_Id for observations | Required Joins |
| PATID | Payer\_plan\_period | person\_id |  |  |  |  |
| ENR\_START\_DATE | Payer\_plan\_period | Payer\_plan\_period\_start\_date |  |  |  |  |
| ENR\_END\_DATE | Payer\_plan\_period | Payer\_plan\_period\_end\_date |  |  |  |  |
| CHART | Observation | value\_as\_concept\_id |  | Chart availability | 4030450 | Payer\_plan and Observation, Observation and source-to-concept mapping table |
| BASIS |  |  | Hardcore to ‘I’ (insurance) |  |  |  |

# PCORnet Table: DIAGNOSIS

Reading from OMOP tables: Condition\_occurrence, and PCORnet table/view ENCOUNTER

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Destination Field  (PCORnet) | Source table  (OMOP) | Source Field(s)  (OMOP) | Transformation Logic | | | |
| General | Concept Class for mapping to PCORnet vocabulary | OMOP Concept IDs for observations | Required Joins |
| PATID | Condition\_occurrence | Person\_id |  |  |  |  |
| ENCOUNTERID | Condition\_occurrence | Visit\_occurrence\_id |  |  |  |  |
| ENC\_TYPE | ENCOUNTER | ENC\_TYPE |  |  |  |  |
| ADMIT\_DATE | ENCOUNTER | ADMIT\_DATE |  |  |  |  |
| PROVIDERID | ENCOUNTER | PROVIDERID |  |  |  |  |
| DX | ENCOUNTER | CONDITION\_CONCEPT\_ID |  |  |  |  |
| DX\_TYPE |  |  | Hardcore to ‘SM’ (SNOMED-CT) |  |  |  |
| DX\_SOURCE |  |  |  |  |  |  |
| PDX |  |  |  |  |  |  |
| RAW\_DX |  |  |  |  |  |  |
| RAW\_DX\_TYPE |  |  |  |  |  |  |
| RAW\_DX\_SOURCE |  |  |  |  |  |  |
| RAW\_PDX |  |  |  |  |  |  |

# PCORnet Table: PROCEDURE

Reading from OMOP tables: Procedure\_occurrence, and the PCORnet table/view ENCOUNTER

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Destination Field  (PCORnet) | Source table  (OMOP) | Source Field(s)  (OMOP) | Transformation Logic | | | |
| General | Concept Class for mapping to PCORnet vocabulary | OMOP Concept ID for observations | Required Joins |
| PATID | Procedure\_occurrence | Person\_id |  |  |  |  |
| ENCOUNTERID | Procedure\_occurrence | Visit\_occurrence\_id |  |  |  |  |
| ENC\_TYPE | ENCOUNTER | ENC\_TYPE |  |  |  |  |
| ADMIT\_DATE | ENCOUNTER | ADMIT\_DATE |  |  |  |  |
| PROVIDERID | ENCOUNTER | PROVIDERID |  |  |  |  |
| PX | Procedure\_occurrence | procedure\_concept\_id |  |  |  |  |
| PX\_TYPE |  |  | Hardcore to ‘SM’ (SNOMED-CT) |  |  |  |
| RAW\_PX |  |  |  |  |  |  |
| RAW\_PX\_TYPE |  |  |  |  |  |  |

# PCORnet Table: VITAL

Reading from OMOP table: Observation

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Destination Field  (PCORnet) | Source table  (OMOP) | Source Field(s)  (OMOP) | Transformation Logic | | | |
| General | Concept Class for mapping to PCORnet vocabulary | OMOP Concept ID for observations | Required Joins |
| PATID | Observation  (1st instance) | Person\_id |  |  |  |  |
| ENCOUNTERID | Observation (1st instance) | Visit\_occurrence\_id |  |  |  |  |
| MEASURE\_DATE | Observation (1st instance) | Observation\_date |  |  |  |  |
| MEASURE\_TIME | Observation (1st instance) | Observation\_time |  |  |  |  |
| VITAL\_SOURCE |  |  |  |  |  |  |
| HT | Observation  (2nd instance) | Value\_as\_number |  |  | 3036277 | Observation (1st instance) and Observation (2nd instance) |
| WT | Observation  (3rd instance) | Value\_as\_number |  |  | 3025315 | Observation (1st instance) and Observation (3rd instance) |
| ORIGINAL\_BMI | Observation  (4th instance) | Value\_as\_number |  |  | 3038553 | Observation (1st instance) and Observation (4th instance) |
| DIASTOLIC | Observation  (5th instance) | Value\_as\_number |  |  | 3012888 | Observation (1st instance) and Observation (5th instance) |
| SYSTOLIC | Observation  (6th instance) | Value\_as\_number |  |  | 3004249 | Observation (1st instance) and Observation (6th instance) |
| BP\_POSITION | Observation  (7th instance) | Target\_concept |  | ‘BP Position’ |  | Observation (1st instance) and Observation (7th instance), Observation (7th instance) and source-to-concept-mapping table |
| RAW\_VITAL\_SOURCE |  |  |  |  |  |  |
| RAW\_DIASTOLIC |  |  |  |  |  |  |
| RAW\_SYSTOLIC |  |  |  |  |  |  |
| RAW\_BP\_POSITION |  |  |  |  |  |  |