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|  | |  | | --- | | **OMOP Common Data Model (CDM V5.0)**  **ETL Mapping Specification**  ***(AuEmr)*** | |

**Revision history**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Author** | **Date** | **Description** |
| V1.0 | Irina Yabbarova | 7 October 2016 | Version 1 |
| V1.1 | Irina Yabbarova, Kirill Eitvid | 12 October 2016 | 1) source field in cdm.person table was corrected - table name was missing (src.pat\_id was changed to src.patient.pat\_id), source field in cdm.location was changed - src.practice.postcode was added  2) field mapping and mapping rules for cdm.visit\_occurrence table were changed (this table will be populated after populating event tables)  3) applied rule for visit\_occurrence\_id field was corrected in 5 event tables - cdm.drug\_exposure, cdm.procedure\_occurrence, cdm.condition\_occurrence, cdm.measurement, cdm.observation  4) sql notes were replaced by text description and were moved to rules summary  5) in cdm.observation.observation\_source\_value description src.diagnostic.dia\_lbl was changed to src.diagnostic\_contact.dia\_id because we use dia\_id to find icd10 concept6) \_source\_value, \_source\_concept\_id and \_concept\_id fields were corrected in all 5 event tables (now source field is the same for \_source\_value, \_source\_concept\_id and \_concept\_id and contains source\_value), comments for these fields were added  7) spec format was corrected (not finished yet) |
| V1.2 | Irina Yabbarova | 24 October 2016 | 1) spec format was corrected - introduction, source data mapping approach were added; headers were changed - numbering was added  2) Business rules n.2-3 were added (about populating records from src.diagnositc\_contact and about death list. Death list was removed from mapping rules description of cdm.death table). Links to business rules 1-3 were added in mapping rules of cdm tables  3) text description of mapping rules was added for all 5 event tables, lookup tables, cdm.provider table  4) Care\_site summary and mapping rules were corrected, source field for care\_site\_id was added (src.practice.pracid)  5) Applied rule for cdm.location.location\_id was corrected (person\_id was replaced with location\_id)  6) Source field for cdm.provider.provider\_id was added (src.doctor.doc\_eid)  7) \_source\_concept\_id field was corrected in condition\_occurrence and procedure\_occurrence - concept\_2 was replaced by concept\_1  8) Business rule n.4 was added (about elimination of duplicates in event tables). Links to business rule 4 were added to mapping rules of cdm tables  9) Mapping rules for records from src.prescription were added for 4 event tables (cdm.procedure\_occurrence, cdm.condition\_occurrence, cdm.measurement, cdm.observation)  10) condition\_era and observation\_period were added  11) appendix a: source table mapping to cdm was added  12) appendix c: test\_unit\_mapping was added |
| V1.3 | Irina Yabbarova | 31 October 2016 | 1) doc\_eid were replaced by doc\_id  2) mapping rules and field mapping for cdm.measurement (populated from src.test\_result) were added  3) mapping rules and field mapping for lookup table icd10\_concept\_lk were corrected  4) in condition\_occurrence from src.diagnostic\_contact applied rule and comment for condition\_source\_value were added |
| V1.4 | Irina Yabbarova | 7 November 2016 | 1. List of excluded diagnoses was added, business rule n.5 was added (about not populating from src.diagnostic\_contact/src.prescription/src.patient\_medical\_hist records associated with dia\_id from list of excluded diagnoses), links to this business rule were added 2. Name of lookup table lk.voc\_icd10\_to\_standard\_lk was changed (now it is lk.voc\_source\_to\_standard\_lk) 3. Mapping rule n.2 and field mapping for lookup table lk.voc\_source\_to\_standard\_lk were added 4. Field mapping for condition\_occurrence was corrected |
| V1.5 | Irina Yabbarova | 17 November 2016 | 1. doc\_eid and pra\_eid were replaced by ids (in cdm.care\_site and cdm.provider tables) 2. Business rule n.7 was added (about populating records from src.allergy table) 3. Mapping rules and field mapping were added for condition\_occurrence and observation tables for records from src.allergy (using alg\_id) 4. Date of current dataset was added |
| V1.6 | Irina Yabbarova | 22 November 2016 | 1. Rule about correction of state from appendix D was deleted (it is not needed with new src.practice table) |
| V1.7 | Irina Yabbarova | 30 November 2016 | 1. Rule for observation\_period\_end\_date was changed (*IF calculated observation\_period\_end\_date > death\_date of patient, populate with cdm.death.death\_date*) 2. Note about visits (with invalid visit date) after death\_date was added in mapping rules of cdm.death table 3. Applied rule for cdm.drug\_exposure.quantity field was changed 4. Mapping rules and field mapping were added for procedure\_occurrence, condition\_occurrence, measurement and observation tables for records from src.allergy (using man\_id) |
| V1.8 | Irina Yabbarova | 2 December 2016 | 1. Mapping rules and field mapping were changed for drug\_exposure (from both src.prescription and src.immunization) 2. Tables src.prescription and src.fo\_product in Appendix A: Source table mapping to CDM were changed 3. Lookup table lk.voc\_drug\_lk was deleted |
| V1.9 | Irina Yabbarova | 13 December 2016 | 1. Test qualifier mapping was added in Appendix B 2. Drug\_exposure was updated with route\_mapping (from stcm) 3. value\_as\_concept\_id field was added in VOC\_SOURCE\_TO\_STANDARD\_LK 4. value\_as\_concept\_id field was updated in measurement (rules 1, 2) and observation (rules 1, 2, 3) |
| V1.10 | Irina Yabbarova | 14 December 2016 | 1. Applied rule was corrected for measurement.value\_as\_concept\_id (source\_to\_concept\_map.source\_vocabulary\_id = ‘AUS\_QUALIFIER\_CODE’) |

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# **1.0 Introduction**

The purpose of this document is to describe the ETL mapping of the proprietary or licensed data from **IMS Health** into the OMOP Common Data Model.

Also, this document will describe the entity transformation and loading (ETL) of Australia EMR data into OMOP Common Data Model version 5 (CMDv5). Australia EMR source data contains 38 tables (33 main tables + 5 source mapping tables). In ETL process were used:

* 14 source main tables
* 5 source mapping tables
* 4 mapping tables from mapping team
* 2 source vocabulary tables (used for creating diagnosis\_mapping and test\_mapping, not used in cdm tables)

**Source main tables**

|  |  |  |
| --- | --- | --- |
| **Source Data Tables** | **No of Variables** | **Description** |
| allergy | 14 | Allergens and allergy manifestation of patients from patient table |
| biometric | 15 | Biometric data - information about measurements, smokers and alcohol use. Records are related to patients from patient table and doctors from doctor table |
| contact | 16 | Information about contact. Records are related to patients from patient table and doctors from doctor table |
| diagnostic\_contact | 10 | Conditions of patients from patient table. Records are related to contacts from contact table |
| doctor | 20 | Information related to doctors |
| doctor\_practice | 5 | Places of service of doctors from doctor table |
| immunization | 10 | Vaccinations of of patients from patient table |
| list\_code | 8 | Source codes vocabulary |
| locale\_list\_code | 5 | Source codes vocabulary |
| patient | 14 | Information related to patients |
| patient\_medical\_hist | 9 | Medical history records of patients from patient table |
| practice | 6 | Information related to places of service |
| prescription | 57 | Drugs prescribed to patients from patient table. Records are related to contacts from contact table |
| test\_result | 13 | Test result of patients from patient table. Records are related to contacts from contact table |

**Additional source mapping tables**

|  |  |  |
| --- | --- | --- |
| **Source Data Tables** | **No of Variables** | **Description** |
| diagnosis\_mapping | 6 | Mapping of dia\_id (from diagnostic\_contact, patient\_medical\_hist, prescription) to ICD10 codes |
| drug\_mapping | 16 | Mapping of prd\_eid to atc, nfc and fcc codes |
| fo\_product | 59 | Description of drugs from prescription and immunization tables |
| immunization\_mapping | 6 | Mapping of imt\_id (from immunization table) to prd\_eid in fo\_product table |
| test\_mapping | 2 | LOINC codes associated with tst\_id from test\_result table |

**Additional mapping tables (from mapping team)**

|  |  |  |
| --- | --- | --- |
| **Source Data Tables** | **No of Variables** | **Description** |
| allergy\_mapping\_lk | 3 | Mapping of alg\_id to SNOMED codes |
| diagnosis\_mapping\_snomed | 7 | Mapping of dia\_id (from diagnostic\_contact, patient\_medical\_hist, prescription) to SNOMED concepts |
| manifestation\_mapping\_lk | 3 | Mapping of man\_id to SNOMED codes |
| test\_unit\_mapping | 4 | Mapping of test\_unit\_id to UCUM codes |

**Source vocabulary tables (used for creating diagnosis\_mapping and test\_mapping, not used in cdm tables)**

|  |  |  |
| --- | --- | --- |
| **Source Data Tables** | **No of Variables** | **Description** |
| diagnostic | 15 | Diagnosis labels associated with dia\_id from diagnostic\_contact |
| test | 9 | Test labels associated with tst\_id from test\_result |

The dates of events in the data range from ‘0001-01-01’ to ‘6200-10-01’. Date of current dataset =10/31/2016 (mm/dd/yyyy format). Provider specialties included are ‘General Practice’ and ‘Nurse Practitioner’.

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 client-specific aspects of mapping and converting data to the standard CDM is provided.

# **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. However, if a significant divergence becomes necessary and meaningful, it should be discussed here.

## 2.1 Business Rules Summary

To ensure common understanding of the rules related to how the source’s drugs, diagnoses, procedures get allocated to CDM’s tables, below is the general set of rules to accomplish this. Also note that these rules are not intended to account for how every detailed field gets mapped (please read the Applied Rules in each section for this information). It is, however, intended to show in which CDM table each main field gets mapped and the logic around it.

1. There are dates in source data that are <1900 year or >date of dataset in:
   1. src.patient.birthyear\_od
   2. src.doctor.birth\_year
   3. src.contact.con\_date
   4. src.immunization.(vaccination\_date/input\_date)
   5. src.patient\_medical\_hist(known\_since/input\_date)​
   6. src.allergy(all\_start\_date/input\_date)

We populate these dates ‘as is’.

1. From src.diagnostic\_contact and src.prescription we populate records according to corresponding domain\_id (‘Procedure’, ‘Condition’, ‘Observation’, ‘Measurement’). There are 3 different cases:
   1. If src.diagnostic\_contact.dia\_id/src.prescription.dia\_id maps to icd10 code, and then to standard snomed concept\_id, we use domain\_id of snomed concept\_id;
   2. If src.diagnostic\_contact.dia\_id/src.prescription.dia\_id maps to icd10 code, but then icd10 code doesn’t map to standard snomed concept\_id, we use domain\_id of icd10 concept\_id;
   3. If src.diagnostic\_contact.dia\_id/src.prescription.dia\_id doesn’t map to icd10 code, we populate records associated with this dia\_id in cdm.condition\_occurrence with condition\_source\_concept\_id и condition\_concept\_id equal to 0.
2. We use the following ‘Death list’ of dia\_ids related to death for populating records from src.patient\_medical\_hist, src.diagnostic\_contact and src.prescription in cdm.death table:
   1. 3017 (‘DEAD’)
   2. or 3027 ('DEATH')
   3. or 3032 (‘DEATH OF PATIENT’)
   4. or 3035 ('DECEASED')
   5. or 10888 (‘SIDS’)
   6. or 11445 (‘SUICIDE’)
   7. or 634607 (‘SUDDEN DEATH’)
   8. or 244264 (‘PATIENT DECEASED’)

We don’t populate in 4 event tables (cdm.procedure\_occurrence, cdm.condition\_occurrence, cdm.measurement, cdm.observation) records from src.patient\_medical\_hist, src.diagnostic\_contact and srs.prescription associated with dia\_id from ‘Death list’.

We populate in cdm.drug\_exposure records from srs.prescription even if they are associated with dia\_id from ‘Death list’.

1. CDM tables should not have duplicates. We consider as duplicates in cdm tables records that have identical info except the \_id (identity field). We eliminated duplicates that derive from src.diagnostic\_contact, src.prescription and src.patient\_medical\_hist because of the following reasons:

* Source table src.patient\_medical\_hist contains duplicates
* Src.diagnostic\_contact and src.prescription contain records with the same info (pat\_id, con\_date, dia\_id)
* Some dia\_ids map to the same icd10 code. We populate icd10 code in \_source\_value field. For source records that:
  + have the same corresponding \_type\_concept\_id;
  + have identical info except dia\_id;
  + map to the same icd10 code

only one record will be created in cdm table.

1. We don’t populate in 4 event tables (cdm.procedure\_occurrence, cdm.condition\_occurrence, cdm.measurement, cdm.observation) records from src.patient\_medical\_hist, src.diagnostic\_contact and srs.prescription associated with dia\_id from the list of excluded diagnoses (See section [3.6. Records Excluded from CDMv5 and Reasons Why](#_oraxm9bsbzuc)).
2. If \_concept\_id field can’t be populated with concept\_id from cdm.concept, it should be populated with 0. This rule should be applied for all cdm tables.
3. From src.allergy we populate records according to domain\_id (‘Condition’ or ‘Observation’) of corresponding snomed concept\_id. If src.allergy.(alg\_id/man\_id) doesn’t map to OMOP snomed code, associated record will populate Condition table with concept\_id=0.

# **3.0 Source Data Mapping**

## 3.1 Lookup Tables

### 3.1.1 Lookup Table Name: ICD10\_CONCEPT\_LK

**Summary**

We create this table in order to map src.diagnosis\_mapping.icd10 to cdm.concept.concept\_code.

**Mapping Rules**

In src.diagnosis\_mapping codes need to be manipulated in order to find matching concept\_code from cdm.concept table. We use the following rules when mapping icd10 codes from src.diagnosis\_mapping to concept\_code from cdm.concept table (we are using only one rule according to its priority. If rule n.1 is not applicable, then we use n.2 and so on. If no rule is applicable, the source code won’t be mapped to concept\_code from ICD10 vocabulary):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Rule n.1** | **Rule n.2** | **Rule n.3** | **Rule n.4** | **Rule n.5** |
| 1. Remove a dot in cdm.concept.concept\_code (ICD10 codes have a dot after the 2nd or 3rd character, but in source data they are often stored without the dot) | + | + | + | + | + |
| 2. Remove the last symbol from src.diagnosis\_mapping.icd10 |  | + | + |  |  |
| 3. Remove two last symbols from src.diagnosis\_mapping.icd10 |  |  |  | + | + |
| 4. Remove the first "0" from src.diagnosis\_mapping.icd10 |  |  | + | + | + |
| 5. src.concept.invalid\_reason is null | + | + | + | + | + |
| 6. src.concept.vocabulary\_id = “ICD10” | + | + | + | + | + |
| 7. src.concept.concept\_class\_id = “ICD10 code” | + | + | + | + |  |

**Field Mapping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| icd10 | src.diagnosis mapping.icd10 |  | Yes |  |
| concept\_code | cdm.concept.concept\_code | See mapping rules above |  |  |
| concept\_id | cdm.concept.concept\_id | See mapping rules above |  |  |
| domain\_id | cdm.concept.domain\_id | See mapping rules above |  |  |
| rule\_id |  | See mapping rules above  AND  Populate with number of rule that was applied for mapping (1, 2, 3, 4 or 5). If src.diagnosis mapping.icd10 doesn’t map to cdm.concept.concept\_code, populate with -1 | Yes |  |

### 3.1.2 Lookup Table Name: VOC\_SOURCE\_TO\_STANDARD\_LK

**Summary**

We create this table in order to map s dia\_id from src.diagnosis\_mapping to standard OMOP concepts.

**Mapping rules**

##### Rule n.1: records from src.diagnosis\_mapping

This table is populated from:

* src.diagnosis\_mapping
* lk.icd10\_concept\_lk
  + src.diagnosis\_mapping.icd10=lk.icd10\_concept\_lk.icd10

We use lk.icd10\_concept\_lk to find for each src.diagnosis\_mapping.dia\_id corresponding icd10 code from cdm.concept table. We find corresponding target concept\_id for each icd10 code using cdm.concept\_relationship and relationship\_id = ‘Maps to’ (we will use name cdm.concept\_relationship\_1 below in applied rule). We use cdm.concept\_relationship also with relationship\_id = ‘Maps to value’ for finding corresponding value\_as\_concept\_id (we will use name cdm.concept\_relationship\_2 below in applied rule).

**Field Mapping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| dia\_id | src.diagnosis\_mapping.dia\_id |  | Yes |  |
| icd10 | lk.icd10\_concept\_lk.icd10 | See mapping rule n.1 above |  |  |
| snomed |  | NULL |  |  |
| concept\_id\_1 | lk.icd10\_concept\_lk.concept\_id | See mapping rule n.1 above |  |  |
| concept\_id\_2 | cdm.concept.concept\_id | See mapping rule n.1 above  AND cdm.concept\_relationship\_1.concept\_id\_1=lk.icd10\_concept\_lk.concept\_id  AND cdm.concept\_relationship\_1.relationship\_id = ‘Maps to’  AND cdm.concept\_relationship\_1.invalid\_reason IS NULL  AND cdm.concept\_relationship\_1.concept\_id\_2=cdm.concept.concept\_id  AND cdm.concept.invalid\_reason IS NULL |  |  |
| domain\_id\_1 | lk.icd10\_concept\_lk.domain\_id | See mapping rule n.1 above |  |  |
| domain\_id\_2 | cdm.concept.domain\_id | See mapping rule n.1 above  AND cdm.concept\_relationship\_1.concept\_id\_1=lk.icd10\_concept\_lk.concept\_id  AND cdm.concept\_relationship\_1.relationship\_id = ‘Maps to’  AND cdm.concept\_relationship\_1.invalid\_reason IS NULL  AND cdm.concept\_relationship\_1.concept\_id\_2=cdm.concept.concept\_id  AND cdm.concept.invalid\_reason IS NULL |  |  |
| value\_as\_concept\_id | cdm.concept\_relationship\_2.concept\_id\_2 | See mapping rule n.1 above  (AND cdm.concept\_relationship\_2.concept\_id\_1=lk.icd10\_concept\_lk.concept\_id  AND cdm.concept\_relationship\_2.relationship\_id = ‘Maps to value’  AND cdm.concept\_relationship\_2.invalid\_reason IS NULL )  AND  IF cdm.concept\_relationship\_2.concept\_id\_2 IS NOT NULL  THEN cdm.concept\_relationship\_2.concept\_id\_2  ELSE 0 |  |  |
| gender |  | NULL |  |  |

##### Rule n.2: records from lk.diagnosis\_mapping\_snomed

This table is populated from:

* lk.diagnosis\_mapping\_snomed

We find corresponding target concept\_id for each snomed code using cdm.concept\_relationship.

**Field Mapping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| dia\_id | lk.diagnosis\_mapping\_snomed.dia\_id |  | Yes |  |
| icd10 |  | NULL |  |  |
| snomed | lk.diagnosis\_mapping\_snomed.snomed |  |  |  |
| concept\_id\_1 | lk.diagnosis\_mapping\_snomed.concept\_id |  |  |  |
| concept\_id\_2 | cdm.concept.concept\_id | cdm.concept\_relationship.concept\_id\_1=lk.diagnosis\_mapping\_snomed.concept\_id  AND cdm.concept\_relationship.relationship\_id = ‘Maps to’  AND cdm.concept\_relationship.invalid\_reason IS NULL  AND cdm.concept\_relationship.concept\_id\_2=cdm.concept.concept\_id  AND cdm.concept.invalid\_reason IS NULL |  |  |
| domain\_id\_1 | lk.diagnosis\_mapping\_snomed.domain\_id |  |  |  |
| domain\_id\_2 | cdm.concept.domain\_id | cdm.concept\_relationship.concept\_id\_1=lk.icd10\_concept\_lk.concept\_id  AND cdm.concept\_relationship.relationship\_id = ‘Maps to’  AND cdm.concept\_relationship.invalid\_reason IS NULL  AND cdm.concept\_relationship.concept\_id\_2=cdm.concept.concept\_id  AND cdm.concept.invalid\_reason IS NULL |  |  |
| value\_as\_concept\_id |  | 0 |  |  |
| gender |  | IF lk.diagnosis\_mapping\_snomed.snomed = 2904007  THEN 8507 (‘Male’)  IF lk.diagnosis\_mapping\_snomed.snomed = 6738008  THEN 8532 (‘Female’)  ELSE NULL |  | 2904007 = ‘Male infertility’  6738008= ‘Female infertility’ |

### 3.1.3 Lookup Table Name: BIOMETRIC\_CONCEPT\_LK

**Summary**

We create this table in order to create source\_value for fields from src.biometric.

**Mapping Rules**

Table is populated from:

* src.biometric
* src.locale\_list\_code
  + src.biometric.alc\_id = src.locale\_list\_code.lco\_id

All records from [src.biometric](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:observation) are divided into several measurements with different concepts according to the field. For each field name source\_value will be created. We use src.locale\_list\_code to find records related to ‘Admits alcohol use’ concept.

**Field Mapping**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **concept\_id** | **concept\_name** | **source\_value** | **rule** | **source field for value\_ as\_number** | **unit\_concept\_id** | **unit\_concept\_name** |
| 4301868 | Pulse rate | Pulse | src.biometric.pulse > 0 | src.biometric.pulse | 8581 | heartbeat |
| 4152194 | Systolic blood pressure | Max\_bp | src.biometric.max\_bp > 0 | src.biometric.max\_bp | 8876 | millimeter mercury column |
| 4154790 | Diastolic blood pressure | Min\_bp | src.biometric.min\_bp > 0 | src.biometric.min\_bp | 8876 | millimeter mercury column |
| 40766929 | How many cigarettes do you smoke per day now [PhenX] | Dayly\_cigaret\_number | src.biometric.dayly\_cigaret\_number > 0 | src.biometric.dayly\_cigaret\_number | 44777556 | per 24 hours |
| 3038553 | Body mass index | Body\_mass\_index | src.biometric.body\_mass\_index > 0 | src.biometric.body\_mass\_index | 9531 | kilogram per square meter |
| 3036277 | Body height | Height | src.biometric.height > 0 | src.biometric.height | 8582 | centimeter |
| 3016258 | Waist circumference at umbilicus by tape measure | Waist\_measurement | src.biometric.waist\_measurement > 0 | src.biometric.waist\_measurement | 8582 | centimeter |
| 3025315 | Body weight | Weight | src.biometric.weight > 0 | src.biometric.weight | 9529 | kilogram |
| 4298794 | Smoker | Is\_smoker | src.biometric.dayly\_cigaret\_number > 0  OR src.biometric.is\_smoker = 1 | NULL | NULL | - |
| 45766930 | Admits alcohol use | Alcohol\_use | src.locale\_list\_code.lco\_long\_label =1 | NULL | NULL | - |

### 

## 3.2 Standardized Clinical Data Tables

### 3.2.1 Table Name: [PERSON](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:person)

**Summary**

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. Each person record has associated demographic attributes (year of birth, gender) which are assumed to be constant for the patient throughout the course of their periods of observation. Race and ethnicity attributes will not be populated. All other patient-related data domains have a foreign-key reference to the person domain.

**Mapping Rules**

Person table is populated from src.patient. Some records in src.patient do not have a value for the year of birth, *src.patient.birthyear\_od.* These patients and also events related to these patients will not be included in the OMOP CDM.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1 - about populating of year\_of\_birth with date from source data ‘as is’).

**Field Mapping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| person\_id | src.patient.pat\_id | *Generate unique person\_id for each distinct src.patient.pat\_id* | Yes |  |
| gender\_concept\_id | src.patient.gen\_id\_od | IF src.patient.gen\_id\_od = 1 THEN 8507  IF src.patient.gen\_id\_od = 2 THEN 8532  **ELSE 0** | Yes | Standard CDM gender concepts.  8507 - ‘Male’  8532 - ‘Female’ |
| year\_of\_birth | src.patient.birthyear\_od |  | Yes |  |
| month\_of\_birth | src.patient.birth\_month |  |  |  |
| day\_of\_birth |  | NULL |  |  |
| time\_of\_birth |  | NULL |  |  |
| race\_concept\_id |  | 0 | Yes |  |
| ethnicity\_concept\_id |  | 0 | Yes |  |
| location\_id |  | NULL |  |  |
| provider\_id |  | NULL |  |  |
| care\_site\_id |  | NULL |  |  |
| person\_source\_value | src.patient.pat\_id |  |  |  |
| gender\_source\_value | src.patient.gen\_id\_od | IF src.patient.gen\_id\_od = 1 THEN 'M'  IF src.patient.gen\_id\_od = 2 THEN 'F' |  |  |
| gender\_source\_concept\_id |  | 0 |  |  |
| race\_source\_value |  | NULL |  |  |
| race\_source\_concept\_id |  | 0 |  |  |
| ethnicity\_source\_value |  | NULL |  |  |
| ethnicity\_source\_concept\_id |  | 0 |  |  |

### 3.2.2 Table Name: [DEATH](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:death)

**Summary**

The death domain contains the clinical event for how and when a person dies. Living patients should not contain any information in the death table. Cause of death will not be populated since we don’t have any information about in the source data.

**Mapping Rules**

1. Table is populated from [src.patient\_medical\_hist, src.diagnostic\_contact, src.contact,](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:death) cdm.person[.](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:death) We are creating records for all the patients having records in src.patient\_medical\_hist or src.[diagnostic\_contact](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:death) associated with dia\_id from the ’Death list’ (See [Business Rules Summary](#_bj0ez5g3a10w), rule n.3).
2. If we have multiple records associated with ICD10 code from ‘Death list’ for one patient, we should use the one with minimum death\_date (see applied rule for death\_date) that is not > date of current dataset.
3. If patients have contacts after minimum death\_date, they shouldn’t be considered as dead. Invalid contact dates (> date of current dataset) or another dates related to death shouldn’t be considered. We should consider following dates as dates of contacts:

* src.diagnostic\_contact.con\_date - records that are not related to codes from ‘Death list’
* src.prescription.con\_date
* src.test\_result.con\_date and src.test\_result.tst\_date
* src.contact.con\_date (all contacts that are not related to src.diagnostic\_contact, src.prescription, src.test\_result)
* src.patient\_medical\_hist.(known\_since/input\_date) - records that are not related to codes from ‘Death list’
* src.immunization(vaccination/input\_date)
* src.allergy(all\_start\_date/input\_date)

**NOTE:** if contact dates are invalid (> date of current dataset), they still go ‘as is’ in cdm event tables. Because of it patients may have records in cdm event tables with date of visit after death\_date (but only if date of such visit > date of current dataset).

**Field Mapping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| person\_id | cdm.person.person\_id | src.patient\_medical\_hist.pat\_id = cdm.person.person\_source\_value  or  src.contact.pat\_id = cdm.person.person\_source\_value | Yes |  |
| death\_date | src.patient\_medical\_hist.(known\_since/input\_date)  OR  src.diagnostic\_contact.con\_date  OR  src.prescription.con\_date | See mapping rules above  AND  IF src.patient\_medical\_hist.known\_since IS NOT NULL THEN src.patient\_medical\_hist.known\_since ELSE  src.patient\_medical\_hist.input\_date  OR  src.diagnostic\_contact.con\_date  OR  src.prescription.con\_date | Yes |  |
| death\_type\_concept\_id |  | 0 | Yes |  |
| cause\_concept\_id |  | 0 |  |  |
| cause\_source\_value |  | NULL |  |  |
| cause\_source\_concept\_id |  | 0 |  |  |

### 3.2.3 Table Name: [PROCEDURE\_OCCURRENCE](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:procedure_occurrence)

**Summary**

The PROCEDURE\_OCCURRENCE table contains records of activities or processes ordered by, or carried out by, a healthcare provider on the patient to have a diagnostic or therapeutic purpose.

**Mapping Rules**

##### Rule n.1: records from src.diagnostic\_contact

Table is populated from:

* src.diagnostic\_contact
* src.contact
  + src.contact.con\_id = src.diagnostict\_contact.con\_id
* cdm.person
  + cdm.person.person\_source\_value = src.contact.pat\_id
* [lk.voc\_source\_to\_standard\_lk](#_2hnc7o10wzkk) 
  + lk.voc\_source\_to\_standard\_lk.dia\_id = src.diagnostict\_contact.dia\_id

From src.diagnostic\_contact we populate only records that are associated with patients from cdm.person table. We use lookup table lk.voc\_source\_to\_standard\_lk to find corresponding icd10 code and target standard concept\_id for each src.diagnostic\_contact.dia\_id. We use src.contact table to find corresponding person and provider for each record from src.diagnostic\_contact.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1-5):

1. about populating of procedure\_date with date from source data ‘as is’
2. populating records from src.diagnostic\_contact according to corresponding domain\_id
3. not populating from src.diagnostic\_contact records associated with dia\_id from ‘Death list’
4. rule regarding duplicates
5. not populating from src.diagnostic\_contact records associated with dia\_id from list of excluded diagnoses

**Field Mapping (n.1) - records from src.diagnostic\_contact**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| procedure\_occurrence\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.1 above | Yes |  |
| procedure\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.1 above  AND  IF k.voc\_source\_to\_standard\_lk.concept\_id\_2 IS NOT NULL  THEN k.voc\_source\_to\_standard\_lk.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_2 using icd10 code |
| procedure\_date | src.diagnostic\_contact.con\_date |  | Yes |  |
| procedure\_type\_concept\_id |  | 38000275 | Yes | concept\_name ‘EHR order list entry’ |
| modifier\_concept\_id |  | 0 |  |  |
| quantity |  | NULL |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.1 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, procedure\_date and provider\_id |  |  |
| procedure\_source\_value | “ICD10: “ + lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.1 above |  |  |
| procedure\_source\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.1 above |  | Populate with source concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_1 related to icd10 code |
| qualifier\_source\_value |  | NULL |  |  |

##### Rule n.2: records from src.prescription

Table is populated from:

* src.prescription
* src.contact
  + src.contact.con\_id = src.prescription.con\_id
* cdm.person
  + cdm.person.person\_source\_value = src.contact.pat\_id
* [lk.voc\_source\_to\_standard\_lk](#_2hnc7o10wzkk) 
  + lk.voc\_source\_to\_standard\_lk.dia\_id = src.prescription.dia\_id

From src.prescription we populate only records that are associated with patients from cdm.person table. We use lookup table lk.voc\_source\_to\_standard\_lk to find corresponding icd10 code and target standard concept\_id for each src.prescription.dia\_id. We use src.contact table to find corresponding person and provider for each record from src.prescription.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1-5):

1. about populating of procedure\_date with date from source data ‘as is’
2. populating records from src.prescription according to corresponding domain\_id
3. not populating from src.prescription records associated with dia\_id from ‘Death list’
4. rule regarding duplicates
5. not populating from src.prescription records associated with dia\_id from list of excluded diagnoses

**Field Mapping (n.2) - records from src.prescription**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| procedure\_occurrence\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.2 above | Yes |  |
| procedure\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.2 above  AND  IF k.voc\_source\_to\_standard\_lk.concept\_id\_2 IS NOT NULL  THEN k.voc\_source\_to\_standard\_lk.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_2 using icd10 code |
| procedure\_date | src.prescription.con\_date |  | Yes |  |
| procedure\_type\_concept\_id |  | 38000275 | Yes | concept\_name ‘EHR order list entry’ |
| modifier\_concept\_id |  | 0 |  |  |
| quantity |  | NULL |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.2 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, procedure\_date and provider\_id |  |  |
| procedure\_source\_value | “ICD10: “ + lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.2 above |  |  |
| procedure\_source\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.2 above |  | Populate with source concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_1 related to icd10 code |
| qualifier\_source\_value |  | NULL |  |  |

##### Rule n.3: records from src.allergy (using src.allergy.man\_id)

Table is populated from:

* src.allergy
* сdm.person
  + cdm.person.person\_source\_value = src.allergy.pat\_id
* src.manifestation\_mapping\_lk
  + src.allergy.man\_id=lk.manifestation\_mapping\_lk.man\_id
* cdm.concept
  + cdm.concept.concept\_code=lk.manifestation\_mapping\_lk.concept\_code
  + AND cdm.concept.vocabulary\_id=’SNOMED’
  + AND cdm.concept.invalid\_reason IS NULL

From src.allergy we populate only records that are associated with patients from cdm.person table.

See also [Business Rules Summary](#_rjb481r50xzr) (rules n.1, 4 and 7):

1. about populating of observation\_date with date from source data ‘as is’
2. rule regarding duplicates
3. about populating records from src.allergy according to corresponding domain\_id

**Field Mapping (n.3) - records from src.allergy (using src.allergy.man\_id)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| procedure\_occurrence\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.3 above | Yes |  |
| procedure\_concept\_id | lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.3 above | Yes | Find target concept\_id  cdm.concept.concept\_id  using  src.allergy.man\_id |
| procedure\_date | src.allergy.(all\_start\_date/input\_date) | IF all\_start\_date IS NOT NULL  THEN all\_start\_date  ELSE input\_date | Yes |  |
| procedure\_type\_concept\_id |  | 38000275 | Yes | concept\_name ‘EHR order list entry’ |
| modifier\_concept\_id |  | 0 |  |  |
| quantity |  | NULL |  |  |
| provider\_id |  | NULL |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id and procedure\_date |  |  |
| procedure\_source\_value | “SNOMED: “ + lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.3 above |  |  |
| procedure\_source\_concept\_id | lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.3 above |  | Find source concept\_id  cdm.concept.concept\_id  using  src.allergy.man\_id |
| qualifier\_source\_value |  | NULL |  |  |

### 3.2.4 Table Name: [DRUG\_EXPOSURE](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:drug_exposure)

**Summary**

The drug exposure domain captures records about the inferred utilization of a biochemical substance with a physiological effect when ingested or otherwise introduced into the body. Drugs include prescription and vaccines. Drug exposure is inferred from clinical events associated with orders, prescriptions written, pharmacy dispensings, procedural administrations, and other patient-reported information.

**Mapping Rules**

See [Appendix C](#_176qg3a6xg35) - Dose Units Mapping.

##### Rule n.1: records from src.prescription

Table is populated from:

* src.prescription
* src.contact
  + src.contact.con\_id = src.prescription.con\_id
* cdm.person
  + cdm.person.person\_source\_value = src.contact.pat\_id

From src.prescription we populate only records that are associated with patients from cdm.person table. We use src.contact table to find corresponding person and provider for each record from src.prescription. We use cdm.source\_to\_conept\_map to find target standard concept\_id for each src.prescription.prd\_id.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1 and n.3-4):

1. about populating of drug\_exposure\_start\_date with date from source data ‘as is’
2. populating from src.prescription also records associated with dia\_id from ‘Death list’
3. rule regarding duplicates

**Field Mapping (n.1) - records from src.prescription**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| drug\_exposure\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.1 above | Yes |  |
| drug\_concept\_id | src.prescription.prd\_id | See mapping rule n.1 above  AND  cdm.source\_to\_concept\_map.source\_code=src.prescription.prd\_id  AND  cdm.source\_to\_concept\_map.source\_vocabulary\_id=’AUS\_DRUG\_CODE’  AND  IF cdm.source\_to\_concept\_map.target\_concept\_id IS NOT NULL  THEN cdm.source\_to\_concept\_map.target\_concept\_id  ELSE 0 | Yes | Find target concept\_id cdm.source\_to\_concept\_map.target\_concept\_id using src.prescription.prd\_id |
| drug\_exposure\_start\_date | src.prescription.con\_date |  | Yes |  |
| drug\_exposure\_end\_date |  | NULL |  |  |
| drug\_type\_concept\_id |  | 38000177 | Yes | 38000177= Type concept `Prescription written’ |
| stop\_reason |  | NULL |  |  |
| refills | src.prescription.renewal\_number | IF src.prescription.renewal\_number IS NOT NULL  THEN src.prescription.renewal\_number  ELSE  0 |  |  |
| quantity | src.prescription.trt\_duration\_tabs | IF src.prescription.trt\_duration\_tabs < 0  THEN Populate with NULL  ELSE Populate with src.prescription.trt\_duration\_tabs |  |  |
| days\_supply | src.prescription.min\_duration\_in\_days | IF src.prescription.min\_duration\_in\_days IS NOT INTEGER  THEN ROUND IT TO THE LARGER NUMBER  ELSE  src.prescription.min\_duration\_in\_days |  |  |
| sig | src.prescription.additional\_info AND src.prescription.min\_dosage AND src.prescription.min\_per\_period | “additional\_info:” +  IF src.prescription.additional\_info IS NOT NULL THEN src.prescription.additional\_info  ELSE “”  +“;” + “min\_dosage:” +  IF src.prescription.min\_dosage  IS NOT NULL THEN src.prescription.min\_dosage  ELSE “”  +“;” + “min\_per\_period: ” +  IF src.prescription.min\_per\_period IS NOT NULL THEN  src.prescription.min\_per\_period  ELSE “” |  |  |
| route\_concept\_id | cdm.source\_to\_concept\_map.target\_concept\_id | src.prescription.prd\_id = src.fo\_product.fo\_prd\_id  AND  src.fo\_product.prd\_eid = src.drug\_mapping.prd\_eid  AND  cdm.source\_to\_concept\_map.source\_code=src.drug\_mapping.nfc\_code AND  cdm.source\_to\_concept\_map.source\_vocabulary\_id = ‘NFC’  AND  IF cdm.source\_to\_concept\_map.target\_concept\_id  IS NOT NULL  THEN  cdm.source\_to\_concept\_map.target\_concept\_id  ELSE 0 |  |  |
| effective\_drug\_dose |  | NULL |  |  |
| dose\_unit\_concept\_id |  | 0 |  |  |
| lot\_number |  | NULL |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.1 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, drug\_exposure\_start\_date and provider\_id |  |  |
| drug\_source\_value | src.prescription.prd\_id |  |  |  |
| drug\_source\_concept\_id |  | 0 |  |  |
| route\_source\_value | src.drug\_mapping.nfc\_code | src.prescription.prd\_id = src.fo\_product.fo\_prd\_id  AND  src.fo\_product.prd\_eid = src.drug\_mapping.prd\_eid |  |  |
| dose\_unit\_source\_value |  | NULL |  |  |

##### Rule n.2: records from src.immunization

Table is populated from:

* src.immunization
* cdm.person
  + cdm.person.person\_source\_value = src.immunization.pat\_id
* src.immunization\_mapping
  + src.immunization\_mapping.imt\_id = src.immunization.imt\_id
* src.fo\_product
  + src.fo\_product.prd\_eid = src.immunization\_mapping.prd\_eid
  + src.immunization\_mapping.min\_age IS NULL
  + OR (year(src.immunization.(vaccination\_date/input\_date))-cdm.person.year\_of\_birth ) >= src.immunization\_mapping.min\_age and (year(src.immunization.(vaccination\_date/input\_date))-cdm.person.year\_of\_birth ) <= src.immunization\_mapping.max\_age

From src.immunization we populate only records that are associated with patients from cdm.person table. We use src.immunization\_mapping and src.fo\_product table to find corresponding fo\_prd\_id for each src.immunization.imt\_id. Some imt\_ids map to 2 products - adult and pediatric vaccines. For such cases in order to find correct product we use age rules from src.immunization\_mapping. We also use cdm.source\_to\_concept\_map to find target standard concept\_id for each src.fo\_product.fo\_prd\_id.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1 and n.4)

1. about populating of drug\_exposure\_start\_date with date from source data ‘as is’)
2. rule regarding duplicates

**Field Mapping (n.2) - records from src.immunization**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| drug\_exposure\_id |  | identity | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.2 above | Yes |  |
| drug\_concept\_id | src.fo\_product.fo\_prd\_id | See mapping rule n.2 above  AND  cdm.source\_to\_concept\_map.source\_code=src.fo\_product.fo\_prd\_id  AND  cdm.source\_to\_concept\_map.source\_vocabulary\_id=’AUS\_DRUG\_CODE’  AND  IF cdm.source\_to\_concept\_map.target\_concept\_id IS NOT NULL  THEN cdm.source\_to\_concept\_map.target\_concept\_id  ELSE 0 | Yes | Find target cdm.source\_to\_concept\_map.target\_concept\_id using src.fo\_product.fo\_prd\_id |
| drug\_exposure\_start\_date | src.immunization.(vaccination\_date/input\_date) | IF src.immunization.vaccination\_date IS NOT NULL  THEN src.immunization.vaccination\_date  ELSE src.immunization.input\_date | Yes |  |
| drug\_exposure\_end\_date |  | NULL |  |  |
| drug\_type\_concept\_id |  | 38000179 | Yes | 38000179 = Type concept  ‘Physician administered drug (identified as procedure)’’ |
| stop\_reason |  | NULL |  |  |
| refills |  | NULL |  |  |
| quantity |  | NULL |  |  |
| days\_supply |  | 1 |  |  |
| sig |  | NULL |  |  |
| route\_concept\_id | cdm.source\_to\_concept\_map.target\_concept\_id | See mapping rule n.2 above  AND  src.fo\_product.prd\_eid = src.drug\_mapping.prd\_eid  AND  cdm.source\_to\_concept\_map.source\_code=src.drug\_mapping.nfc\_code AND  cdm.source\_to\_concept\_map.source\_vocabulary\_id = ‘NFC’  AND  IF cdm.source\_to\_concept\_map.target\_concept\_id  IS NOT NULL  THEN  cdm.source\_to\_concept\_map.target\_concept\_id  ELSE 0 |  |  |
| effective\_drug\_dose |  | NULL |  |  |
| dose\_unit\_concept\_id |  | 0 |  |  |
| lot\_number |  | NULL |  |  |
| provider\_id |  | NULL |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id and drug\_exposure\_start\_date |  |  |
| drug\_source\_value | src.fo\_product.fo\_prd\_id | See mapping rule n.2 above |  |  |
| drug\_source\_concept\_id |  | 0 |  |  |
| route\_source\_value | src.drug\_mapping.nfc\_code | See mapping rule n.2 above  AND  src.fo\_product.prd\_eid = src.drug\_mapping.prd\_eid |  |  |
| dose\_unit\_source\_value |  | NULL |  |  |

### 3.2.5 Table Name: [CONDITION\_OCCURRENCE](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:condition_occurrence)

**Summary**

Conditions are records of a Person suggesting the presence of a disease or medical condition stated as a diagnosis, a sign or a symptom, which is observed by a Provider.

**Mapping Rules**

##### Rule n.1: records from src.diagnostic\_contact

Table is populated from:

* src.diagnostic\_contact
* src.contact
  + src.diagnostic\_contact.con\_id=src.contact.con\_id
* сdm.person
  + cdm.person.person\_source\_value = src.contact.pat\_id
* [lk.voc\_source\_to\_standard\_lk](#_2hnc7o10wzkk)
  + lk.voc\_source\_to\_standard\_lk.dia\_id = src.diagnostic\_contact.dia\_id
  + AND (lk.voc\_source\_to\_standard\_lk.gender IS NULL OR lk.voc\_source\_to\_standard\_lk.gender=cdm.person.gender\_concept\_id)

From src.diagnostic\_contact we populate only records that are associated with patients from cdm.person table. We use lookup table lk.voc\_source\_to\_standard\_lk to find corresponding icd10 code and target standard concept\_id for each src.diagnostic\_contact.dia\_id (codes related to infertility we map according to gender of patient). We use src.contact table to find corresponding person and provider for each record from src.diagnostic\_contact.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1-5):

1. about populating of condition\_start\_date with date from source data ‘as is’
2. populating records from src.diagnostic\_contact according to corresponding domain\_id + all unmapped records
3. not populating from src.diagnostic\_contact records associated with dia\_id from ‘Death list’
4. rule regarding duplicates
5. not populating from src.diagnostic\_contact records associated with dia\_id from list of excluded diagnoses

**Field Mapping (n.1) - records from src.diagnostic\_contact**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| condition\_occurrence\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.1 above | Yes |  |
| condition\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10, lk.voc\_source\_to\_standard\_lk.snomed | See mapping rule n.1 above  AND  lk.voc\_source\_to\_standard\_lk.concept\_id\_2 IS NOT NULL  THEN  lk.voc\_source\_to\_standard\_lk.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_2 using lk.voc\_source\_to\_standard\_lk.icd10/ lk.voc\_source\_to\_standard\_lk.snomed |
| condition\_start\_date | src.diagnostic\_contact.con\_date |  | Yes |  |
| condition\_end\_date |  | NULL |  |  |
| condition\_type\_concept\_id |  | 43542353 | Yes | 43542353 = ‘Observation recorded from EHR’,  vocabulary\_id='Condition Type' |
| stop\_reason |  | NULL |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.1 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, condition\_start\_date and provider\_id |  |  |
| condition\_source\_value | “ICD10: ” + lk.voc\_source\_to\_standard\_lk.icd10  OR  “SNOMED: ” +  lk.voc\_source\_to\_standard\_lk.snomed  OR  “DIA\_ID: ” + src.diagnostic\_contact.dia\_id | See mapping rule n.1 above  AND  IF lk.voc\_source\_to\_standard\_lk.icd10 IS NOT NULL  THEN  lk.voc\_source\_to\_standard\_lk.icd10  IF  lk.voc\_source\_to\_standard\_lk.snomed IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.snomed  ELSE src.prescription.dia\_id |  | If src.diagnostic\_contact.dia\_id maps to icd10 code or snomed code, we populate this field with icd10 code/snomed code. If it doesn’t, we populate this field with src.diagnostic\_contact.dia\_id |
| condition\_source\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10, lk.voc\_source\_to\_standard\_lk.snomed | See mapping rule n.1 above  AND  lk.voc\_source\_to\_standard\_lk.concept\_id\_1 IS NOT NULL  THEN  lk.voc\_source\_to\_standard\_lk.concept\_id\_1  ELSE 0 |  | Populate with source concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_1 related to lk.voc\_source\_to\_standard\_lk.icd10/ lk.voc\_source\_to\_standard\_lk.snomed |

##### Rule n.2: records from src.prescription

Table is populated from:

* src.prescription
* src.contact
  + src.prescription.con\_id=src.contact.con\_id
* сdm.person
  + cdm.person.person\_source\_value = src.contact.pat\_id
* [lk.voc\_source\_to\_standard\_lk](#_2hnc7o10wzkk)
  + lk.voc\_source\_to\_standard\_lk.dia\_id = src.prescription.dia\_id
  + AND (lk.voc\_source\_to\_standard\_lk.gender IS NULL OR lk.voc\_source\_to\_standard\_lk.gender=cdm.person.gender\_concept\_id)

From src.prescription we populate only records that are associated with patients from cdm.person table and where dia\_id>0. We use lookup table lk.voc\_source\_to\_standard\_lk to find corresponding icd10 code and target standard concept\_id for each src.prescription.dia\_id (codes related to infertility we map according to gender of patient). We use src.contact table to find corresponding person and provider for each record from src.prescription.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1-5):

1. about populating of condition\_start\_date with date from source data ‘as is’
2. populating records from src.prescription according to corresponding domain\_id + all unmapped records
3. not populating from src.prescription records associated with dia\_id from ‘Death list’
4. rule regarding duplicates
5. not populating from src.prescription records associated with dia\_id from list of excluded diagnoses

**Field Mapping (n.2) - records from src.prescription**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| condition\_occurrence\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.2 above | Yes |  |
| condition\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10, lk.voc\_source\_to\_standard\_lk.snomed | See mapping rule n.2 above  AND  lk.voc\_source\_to\_standard\_lk.concept\_id\_2 IS NOT NULL  THEN  lk.voc\_source\_to\_standard\_lk.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_2 using lk.voc\_source\_to\_standard\_lk.icd10/ lk.voc\_source\_to\_standard\_lk.snomed |
| condition\_start\_date | src.prescription.con\_date |  | Yes |  |
| condition\_end\_date |  | NULL |  |  |
| condition\_type\_concept\_id |  | 43542353 | Yes | 43542353 = ‘Observation recorded from EHR’,  vocabulary\_id='Condition Type' |
| stop\_reason |  | NULL |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.2 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, condition\_start\_date and provider\_id |  |  |
| condition\_source\_value | “ICD10: ” + lk.voc\_source\_to\_standard\_lk.icd10  OR  “SNOMED: ” +  lk.voc\_source\_to\_standard\_lk.snomed  OR  “DIA\_ID: ” + src.prescription.dia\_id | See mapping rule n.2 above  AND  IF lk.voc\_source\_to\_standard\_lk.icd10 IS NOT NULL  THEN  lk.voc\_source\_to\_standard\_lk.icd10  IF  lk.voc\_source\_to\_standard\_lk.snomed IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.snomed  ELSE src.prescription.dia\_id |  | If src.diagnostic\_contact.dia\_id maps to icd10 code or snomed code, we populate this field with icd10 code/snomed code. If it doesn’t, we populate this field with src.diagnostic\_contact.dia\_id |
| condition\_source\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10, lk.voc\_source\_to\_standard\_lk.snomed | See mapping rule n.2 above  AND  IF lk.voc\_source\_to\_standard\_lk.concept\_id\_1 IS NOT NULL  THEN  lk.voc\_source\_to\_standard\_lk.concept\_id\_1  ELSE 0 |  | Populate with source concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_1 related to lk.voc\_source\_to\_standard\_lk.icd10/ lk.voc\_source\_to\_standard\_lk.snomed |

### 

##### Rule n.3: records from src.biometric (using lk.biometric\_concept\_lk)

Table is populated from:

* [lk.biometric\_concept\_lk](#_ro4v8qovoj27)
* src.contact
  + lk.biometric\_concept\_lk.con\_id=src.contact.con\_id
* сdm.person
  + cdm.person.person\_source\_value = src.contact.pat\_id

From lk.biometric\_concept\_lk we populate only records that are associated with patients from cdm.person table and with lk.biometric\_concept\_lk.concept\_id = 4298794 (concept\_name ‘Smoker’). We use src.contact table to find corresponding person and provider for each record from lk.biometric\_concept\_lk.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1 and n.4):

1. about populating of condition\_start\_date with date from source data ‘as is’
2. rule regarding duplicates

**Field Mapping (n.3) - records from src.biometric (using biometric\_concept\_lk)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| condition\_occurrence\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.3 above | Yes |  |
| condition\_concept\_id | lk.biometric\_concept\_lk.source\_value |  | Yes | Populate with target concept\_id lk.biometric\_concept\_lk.concept\_id  related to lk.biometric\_concept\_lk.source\_value |
| condition\_start\_date | lk.biometric\_concept\_lk.con\_date |  | Yes |  |
| condition\_end\_date |  | NULL |  |  |
| condition\_type\_concept\_id |  | 45905770 | Yes | 45905770 = 'Patient Self-Reported Condition', vocabulary\_id='Condition Type' |
| stop\_reason |  | NULL |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.3 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, condition\_start\_date and provider\_id |  |  |
| condition\_source\_value | “BIOMETRIC: ” + lk.biometric\_concept\_lk.source\_value |  |  |  |
| condition\_source\_concept\_id |  | 0 |  |  |

##### Rule n.4.1: records from src.allergy (using src.allergy.alg\_id)

Table is populated from:

* src.allergy
* сdm.person
  + cdm.person.person\_source\_value = src.allergy.pat\_id

From src.allergy we populate only records that are associated with patients from cdm.person table.

See also [Business Rules Summary](#_rjb481r50xzr) (rules n.1, 4 and 7):

1. about populating of condition\_start\_date with date from source data ‘as is’
2. rule regarding duplicates
3. about populating records from src.allergy according to corresponding domain\_id + all unmapped records

**Field Mapping (n.4.1) - records from src.allergy (using src.allergy.alg\_id)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| condition\_occurrence\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.4.1 above | Yes |  |
| condition\_concept\_id | lk.allergy\_mapping\_lk.concept\_code, src.allergy.alg\_id | See mapping rule n.4.1 above  AND  src.allergy.alg\_id=lk.allergy\_mapping\_lk.alg\_id  AND  cdm.concept.concept\_code=lk.allergy\_mapping\_lk.concept\_code  AND  cdm.concept.vocabulary\_id=’SNOMED’  AND  cdm.concept.invalid\_reason IS NULL  AND  IF cdm.concept.concept\_id IS NOT NULL  THEN Populate with cdm.concept.concept\_id  ELSE Populate with 0 | Yes | Populate with target concept\_id  cdm.concept.concept\_id  using  src.allergy.alg\_id/lk.allergy\_mapping\_lk.concept\_code |
| condition\_start\_date | src.allergy.(all\_start\_date/input\_date) | IF all\_start\_date IS NOT NULL  THEN all\_start\_date  ELSE input\_date | Yes |  |
| condition\_end\_date |  | NULL |  |  |
| condition\_type\_concept\_id |  | 43542353 | Yes | 43542353 = ‘Observation recorded from EHR’,  vocabulary\_id='Condition Type' |
| stop\_reason |  | NULL |  |  |
| provider\_id |  | NULL |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id and condition\_start\_date |  |  |
| condition\_source\_value | “SNOMED: “ + lk.allergy\_mapping\_lk.concept\_code  OR  “ALG\_ID: “ + src.allergy.alg\_id | See mapping rule n.4.1 above  AND  src.allergy.alg\_id=lk.allergy\_mapping\_lk.alg\_id  AND  IF lk.allergy\_mapping\_lk.concept\_code IS NOT NULL  THEN  lk.allergy\_mapping\_lk.concept\_code  ELSE src.allergy.alg\_id |  | If src.allergy.alg\_id maps to snomed code, we populate this field with snomed code. If it doesn’t, we populate this field with src.allergy.alg\_id |
| condition\_source\_concept\_id | lk.allergy\_mapping\_lk.concept\_code | See mapping rule n.4.1 above  AND  src.allergy.alg\_id=lk.allergy\_mapping\_lk.alg\_id  AND  cdm.concept.concept\_code=lk.allergy\_mapping\_lk.concept\_code  AND  cdm.concept.vocabulary\_id=’SNOMED’  AND  cdm.concept.invalid\_reason IS NULL  AND  IF cdm.concept.concept\_id IS NOT NULL  THEN Populate with cdm.concept.concept\_id  ELSE Populate with 0 |  | Find source concept\_id  cdm.concept.concept\_id  using  src.allergy.alg\_id |

##### Rule n.4.2: records from src.allergy (using src.allergy.man\_id)

Table is populated from:

* src.allergy
* сdm.person
  + cdm.person.person\_source\_value = src.allergy.pat\_id

From src.allergy we populate only records that are associated with patients from cdm.person table and only records where man\_id>0.

See also [Business Rules Summary](#_rjb481r50xzr) (rules n.1, 4 and 7):

1. about populating of condition\_start\_date with date from source data ‘as is’
2. rule regarding duplicates
3. about populating records from src.allergy according to corresponding domain\_id + all unmapped records

**Field Mapping (n.4.2) - records from src.allergy (using src.allergy.man\_id)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| condition\_occurrence\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.4.2 above | Yes |  |
| condition\_concept\_id | lk.manifestation\_mapping\_lk.concept\_code, src.allergy.man\_id | See mapping rule n.4.2 above  AND  src.allergy.man\_id=lk.manifestation\_mapping\_lk.man\_id  AND  cdm.concept.concept\_code=lk.manifestation\_mapping\_lk.concept\_code  AND  cdm.concept.vocabulary\_id=’SNOMED’  AND  cdm.concept.invalid\_reason IS NULL  AND  IF cdm.concept.concept\_id IS NOT NULL  THEN Populate with cdm.concept.concept\_id  ELSE Populate with 0 | Yes | Populate with target concept\_id  cdm.concept.concept\_id  using  src.allergy.man\_id/lk.manifestation\_mapping\_lk.concept\_code |
| condition\_start\_date | src.allergy.(all\_start\_date/input\_date) | IF all\_start\_date IS NOT NULL  THEN all\_start\_date  ELSE input\_date | Yes |  |
| condition\_end\_date |  | NULL |  |  |
| condition\_type\_concept\_id |  | 43542353 | Yes | 43542353 = ‘Observation recorded from EHR’,  vocabulary\_id='Condition Type' |
| stop\_reason |  | NULL |  |  |
| provider\_id |  | NULL |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id and condition\_start\_date |  |  |
| condition\_source\_value | “SNOMED: “ + lk.manifestation\_mapping\_lk.concept\_code  OR  “MAN\_ID: “ + src.allergy.man\_id | See mapping rule n.4.2 above  AND  src.allergy.man\_id=lk.manifestation\_mapping\_lk.man\_id  AND  IF lk.manifestation\_mapping\_lk.concept\_code IS NOT NULL  THEN  lk.manifestation\_mapping\_lk.concept\_code  ELSE src.allergy.man\_id |  | 1. where man\_id>0 2. If src.allergy.man\_id maps to snomed code, we populate this field with snomed code. If it doesn’t, we populate this field with src.allergy.man\_id |
| condition\_source\_concept\_id | lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.4.2 above  AND  src.allergy.man\_id=lk.manifestation\_mapping\_lk.man\_id  AND  cdm.concept.concept\_code=lk.manifestation\_mapping\_lk.concept\_code  AND  cdm.concept.vocabulary\_id=’SNOMED’  AND  cdm.concept.invalid\_reason IS NULL  AND  IF cdm.concept.concept\_id IS NOT NULL  THEN Populate with cdm.concept.concept\_id  ELSE Populate with 0 |  | Find source concept\_id  cdm.concept.concept\_id  using  src.allergy.man\_id |

### 

### 3.2.6 Table Name: [MEASUREMENT](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:measurement)

**Summary**

The MEASUREMENT table contains records of Measurement, i.e. structured values (numerical or categorical) obtained through systematic and standardized examination or testing of a Person or Person's sample. The MEASUREMENT table contains results of such Measurements as laboratory tests, vital signs, quantitative findings from pathology reports, etc.

**Mapping Rules**

##### Rule n.1: records from src.diagnostic\_contact

Table is populated from:

* src.diagnostic\_contact
* src.contact
  + src.diagnostic\_contact.con\_id=src.contact.con\_id
* cdm.person
  + src.contact.pat\_id=cdm.person.person\_source\_value
* [lk.voc\_source\_to\_standard\_lk](#_2hnc7o10wzkk)
  + lk.voc\_source\_to\_standard\_lk.dia\_id = src.diagnostic\_contact.dia\_id

From src.diagnostic\_contact we populate only records that are associated with patients from cdm.person table. We use lookup table lk.voc\_source\_to\_standard\_lk to find corresponding icd10 code and target standard concept\_id for each src.diagnostic\_contact.dia\_id. We use src.contact table to find corresponding person and provider for each record from src.diagnostic\_contact.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1-5):

1. about populating of measurement\_date with date from source data ‘as is’
2. populating records from src.diagnostic\_contact according to corresponding domain\_id
3. not populating from src.diagnostic\_contact records associated with dia\_id from ‘Death list’
4. rule regarding duplicates
5. not populating from src.diagnostic\_contact records associated with dia\_id from list of excluded diagnoses

**Field Mapping (n. 1) - records from src.diagnostic\_contact**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| measurement\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.1 above | Yes |  |
| measurement\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.1 above  AND  IF lk.voc\_source\_to\_standard\_lk.concept\_id\_2 IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_2 using lk.voc\_source\_to\_standard\_lk.icd10 |
| measurement\_date | src.diagnostic\_contact.con\_date |  | Yes |  |
| measurement\_time |  | NULL |  |  |
| measurement\_type\_concept\_id |  | 44818701 | Yes | 44818701 = ‘From physical examination’ |
| operator\_concept\_id |  | 0 |  |  |
| value\_as\_number |  | NULL |  |  |
| value\_as\_concept\_id | lk.voc\_source\_to\_standard\_lk.value\_as\_concept\_id |  |  |  |
| unit\_concept\_id |  | 0 |  |  |
| range\_low |  | NULL |  |  |
| range\_high |  | NULL |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.1 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, measurement\_date and provider\_id |  |  |
| measurement\_source\_value | “ICD10: ” +  lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.1 above |  |  |
| measurement\_source\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.1 above |  | Populate with source concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_1 related to lk.voc\_source\_to\_standard\_lk.icd10 |
| unit\_source\_value |  | NULL |  |  |
| value\_source\_value |  | NULL |  |  |

##### Rule n.2: records from src.prescription

Table is populated from:

* src.prescription
* src.contact
  + src.prescription.con\_id=src.contact.con\_id
* cdm.person
  + src.contact.pat\_id=cdm.person.person\_source\_value
* [lk.voc\_source\_to\_standard\_lk](#_2hnc7o10wzkk)
  + lk.voc\_source\_to\_standard\_lk.dia\_id = src.prescription.dia\_id

From src.prescription we populate only records that are associated with patients from cdm.person table. We use lookup table lk.voc\_source\_to\_standard\_lk to find corresponding icd10 code and target standard concept\_id for each src.prescription.dia\_id. We use src.contact table to find corresponding person and provider for each record from src.prescription.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1-5):

1. about populating of measurement\_date with date from source data ‘as is’
2. populating records from src.prescription according to corresponding domain\_id
3. not populating from src.prescription records associated with dia\_id from ‘Death list’
4. rule regarding duplicates
5. not populating from src.prescription records associated with dia\_id from list of excluded diagnoses

**Field Mapping (n. 2) - records from src.prescription**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| measurement\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.2 above | Yes |  |
| measurement\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.2 above  AND  IF lk.voc\_source\_to\_standard\_lk.concept\_id\_2 IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_2 using lk.voc\_source\_to\_standard\_lk.icd10 |
| measurement\_date | src.prescription.con\_date |  | Yes |  |
| measurement\_time |  | NULL |  |  |
| measurement\_type\_concept\_id |  | 44818701 | Yes | 44818701 = ‘From physical examination’ |
| operator\_concept\_id |  | 0 |  |  |
| value\_as\_number |  | NULL |  |  |
| value\_as\_concept\_id | lk.voc\_source\_to\_standard\_lk.value\_as\_concept\_id |  |  |  |
| unit\_concept\_id |  | 0 |  |  |
| range\_low |  | NULL |  |  |
| range\_high |  | NULL |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.2 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, measurement\_date and provider\_id |  |  |
| measurement\_source\_value | “ICD10: ” +  lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.2 above |  |  |
| measurement\_source\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.2 above |  | Populate with source concept\_id lk.voc\_source\_to\_standard\_lk.concept\_id\_1 related to lk.voc\_source\_to\_standard\_lk.icd10 |
| unit\_source\_value |  | NULL |  |  |
| value\_source\_value |  | NULL |  |  |

##### Rule n.3: records from src.biometric (using lk.biometric\_concept\_lk)

Table is populated from:

* [lk.biometric\_concept\_lk](#_ro4v8qovoj27)
* src.contact
  + lk.biometric\_concept\_lk.con\_id=src.contact.con\_id
* cdm.person
  + src.contact.pat\_id=cdm.person.person\_source\_value

From lk.biometric\_concept\_lk we populate only records that are associated with patients from cdm.person table and with lk.biometric\_concept\_lk.source\_value NOT equal to ‘Is\_smoker’ and NOT equal to ’Alcohol\_use’. We use src.contact table to find corresponding person and provider for each record from lk.biometric\_concept\_lk.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1 and n.4):

1. about populating of measurement\_date with date from source data ‘as is’
2. rule regarding duplicates

**Field Mapping (n. 3) - records from src.biometric (using lk.biometric\_concept\_lk)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| measurement\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.3 above | Yes |  |
| measurement\_concept\_id | lk.biometric\_concept\_lk.source\_value | See mapping rule n.3 above | Yes | Populate with target concept\_id lk.biometric\_concept\_lk.concept\_id  related to lk.biometric\_concept\_lk.source\_value |
| measurement\_date | lk.biometric\_concept\_lk.con\_date |  | Yes |  |
| measurement\_time |  | NULL |  |  |
| measurement\_type\_concept\_id |  | IF lk.biometric\_concept\_lk.source\_value = ‘Dayly\_cigaret\_number’  THEN 44818704  ELSE 44818701 | Yes | 44818701 = ‘From physical examination’  44818704 = ‘Patient reported value’ |
| operator\_concept\_id |  | 4172703 |  | Qualifier operator ‘=’ |
| value\_as\_number | lk.biometric\_concept\_lk.value\_as\_number |  |  |  |
| value\_as\_concept\_id |  | 0 |  |  |
| unit\_concept\_id | lk.biometric\_concept\_lk.unit\_concept\_id |  |  |  |
| range\_low |  | NULL |  |  |
| range\_high |  | NULL |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.3 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, measurement\_date and provider\_id |  |  |
| measurement\_source\_value | “BIOMETRIC: ” + lk.biometric\_concept\_lk.source\_value |  |  |  |
| measurement\_source\_concept\_id |  | 0 |  |  |
| unit\_source\_value |  | NULL |  |  |
| value\_source\_value | lk.biometric\_concept\_lk.value\_as\_number |  |  |  |

##### Rule n.4: records from src.test\_result

Table is populated from:

* src.test\_result
* src.contact
  + src.test\_result.con\_id=src.contact.con\_id
* cdm.person
  + src.contact.pat\_id=cdm.person.person\_source\_value

From src.test\_result we populate only records that are associated with patients from cdm.person table. We use src.contact table to find corresponding person and provider for each record from src.test\_result.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1 and n.4):

1. about populating of measurement\_date with date from source data ‘as is’
2. rule regarding duplicates

**Field Mapping (n. 4) - records from src.test\_result**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| measurement\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.4 above | Yes |  |
| measurement\_concept\_id | src.test\_mapping.loinc | cdm.concept.concept\_code=src.test\_mapping.loinc and cdm.concept.invalid\_reason is null  AND  cdm.concept\_relationship.concept\_id\_1=cdm.concept.concept\_id and cdm.concept\_relationship.invalid\_reason is null and cdm.concept\_relationship.relationship\_id=’Maps to’  AND  IF cdm.concept\_relationship.concept\_id\_2 IS NOT NULL  THEN cdm.concept\_relationship.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id    cdm.concept\_relationship.concept\_id\_2  using  src.test\_mapping.loinc |
| measurement\_date | src.test\_result.tst\_date |  | Yes |  |
| measurement\_time |  | NULL |  |  |
| measurement\_type\_concept\_id |  | 44818702 | Yes | 44818702 = ‘Lab result’ |
| operator\_concept\_id |  | 4172703 |  | Qualifier operator ‘=’ |
| value\_as\_number | src.test\_result.tst\_value, lk.test\_unit\_mapping.conversion\_factor | src.test\_result.tst\_unit\_id=lk.test\_unit\_mapping.tst\_unit\_id  AND  USE FORMULA:  src.test\_result.tst\_value  \*  (IF lk.test\_unit\_mapping.conversion\_factor IS NOT NULL  THEN  lk.test\_unit\_mapping.conversion\_factor  ELSE 1) |  | For tst\_unit\_id = 281856 (label = ‘10’) find corresponding lk.test\_unit\_mapping.conversion\_factorusing also tst\_id (src.test\_result.tst\_id=lk.test\_unit\_mapping.tst\_id) |
| value\_as\_concept\_id | cdm.source\_to\_concept\_map.target\_concept\_id | src.test\_result.tst\_qual\_id=src.list\_code.lco\_id  AND  src.list\_code.lco\_eid=cdm.source\_to\_concept\_map.source\_code  AND  cdm.source\_to\_concept\_map.target\_vocabulary\_id=’SNOMED’ AND cdm.source\_to\_concept\_map.source\_vocabulary\_id = ‘AUS\_QUALIFIER\_CODE’  AND  IF cdm.source\_to\_concept\_map.target\_concept\_id IS NOT NULL  THEN cdm.source\_to\_concept\_map.target\_concept\_id  ELSE 0 |  |  |
| unit\_concept\_id | cdm.concept.concept\_id  OR  lk.test\_unit\_mapping.concept\_id | Three cases (see comments):   1. Map to target concept using tst\_unit label (src.list\_code.lco\_id):   src.test\_result.tst\_unit\_id=src.list\_code.lco\_id  AND  (src.list\_code.lco\_eid=cdm.concept.concept\_code and cdm.concept.vocabulary\_id=’UCUM’ and cdm.concept.invalid\_reason IS NULL and tst\_unit\_id not equal to (!=) 281562 )   1. Map to target concept using mapping table:   src.test\_result.tst\_unit\_id=lk.test\_unit\_mapping.tst\_unit\_id   1. Otherwise:   Set to 0 |  | If src.test\_result.tst\_unit\_id doesn’t map to UCUM code from cdm.concept table using test unit label src.list\_code.lco\_id, use lk.test\_unit\_mapping for finding target concept\_id (See [Appendix C: 6.1 Test Unit Mapping](#_68mg21xns923))  For tst\_unit\_id = 281562 use lk.test\_unit\_mapping (test unit label src.list\_code.lco\_id =’C’ of this tst\_unit\_id maps to concept\_id ‘coulomb’, but it should map to concept\_id ‘degree Celsius’)  Find corresponding lk.test\_unit\_mapping.conversion\_factor for tst\_unit\_id = 281856 (label = ‘10’) using also tst\_id (src.test\_result.tst\_id=lk.test\_unit\_mapping.tst\_id) |
| range\_low | src.test\_result.low\_normal\_value |  |  |  |
| range\_high | src.test\_result.high\_normal\_value |  |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.4 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, measurement\_date and provider\_id |  |  |
| measurement\_source\_value | “LOINC: “ + src.test\_mapping.loinc  OR  “TST\_ID: “ + src.test\_result.tst\_id | src.test\_result.tst\_id=src.test\_mapping.tst\_id  AND  IF src.test\_mapping.loinc IS NOT NULL  THEN src.test\_mapping.loinc  ELSE src.test\_result.tst\_id |  | If src.test\_result.tst\_id maps to LOINC code, we populate this field with LOINC code. If it doesn’t, we populate this field with src.test\_result.tst\_id |
| measurement\_source\_concept\_id | src.test\_mapping.loinc | src.test\_result.tst\_id=src.test\_mapping.tst\_id  AND  src.test\_mapping.loinc=cdm.concept.concept\_code  AND  IF cdm.concept.concept\_id IS NOT NULL  THEN cdm.concept.concept\_id  ELSE 0 |  | Populate with source concept\_id  cdm.concept.concept\_id  related to src.test\_mapping.loinc |
| unit\_source\_value | src.test\_result.tst\_unit\_id |  |  |  |
| value\_source\_value | src.list\_code.lco\_eid | src.test\_result.tst\_qual\_id=src.list\_code.lco\_id |  |  |

##### Rule n.5: records from src.allergy (using src.allergy.man\_id)

Table is populated from:

* src.allergy
* сdm.person
  + cdm.person.person\_source\_value = src.allergy.pat\_id
* src.manifestation\_mapping\_lk
  + src.allergy.man\_id=lk.manifestation\_mapping\_lk.man\_id
* сdm.concept
  + cdm.concept.concept\_code=lk.manifestation\_mapping\_lk.concept\_code
  + AND cdm.concept.vocabulary\_id=’SNOMED’
  + AND cdm.concept.invalid\_reason IS NULL

From src.allergy we populate only records that are associated with patients from cdm.person table.

See also [Business Rules Summary](#_rjb481r50xzr) (rules n.1, 4 and 7):

1. about populating of observation\_date with date from source data ‘as is’
2. rule regarding duplicates
3. about populating records from src.allergy according to corresponding domain\_id

**Field Mapping (n.5) - records from src.allergy (using src.allergy.man\_id)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| measurement\_id |  | Identity | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.5 above | Yes |  |
| measurement\_concept\_id | lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.5 above | Yes | Find target concept\_id  cdm.concept.concept\_id  using  src.allergy.man\_id |
| measurement\_date | src.allergy.(all\_start\_date/input\_date) | IF all\_start\_date IS NOT NULL  THEN all\_start\_date  ELSE input\_date | Yes |  |
| measurement\_time |  | NULL |  |  |
| measurement\_type\_concept\_id |  | IF cdm.concept.concept\_name contains text ‘WEIGHT’ THEN Populate with 44818701  ELSE Populate with 44818702 | Yes | 44818702 = ‘Lab result’;  44818701 = ‘From physical examination’ |
| operator\_concept\_id |  | 0 |  |  |
| value\_as\_number |  | NULL |  |  |
| value\_as\_concept\_id |  | 0 |  |  |
| unit\_concept\_id |  | 0 |  |  |
| range\_low |  | NULL |  |  |
| range\_high |  | NULL |  |  |
| provider\_id |  | NULL |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id and measurement\_date |  |  |
| measurement\_source\_value | “SNOMED: “ + lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.5 above |  |  |
| measurement\_source\_concept\_id | lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.5 above |  | Find source concept\_id  cdm.concept.concept\_id  using  src.allergy.man\_id |
| unit\_source\_value |  | NULL |  |  |
| value\_source\_value |  | NULL |  |  |

### 3.2.7 Table Name: [OBSERVATION](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:observation)

**Summary**

The OBSERVATION table captures clinical facts about a Person obtained in the context of examination, questioning or a procedure. Any data that cannot be represented by any other domains, such as social and lifestyle facts, medical history, family history, etc. are recorded here.

**Mapping Rules**

##### Rule n.1: records from src.diagnostic\_contact

Table is populated from:

* src.diagnostic\_contact
* src.contact
  + src.contact.con\_id=src.diagnostic\_contact.con\_id
* [lk.voc\_source\_to\_standard\_lk](#_2hnc7o10wzkk)
  + lk.voc\_source\_to\_standard\_lk.dia\_id=src.diagnostic\_contact.dia\_id
* cdm.person
  + cdm.person.person\_source\_value=src.contact.pat\_id

From src.diagnostic\_contact we populate only records that are associated with patients from cdm.person table. We use lookup table lk.voc\_source\_to\_standard\_lk to find corresponding icd10 code and target standard concept\_id for each src.diagnostic\_contact.dia\_id. We use src.contact table to find corresponding person and provider for each record from src.diagnostic\_contact.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1-5):

1. about populating of observation\_date with date from source data ‘as is’
2. populating records from src.diagnostic\_contact according to corresponding domain\_id
3. not populating from src.diagnostic\_contact records associated with dia\_id from ‘Death list’
4. rule regarding duplicates
5. not populating from src.diagnostic\_contact records associated with dia\_id from list of excluded diagnoses

**Field Mapping (n.1) - from src.diagnostic\_contact**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| observation\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.1 above | Yes |  |
| observation\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.1 above  AND  IF lk.voc\_source\_to\_standard\_lk.concept\_id\_2 IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id  lk.voc\_source\_to\_standard\_lk.concept\_id\_2 using lk.voc\_source\_to\_standard\_lk.icd10 |
| observation\_date | src.diagnostic\_contact.con\_date | See mapping rule n.1 above | Yes |  |
| observation\_time |  | NULL |  |  |
| observation\_type\_concept\_id |  | 38000280 | Yes | 38000280 has concept\_name 'Observation recorded from EHR', vocabulary\_id='Observation Type’ |
| value\_as\_number |  | NULL |  |  |
| value\_as\_string |  | NULL |  |  |
| value\_as\_concept\_id | lk.voc\_source\_to\_standard\_lk.value\_as\_concept\_id |  |  |  |
| qualifier\_concept\_id |  | 0 |  |  |
| unit\_concept\_id |  | 0 |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.1 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, observation\_date and provider\_id |  |  |
| observation\_source\_value | “ICD10: “ + lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.1 above |  |  |
| observation\_source\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.1 above |  | Populate with source concept\_id  lk.voc\_source\_to\_standard\_lk.concept\_id\_1 related to lk.voc\_source\_to\_standard\_lk.icd10 |
| unit\_source\_value |  | NULL |  |  |
| qualifier\_source\_value |  | NULL |  |  |

##### Rule n.2: records from src.prescription

Table is populated from:

* src.prescription
* src.contact
  + src.contact.con\_id=src.prescription.con\_id
* [lk.voc\_source\_to\_standard\_lk](#_2hnc7o10wzkk)
  + lk.voc\_source\_to\_standard\_lk.dia\_id=src.prescription.dia\_id
* cdm.person
  + cdm.person.person\_source\_value=src.contact.pat\_id

From src.prescription we populate only records that are associated with patients from cdm.person table. We use lookup table lk.voc\_source\_to\_standard\_lk to find corresponding icd10 code and target standard concept\_id for each src.prescription.dia\_id. We use src.contact table to find corresponding person and provider for each record from src.prescription.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1-5):

1. about populating of observation\_date with date from source data ‘as is’
2. populating records from src.prescription according to corresponding domain\_id
3. not populating from src.prescription records associated with dia\_id from ‘Death list’
4. rule regarding duplicates
5. not populating from src.prescription records associated with dia\_id from list of excluded diagnoses

**Field Mapping (n.2) - from src.prescription**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| observation\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.2 above | Yes |  |
| observation\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.2 above  AND  IF lk.voc\_source\_to\_standard\_lk.concept\_id\_2 IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id  lk.voc\_source\_to\_standard\_lk.concept\_id\_2 using lk.voc\_source\_to\_standard\_lk.icd10 |
| observation\_date | src.prescription.con\_date | See mapping rule n.2 above | Yes |  |
| observation\_time |  | NULL |  |  |
| observation\_type\_concept\_id |  | 38000280 | Yes | 38000280 has concept\_name 'Observation recorded from EHR', vocabulary\_id='Observation Type’ |
| value\_as\_number |  | NULL |  |  |
| value\_as\_string |  | NULL |  |  |
| value\_as\_concept\_id | lk.voc\_source\_to\_standard\_lk.value\_as\_concept\_id |  |  |  |
| qualifier\_concept\_id |  | 0 |  |  |
| unit\_concept\_id |  | 0 |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.2 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, observation\_date and provider\_id |  |  |
| observation\_source\_value | “ICD10: “ + lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.2 above |  |  |
| observation\_source\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.2 above |  | Populate with source concept\_id  lk.voc\_source\_to\_standard\_lk.concept\_id\_1 related to lk.voc\_source\_to\_standard\_lk.icd10 |
| unit\_source\_value |  | NULL |  |  |
| qualifier\_source\_value |  | NULL |  |  |

##### Rule n.3: records from src.patient\_medical\_hist

Table is populated from:

* src.patient\_medical\_hist
* cdm.person
  + cdm.person.person\_source\_value=src.patient\_medical\_hist.pat\_id

We populate records from src.patient\_medical\_hist regardless of domain\_id of corresponding standard concept. From src.patient\_medical\_hist we populate only records that are associated with patients from cdm.person table. We use lookup table [lk.voc\_source\_to\_standard\_lk](#_2hnc7o10wzkk) to find corresponding icd10 code and target standard concept\_id for each src.patient\_medical\_hist.dia\_id. We use src.contact table to find corresponding provider.

See also [Business Rules Summary](#_rjb481r50xzr) (rules n.1, 3-5):

1. about populating of observation\_date with date from source data ‘as is’
2. not populating from src.patient\_medical\_hist records associated with dia\_id from ‘Death list’
3. rule regarding duplicates
4. not populating from src.patient\_medical\_hist records associated with dia\_id from list of excluded diagnoses

**Field Mapping (n.3) - from src.patient\_medical\_hist**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| observation\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.3 above | Yes |  |
| observation\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.3 above  AND  lk.voc\_source\_to\_standard\_lk.dia\_id=src.patient\_medical\_hist.dia\_id  AND  IF lk.voc\_source\_to\_standard\_lk.concept\_id\_2 IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.concept\_id\_2  ELSE 0 | Yes | Find target concept\_id  lk.voc\_source\_to\_standard\_lk.concept\_id\_2 using lk.voc\_source\_to\_standard\_lk.icd10 |
| observation\_date | src.patient\_medical\_hist.(known\_since/input\_date) | IF known\_since IS NOT NULL  THEN known\_since  ELSE input\_date | Yes |  |
| observation\_time |  | NULL |  |  |
| observation\_type\_concept\_id |  | 44814721 | Yes | 44814721 has concept\_name 'Patient reported', vocabulary\_id='Observation Type’ |
| value\_as\_number |  | NULL |  |  |
| value\_as\_string |  | NULL |  |  |
| value\_as\_concept\_id | lk.voc\_source\_to\_standard\_lk.value\_as\_concept\_id | See mapping rule n.3 above  AND  lk.voc\_source\_to\_standard\_lk.dia\_id=src.patient\_medical\_hist.dia\_id  IF  lk.voc\_source\_to\_standard\_lk.value\_as\_concept\_id IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.value\_as\_concept\_id  ELSE 0 |  |  |
| qualifier\_concept\_id |  | 0 |  |  |
| unit\_concept\_id |  | 0 |  |  |
| provider\_id |  | NULL |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id and observation\_date |  |  |
| observation\_source\_value | “ICD10: “ + lk.voc\_source\_to\_standard\_lk.icd10  OR  “DIA\_ID: “ + src.diagnostic\_contact.dia\_id | See mapping rule n.3 above  AND  lk.voc\_source\_to\_standard\_lk.dia\_id=src.patient\_medical\_hist.dia\_id  IF  lk.voc\_source\_to\_standard\_lk.icd10 IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.icd10  ELSE src.diagnostic\_contact.dia\_id |  | If src.diagnostic\_contact.dia\_id maps to icd10 code, we populate this field with icd10 code. If it doesn’t, we populate this field with src.diagnostic\_contact.dia\_id |
| observation\_source\_concept\_id | lk.voc\_source\_to\_standard\_lk.icd10 | See mapping rule n.3 above  AND  lk.voc\_source\_to\_standard\_lk.dia\_id=src.patient\_medical\_hist.dia\_id  IF lk.voc\_source\_to\_standard\_lk.concept\_id\_1 IS NOT NULL  THEN lk.voc\_source\_to\_standard\_lk.concept\_id\_1  ELSE 0 |  | Populate with source concept\_id  lk.voc\_source\_to\_standard\_lk.concept\_id\_1 related to lk.voc\_source\_to\_standard\_lk.icd10 |
| unit\_source\_value |  | NULL |  |  |
| qualifier\_source\_value |  | NULL |  |  |

##### Rule n.4: records from src.biometric (using lk.biometric\_concept\_lk)

Table is populated from:

* [lk.biometric\_concept\_lk](#_ro4v8qovoj27)
* src.contact
  + src.contact.con\_id=lk.biometric\_concept\_lk.con\_id
* cdm.person
  + cdm.person.person\_source\_value=src.contact.pat\_id

From lk.biometric\_concept\_lk we populate only records that are associated with patients from cdm.person table and with lk.biometric\_concept\_lk.concept\_id = 45766930 (concept\_name ‘Admits alcohol use’). Domain\_id of this concept is ‘Observation’. We use src.contact table to find corresponding person and provider for each record from lk.biometric\_concept\_lk.

See also [Business Rules Summary](#_rjb481r50xzr) (rule n.1 and n.4):

1. about populating of observation\_date with date from source data ‘as is’
2. rule regarding duplicates

**Field Mapping (n.4) - from src.biometric (using lk.biometric\_concept\_lk)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| observation\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.4 above | Yes |  |
| observation\_concept\_id | lk.biometric\_concept\_lk.source\_value |  | Yes | Populate with target concept\_id lk.biometric\_concept\_lk.concept\_id related to lk.biometric\_concept\_lk.source\_value |
| observation\_date | src.biometric\_concept\_lk.con\_date |  | Yes |  |
| observation\_time |  | NULL |  |  |
| observation\_type\_concept\_id |  | 44814721 | Yes | 44814721 has concept\_name 'Patient reported', vocabulary\_id='Observation Type’ |
| value\_as\_number |  | NULL |  |  |
| value\_as\_string |  | NULL |  |  |
| value\_as\_concept\_id |  | 0 |  |  |
| qualifier\_concept\_id |  | 0 |  |  |
| unit\_concept\_id |  | 0 |  |  |
| provider\_id | cdm.provider.provider\_id | See mapping rule n.4 above  AND  src.contact.doc\_id = cdm.provider.provider\_source\_value |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id, observation\_date and provider\_id |  |  |
| observation\_source\_value | “BIOMETRIC: “ + lk.biometric\_concept\_lk.source\_value | See mapping rule n.4 above |  |  |
| observation\_source\_concept\_id |  | 0 |  |  |
| unit\_source\_value |  | NULL |  |  |
| qualifier\_source\_value |  | NULL |  |  |

##### Rule n.5.1: records from src.allergy (using src.allergy.alg\_id)

Table is populated from:

* src.allergy
* сdm.person
  + cdm.person.person\_source\_value = src.allergy.pat\_id
* src.allergy\_mapping\_lk
  + src.allergy.alg\_id=lk.allergy\_mapping\_lk.alg\_id
* сdm.concept
  + cdm.concept.concept\_code=lk.allergy\_mapping\_lk.concept\_code
  + AND cdm.concept.vocabulary\_id=’SNOMED’
  + AND cdm.concept.invalid\_reason IS NULL

From src.allergy we populate only records that are associated with patients from cdm.person table.

See also [Business Rules Summary](#_rjb481r50xzr) (rules n.1, 4 and 7):

1. about populating of observation\_date with date from source data ‘as is’
2. rule regarding duplicates
3. about populating records from src.allergy according to corresponding domain\_id

**Field Mapping (n.5.1) - records from src.allergy (using src.allergy.alg\_id)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| observation\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.5.1 above | Yes |  |
| observation\_concept\_id | lk.allergy\_mapping\_lk.concept\_code | See mapping rule n.5.1 above | Yes | Find target concept\_id  cdm.concept.concept\_id  using  src.allergy.alg\_id |
| observation\_date | src.allergy.(all\_start\_date/input\_date) | IF all\_start\_date IS NOT NULL  THEN all\_start\_date  ELSE input\_date | Yes |  |
| observation\_time |  | NULL |  |  |
| observation\_type\_concept\_id |  | 38000280 | Yes | 38000280 has concept\_name 'Observation recorded from EHR', vocabulary\_id='Observation Type’ |
| value\_as\_number |  | NULL |  |  |
| value\_as\_string |  | NULL |  |  |
| value\_as\_concept\_id |  | 0 |  |  |
| qualifier\_concept\_id |  | 0 |  |  |
| unit\_concept\_id |  | 0 |  |  |
| provider\_id |  | NULL |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id and observation\_date |  |  |
| observation\_source\_value | “SNOMED: “ + lk.allergy\_mapping\_lk.concept\_code | See mapping rule n.5.1 above |  |  |
| observation\_source\_concept\_id | lk.allergy\_mapping\_lk.concept\_code | See mapping rule n.5.1 above |  | Find source concept\_id  cdm.concept.concept\_id  using  src.allergy.alg\_id |
| unit\_source\_value |  | NULL |  |  |
| qualifier\_source\_value |  | NULL |  |  |

##### Rule n.5.2: records from src.allergy (using src.allergy.man\_id)

Table is populated from:

* src.allergy
* сdm.person
  + cdm.person.person\_source\_value = src.allergy.pat\_id
* src.manifestation\_mapping\_lk
  + src.allergy.man\_id=lk.manifestation\_mapping\_lk.man\_id
* cdm.concept
  + cdm.concept.concept\_code=lk.manifestation\_mapping\_lk.concept\_code
  + AND cdm.concept.vocabulary\_id=’SNOMED’
  + AND cdm.concept.invalid\_reason IS NULL

From src.allergy we populate only records that are associated with patients from cdm.person table.

See also [Business Rules Summary](#_rjb481r50xzr) (rules n.1, 4 and 7):

1. about populating of observation\_date with date from source data ‘as is’
2. rule regarding duplicates
3. about populating records from src.allergy according to corresponding domain\_id

**Field Mapping (n.5.2) - records from src.allergy (using src.allergy.alg\_id)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| observation\_id |  | *Identity* | Yes |  |
| person\_id | cdm.person.person\_id | See mapping rule n.5.2 above | Yes |  |
| observation\_concept\_id | lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.5.2 above | Yes | Find target concept\_id  cdm.concept.concept\_id  using  src.allergy.man\_id |
| observation\_date | src.allergy.(all\_start\_date/input\_date) | IF all\_start\_date IS NOT NULL  THEN all\_start\_date  ELSE input\_date | Yes |  |
| observation\_time |  | NULL |  |  |
| observation\_type\_concept\_id |  | 38000280 | Yes | 38000280 has concept\_name 'Observation recorded from EHR', vocabulary\_id='Observation Type’ |
| value\_as\_number |  | NULL |  |  |
| value\_as\_string |  | NULL |  |  |
| value\_as\_concept\_id |  | 0 |  |  |
| qualifier\_concept\_id |  | 0 |  |  |
| unit\_concept\_id |  | 0 |  |  |
| provider\_id |  | NULL |  |  |
| visit\_occurrence\_id | cdm.visit\_occurrence.visit\_occurrence\_id | Populate with cdm.visit\_occurrence.visit\_occurrence\_id related to combination of person\_id and observation\_date |  |  |
| observation\_source\_value | “SNOMED: “ + lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.5.2 above |  |  |
| observation\_source\_concept\_id | lk.manifestation\_mapping\_lk.concept\_code | See mapping rule n.5.2 above |  | Find source concept\_id  cdm.concept.concept\_id  using  src.allergy.man\_id |
| unit\_source\_value |  | NULL |  |  |
| qualifier\_source\_value |  | NULL |  |  |

### 3.2.8 Table Name: [VISIT\_OCCURRENCE](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:visit_occurrence)

**Summary**

The visit domain contains the spans of time a person continuously receives medical services from one or more providers at a care site in a given setting within the healthcare system.

**Mapping Rules**

Table is populated from event tables:

* cdm.procedure\_occurrence
* cdm.drug\_exposure
* cdm.condition\_occurrence
* cdm.measurement
* cdm.observation

**Field Mapping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| visit\_occurrence\_id |  | Generate unique visit\_occurrence\_id for each distinct combination of:   * person\_id * provider\_id * \_date   from event tables (see mapping rules above). | Yes | Provider\_id is null for records from cdm.drug\_exposure that are derived from src.immunization,  records from cdm.observation that are derived from src.patient\_medical\_hist,  records from cdm.observation and cdm.condition\_occurrence from src.allergy |
| person\_id | cdm.procedure\_occurrence.person\_id,  cdm.drug\_exposure.person\_id,  cdm.condition\_occurrence.person\_id,  cdm.measurement.person\_id,  cdm.observation.person\_id |  | Yes |  |
| visit\_concept\_id |  | 9202 | Yes | 9202 ='Outpatient Visit' |
| visit\_start\_date | cdm.procedure\_occurrence.procedure\_date,  cdm.drug\_exposure.drug\_exposure\_start\_date,  cdm.condition\_occurrence.condition\_start\_date,  cdm.measurement.measurement\_date,  cdm.observation.observation\_date |  | Yes |  |
| visit\_start\_time |  | NULL |  |  |
| visit\_end\_date | cdm.procedure\_occurrence.procedure\_date,  cdm.drug\_exposure.drug\_exposure\_start\_date,  cdm.condition\_occurrence.condition\_start\_date,  cdm.measurement.measurement\_date,  cdm.observation.observation\_date |  | Yes |  |
| visit\_end\_time |  | NULL |  |  |
| visit\_type\_concept\_id |  | 44818518 |  | 44818518 =‘Visit derived from EHR record’ |
| provider\_id | cdm.procedure\_occurrence.provider\_id,  cdm.drug\_exposure.provider\_id,  cdm.condition\_occurrence.provider\_id,  cdm.measurement.provider\_id,  cdm.observation.provider\_id |  |  |  |
| care\_site\_id | cdm.provider.care\_site\_id | provider\_id from event tables = cdm.provider.provider\_id |  |  |
| visit\_source\_value | src.contact.con\_id | provider\_id from event tables = cdm.provider.provider\_id  AND  person\_id from event tables = cdm.person.person\_id  AND  cdm.provider.provider\_source\_value=src.doctor.doc\_id  AND  cdm.person.person\_source\_value=src.contact.pat\_id  AND  \_date from event tables =src.contact.con\_date  AND  Populate with min src.contact.con\_id (for the same person\_id, provider\_id,  \_date) |  |  |
| visit\_source\_concept\_id |  | 0 |  |  |

### 3.2.9 Table Name: [OBSERVATION\_PERIOD](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:observation_period)

**Summary**

The OBSERVATION\_PERIOD table contains records which uniquely define the spans of time for which a Person is at-risk to have clinical events recorded within the source systems, even if no events in fact are recorded (healthy patient with no healthcare interactions).

**Mapping rules**

Observation\_period was established after populating 5 event tables:

* cdm.procedure\_occurrence,
* cdm.condition\_occurrence,
* cdm.drug\_exposure,
* cdm.measurement,
* cdm.observation.

Every Patient should have only one observation period. Observation Period should be the range of each person’s transaction from 5 event tables, using the earliest and the latest events from these tables.

**Field Mapping**

|  |  |  |  |
| --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Comment** |
| observation\_period\_id | person\_id from event tables | *Generate a unique observation\_period\_id for each distinct person\_id* |  |
| person\_id | cdm.procedure\_occurrence.person\_id,  cdm.drug\_exposure.person\_id,  cdm.condition\_occurrence.person\_id,  cdm.measurement.person\_id,  cdm.observation.person\_id | Use person\_id from cdm event tables |  |
| observation\_period\_start\_date | cdm.procedure\_occurrence.procedure\_date  OR  cdm.drug\_exposure.drug\_exposure\_start\_date  OR  cdm.condition\_occurrence.condition\_start\_date  OR  cdm.measurement.measurement\_date  OR  cdm.observation.observation\_date | Use earliest date from range of each person’s transactions in all 5 event tables |  |
| observation\_period\_end\_date | cdm.procedure\_occurrence.procedure\_date  OR  cdm.drug\_exposure.drug\_exposure\_start\_date  OR  cdm.condition\_occurrence.condition\_start\_date  OR  cdm.measurement.measurement\_date  OR  cdm.observation.observation\_date | Use latest date from range of each person’s transactions in all 5 event tables  **For records from cdm.drug\_exposure:**  USE FORMULA:  cdm.drug\_exposure.drug\_exposure\_end\_date =  cdm.drug\_exposure.drug\_exposure\_start\_date  +  (IF cdm.drug\_exposure.days\_supply >0  THEN cdm.drug\_exposure.days\_supply  ELSE 1)  \*  (IF cdm.drug\_exposure.refills >0  THEN cdm.drug\_exposure.refills  ELSE 1)  *IF calculated observation\_period\_end\_date > death\_date of patient, populate with cdm.death.death\_date* |  |
| period\_type\_concept\_id |  | 44814724 | 44814724 = ‘Period covering healthcare encounters’ |

### 3.2.10 Table Name: [FACT\_RELATIONSHIP](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:fact_relationship)

This table will not be populated.

### 3.2.11 Table Name: [DEVICE\_EXPOSURE](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:device_exposure)

This table will not be populated.

### 3.2.12 Table Name: [SPECIMEN](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:specimen)

This table will not be populated.

### 3.2.13 Table Name: [NOTE](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:note)

This table will not be populated.

# 3.3 Standardized Health System Data Tables

### 3.3.1 Table Name: [LOCATION](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:location)

**Summary**

The Location table represents a generic way to capture physical location or address information. Locations are used to define the addresses for Care Sites. Patient's and Doctor’s location information will not be presented in CDM.

**Mapping Rules**

Location table is populated using src.practice. For each distinct src.practice.postcode record will be created.

**Field Mapping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| location\_id | src.practice.postcode | Generate unique location\_id for each distinct src.practice.postcode | Yes |  |
| address\_1 |  | NULL |  |  |
| address\_2 |  | NULL |  |  |
| city |  | NULL |  |  |
| state | src.practice.state |  |  |  |
| zip | src.practice.postcode |  |  |  |
| county |  | NULL |  |  |
| location\_source\_value | src.practice.postcode |  |  |  |

### 3.3.2 Table Name: [CARE\_SITE](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:care_site)

**Summary**

The Care Site table contains a list of uniquely identified physical or organizational units where healthcare delivery is practiced.

**Mapping Rules**

Care\_site table is populated using src.practice. For each unique src.practice.pracid record will be created. We look for the corresponding cdm.location record in order to populate location\_id (see applied rule for details).

**Field Mapping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| care\_site\_id | src.practice.pra\_id | Generate unique care\_site\_id for each distinct src.practice.pra\_id | Yes |  |
| care\_site\_name |  | NULL |  |  |
| place\_of\_service\_concept\_id |  | 8940 |  | Constant value 8940(‘Office’ ) for all records |
| location\_id | cdm.location.location\_id | cdm.location.zip = src.practice.postcode |  |  |
| care\_site\_source\_value | src.practice.pra\_id |  |  |  |
| place\_of\_service\_source\_value |  | ‘Office’ |  |  |

### 3.3.3 Table Name: [PROVIDER](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:provider)

**Summary**

The Provider table contains a list of uniquely identified health care providers. These are typically physicians, nurses, etc.

**Mapping rules**

Table is populated from:

* src.doctor
* src.doctor\_practice
  + src.doctor.doc\_id = src.doctor\_practice.doc\_id

We populate records from src.doctor table. We use src.doctor\_practice for populating care\_site\_id.

**Field Mapping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Destination Field** | **Source Field** | **Applied Rule** | **Required field** | **Comment** |
| provider\_id | src.doctor.doc\_id | Generate unique provider\_id for each distinct src.doctor.doc\_id | Yes |  |
| provider\_name |  | NULL |  |  |
| npi |  | NULL |  |  |
| dea |  | NULL |  |  |
| specialty\_concept\_id | cdm.source\_to\_concept\_map.target\_concept\_id | src.list\_code.lco\_id = src.doctor.spe\_id  AND  src.list\_code.lco\_eid = cdm.source\_to\_concept\_map.source\_code  AND target\_vocabulary\_id = ‘Specialty’  AND  IF cdm.source\_to\_concept\_map.target\_concept\_id  IS NOT NULL  THEN  cdm.source\_to\_concept\_map.target\_concept\_id  ELSE 0 |  | See [Appendix B: 5.1 Provider Specialty Mapping](#_ju339xrsa2n3) |
| care\_site\_id | cdm.care\_site.care\_site\_id | See mapping rules above  and cdm.care\_site.care\_site\_source\_value = src.doctor\_practice.pra\_id |  |  |
| year\_of\_birth | src.doctor.birth\_year |  |  |  |
| gender\_concept\_id | src.doctor.doc\_gen\_id | IF src.doctor.doc\_gen\_id = 1 THEN 8507  IF src.doctor.doc\_gen\_id = 2 THEN 8532  ELSE 0 |  | Standard CDM gender concepts.  8507 - ‘Male’  8532 - ‘Female’ |
| provider\_source\_value | src.doctor.doc\_id |  |  |  |
| specialty\_source\_value | src.list\_code.lco\_eid | src.list\_code.lco\_id = src.doctor.spe\_id |  |  |
| specialty\_source\_concept\_id |  | 0 |  |  |
| gender\_source\_value | src.doctor.doc\_gen\_id | IF src.doctor.doc\_gen\_id = 1 THEN 'M'  IF src.doctor.doc\_gen\_id = 2 THEN 'F' |  |  |
| gender\_source\_concept\_id |  | 0 |  |  |

# 3.4 Standardized Health Economics Data Tables

### 3.4.1 Table Name: [PAYER\_PLAN\_PERIOD](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:payer_plan_period)

This table will not be populated.

### 3.4.2 Table Name: [COST](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:cost)

This table will not be populated.

# 3.5 Standardized Derived Elements

### 3.5.1 Table Name: [COHORT](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:cohort)

This table will not be populated.

### 3.5.2 Table Name: [COHORT\_ATTRIBUTE](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:cohort_attribute)

This table will not be populated.

### 3.5.3 Table Name: [DRUG\_ERA](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:drug_era)

**Summary**

The Drug era table contains a list of unique spans of time when the Person is assumed to be exposed to a particular active ingredient. Drug Exposures are combined under certain rules to produce continuous Drug Eras.

All Drug Eras are recorded in the DRUG\_ERA table based on OMOP standard calculations of drugs for a patient. A persistence window of 30 days is applied.

### 3.5.4 Table Name: [DOSE\_ERA](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:dose_era)

**Summary**

The Dose era table contains a list of unique spans of time when Person is assumed to be exposed to a constant dose of a specific active ingredient.

### 3.5.5 Table Name: [CONDITION\_ERA](http://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:condition_era)

**Summary**

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 OMOP standard calculations of conditions for a patient

# 3.6. Records Excluded from CDMv5 and Reasons Why

1. Patients where the YOB is not defined.
2. Records related to dia\_id from the following list:

|  |  |  |
| --- | --- | --- |
| **dia\_id** | **qty of records** **associated with dia\_id** | **DIA\_LBL** |
| 102268 | 41475 | DNA DID NOT ARRIVE |
| 251220 | 2793 | PHONE CALL FAILED ATTEMPT |
| 134016 | 2686 | FTA FAILED TO ATTEND |
| 3357 | 2128 | DNA (DID NOT ARRIVE) |
| 4096 | 1481 | FAILED TO ATTEND |
| 102340 | 1065 | DNW DID NOT WAIT |
| 225898 | 266 | NO CONSULTATION |
| 95314 | 224 | DID NOT ATTEND |
| 740076 | 209 | PATIENT DECLINED TO CONTACT |
| 102220 | 208 | DNA 10 MIN |
| 95313 | 207 | DID NOT ARRIVE |
| 102228 | 203 | DNA 2 |
| 228447 | 197 | NOT SEEN |
| 102214 | 193 | DNA 1 |
| 226445 | 188 | NO SHOW NO CANCELLATION |
| 102230 | 182 | DNA 20 MIN |
| 886 | 179 | APPOINTMENT CANCELLED |
| 228298 | 168 | NOT CONSULTED |
| 225864 | 159 | NO CONSULT |
| 102226 | 144 | DNA 1A |
| 27917 | 134 | ANTACID |
| 233651 | 133 | OPENED IN ERROR |
| 369218 | 132 | WRONG PATIENT |
| 369203 | 130 | WRONG ENTRY |
| 45049 | 111 | BLOOD TESTS AND BP CHECK |
| 102248 | 104 | DNA 3 |

# 4.0 Appendix A: Source Table mapping to CDM

The following will be a table listing all of the fields in source data tables and how they were used. All details below are based on the standard variable and file structures as described in the Source supplied documentation.

### 4.1 Table: Allergy

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| alg\_id | integer | cdm.condition\_occurrence.condition\_source\_value (only unmapped alg\_id), used for linking with lk.allergy\_mapping\_lk in cdm.condition\_occurrence, cdm.observation |  |
| all\_cer\_id | character varying |  | Not used in ETL |
| all\_end\_date | character varying |  | Not used in ETL |
| all\_id | integer |  | Not used in ETL |
| all\_start\_date | date | \_date field in  cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement |  |
| all\_text | character varying |  | Not used in ETL |
| input\_date | date | \_date field in  cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement |  |
| man\_id | integer | cdm.condition\_occurrence.condition\_source\_value (only unmapped alg\_id), used for linking with lk.manifestation\_mapping\_lk in cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement |  |
| mol\_id | character varying |  | Not used in ETL |
| pat\_id | integer | Used for linking with cdm.person in cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement | Used in ETL process, not presented in final cdm tables |
| prd\_id | character varying |  | Not used in ETL |
| sev\_id | integer |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 

### 4.2 Table: Biometric

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| alc\_id | integer | Used in applied rule for cdm.condition\_occurrence.condition\_concept\_id, cdm.condition\_occurrence.condition\_source\_value | Using lk.biometric\_concept\_lk, used in ETL process, not presented in final cdm tables |
| alcohol\_drinker | integer |  | Not used in ETL |
| body\_mass\_index | integer | cdm.measurement.value\_as\_number, cdm.measurement.value\_source\_value | Using lk.biometric\_concept\_lk |
| con\_date | date | \_date field in  cdm.condition\_occurrence, cdm.measurement |  |
| con\_id | integer | Used for linking with src.contact in cdm.condition\_occurrence, cdm.measurement |  |
| dayly\_cigaret\_number | integer | cdm.measurement.value\_as\_number, cdm.measurement.value\_source\_value, used in applied rule for cdm.condition\_occurrence.condition\_concept\_id, cdm.condition\_occurrence.condition\_source\_value | Using lk.biometric\_concept\_lk |
| height | integer | cdm.measurement.value\_as\_number, cdm.measurement.value\_source\_value | Using lk.biometric\_concept\_lk |
| is\_smoker | integer | Used in applied rule for cdm.condition\_occurrence.condition\_concept\_id, cdm.condition\_occurrence.condition\_source\_value | Using lk.biometric\_concept\_lk, used in ETL process, not presented in final cdm tables |
| max\_bp | integer | cdm.measurement.value\_as\_number, cdm.measurement.value\_source\_value | Using lk.biometric\_concept\_lk |
| min\_bp | integer | cdm.measurement.value\_as\_number, cdm.measurement.value\_source\_value | Using lk.biometric\_concept\_lk |
| pulse | integer | cdm.measurement.value\_as\_number, cdm.measurement.value\_source\_value | Using lk.biometric\_concept\_lk |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |
| waist\_measurement | character varying | cdm.measurement.value\_as\_number, cdm.measurement.value\_source\_value | Using lk.biometric\_concept\_lk |
| weight | integer | cdm.measurement.value\_as\_number, cdm.measurement.value\_source\_value | Using lk.biometric\_concept\_lk |

### 

### 4.3 Table: Contact

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| con\_age\_child | character varying |  | Not used in ETL |
| con\_children\_number | character varying |  | Not used in ETL |
| con\_date | date | Used for linking with cdm event tables in cdm.visit\_occurrence |  |
| con\_duration | character varying |  | Not used in ETL |
| con\_id | integer | cdm.visit\_occurrence.visit\_source\_value |  |
| con\_mar\_id | integer |  | Not used in ETL |
| con\_num | integer |  | Not used in ETL |
| con\_spg\_id | integer |  | Not used in ETL |
| con\_sta\_id | character varying |  | Not used in ETL |
| con\_typ\_id | integer |  | Not used in ETL |
| doc\_id | integer | Used for linking with cdm event tables in cdm.visit\_occurrence |  |
| pat\_id | integer | Used for linking with cdm event tables in cdm.visit\_occurrence |  |
| pra\_id | integer |  | Not used in ETL |
| refund\_data | character varying |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 4.4 Table: Diagnostic\_contact

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| cer\_id | character varying |  | Not used in ETL |
| con\_date | date | \_date field in  cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement |  |
| con\_id | integer | Used for linking with src.contact in cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement |  |
| dia\_id | integer | cdm.condition\_occurrence.condition\_source\_value (only unmapped dia\_id), used for linking with lk.voc\_source\_to\_standard\_lk in cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement |  |
| dia\_rank | integer |  | Not used in ETL |
| dia\_type\_id | integer |  | Not used in ETL |
| is\_professional\_disease | integer |  | Not used in ETL |
| sick\_leave\_duration | character varying |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 4.5 Table: Doctor

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| activity\_sector | character varying |  | Not used in ETL |
| birth\_year | integer | cdm.provider.year\_of\_birth |  |
| category | character varying |  | Not used in ETL |
| doc\_gen\_id | integer | Used in applied rule of cdm.provider.gender\_source\_value | Used in ETL process, not presented in final cdm tables |
| doc\_id | integer | cdm.provider.provider\_source\_value |  |
| end\_panel\_date | character varying |  | Not used in ETL |
| first\_con\_date | date |  | Not used in ETL |
| last\_con\_date | date |  | Not used in ETL |
| last\_trans\_date | date |  | Not used in ETL |
| lng\_code | character varying |  | Not used in ETL |
| potential | character varying |  | Not used in ETL |
| rol\_id | integer |  | Not used in ETL |
| soft\_version | character varying |  | Not used in ETL |
| spe\_id | integer | Used in applied rule of cdm.provider.specialty\_source\_value |  |
| spe2\_id | character varying |  | Not used in ETL |
| start\_panel\_date | character varying |  | Not used in ETL |
| ten\_id | character varying |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 

### 4.6 Table: Doctor\_practice

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| doc\_id | bigint | Used for linking with src.doctor in cdm.provider |  |
| pra\_id | bigint | Used for linking with cdm.care\_site in cdm.provider |  |
| rank | integer |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 

### 4.7 Table: Fo\_product

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| fo\_prd\_id | integer | cdm.drug\_exposure.drug\_source\_value |  |
| prd\_eid | character varying | Used for linking with src.immunization\_mapping in cdm.drug\_exposure (rule n.2) |  |
| prd\_name | character varying |  | Not used in ETL |
| mast\_prd\_name | character varying |  | Not used in ETL |
| int\_brand\_name | character varying |  | Not used in ETL |
| dosage | double precision |  | Not used in ETL |
| dosage\_as\_text | character varying |  | Not used in ETL |
| unit | character varying |  | Not used in ETL |
| dosage2 | double precision |  | Not used in ETL |
| dosage2\_as\_text | character varying |  | Not used in ETL |
| unit2 | character varying |  | Not used in ETL |
| dosage3 | double precision |  | Not used in ETL |
| dosage3\_as\_text | character varying |  | Not used in ETL |
| unit3 | character varying |  | Not used in ETL |
| nbdose | double precision |  | Not used in ETL |
| nbdose\_as\_text | character varying |  | Not used in ETL |
| galenic | character varying |  | Not used in ETL |
| nbdose2 | double precision |  | Not used in ETL |
| nbdose2\_as\_text | character varying |  | Not used in ETL |
| galenic2 | character varying |  | Not used in ETL |
| is\_prd\_refundable | integer |  | Not used in ETL |
| prd\_refundable\_rate | character varying |  | Not used in ETL |
| prd\_price | character varying |  | Not used in ETL |
| canceled\_dat | date |  | Not used in ETL |
| creation\_dat | date |  | Not used in ETL |
| manufacturer\_name | character varying |  | Not used in ETL |
| is\_generic | character varying |  | Not used in ETL |
| is\_hosp | character varying |  | Not used in ETL |
| prd\_start\_dat | date |  | Not used in ETL |
| prd\_end\_dat | date |  | Not used in ETL |
| regrouping\_code | character varying |  | Not used in ETL |
| eph\_code | character varying |  | Not used in ETL |
| eph\_name | character varying |  | Not used in ETL |
| eph\_type | character varying |  | Not used in ETL |
| eph\_state | integer |  | Not used in ETL |
| mol\_eid | character varying |  | Not used in ETL |
| mol\_name | character varying |  | Not used in ETL |
| atccode | character varying |  | Not used in ETL |
| atc\_name | character varying |  | Not used in ETL |
| atc\_mol | character varying |  | Not used in ETL |
| atc\_type | integer |  | Not used in ETL |
| atc\_state | integer |  | Not used in ETL |
| bnf\_eid | character varying |  | Not used in ETL |
| bnf\_name | character varying |  | Not used in ETL |
| version | integer |  | Not used in ETL |
| updated | character varying |  | Not used in ETL |
| min\_dosage\_by\_day\_ref | character varying |  | Not used in ETL |
| max\_dosage\_by\_day\_ref | character varying |  | Not used in ETL |
| gal\_id | integer |  | Not used in ETL |
| gal\_id2 | integer |  | Not used in ETL |
| first\_prd\_date | character varying |  | Not used in ETL |
| first\_pre\_tra\_id | character varying |  | Not used in ETL |
| first\_tra\_date | character varying |  | Not used in ETL |
| ddl\_id | character varying |  | Not used in ETL |
| ddl\_lbl | character varying |  | Not used in ETL |
| prd\_vat | character varying |  | Not used in ETL |
| regrouping\_code\_2 | character varying |  | Not used in ETL |
| gmp\_id | integer |  | Not used in ETL |
| prd\_id\_dc | character varying |  | Not used in ETL |

### 4.8 Table: Immunization

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| first\_time | integer |  | Not used in ETL |
| imm\_id | integer |  | Not used in ETL |
| imt\_id | integer | Used for linking with src.immunization\_mapping | Used in ETL process, not presented in final cdm tables |
| input\_date | date | cdm.drug\_exposure.drug\_exposure\_start\_date |  |
| pat\_id | integer | Used for linking with cdm.person in cdm.drug\_exposure |  |
| prd\_id | character varying |  | Not used in ETL |
| rea\_id | character varying |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| vaccination\_date | date | cdm.drug\_exposure.drug\_exposure\_start\_date |  |
| version | integer |  | Not used in ETL |

### 4.9 Table: List\_code

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| lco\_eid | character varying | сdm.measurement.value\_source\_value, cdm.provider.specialty\_source\_value,  used in applied rule of cdm.measurement.unit\_concept\_id |  |
| lco\_end\_dat | character varying |  | Not used in ETL |
| lco\_id | integer | used in applied rule of cdm.measurement.unit\_concept\_id, cdm.provider.specialty\_source\_value,  cdm.provider.specialty\_concept\_id, |  |
| lco\_sort\_rnk | character varying |  | Not used in ETL |
| lco\_start\_dat | character varying |  | Not used in ETL |
| lis\_id | integer |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 

### 4.10 Table: Locale\_list\_code

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| lco\_id | integer | Used in applied rule for cdm.condition\_occurrence.condition\_concept\_id, cdm.condition\_occurrence.condition\_source\_value | Using lk.biometric\_concept\_lk, used in ETL process, not presented in final cdm tables |
| lco\_long\_label | character varying | Used in applied rule for cdm.condition\_occurrence.condition\_concept\_id, cdm.condition\_occurrence.condition\_source\_value | Using lk.biometric\_concept\_lk, used in ETL process, not presented in final cdm tables |
| lng\_code | character varying |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 4.11 Table: Patient

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| birth\_month | integer | cdm.person.month\_of \_birth |  |
| birth\_year | integer |  | Not used in ETL |
| birthyear\_od | integer | cdm.person.year\_of \_birth |  |
| gen\_id | integer |  | Not used in ETL |
| gen\_id\_od | integer | Used in applied rule of cdm.person.gender\_source\_value | Used in ETL process, not presented in final cdm tables |
| pat\_id | integer | cdm.person.person\_source\_value |  |
| pat\_mar\_id | character varying |  | Not used in ETL |
| pat\_sta\_id | character varying |  | Not used in ETL |
| registration\_date | character varying |  | Not used in ETL |
| registration\_out\_date | character varying |  | Not used in ETL |
| sub\_id | integer |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 

### 4.12 Table: Patient\_medical\_hist

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| dia\_id | integer | cdm.observation.observation\_source\_value (only unmapped dia\_id), used for linking with lk.voc\_source\_to\_standard\_lk in cdm.observation |  |
| end\_date | date |  | Not used in ETL |
| episode\_eid | character varying |  | Not used in ETL |
| input\_date | date | cdm.observation.observation\_date |  |
| known\_since | date | cdm.observation.observation\_date |  |
| pat\_id | integer | Used for linking with cdm.person in cdm.observation |  |
| pmh\_dia\_text | character varying |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 4.13 Table: Practice

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| pra\_id | integer | cdm.care\_site.care\_site\_source\_value |  |
| state | character varying | cdm.location.state |  |
| postcode | character varying | cdm.location.location\_source\_value, cdm.location.zip |  |

### 4.14 Table: Prescription

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| additional\_info | character varying | cdm.drug\_exposure.sig, cdm.drug\_exposure.route\_source\_value |  |
| bnf\_id | character varying |  | Not used in ETL |
| con\_date | date | \_date field in  cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement,  cdm.drug\_exposure |  |
| con\_id | integer | Used for linking with src.contact in cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement,  cdm.drug\_exposure |  |
| crc\_id | character varying |  | Not used in ETL |
| daily\_repartition | character varying |  | Not used in ETL |
| dia\_id | integer | cdm.condition\_occurrence.condition\_source\_value (only unmapped dia\_id), used for linking with lk.voc\_source\_to\_standard\_lk in cdm.condition\_occurrence, cdm.observation,  cdm.procedure\_occurrence,  cdm.measurement |  |
| fqy\_id | character varying |  | Not used in ETL |
| gal\_id | integer |  | Not used in ETL |
| hcc\_id | character varying |  | Not used in ETL |
| iby\_id | character varying |  | Not used in ETL |
| in\_prevention | integer |  | Not used in ETL |
| is\_long\_period\_disease | integer |  | Not used in ETL |
| is\_private | integer |  | Not used in ETL |
| lpd\_start\_date | character varying |  | Not used in ETL |
| max\_dosage | double precision | cdm.drug\_exposure.sig |  |
| max\_dosage2 | double precision |  | Not used in ETL |
| max\_dosage3 | double precision |  | Not used in ETL |
| max\_duration\_in\_days | double precision |  | Not used in ETL |
| max\_duration\_in\_days2 | double precision |  | Not used in ETL |
| max\_duration\_in\_days3 | double precision |  | Not used in ETL |
| max\_duration\_orig | integer |  | Not used in ETL |
| max\_per\_period | double precision | cdm.drug\_exposure.sig |  |
| max\_per\_period2 | double precision |  | Not used in ETL |
| max\_per\_period3 | double precision |  | Not used in ETL |
| min\_dosage | double precision |  | Not used in ETL |
| min\_dosage2 | integer |  | Not used in ETL |
| min\_dosage3 | integer |  | Not used in ETL |
| min\_duration\_in\_days | double precision | cdm.drug\_exposure.days\_supply |  |
| min\_duration\_in\_days2 | integer |  | Not used in ETL |
| min\_duration\_in\_days3 | integer |  | Not used in ETL |
| min\_duration\_orig | integer |  | Not used in ETL |
| min\_per\_period | double precision |  | Not used in ETL |
| min\_per\_period2 | double precision |  | Not used in ETL |
| min\_per\_period3 | double precision |  | Not used in ETL |
| mom\_id | character varying |  | Not used in ETL |
| orig\_per\_id | character varying |  | Not used in ETL |
| pack\_number | character varying |  | Not used in ETL |
| per\_id | integer |  | Not used in ETL |
| per\_id2 | character varying |  | Not used in ETL |
| per\_id3 | character varying |  | Not used in ETL |
| prd\_id | integer | cdm.drug\_exposure.drug\_source\_value |  |
| prd\_to\_dc | character varying |  | Not used in ETL |
| pre\_dia\_type\_id | integer |  | Not used in ETL |
| pre\_id | integer |  | Not used in ETL |
| pre\_price | character varying |  | Not used in ETL |
| pre\_spe\_id | character varying |  | Not used in ETL |
| renewal\_number | integer | cdm.drug\_exposure.refills |  |
| spec1\_id | character varying |  | Not used in ETL |
| spec2\_id | character varying |  | Not used in ETL |
| sub\_prd\_id | character varying |  | Not used in ETL |
| substitut\_id | integer |  | Not used in ETL |
| tra\_id | integer |  | Not used in ETL |
| trt\_duration\_tabs | integer | cdm.drug\_exposure.quantity |  |
| tty\_id | character varying |  | Not used in ETL |
| version | integer |  | Not used in ETL |

### 4.15 Table: Test\_result

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Where in CDM** | **Comment** |
| additional\_info | character varying |  | Not used in ETL |
| con\_date | date |  | Not used in ETL |
| con\_id | integer | Used for linking with src.contact in  cdm.measurement |  |
| high\_normal\_value | double precision | cdm.measurement.range\_high |  |
| low\_normal\_value | double precision | cdm.measurement.range\_low |  |
| tra\_id | integer |  | Not used in ETL |
| tst\_date | date | cdm.measurement.measurement\_date |  |
| tst\_id | integer | cdm.measurement.measurement\_source\_value (only unmapped tst\_id), used for linking with src.test\_mapping |  |
| tst\_qual\_id | integer | Used in applied rule for cdm.measurement.value\_source\_value | Used in ETL process, not presented in final cdm tables |
| tst\_text | character varying |  | Not used in ETL |
| tst\_unit\_id | integer | cdm.measurement.unit\_source\_value |  |
| tst\_value | double precision | cdm.measurement.value\_as\_number |  |
| version | integer |  | Not used in ETL |

# 5.0 Appendix B: Source to Concept Mapping

The following will be all vocabulary from source data and also any additional information that was included in the conversion process. This could include additional tables, logic, custom mapping if used.

## 5.1 Provider Specialty Mapping

|  |  |  |  |
| --- | --- | --- | --- |
| **source\_code/source\_code\_description** | **target\_concept\_id** | **concept\_name** | **target\_vocabulary\_id** |
| ENDORSED ENROLLED NURSE | 38004487 | Nurse Practitioner | Specialty |
| ENROLLED NURSE | 38004487 | Nurse Practitioner | Specialty |
| ASSISTANT NURSE | 38004487 | Nurse Practitioner | Specialty |
| MENTAL HEALTH NURSE | 38004487 | Nurse Practitioner | Specialty |
| MIDWIFE | 38004487 | Nurse Practitioner | Specialty |
| NURSE | 38004487 | Nurse Practitioner | Specialty |
| NURSE/ PRACTICE MANAGER | 38004487 | Nurse Practitioner | Specialty |
| NURSE PRACTITIONER | 38004487 | Nurse Practitioner | Specialty |
| PRACTICE NURSE | 38004487 | Nurse Practitioner | Specialty |
| REGISTERED NURSE | 38004487 | Nurse Practitioner | Specialty |
| RN | 38004487 | Nurse Practitioner | Specialty |
| WOMEN'S HEALTH NURSE | 38004487 | Nurse Practitioner | Specialty |
| GP | 38004446 | General Practice | Specialty |
| LOCUM TENENS | 38004446 | General Practice | Specialty |
| GENERAL PRACTITIONER | 38004446 | General Practice | Specialty |
| DOCTOR | 38004446 | General Practice | Specialty |
| OTHER | 38004446 | General Practice | Specialty |

## 5.2 Test Qualifier Mapping

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **source\_code** | **source\_code\_description** | **target\_concept\_id** | **concept\_name** | **target\_vocabulary\_id** |
| N | neutral | 4124457 | Normal range | SNOMED |
| ++ | moderately high | 4126673 | ++ | SNOMED |
| L | low | 4267416 | Low | SNOMED |
| \* | undefined | 4160775 | Undetermined | SNOMED |
| HH | moderately high | 4126673 | ++ | SNOMED |
| +++ | very high | 4123513 | Very high | SNOMED |
| LL | moderately low | 4267416 | Low | SNOMED |
| --- | very low | 4125550 | Very low | SNOMED |
| HHH | very high | 4123513 | Very high | SNOMED |
| H | high | 4328749 | High | SNOMED |
| + | high | 4328749 | High | SNOMED |
| -- | moderately low | 4267416 | Low | SNOMED |
| - | low | 4267416 | Low | SNOMED |
| LLL | very low | 4125550 | Very low | SNOMED |

# 6.0 Appendix C: Other Custom Mapping

## 6.1 Test Unit Mapping

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **tst\_unit\_id** | **source\_code** | **concept\_id** | **concept\_name** | **tst\_id** | **tst\_lbl** | **conversion\_factor** |
| 281503 | /?l | 8647 | per microliter | NULL | NULL | NULL |
| 281510 | /ml | 9257 | per milliliter | NULL | NULL | NULL |
| 281526 | ?g/l | 8748 | microgram per liter | NULL | NULL | NULL |
| 281543 | ?mol/l | 8749 | micromole per liter | NULL | NULL | NULL |
| 281545 | ?U/ml | 8860 | microunit per milliliter | NULL | NULL | NULL |
| 281557 | AU/ml | 8980 | arbitrary unit per milliliter | NULL | NULL | NULL |
| 281562 | C | 8653 | degree Celsius | NULL | NULL | NULL |
| 281566 | cells/?l | 8784 | cells per microliter | NULL | NULL | NULL |
| 281572 | copie/ml | 8799 | copies per milliliter | NULL | NULL | NULL |
| 281583 | EIA | 8556 | EIA unit | NULL | NULL | NULL |
| 281589 | EUs | 8600 | Elisa unit | NULL | NULL | NULL |
| 281592 | fl | 8583 | femtoliter | NULL | NULL | NULL |
| 281595 | g/24h | 8807 | gram per 24 hours | NULL | NULL | NULL |
| 281600 | g/dl | 8713 | gram per deciliter | NULL | NULL | NULL |
| 281602 | g/l | 8636 | gram per liter | NULL | NULL | NULL |
| 281608 | GPL/ml | 9157 | IgG phospholipid unit per milliliter | NULL | NULL | NULL |
| 281622 | IU/l | 8923 | international unit per liter | NULL | NULL | NULL |
| 281623 | IU/ml | 8985 | international unit per milliliter | NULL | NULL | NULL |
| 281626 | kU/I | 8810 | kilounit per liter | NULL | NULL | NULL |
| 281632 | l | 8519 | liter | NULL | NULL | NULL |
| 281647 | mg% | 9503 | gram percent | NULL | NULL | 0.001 |
| 281651 | mg/12h | 8908 | milligram per 12 hours | NULL | NULL | NULL |
| 281652 | mg/24h | 8909 | milligram per 24 hours | NULL | NULL | NULL |
| 281654 | mg/dl | 8840 | milligram per deciliter | NULL | NULL | NULL |
| 281659 | mg/l | 8751 | milligram per liter | NULL | NULL | NULL |
| 281669 | mIU/l | 9040 | milli-international unit per liter | NULL | NULL | NULL |
| 281670 | mIU/ml | 9550 | milli-international unit per milliliter | NULL | NULL | NULL |
| 281671 | ml | 8587 | milliliter | NULL | NULL | NULL |
| 281672 | ml/24h | 8930 | milliliter per 24 hours | NULL | NULL | NULL |
| 281676 | ml/min | 8795 | milliliter per minute | NULL | NULL | NULL |
| 281677 | ml/sec | 44777614 | milliliter per second | NULL | NULL | NULL |
| 281685 | mmHg | 8876 | millimeter mercury column | NULL | NULL | NULL |
| 281688 | mmol/24h | 8910 | millimole per 24 hours | NULL | NULL | NULL |
| 281690 | mmol/l | 8753 | millimole per liter | NULL | NULL | NULL |
| 281694 | mol/24h | 8910 | millimole per 24 hours | NULL | NULL | 1000 |
| 281695 | mol/l | 9586 | mole per liter | NULL | NULL | NULL |
| 281698 | MPLU/ml | 9158 | IgM phospholipid unit per milliliter | NULL | NULL | NULL |
| 281701 | mU/l | 44777578 | milliunit per liter | NULL | NULL | NULL |
| 281703 | mU/ml | 8719 | milliunit per milliliter | NULL | NULL | NULL |
| 281719 | ng/l | 8725 | nanogram per liter | NULL | NULL | NULL |
| 281721 | ng/ml | 8842 | nanogram per milliliter | NULL | NULL | NULL |
| 281730 | nmol/24h | 44777627 | nanomole per 24 hours | NULL | NULL | NULL |
| 281732 | nmol/l | 8736 | nanomole per liter | NULL | NULL | NULL |
| 281754 | pg/ml | 8845 | picogram per milliliter | NULL | NULL | NULL |
| 281758 | pmol/l | 8729 | picomole per liter | NULL | NULL | NULL |
| 281760 | pmol/ml | 9632 | picomole per milliliter | NULL | NULL | NULL |
| 281765 | ratio | 8523 | ratio | NULL | NULL | NULL |
| 281769 | sec | 8555 | second | NULL | NULL | NULL |
| 281773 | U | 8510 | unit | NULL | NULL | NULL |
| 281780 | U/10E12 | 9031 | unit per billion red blood cells | NULL | NULL | 1000 |
| 281781 | U/24h | 44777567 | unit per 24 hours | NULL | NULL | NULL |
| 281782 | U/dl | 44777568 | unit per deciliter | NULL | NULL | NULL |
| 281783 | U/g | 8629 | unit per gram | NULL | NULL | NULL |
| 281784 | U/l | 8645 | unit per liter | NULL | NULL | NULL |
| 281785 | U/ml | 8763 | unit per milliliter | NULL | NULL | NULL |
| 281792 | ug/24h | 8906 | microgram per 24 hours | NULL | NULL | NULL |
| 281793 | ug/dl | 8837 | microgram per deciliter | NULL | NULL | NULL |
| 281796 | ug/l | 8748 | microgram per liter | NULL | NULL | NULL |
| 281799 | ug/ml | 8859 | microgram per milliliter | NULL | NULL | NULL |
| 281805 | UI/l | 8923 | international unit per liter | NULL | NULL | NULL |
| 281806 | UI/mI | 8985 | international unit per milliliter | NULL | NULL | NULL |
| 281809 | umol/24h | 8907 | micromole per 24 hours | NULL | NULL | NULL |
| 281810 | umol/l | 8749 | micromole per liter | NULL | NULL | NULL |
| 281813 | uU/ml | 8860 | microunit per milliliter | NULL | NULL | NULL |
| 281814 | uUI/l | 8985 | international unit per milliliter | NULL | NULL | 0.001 |
| 281856 | 10 | 44777575 | trillion cells per liter | 23347 | RED CELL COUNT | NULL |
| 281856 | 10 | 44777589 | billion copies per liter | 34940 | WHITE CELL COUNT | NULL |
| 281856 | 10 | 44777591 | Decibel | 220190 | BASOPHIL COUNT ABS | NULL |
| 281856 | 10 | 44777575 | trillion cells per liter | 221279 | FBE COUNT RCC | NULL |
| 281856 | 10 | 44777597 | gram of hemoglobin | 222397 | MONOCYTE COUNT ABS | NULL |
| 281856 | 10 | 44777594 | gram per hour | 222868 | PLATELET | NULL |
| 281856 | 10 | 44777598 | gram of total nitrate | 220187 | BASOPHIL | NULL |
| 281856 | 10 | 44777602 | kilopascal | 222179 | LEUCOCYTES | NULL |
| 281856 | 10 | 44777601 | katal per liter | 222230 | LYMPHOCYTES | NULL |
| 281856 | 10 | 44777603 | liter per hour | 222400 | MONOCYTES | NULL |
| 281856 | 10 | 44777604 | liter per liter | 222512 | NEUTROPHILS | NULL |
| 281856 | 10 | 44777575 | trillion cells per liter | 223126 | RCC | NULL |
| 281856 | 10 | 8786 | per high power field | 223618 | SQUAMOUS EPITH | NULL |
| 281856 | 10 | 8786 | per high power field | 223938 | TRANSITIONAL EPITH | NULL |
| 281856 | 10 | 44777593 | gram per 12 hours | 221148 | EOSINOPHIL COUNT ABS | NULL |
| 281856 | 10 | 44777590 | centimeter watercolumn | 222226 | LYMPHOCYTE COUNT ABS | NULL |
| 281856 | 10 | 44777592 | femtogram per liter | 222509 | NEUTROPHIL COUNT ABS | NULL |
| 281856 | 10 | 44777596 | gram of creatinine | 34929 | WCC | NULL |
| 281856 | 10 | 44777599 | gram of total protein | 221150 | EOSINOPHILS | NULL |
| 281856 | 10 | 44777575 | trillion cells per liter | 221185 | ERYTHROCYTES | NULL |
| 281856 | 10 | 44777603 | liter per hour | 219735 | ABSOLUTE MYELOCYTES | NULL |
| 281862 | 10000000 | 8549 | million | NULL | NULL | NULL |
| 281870 | % leuko | 8554 | percent | NULL | NULL | NULL |
| 281879 | % WBC | 9229 | percent of white blood cells | NULL | NULL | NULL |
| 281903 | /nl | 8647 | per microliter | NULL | NULL | 1000 |
| 281905 | /pl | 8647 | per microliter | NULL | NULL | 1000000 |
| 281932 | /ul | 8647 | per microliter | NULL | NULL | NULL |
| 281972 | 10E3/?l | 9436 | thousand per milliliter | NULL | NULL | 0.001 |
| 281978 | 10E3/ml | 9436 | thousand per milliliter | NULL | NULL | NULL |
| 281985 | 10E6/?l | 8815 | million per microliter | NULL | NULL | NULL |
| 281990 | 10E6/ml | 8816 | million per milliliter | NULL | NULL | NULL |
| 282006 | 24h | 44777556 | per 24 hours | NULL | NULL | NULL |
| 282038 | bpm | 8541 | per minute | NULL | NULL | NULL |
| 282057 | degres | 9484 | degree | NULL | NULL | NULL |
| 282082 | fmol/l | 8745 | femtomole per liter | NULL | NULL | NULL |
| 282086 | g/100g | 9508 | gram per 100 gram | NULL | NULL | NULL |
| 282096 | g/ml | 9514 | gram per milliliter | NULL | NULL | NULL |
| 282097 | g/mol creat | 9075 | milligram per millimole of creatinine | NULL | NULL | NULL |
| 282113 | IU | 8718 | international unit | NULL | NULL | NULL |
| 282136 | l/l | 44777604 | liter per liter | NULL | NULL | NULL |
| 282162 | mg/10h | 44777610 | milligram per hour | NULL | NULL | 0.1 |
| 282174 | mg/mmol creat | 9075 | milligram per millimole of creatinine | NULL | NULL | NULL |
| 282188 | ml/min/1.73m2 | 9117 | milliliter per minute per 1.73 square meter | NULL | NULL | NULL |
| 282190 | ml/sec/1.73m2 | 9117 | milliliter per minute per 1.73 square meter | NULL | NULL | 60 |
| 282208 | mosmol | 8605 | milliosmole | NULL | NULL | NULL |
| 282210 | mosmol/kg | 8862 | milliosmole per kilogram | NULL | NULL | NULL |
| 282216 | mU/g | 9594 | milliunit per gram | NULL | NULL | NULL |
| 282238 | nM/l | 8736 | nanomole per liter | NULL | NULL | NULL |
| 282239 | nM/nM | 9612 | nanomole per millimole | NULL | NULL | 0.000001 |
| 282247 | nmol/mmol creat | 9063 | nanomole per millimole of creatinine | NULL | NULL | NULL |
| 282273 | ppm | 9387 | parts per million | NULL | NULL | NULL |
| 282275 | ppm H2 | 9387 | parts per million | NULL | NULL | NULL |
| 282294 | RNA/ml | 8799 | copies per milliliter | NULL | NULL | NULL |
| 282297 | RU/ml | 8763 | unit per milliliter | NULL | NULL | NULL |
| 282308 | Titer | 8525 | titer | NULL | NULL | NULL |
| 282313 | U/g Hb | 9651 | unit per gram of hemoglobin | NULL | NULL | NULL |
| 282315 | U/l 37?C | 8645 | unit per liter | NULL | NULL | NULL |
| 282320 | ug/g creat | 9014 | microgram per gram of creatinine | NULL | NULL | NULL |
| 282323 | ug/nmol | 44777612 | milligram per millimole | NULL | NULL | 1000 |
| 282329 | umol/g creat | 9015 | micromole per gram of creatinine | NULL | NULL | NULL |