**Conventions for Population of OMOP CDM V4.0 to Support PCORnet Requirements**

Revision Date: November 6, 2014

Version Tracking

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| --- | --- | --- |
| Rimma Belenkaya | Nov 4 2014 | * removed all PEDSnet-specific conventions and references
* changed some concepts to synchronize them with the attached vocabulary where non-standard concepts from vocab 60 (PCORnet) are included. All these changes are in green.
* In each section, I added the outstanding PCORnet CDM-related issues that Don and I identified earlier. Now we only have this document to review. All these are in red.
* preserved all the previous comments from Toan, Mark, and myself.
 |
| Don Torok | Nov 6 2014 v5 | Removed all items not specifically necessary to support PCORnet specific attributes stored in the OMOP CDM. Added detailed description for populating observation table with PCORnet specific values. |
| Don Torok | Jan 23, 2015 | Added table of contents. Separate visit type long term care from institutional care |
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## Purpose

This document defines a common means of storing information within the OMOP CDM, with the intent that information needed to populate the PCORnet CDM can be obtained from the OMOP CDM using a common set of procedures. Populating OMOP CDMv4 is addressed in the OMOP Common Data Model Specification, Version 4. This document only addresses areas where the standards spelled out in the OMOP Common Data Model Specification, Version 4 will not support data elements necessary for the PCORnet CDM or where there is ambiguity in how medical data or observations needed for PCORnet might be recorded in the OMOP CDM.

This is an evolving specification, based in structure on the OMOP Common Data Model with focus on PCORnet requirements.

## General Conventions

1. Concept IDs are taken from OMOP v4.5 vocabularies using the complete (“restricted”) version that includes licensed terminologies such as CPT and others.
2. PCORnet CDM V1.0 requires data elements that are not currently part of the OMOP standard vocabulary. To represent PCORnet concepts that are not represented in the standard OMOP vocabulary, we will be using non-standard concepts from vocabulary\_id = 60 (PCORnet). While this violates the OMOP conventions to use only concept\_ids from standard vocabularies, this CDRN-specific convention enables a uniform ETL from OMOP CDM to PCORnet CDM.
3. Representation of “Unknown” flavors.

To support PCORnet conventions for representation of “Unknown” flavors, we will follow these conventions:

|  |  |
| --- | --- |
| **Null Name** | **Definition of each field** |
| A data field is not present in the source system | A corresponding field in the OMOP CDM will be populated with concept\_ID=0. A corresponding record in the OBSERVATION table will not be created. |
| A data field is present in the source system, but the source value is null or blank | A corresponding field in the OMOP CDM will be populated with “No Information” (44814650) from vocabulary 60 (PCORnet) |
| A data field is present in the source system, but the source value explicitly denotes an unknown value | A corresponding field in the OMOP CDM will be populated with “Unknown”( 44814653) from vocabulary 60 (PCORnet) |
| A data field is present in the source system, but the source value cannot be mapped to the CDM | A corresponding field in the OMOP CDM will be populated with “Other” (44814649) from vocabulary 60 (PCORnet) |

## PERSON

The PERSON table contains records that uniquely identify each patient in the source data who has time at-risk to have clinical events recorded within the source systems.

| **Field** | **Required** | **Description** | **PCORnet Conventions** |
| --- | --- | --- | --- |
| person\_id | Yes | A unique system-generated identifier for each person |  |
| gender\_concept\_id | Yes | A foreign key that refers to a standard concept identifier in the Vocabulary for the gender of the person. | Valid OMOP concept\_ids are:* Female: 8532
* Male: 8507

Allowable concepts have been extended to include the following concepts from vocabulary 60 (PCORnet):* Ambiguous: 44814664
* No Information: 44814650
* Unknown: 44814653
* Other: 44814649
* Data field is not present in the source system: 0
 |
| year\_of\_birth | Yes | The year of birth of the person.  |  |
| month\_of\_birth | No | The month of birth of the person.  |  |
| day\_of\_birth | No | The day of the month of birth of the person.  |  |
| race\_concept\_id | Yes | A foreign key that refers to a standard concept identifier in the Vocabulary for the race of the person. | Valid concept\_ids are all standard concepts from vocabulary\_id = 13 plus the following concepts from vocabulary\_id = 60 (PCORnet):* Multiple Race: 44814659
* Refuse to answer: 44814660
* No Information: 44814650
* Unknown: 44814653
* Other: 44814649
* Data field is not present in the source system: 0
 |
| ethnicity\_concept\_id | No | A foreign key that refers to the standard concept identifier in the Vocabulary for the ethnicity of the person. | Valid concept\_ids are all standard concepts from vocabulary\_id = 44 plus the following concepts from vocabulary\_id = 60 (PCORnet):* No Information: 44814650
* Unknown: 44814653
* Other: 44814649
 |
| location\_id | No | A foreign key to the place of residency (ZIP code or region) for the person in the location table, where the detailed address information is stored. |  |
| provider\_id | No | Foreign key to the primary care provider – the person is seeing in the provider table. |  |
| care\_site\_id | Yes | A foreign key to the site of primary care in the care\_site table, where the details of the care site are stored |  |
| person\_source\_value | No |  |  |
| gender\_source\_value | No | The source code for the gender of the person as it appears in the source data.  |  |
| race\_source\_value | No | The source code for the race of the person as it appears in the source data.  |  |
| ethnicity\_source\_value | No | The source code for the ethnicity of the person as it appears in the source data.  |  |

##

## DEATH

The death table contains the clinical event for how and when a person dies. Living patients should not contain any information in the death table.

|  |  |  |  |
| --- | --- | --- | --- |
| Field | Required | Description | PCORnet Conventions |
| person\_id | Yes | A foreign key identifier to the deceased person.  |  |
| death\_date | Yes | The date the person was deceased.  |  |
| death\_type\_concept\_id | Yes | A foreign key referring to the predefined concept identifier in the Vocabulary reflecting how the death was represented in the source data. | Valid concept\_ids are from vocabulary\_id = 45 (IMEDS Death Type), otherwise concept\_id 0 |
| cause\_of\_death\_concept\_id | No | A foreign referring to a standard concept identifier in the Vocabulary for conditions. |  |
| cause\_of\_death\_source\_value | No | The source code for the cause of death as it appears in the source.  |  |

**Conventions**

One of the special cases when a death record is created is when Observation table is populated with a record containing concept\_id 44813951 (“Discharge Details”) and value\_as\_concept\_id 4216643 (“Patient Died”) or concept\_id 4137274 (“Discharged to Establishment”) and value\_as\_concept\_id 4216643 (“Patient Died”). In this case. death\_type\_concept\_id is 44818516 (“EHR discharge status "Expired").

## LOCATION

The Location table represents a generic way to capture physical location or address information. Locations are used to define the addresses for Persons and Care Sites.

| **Field** | **Required** | **Description** | **PCORnet Conventions** |
| --- | --- | --- | --- |
| location\_id | Yes | A unique system-generated identifier for each geographic location. |  |
| State | No | The state field as it appears in the source data. |  |
| Zip | No | The zip code. For US addresses, valid zip codes can be 3, 5 or 9 digits long, depending on the source data. |  |
| location\_source\_value | No | The verbatim information that is used to uniquely identify the location as it appears in the source data. |  |
| address\_1 | No |  |  |
| address\_2 | No |  |  |
| City | No |  |  |
| County | No |  |  |

##

## CARE\_SITE

The Care\_Site table contains a list of uniquely identified physical or organizational units where healthcare delivery is practiced (offices, wards, hospitals, clinics, etc.).

|  |  |  |  |
| --- | --- | --- | --- |
| Field | Required | Description | PCORnet Conventions |
| care\_site\_id | Yes | A unique system-generated identifier for each defined location of care within an organization.  |  |
| place\_of\_service\_concept\_id | No | A foreign key that refers to a place of service concept identifier in the Vocabulary (vocabulary\_id=14) |  |
| location\_id | No | A foreign key to the geographic location of the administrative offices of the organization in the location table, where the detailed address information is stored. |  |
| care\_site\_source\_value | No | The identifier for the organization in the source data, stored here for reference. |  |
| place\_of\_service\_source\_value | No | The source code for the place of service as it appears in the source data, stored here for reference. |  |

## PROVIDER

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Required** | **Description** | **PCORnet Conventions** |
| provider\_id | Yes | A unique system-generated identifier for each provider.  |  |
| specialty\_concept\_id | No | A foreign key to a standard provider's specialty concept identifier in the Vocabulary. (vocabulary\_id=48) |  |
| care\_site\_id | Yes | A foreign key to the main care site where the provider is practicing. |  |
| NPI | No | Optional - Do not transmit to DCCThe National Provider Identifier (NPI) of the provider. |  |
| DEA | No | Optional - Do not transmit to DCC The Drug Enforcement Administration (DEA) number of the provider. |  |
| provider\_source\_value | No | The identifier used for the provider in the source data, stored here for reference.  |  |
| specialty\_source\_value | No | The source code for the provider specialty as it appears in the source data, stored here for reference. |  |

## OBSERVATION PERIOD

The observation\_period table is designed to capture the time intervals in which data are being recorded for the person.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field | Required | Data Type | Description | PCORnet Conventions |
| Observation\_period\_id | Yes | Integer | A system-generate unique identifier for each observation period |  |
| person\_id | Yes | Integer | A foreign key identifier to the person who is experiencing the condition. The demographic details of that person are stored in the person table. |  |
| Observation\_period\_start\_date | Yes | Date | The start date of the observation period for which data are available from the data source |  |
| Observation\_period\_stop\_date | No | Date | The end date of the observation period for which data are available from the source. |   |

**Conventions**

According to PCORnet requirements, “Enrollment” is an insurance-based concept that defines a period during which all medically-attended events are expected to be observed. For partners that do not have enrollment information for some of their patients, other approaches for identifying periods during which complete medical capture is expected can be used. A break in enrollment (of at least one day) or a change in the chart abstraction flag should generate a new record.

## VISIT\_OCCURRENCE

The VISIT\_OCCURRENCE table contains the spans of time a person continuously receives medical services from one or more providers at a facility in a given setting within the health care system.

| **Field** | **Required** | **Description** | **PCORnet Conventions** |
| --- | --- | --- | --- |
| visit\_occurrence\_id | Yes | A unique system-generated identifier for each person’s visits or encounter at a healthcare provider.  |  |
| person\_id | Yes | A foreign key identifier to the person for whom the visit is recorded.  |  |
| visit\_start\_date | Yes | The start date of the visit. |  |
| visit\_end\_date | No | The end date of the visit.  |   |
| care\_site\_id | No | A foreign key to the care site in the care site table that was visited. |  |
| place\_of\_service\_concept\_id | Yes | A foreign key that refers to a place of service concept identifier in the vocabulary. | Even though this column is named place of service concept ID, it holds concepts describing visit type. Therefore, the allowable concepts are limited to the following standard concepts (vocabulary\_id=24):* Inpatient Visit: 9201
* Outpatient Visit: 9202
* Emergency Room Visit: 9203
* Long Term Care Visit: 42898160

plus the following concepts from vocabulary\_id = 60 (PCORnet):* Non-Acute Institutional Stay: 44814710
* Other ambulatory visit: 44814711
* No Information: 44814650
* Unknown: 44814653
* Other: 44814649
 |
| place\_of\_service\_source\_value | No | The source code used to reflect the type or source of the visit in the source data.  | This column holds the source code value that was used to determine the visit type, although visit type if often determine by context rather than an actual POS |

**Conventions**

1. PCORnet expects the following classification of encounters:
* Ambulatory Visit: Includes visits at outpatient clinics, physician offices, same day/ambulatory surgery centers, urgent care facilities, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.
* Emergency Department: Includes ED encounters. Those ED encounter that become inpatient stays (in which case inpatient stays would be a separate encounter) should have Discharge to Establishment equal to IP (see OBSERVATION section).

ED excludes urgent care visits that take place at other than ED urgent care facilities.

ED claims should be pulled before hospitalization claims to ensure that ED with subsequent admission won't be rolled up in the hospital event.

* Inpatient Hospital Stay: Includes all inpatient stays, including: same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.
* Non-Acute Institutional Stay: Non-Acute Institutional Stay: Includes hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.
* Other Ambulatory Visit: Includes other non-overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations. May also include "lab only" visits (when a lab is ordered outside of a patient visit), "pharmacy only" (e.g., when a patient has a refill ordered without a face-to-face visit), "imaging only", etc.

These types are represented respectively by OMOP concepts stored in place\_of\_service\_concept\_id (see table above).

1. Although PCORnet recommends considering multiple visits to the same provider on the same day as one encounter (especially if defined by a reimbursement basis), it is not OMOP representation requirements.
2. According to PCORnet requirements, visit\_end\_date should be populated for all Inpatient Visits and and Long Term Care Visits.

Since most of Long Term Care Visits will not have end date, this is an open question for PCORnet.

## CONDITION\_OCCURRENCE

The CONDITION\_OCCURRENCE table captures records of a disease or a medical condition based on evaluation by a provider or reported by a patient.

|  |  |  |  |
| --- | --- | --- | --- |
| Field | Required | Description | PCORnet Conventions |
| condition\_occurrence\_id | Yes | A unique system-generated identifier for each condition occurrence event. |  |
| person\_id | Yes | A foreign key identifier to the person who is experiencing the condition.  |  |
| condition\_concept\_id | Yes | A foreign key that refers to a standard condition concept identifier in the Vocabulary.  |  |
| condition\_start\_date | Yes | The date when the instance of the condition is recorded. |  |
| condition\_end\_date | No | The date when the instance of the condition is considered to have ended |  |
| condition\_type\_concept\_id | Yes | A foreign key to the predefined concept identifier in the Vocabulary reflecting the source data from which the condition was recorded, the level of standardization, and the type of occurrence. For example, conditions may be defined as primary or secondary diagnoses, problem lists and person statuses. |  |
| stop\_reason | No | The reason, if available, that the condition was no longer recorded, as indicated in the source data.  |  |
| associated\_provider\_id | No | A foreign key to the provider in the provider table who was responsible for determining (diagnosing) the condition. |  |
| visit\_occurrence\_id | No | A foreign key to the visit in the visit\_occurence table during which the condition was determined (diagnosed). |  |
| condition\_source\_value | No | The source code for the condition as it appears in the source data.  |  |

## PROCEDURE\_OCCURRENCE

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

| **Field** | **Required** | **Description**  | **PCORnet Conventions** |
| --- | --- | --- | --- |
| procedure\_occurrence\_id | Yes | A unique system-generated identifier for each procedure occurrence  |  |
| person\_id | Yes | A foreign key identifier to the person who is subjected to the procedure.  |  |
| procedure\_concept\_id | Yes | A foreign key that refers to a standard procedure concept identifier in the Vocabulary.  |  |
| procedure\_date | Yes | The date on which the procedure was performed. |  |
| procedure\_type\_concept\_id | Yes | A foreign key to the predefined concept identifier in the Vocabulary reflecting the type of source data from which the procedure record is derived.  |  |
| associated\_provider\_id | No | A foreign key to the provider in the provider table who was responsible for carrying out the procedure. |  |
| visit\_occurrence\_id | No | A foreign key to the visit in the visit\_occurence table during which the procedure was carried out. |  |
| relevant\_condition\_concept\_id | No | A foreign key to the predefined concept identifier in the vocabulary reflecting the condition that was the cause for initiation of the procedure.  |  |
| procedure\_source\_value | No | The source code for the procedure as it appears in the source data.  |  |

##

## OBSERVATION

The OBSERVATION table captures any clinical facts about a patient obtained in the context of examination, questioning or a procedure. The observation domain supports capture of data not represented by other domains, including unstructured measurements, medical history and family history.

|  |  |  |  |
| --- | --- | --- | --- |
| Field | Required | Description  | PEDSnet Conventions |
| observation\_id | Yes | A unique system-generated identifier for each observation. |  |
| person\_id | Yes | A foreign key identifier to the person about whom the observation was recorded.  |  |
| observation\_concept\_id | Yes | A foreign key to the standard observation concept identifier in the Vocabulary.  | Valid Observation Concepts belong to the "Observation" domain.  |
| observation\_date | Yes | The date of the observation  |  |
| observation\_time | No | The time of the observation  |  |
| observation\_type\_concept\_id | Yes | A foreign key to the predefined concept identifier in the Vocabulary reflecting the type of the observation. | Valid concept\_ids found in CONCEPT table where vocabulary\_id = 39.  |
| value\_as\_number | No\*(see convention) | The observation result stored as a number. This is applicable to observations where the result is expressed as a numeric value. |  |
| value\_as\_string | No\*(see convention) | The observation result stored as a string. This is applicable to observations where the result is expressed as verbatim text. |  |
| value\_as\_concept\_id | No\*(see convention) | A foreign key to an observation result stored as a concept identifier. This is applicable to observations where the result can be expressed as a standard concept from the Vocabulary (e.g., positive/negative, present/absent, low/high, etc.). | Valid concept\_ids provided in the tables below |
| unit\_concept\_id | No | A foreign key to a standard concept identifier of measurement units in the Vocabulary. |  |
| associated\_provider\_id | No | A foreign key to the provider in the provider table who was responsible for making the observation. |  |
| visit\_occurrence\_id | No | A foreign key to the visit in the visit table during which the observation was recorded. |  |
| relevant\_condition\_concept\_id | No | A foreign key to the condition concept related to this observation, if this relationship exists in the source data (*e.g.* indication for a diagnostic test).  |  |
| observation\_source\_value | No | The observation code as it appears in the source data. This code is mapped to a standard concept in the Vocabulary and the original code is, stored here for reference. |  |
| unit\_source\_value | No | The source code for the unit as it appears in the source data. This code is mapped to a standard unit concept in the Vocabulary and the original code is, stored here for reference.  |  |

**Conventions**

There are a number of attributes that are needed to populate the PCORnet V1 Common Data Model which are not available in respective domains of the OMOP CDM v4. These attributes will be stored in the OMOP CDM as observations. This section describes conventions for storing these items.

Items needed by PCORnet that are not explicitly defined in OMOP CDMv4.

* Biobank availability
* Chart availability
* Encounter Provider, Admitting source, Discharge disposition, Discharge status and DRG
* Height, Weight, Body mass index (BMI), Systolic & Diastolic blood pressure with Vital source

### Biobank Availability

The PCORnet Demographic table has the attribute, *biobank\_flag*, with the possible values of ‘Y’ or ‘N’. If a person in the OMOP CDM has one or more biobanked stored specimens, create an Observation record for that person with *observation\_concept\_id* equal to Biobank flag (4001345) and the Observation *value\_as\_concept\_id* set to concept Yes (4188539). The absence of a Biobank specimen is represented by an Observation record with *observation\_concept\_id* equal to Biobank flag (4001345) and *value\_as\_concept\_id* set to concept No (4188540). Biobank records may come from multiple sources. The convention is to have only one record per source. Then, Biobank availability is Yes if if at least one source record indicates Yes. The absence of an Observation record for a person’s Biobank specimen will be interpreted as No.

### Chart Availability

The PCORnet Enrollment table has the attribute *chart* with the possible values of ‘Y’, ‘N’. Then PCORnet Enrollment table corresponds with the OMOP CDM Observation\_Period table. For each person/enrollment period combination, if you can review or requests charts for this person, the will need to be an observation record created. The observation date should be the same as the enrollment period start date. The *observation\_concept\_id* should be Chart availability (4030450) and the *value\_as\_concept\_id* should be set to either Yes (4188539) or No (4188540). The absence of an Observation record for a person for an Observation Period will be interpreted as No. There should be only one record for chart availability per observation period.

### Hospital Provider, Admitting source, Discharge disposition, Discharge status and DRG

The PCORnet Encounter table has a place the Provider, Admitting source, Discharge Disposition, Discharge Status, and DRG. The OMOP CDM table corresponding to Encounter is VISIT\_OCCURRENCE, it does not have these specific attributes. The observation records with these values need to be associated with hospital visits recorded in VISIT\_OCCURRENCE. There should be only one record for each attribute per visit occurrence.

According to PCORnet, encounter Provider is the provider who is most responsible for this encounter. In OMOP CDM, it will be represented by an observation record for the person that has the same date as the Visit Occurrence *visit\_occurrence\_start\_date* and the *observation\_concept\_id* equal to “Provider of encounter” (437770) and *provider\_id* populated with an the ID of respective provider.

According to PCORnet requirements, Admitting source, Discharge Disposition, Discharge Status, and DRG should be populated for Inpatient and Long-term visits, and may be populated for Emergency Room visits.

The Hospital Admitting source will be in an observation record for the person that has the same date as the Visit Occurrence *visit\_occurrence\_start\_date* and the *observation\_concept\_id* equal to Admission from Establishment (4145666). The *value\_as\_concept\_id* should contain the OMOP concept that best represents the source data admission source and the *observation\_source\_value* should hold the code or description used to determine the concept id. The ETL from OMOP CDM to PCORnet will need to map these various values into PCORnet defined values. Following the rule of *Unknown Flavors* given earlier in this document, an admitting source record should be created unless the source data does NOT contain admitting source.

The Discharge Disposition (Discharge Details), Discharge Status (Discharge to Establishment) and Hospital Discharge DRG are similarly recorded, only the observation date will correspond to the *visit\_occurrence\_end\_date*, which is assumed to be the discharge date. The following table defines the concept id’s that should be used to identify these records. For DRG, *value\_as\_string* should be populated with DRG code.

If visit type is “Emergency Room Visit” (9203) and it becomes an inpatient stay, Discharge to Establishment should be “Inpatient Hospital” (8717).

The following table contains allowable concept\_id values for each attribute:

| **Concept Name** | **Concept Id** | **Notes** |
| --- | --- | --- |
| Admission from establishment | 4145666 | Possible standard value\_as\_concept\_id:* Agencies, Foster Care Agency: 38004205
* Nursing & Custodial Care Facilities, Assisted Living Facility: 38004301
* Ambulatory Health Care Facilities, Clinic/Center: 38004207
* Emergency Room – Hospital: 8870
* Agencies, Home Health: 38004195
* Home: 8536
* Hospice: 8546
* Hospitals, General Acute Care Hospital: 38004279
* Nursing Facility: 8676
* Comprehensive Inpatient Rehabilitation Facility: 8920
* Residential Facility: 44814680
* Skilled Nursing Facility: 8863

plus the following concepts from vocabulary\_id = 60 (PCORnet):* No Information: 44814650
* Unknown: 44814653
* Other: 44814649
 |
| Discharge details | 44813951 | Possible standard *value\_as\_concept\_id*:* Discharged alive: 4161979
* Patient died: 4216643

plus the following concepts from vocabulary\_id = 60 (PCORnet):* No Information: 44814650
* Unknown: 44814653
* Other: 44814649
 |
| Discharge to establishment | 4137274 | * Agencies, Foster Care Agency: 38004205
* Nursing & Custodial Care Facilities, Assisted Living Facility: 38004301
* Patient self-discharge against medical advice: 4021968
* Absent without leave: 44814693
* Patient died: 4216643
* Agencies, Home Health: 38004195
* Home: 8536
* Hospice: 8546
* Hospitals, General Acute Care Hospital: 38004279
* Nursing Facility: 8676
* Comprehensive Inpatient Rehabilitation Facility: 8920
* Residential Facility: 44814680
* Inpatient Hospital: 8717
* Skilled Nursing Facility: 8863

plus the following concepts from vocabulary\_id = 60 (PCORnet):* No Information: 44814650
* Unknown: 44814653
* Other: 44814649
 |
| Hospital discharge DRG | 3040464 | *Value\_as\_concept\_id* is the result of looking up the DRG code using OMOP Vocabulary DRG (40) |
| Provider of encounter | 437770 | *Value\_as\_concept\_id* is not populated |

### Height, Weight, Body mass index (BMI) with Vital source

PCORnet CDM includes the following VITAL table

| **Field Name**  | **Data Type** | **Predefined Value Sets and Descriptive Text for Categorical Fields** | **Definition / Comments** |
| --- | --- | --- | --- |
| PATID | TEXT(x) |  | Arbitrary person-level identifier. Used to link across tables. |
| ENCOUNTERID |  |  | Arbitrary encounter-level identifier. This is an optional relationship; the ENCOUNTERID should be present if the vitals were measured as part of healthcare delivery. |
| MEASURE\_DATE | TEXT(10):Format as YYYYMM-DD |  | Date of vitals measure. |
| MEASURE\_TIME | TEXT(5): Format as HH:MI using 24-hour clock and zero-padding for hour and minute |  | Time of vitals measure. |
| VITAL\_SOURCE | TEXT(2) | PR = Patient-reportedHC = Healthcare delivery settingNI = No informationUN = UnknownOT = Other | The “Patient-reported” category can include reporting by patient’s family or guardian |
| HT | NUMBER(8) |  | Height (in inches) measured by standing. Only populated if measure was taken on this date. If missing, leave blank. Decimal precision is permissible. |
| WT | NUMBER(8) |  | Weight (in pounds). Only populated if measure was taken on this date. If missing, leave blank. Decimal precision is permissible. |
| DIASTOLIC | NUMBER(4) |  | Diastolic blood pressure (in mmHg). Only populated if measure was taken on this date. If missing, leave blank. Only report 1 reading per encounter. |
| SYSTOLIC | NUMBER(4) |  | Systolic blood pressure (in mmHg). Only populated if measure was taken on this date. If missing, leave blank. Only report 1 reading per encounter. |
| ORIGINAL\_BMI | NUMBER(8) |  | BMI if calculated in the source system.Important: **Do not calculate BMI during CDM implementation**. This field should only reflect originating source system calculations, if height and weight are notstored in the source. |
| BP\_POSITION | TEXT(2) | 01 = Sitting02 = Standing03 = SupineNI = No informationUN = UnknownOT = Other | Position for orthostatic blood pressure. Leave blank if blood pressure was not measured. |
| RAW\_VITAL\_SOURCE | TEXT(x) |  | Optional field for originating value of field, prior to mapping into the PCORnet CDM value set. |
| RAW\_ DIASTOLIC | TEXT(x) |  | Optional field for originating value of field, prior to mapping into the PCORnet CDM value set. |
| RAW\_ SYSTOLIC | TEXT(x) |  | Optional field for originating value of field, prior to mapping into the PCORnet CDM value set. |
| RAW\_ BP\_POSITION | TEXT(x) |  | Optional field for originating value of field, prior to mapping into the PCORnet CDM value set. |

Each of these attributes will be represented by a single record in the OBSERVATION table. Each type of measure will be identified by the observation concept id. For example, observations that record the weight will have the observation id *Body Weight (3025315)*. The actual weight and units used is recorded in the Observation record’s value as number field and unit\_concept\_id. (Note: the units, lbs, kg are site specific and will need to be converted to lbs specified by PCORnet during the ETL from OMOP CDM to PCORnet.) The PCORnet *vital source* is determined by the *Observation\_type\_concept\_id* where the possible values are Patient reported (44814721) or Observation Recorded from EHR (38000276).

The PCORnet attribute, *bp\_position*, is derived from the various concept ids for blood pressure readings, Diastolic Blood Pressure – Sitting (3034703) vs Diastolic Blood Pressure – Standing (3019962). To synchronize Diastolic and Systolic BP in case of multiple measurements, observation\_date and observation\_time of the same measurement should be the same.

The following table lists the concept ids that should be used as observation concept ids within the OMOP CDM to record the vitals.

|  |  |  |
| --- | --- | --- |
| **Measurement** | **Concept Name** | **Concept Id** |
| Height | Body height | 3036277 |
| Weight | Body weight | 3025315 |
| Body Mass Index | Body mass index (BMI) [Ratio] | 3038553 |
| Diastolic Blood Pressure | Diastolic Blood Pressure - Sitting | 3034703 |
|  | Diastolic Blood Pressure - Standing | 3019962 |
|  | Diastolic Blood Pressure - Supine | 3013940 |
|  | Diastolic BP | 3012888 |
| Systolic Blood Pressure | Systolic Blood Pressure - Sitting | 3018586 |
|  | Systolic Blood Pressure - Standing | 3035856 |
|  | Systolic Blood Pressure - Supine | 3009395 |
|  | Systolic BP  | 3004249 |