

ETL Conventions for use with PEDSnet CDM v2.4 OMOP V5

The PEDSnet Common Data Model is an evolving specification, based in structure on the OMOP Common Data Model, but expanded to accommodate requirements of both the PCORnet Common Data Model and the primary research cohorts established in PEDSnet.

Version 2.4 of the PEDSnet CDM reflects the ETL processes developed after several iterations of network development. As such, it proposes to align with version 3 of the PCORnet CDM.

This document provides the ETL processing assumptions and conventions developed by the PEDSnet data partners that should be used by a data partner for ensuring common ETL business rules. This document will be modified as new situations are identified, incorrect business rules are identified and replaced, as new analytic use cases impose new/different ETL rules, and as the PEDSnet CDM continues to evolve.

Comments on this specification and ETL rules are welcome. Please send email to pedsnetdcc@email.chop.edu, or contact the PEDSnet project management office (details available via <http://www.pedsnet.info>).

PEDSnet Data Standards and Interoperability Policies:

1. The PEDSnet data network will store data using structures compatible with the PEDSnet Common Data Model (PCDM).
2. The PEDSnet CDM v2.4 is based on the Observational Medical Outcomes Partnership (OMOP) data model, version 5.
3. A subset of data elements in the PCDM will be identified as principal data elements (PDEs). The PDEs will be used for population-level queries. Data elements which are NOT PDEs will be marked as Optional (ETL at site discretion) or Non-PDE (ETL required, but data need not be transmitted to DCC), and will not be used in queries without prior approval of site.
4. It is anticipated that PEDSnet institutions will make a good faith attempt to obtain as many of the data elements not marked as Optional as possible.
5. The data elements classified as PDEs and those included in the PCDM will be approved by the PEDSnet Executive Committee (comprised of each PEDSnet institution's site principal investigator).
6. Concept IDs are taken from OMOP 5 vocabularies for PEDSnet CDM v2.4, using the complete (restricted) version that includes licensed terminologies such as CPT and others.
7. PCORnet CDM v3 requires data elements that are not currently considered "standard concepts". Vocabulary version 5 has a new vocabulary (*vocabularyid=PCORNet*) that was added by OMOP to capture all of the PCORnet concepts that are not in the standard terminologies. We use *conceptids* from *vocabularyid=PCORNet* where there are no existing standard concepts. We highlight where we are pulling *conceptids* from *vocabularyid=PCORNet* in the tables. While terms from *vocabularyid=PCORNet* violates the OMOP rule to use only *conceptids* from standard vocabularies (*vocabularyid=PCORNet* is a non-standard vocabulary), this convention enables a clean extraction from PEDSnet CDM to PCORnet CDM.
8. Some source fields may be considered sensitive by data sites. Potential examples include *patientsourcevalue*, *providersourcevalue*, *caresitesourcevalue*. Many of these fields are used to generate an ID field, such as *PERSON.patientsourcevalue* *PERSON.personid*, that is used as a primary key in *PERSON* and a foreign key in many other tables. Sites are free to obfuscate or not provide source values that are used to create ID variables. Sites must maintain a mapping from the ID variable back to the original site-specific value for local re-identification tasks.
 1. Source fields that contain clinical data, such as source condition occurrence, should be included
 2. The PEDSnet DCC will never release source values to external data partners.
 3. Source value obfuscation techniques may include replacing the real source value with a random number, an encrypted derivative value/string, or some other site-specific algorithm.
9. The PCORnet CDM has specific definitions for null values (as seen below). For the PEDSnet CDM, please use the following logic on which concept value to use for `source_concept_id` fields where there are null values in the source `*_source_value`.

| Null Name | Definition of each field |
|-----------------------|---|
| NULL | A data field is not present in the source system. Note. This is not a 'NULL' string but the NULL value. |
| 'NI' = No Information | A data field is present in the source system, but the source value is null or blank |
| 'UN' = Unknown | A data field is present in the source system, but the source value explicitly denotes an unknown value |
| 'OT' = Other | A data field is present in the source system, but the source value cannot be mapped to the CDM |

10. For populating `'*_source_concept_id'` (where there exists non-null values in the source) use the following Logic :

Populate `'*_source_concept_id'` (i.e. non-zero) if the `source_value` is drawn from a standard vocabulary in OMOP.

Please use your local system knowledge to determine this or use the following criteria : All the values in the *sourcevalue* field should be drawn from the *conceptcode* in the concept table (for a given/relevant *domainid* and a given *vocabularyid*).

ELSE Use 0

(usually the case when the sites need to "manually" map the *sourcevalue* to *conceptid*)

11. For populating `*_source_value` please make a best effort to provide "human readable" values rather than a coded value where possible from the source.

Example for `gender_source_value` , the source value at your site may be `1` for Female and `2` for Male. Please provide the label value of `Female` and `Male` .

ETL Recommendation: Due to PK/FK constraints, the most efficient order for ETL table is *location, caresite, provider, person, visitoccurrence, conditionoccurrence, observation, procedureoccurrence, measurement, measurement_organism, drug exposure*

Table of Contents

- [1.1 Person](#)
- [1.2 Death](#)
- [1.3 Location](#)
- [1.4 Caresite](#)
- [1.5 Provider](#)
- [1.6 Visit Occurrence](#)
- [1.7 Condition Occurrence](#)
- [1.8 Procedure Occurrence](#)
- [1.9 Observation](#)
- [1.10 Observation Period](#)
- [1.11 Drug Exposure](#)
- [1.12 Measurement](#)
- [1.13 Fact Relationship](#)
- [1.14 Visit Payer](#)
- [1.15 Measurement Organism](#)
- [1.16 ADT Occurrence](#)

Appendix

Data Extraction Guide

Please use the table headings as a guide in extracting and submitting data. These specifications are indicative of DCC and Network Requirements. All fields must be submitted to the DCC even if you are not submitting data in a field. Here are examples of how the specification should be interpreted:

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|------------|---------------------|---------------------|-----------|-------------|---------------------|
| Field Name | • Yes | • Yes | Data Type | Description | PEDSnet Conventions |

- The above example indicates the data in this field is required by both the DCC and Network. It absolutely must be provided in the data submission.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|------------|---------------------|--------------------------|-----------|-------------|---------------------|
| Field Name | • No | • Provide When Available | Data Type | Description | PEDSnet Conventions |

- The above example indicates the data in this field is required by Network if it is populated or available at your site. If it is available it must be provided in the data submission.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|------------|---------------------|---------------------|-----------|-------------|---------------------|
| Field Name | • No | • Site Preference | Data Type | Description | PEDSnet Conventions |

- The above example indicates the data in this field is not required by the DCC or Network. A site may choose to send this information if they desire to do so.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|------------|---------------------|---------------------|-----------|-------------|---------------------|
| Field Name | • No | • Optional | Data Type | Description | PEDSnet Conventions |

- The above example indicates the data in this field is truly optional for submission. A site may choose to send this information if they desire to do so.

1.1 PERSON

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, which are assumed to be constant for the patient throughout the course of their periods of observation. All other patient-related data domains have a foreign-key reference to the person domain.

PEDSnet uses a specific definition of an active PEDSnet patient. Only patients who meet the PEDSnet definition of an active patient should be included in this table. The criteria for identifying an active patient are:

- Has a unique identifier AND
- At least 1 "in person" clinical encounter on or after January 1, 2009 AND
- At least 1 coded diagnoses recorded on or after January 1, 2009 AND
- Is not a test patient or a research-only patient

The definition of an "in person" clinical encounter remains heuristic -any encounter type that involves a meaningful **physical** interaction with a clinician that involved clinical content. An encounter for a suture removal or a telephone encounter or a lab blood draw does not meet this definition.

NOTE: While the 1/1/2009 date and "in person" clinical encounter restrictions apply to defining an active PEDSnet patient, once a patient has met this criteria, PEDSnet will extract ALL available clinical encounters/clinical data of any type across all available dates. That is, 1/1/2009 and 1 'in person' clinical encounter applies only to defining the active patient cohort. It does NOT apply to data extraction on active patients.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|-----------------|---------------------|---------------------|-----------|--|--|
| person_id | Yes | Yes | Integer | A unique identifier for each person; this is created by each contributing site. | <p>This is not a value found in the EHR.</p> <p>PERSONID must be unique for all patients within a single data set.</p> <p>SITE RESPONSIBILITY: This field must remain a stable identifier across submissions to the DCC.</p> <p>A mapping from the personid to a real patient ID or MRN from the source EHR must be kept at the local site. This mapping is not shared with the data coordinating center. It is used only by the site for re-identification for study recruitment or for data quality review.</p> |
| genderconceptid | Yes | Yes | Integer | A foreign key that refers to a standard concept identifier in the Vocabulary for the gender of the | <p>Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table select * from concept where ((domainid='Gender' and conceptclassid='Gender') or (domainid='Observation' and vocabularyid='PCORNet' and conceptclassid in ('Gender','Undefined')))) and conceptcode not in ('Sex-F','Sex-M') and invalidreason is null:</p> <ul style="list-style-type: none"> • Ambiguous: conceptid = 44814664 |

| | | | | | |
|-------------------------------|-----|------------------------|----------|--|---|
| | | | | person. | <ul style="list-style-type: none"> Female: <i>conceptid</i> = 8532 Male: <i>conceptid</i> = 8507 No Information: <i>conceptid</i> = 44814650 (<i>Vocabularyid</i>=PCORNet') Unknown: <i>conceptid</i> = 44814653 Other: <i>concept_id</i> = 44814649 |
| <i>gendersourceconcept_id</i> | Yes | Yes | Integer | A foreign key to the gender concept that refers to the code used in the source. | If there is not a mapping for the source code in the standard vocabulary, use <i>concept_id</i> = 0 |
| <i>yearofbirth</i> | Yes | Yes | Integer | The year of birth of the person. | For data sources with date of birth, the year is extracted. For data sources where the year of birth is not available, the approximate year of birth is derived based on any age group categorization available. Please keep all accurate/real dates (No date shifting) |
| <i>monthofbirth</i> | No | Provide When Available | Integer | The month of birth of the person. | For data sources that provide the precise date of birth, the month is extracted and stored in this field. Please keep all accurate/real dates (No date shifting) |
| <i>dayofbirth</i> | No | Provide When Available | Integer | The day of the month of birth of the person. | For data sources that provide the precise date of birth, the day is extracted and stored in this field. Please keep all accurate/real dates (No date shifting) |
| <i>timeofbirth</i> | No | Provide When Available | Datetime | The birth date and time | Do not include timezone. Please keep all accurate/real dates (No date shifting). If there is no time associated with the date assert midnight. |
| <i>raceconceptid</i> | Yes | Yes | Integer | A foreign key that refers to a standard concept identifier in the Vocabulary for the race of the person. | <p>Details of categorical definitions:</p> <ul style="list-style-type: none"> -American Indian or Alaska Native: A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment. -Asian: A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. -Black or African American: A person having origins in any of the black racial groups of Africa. -Native Hawaiian or Other Pacific Islander: A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. -White: A person having origins in any of the original peoples of Europe, the Middle East, or North Africa. <p>For patients with multiple races (i.e. biracial), race is considered a single concept, meaning there is only one race slot. If there are multiple races in the source system, concatenate all races into one <i>race</i>sourcevalue (see below) and use <i>conceptid code</i> as 'Multiple Race.'</p> <p><i>Predefined values (valid conceptids found in CONCEPT table where ((domainid='Race' and vocabularyid = 'Race') or (vocabularyid='PCORNet' and conceptclassid='Undefined') or conceptid in (44814659,44814660)) and invalidreason is null:</i></p> <ul style="list-style-type: none"> American Indian/Alaska Native: <i>conceptid</i> = 8657 Asian: <i>conceptid</i> = 8515 Black or African American: <i>conceptid</i> = 8516 Native Hawaiian or Other Pacific Islander: <i>conceptid</i> = 8557 White: <i>conceptid</i> = 8527 Multiple Race: <i>conceptid</i> = 44814659 (<i>vocabularyid</i>=PCORNet') Refuse to answer: <i>conceptid</i> = 44814660 (<i>vocabularyid</i>=PCORNet') No Information: <i>conceptid</i> = 44814650 (<i>vocabularyid</i>=PCORNet') Unknown: <i>conceptid</i> = 44814653 Other: <i>conceptid</i> = 44814649 |
| | | | | A foreign key to the | |

| | | | | | |
|---|-----|------------------------|---------|--|--|
| race <code>sourceconcept_id</code> | Yes | Yes | Integer | race concept that refers to the code used in the source. | If there is not a mapping for the source code in the standard vocabulary, use <code>concept_id = 0</code> |
| ethnicity <code>conceptid</code> | Yes | Yes | Integer | A foreign key that refers to the standard concept identifier in the Vocabulary for the ethnicity of the person. | For PEDSnet, a person with Hispanic ethnicity is defined as "A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race." Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid <code>conceptids</code> found in <code>CONCEPT</code> table where <code>vocabularyid = 'Ethnicity'</code> or (<code>vocabularyid=PCORNet</code> and <code>conceptclassid='Undefined'</code>) where noted): <ul style="list-style-type: none"> • <i>Hispanic</i>: <code>conceptid = 38003563</code> • <i>Not Hispanic</i>: <code>conceptid = 38003564</code> • <i>No Information</i>: <code>conceptid = 44814650</code> (<code>vocabularyid='PCORNet'</code>) • <i>Unknown</i>: <code>conceptid = 44814653</code> (<code>vocabularyid='PCORNet'</code>) • <i>Other</i>: <code>conceptid = 44814649</code> (<code>vocabulary_id='PCORNet'</code>) |
| ethnicity <code>sourceconcept_id</code> | Yes | Yes | Integer | A foreign key to the ethnicity concept that refers to the code used in the source. | If there is not a mapping for the source code in the standard vocabulary, use <code>concept_id = 0</code> |
| location <code>_id</code> | No | Provide When Available | Integer | A foreign key to the place of residency (ZIP code) for the person in the location table, where the detailed address information is stored. | |
| provider <code>_id</code> | No | Provide When Available | Integer | Foreign key to the primary care provider the person is seeing in the provider table. | For PEDSnet CDM v2.4.0: Sites will use site-specific logic to determine the best primary care provider and document how that decision was made (e.g., billing provider). |
| care <code>siteid</code> | Yes | Yes | Integer | A foreign key to the site of primary care in the care <code>_site</code> table, where the details of the care site are stored | For patients who receive care at multiple care sites, use site-specific logic to select a care site that best represents where the patient obtains the majority of their recent care. If a specific site within the institution cannot be identified, use a <code>care<code>siteid</code></code> representing the institution as a whole. |
| pn <code>gestationalage</code> | No | Provide When Available | Integer | The post-menstrual age in weeks of the person at birth, if known | Use granularity of age in weeks as is recorded in local EHR. |
| person <code>sourcevalue</code> | No | Provide When Available | Varchar | An encrypted key derived from the person identifier in the source data. | Insert a unique pseudo-identifier (random number, encrypted identifier) into the field. Do not insert the actual MRN or PATID from your site. A mapping from the pseudo-identifier for <code>person<code>source_value</code></code> in this field to a real patient ID or MRN from the source EHR must be kept at the local site. This mapping is not shared with the data coordinating center. It is used only by the site for re-identification for study recruitment or for data quality review. |
| gender <code>sourcevalue</code> | Yes | Yes | Varchar | The source code for the gender of the person as it appears in the source data. | The person's gender is mapped to a standard gender concept in the Vocabulary; the original value is stored here for reference. See <code>gender<code>conceptid</code></code> |
| | | | | The source code for | The person race is mapped to a standard race concept in the Vocabulary and the original value is stored here for reference. |

| | | | | | |
|--------------------------------------|-----|-----|---------|--|--|
| race _{sourcevalue} | Yes | Yes | Varchar | the race of the person as it appears in the source data. | For patients with multiple races (i.e. biracial), race is considered a single concept, meaning there is only one race slot. If there are multiple races in the source system, concatenate all races into one source value, and use the concept_id for Multiple Race. |
| ethnicity _{sourcevalue} | Yes | Yes | Varchar | The source code for the ethnicity of the person as it appears in the source data. | The person ethnicity is mapped to a standard ethnicity concept in the Vocabulary and the original code is, stored here for reference. |
| language _{conceptid} | Yes | Yes | Integer | A foreign key that refers to the standard concept identifier in the Vocabulary for the language of the person. | For PEDSNet, please map your source codes to acceptable language values in appendix 2 If there is not a mapping for the source code in the network language mapping, use concept_id = 44814649 (Other PCORNet Vocabulary) |
| language _{sourceconcept_id} | Yes | Yes | Integer | A foreign key to the language concept that refers to the code used in the source. | If there is not a mapping for the source code in the standard vocabulary, use concept_id = 0 |
| language _{sourcevalue} | Yes | Yes | Varchar | The source code for the language of the person as it appears in the source data | The person language is mapped to a standard language concept in the Vocabulary and the original code is stored here for reference. |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.2 DEATH

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.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|--------------------------|---------------------|---------------------|-----------|---|---|
| death _{causeid} | Yes | Yes | Integer | A unique identifier for each death cause occurrence | This is not a value found in the EHR. Sites may choose to use a sequential value for this field |
| person_id | Yes | Yes | Integer | A foreign key identifier to the deceased person. The demographic details of that person are stored in the person table. | See PERSON.person_id (primary key) |
| death_date | Yes | Yes | Date | The date the person was deceased. | If the precise date including day or month is not known or not allowed, December is used as the default month, and the last day of the month the default day. If no date available, use date recorded as deceased. When the date of death is not present in the source data, use the date the source record was created. |
| death_time | Yes | Yes | Datetime | The date the person was deceased. | This field is custom to PEDSnet If the precise date including day or month is not known or not allowed, December is used as the default month, and the last day of the month the default day. If no date available, use date recorded as deceased. When the date of death is not present in the source data, use the date the source record was created. If there is no time associated with the date assert '23:59:59'. |
| | | | | | Please include valid concept ids (consistent with OMOP CDMv5). |

| | | | | | |
|-----------------------|-----|------------------------|---------|---|--|
| deathtypeconcept_id | Yes | Yes | Integer | A foreign key referring to the predefined concept identifier in the Vocabulary reflecting how the death was represented in the source data. | <p>Predefined value set (valid conceptids found in CONCEPT table where domainid = 'Death Type')</p> <p>select * from concept where conceptclassid = 'Death Type' yields 9 valid conceptids. If none are correct, use conceptid = 0</p> <p>Note: Most current ETLs are extracting data from EHR. The common conceptid to insert here is</p> <ul style="list-style-type: none"> 38003569 ("EHR record patient status "Deceased") <p>. Please assert</p> <ul style="list-style-type: none"> No information: conceptid = 44814650 <p>where there is no information in the source</p> <p>Note: These terms only describe the source from which the death was reported. It does not describe our certainty/source of the date of death, which may have been created by one of the heuristics described in death_date.</p> |
| causeconceptid | No | Provide When Available | Integer | A foreign referring to a standard concept identifier in the Vocabulary for conditions. | |
| causesourcevalue | No | Provide When Available | Varchar | The source code for the cause of death as it appears in the source. This code is mapped to a standard concept in the Vocabulary and the original code is stored here for reference. | |
| causesourceconcept_id | No | Provide When Available | Integer | A foreign key to the vocabulary concept that refers to the code used in the source. | <p>This links to the concept id of the vocabulary of the cause of death concept id as stored in the source. For example, if the cause of death is "Acute myeloid leukemia, without mention of having achieved remission" which has an icd9 code of 205.00 the cause source concept id is 44826430 which is the icd9 code concept that corresponds to the diagnosis 205.00.</p> <p>If there is not a mapping for the source code in the standard vocabulary, use concept_id = 0</p> |
| deathimputeconcept_id | Yes | Yes | Varchar | A foreign key referring to a standard concept identifier in the vocabulary for death imputation. | <p>p>Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table where conceptclassid = 'Death Imput Type')</p> <p>select * from concept where (conceptclassid = 'Death Imput Type' or (vocabularyid = 'PCORNet' and conceptclassid = 'Undefined')) and invalidreason is null yields 8 valid conceptids. If none are correct, use conceptid = 0</p> <ul style="list-style-type: none"> Both month and day imputed: 2000000034 Day imputed: 2000000035 Month imputed: 2000000036 Full Date imputed: 2000000038 Not imputed: 2000000037 No Information: conceptid = 44814650 (Vocabularyid = 'PCORNet') Unknown: conceptid = 44814653 Other: concept_id = 44814649 |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.2.1 Additional Notes

- Each Person may have more than one record of death in the source data. It is OK to insert multiple death records for an individual.

- If the Death Date cannot be precisely determined from the data, the best approximation should be used.

1.3 LOCATION

The Location domain represents a generic way to capture physical location or address information. Locations are used to define the addresses for Persons and Care Sites. The most important field is ZIP for location-based queries.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|----------------------|---------------------|------------------------|-----------|---|--|
| location_id | Yes | Yes | Integer | A unique identifier for each geographic location. | This is not a value found in the EHR. Sites may choose to use a sequential value for this field |
| state | No | Provide When Available | Varchar | The state field as it appears in the source data. | |
| zip | No | Provide When Available | Varchar | The zip code. For US addresses, valid zip codes can be 3, 5 or 9 digits long, depending on the source data. | While optional, this is the most important field in this table to support location-based queries. |
| location_sourcevalue | No | Provide When Available | Varchar | The verbatim information that is used to uniquely identify the location as it appears in the source data. | If location source values are deemed sensitive by your organization, insert a pseudo-identifier (random number, encrypted identifier) into the field. Sites electing to obfuscate location_sourcevalues will keep the mapping between the value in this field and the original clear text location source value. This value is only used for site-level re-identification for study recruitment and for data quality review. Sites may consider using the location_id field value in this table as the pseudo-identifier as long as a local mapping from location_id to the real site identifier is maintained. |
| address_1 | No | NO | Varchar | | Do not transmit to DCC |
| address_2 | No | NO | Varchar | | Do not transmit to DCC |
| city | No | NO | Varchar | | Do not transmit to DCC |
| county | No | NO | Varchar | | Do not transmit to DCC |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.3.1 Additional Notes

- Each address or Location is unique and is present only once in the table
- Locations in this table are restricted to locations that are applicable to persons and care_sites in the Pedsnet cohort at each site. When external data is implemented, valid(data containing) locations may be expanded beyond locations of those only present in clinical tables.

1.4 CARE_SITE

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

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|------------|---------------------|---------------------|-----------|--|---|
| caresiteid | Yes | Yes | Integer | A unique identifier for each defined location of care within an organization. Here, an organization is defined as a collection of one or more care sites that share a single EHR database. | This is not a value found in the EHR. Sites may choose to use a sequential value for this field |

| | | | | | |
|---------------------------|-----|------------------------|---------|---|---|
| caresitename | No | Provide When Available | Varchar | The description of the care site | |
| placeofserviceconceptid | No | Provide When Available | Integer | A foreign key that refers to a place of service concept identifier in the Vocabulary | <p>Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table where domainid='Visit' or (vocabularyid='PCORNet' and conceptclassid='Encounter Type') or (vocabularyid='PCORNet' and conceptclassid='Undefined' and not conceptcode ~ '-EDI-IPI-AV') and invalidreason is null)</p> <p>select * from concept where domainid='Visit' or (vocabularyid='PCORNet' and conceptclassid='Encounter Type') or (vocabularyid='PCORNet' and conceptclassid='Undefined') and invalidreason is null yields 10 valid conceptids.</p> <p>If none are correct, use conceptid = 0</p> <ul style="list-style-type: none"> Inpatient Hospital Stay: conceptid = 9201 Ambulatory Visit: conceptid = 9202 Emergency Department: conceptid = 9203 Long Term Care Visit = 42898160 Other ambulatory Visit = 44814711 Non-Acute Institutional Stay: conceptid = 44814710) Emergency Department Admit to Inpatient Hospital Stay (If sites are unable to split the encounter) = 2000000048 Unknown: conceptid = 44814653 Other: conceptid = 44814649 No information: concept_id = 44814650 |
| location_id | No | Provide When Available | Integer | 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. | |
| caresitesource_value | Yes | Yes | Varchar | The identifier for the organization in the source data, stored here for reference. | <p>If care site source values are deemed sensitive by your organization, insert a pseudo-identifier (random number, encrypted identifier) into the field. Sites electing to obfuscate care sitesourcevalues will keep the mapping between the value in this field and the original clear text location source value. This value is only used for site-level re-identification for study recruitment and for data quality review.</p> <p>For EPIC EHRs, map caresiteid to Clarity Department.</p> <p>Sites may consider using the caresiteid field value in this table as the pseudo-identifier as long as a local mapping from caresiteid to the real site identifier is maintained.</p> |
| placeofservicesourcevalue | No | Provide When Available | Varchar | The source code for the place of service as it appears in the source data, stored here for reference. | |
| | | | | | <p>Care sites could have one or more specialties or a Care site could have no specialty information.</p> <p>Valid specialty concept ids for PEDSnet are found in the appendix</p> <p>Please use the following rules:</p> <ul style="list-style-type: none"> If care site specialty information is unavailable, please follow the convention on reporting values that are unknown,null or unavailable. If a care site has a single specialty associated with it, sites |

| | | | | | |
|----------------------|----|------------------------|---------|--|--|
| specialtyconceptid | No | Provide When Available | Integer | The specialty of the department linked to a standard specialty concept as it appears in the Vocabulary | <p>should link the specialty to the valid specialty concepts as assigned in the appendix. If the specialty does not correspond to a value in this listing, please use the NUCC Listing (vocabularyid='NUCC') provided in the vocabulary as a reference.</p> <ul style="list-style-type: none"> If there are multiple specialties associated with a particular care site and sites are not able to assign a specialty value on the visit occurrence level, sites should use the specialty concept id=38004477 "Pediatric Medicine". If there are multiple specialties associated with a particular care site and this information is attainable, sites should document the strategy used to obtain this information and the strategy used to link the correct care site/specialty pair for each visit occurrence. Sites should also link the specialty to the valid specialty concepts as assigned in the appendix <p>If the specialty does not correspond to a value in this listing, please use the NUCC Listing (vocabularyid='NUCC') provided in the vocabulary as a reference.</p> |
| specialtysourcevalue | No | Provide When Available | Varchar | The source code for the specialty as it appears in the source data, stored here for reference. | |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.4.1 Additional Notes

- Care sites are primarily identified based on the specialty or type of care provided, and secondarily on physical location, if available (e.g. North Satellite Endocrinology Clinic)
- The Place of Service Concepts are based on a catalog maintained by the CMS (see vocabulary for values)

1.5 PROVIDER

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

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|--------------------|---------------------|------------------------|-----------|--|--|
| provider_id | Yes | Yes | Integer | A unique identifier for each provider. Each site must maintain a map from this value to the identifier used for the provider in the source data. | <p>This is not a value found in the EHR.</p> <p>SITE RESPONSIBILITY: This field must remain a stable identifier across submissions to the DCC.</p> <p>A mapping from the provider_id to a real provider from the source EHR must be kept at the local site. This mapping is not shared with the data coordinating center. It is used only by the site for re-identification for study recruitment or for data quality review.</p> <p>Sites should document who they have included as a provider.</p> |
| provider_name | No | NO | Varchar | A description of the provider | DO NOT TRANSMIT TO DCC |
| genderconceptid | No | Provide When Available | Integer | The gender of the provider | A foreign key to the concept that refers to the code used in the source. |
| specialtyconceptid | No | Provide When | Integer | A foreign key to a standard provider's specialty concept | <p>Please map the source data to the mapped provider specialty concept associated with the American Medical Board of Specialties as seen in Appendix A1. Predefined value set (valid conceptids found in CONCEPT table where domainid='Provider Specialty' and vocabularyid in ('Specialty', 'ABMS', 'NUCC', 'PEDSnet'))</p> <p><i>select * from concept where domainid ='Provider Specialty' and vocabularyid in ('Specialty', 'ABMS', 'NUCC', 'PEDSnet') and invalidreason is null yields 1025 valid conceptids.</i></p> |

| | | | | | |
|---------------------------|-----|------------------------|---------|---|--|
| | | Available | | identifier in the Vocabulary. | <i>If none are correct, use conceptid = 0</i> For providers with more than one specialty, use site-specific logic to select one specialty and document the logic used. For example, sites may decide to always assert the **first** specialty listed in their data source. As a first guide please use the ABMS and PEDSnet vocabulary specialty listing listing to map your speciality values. If the specialty does not correspond to a value in these listings, please use the NUCC Listing (vocabulary_id='NUCC') provided in the vocabulary as a reference. |
| caresiteid | Yes | Yes | Integer | A foreign key to the main care site where the provider is practicing. | See CARESITE.caresite_id (primary key) |
| yearofbirth | No | Provide When Available | Integer | The year of birth of the provider | |
| NPI | No | Site Preference | Varchar | The National Provider Identifier (NPI) of the provider. | |
| DEA | No | Site Preference | Varchar | The Drug Enforcement Administration (DEA) number of the provider. | |
| providersourcevalue | Yes | Yes | Varchar | The identifier used for the provider in the source data, stored here for reference. | Insert a pseudo-identifier (random number, encrypted identifier) into the field. Do not insert the actual PROVIDERID from your site. A mapping from the pseudo-identifier for providersourcevalue in this field to a real provider ID from the source EHR must be kept at the local site. This mapping is not shared with the data coordinating center. It is used only by the site for re-identification for study recruitment or for data quality review. Sites may consider using the providerid field value in this table as the pseudo-identifier as long as a local mapping from provider_id to the real site identifier is maintained. |
| specialtysourcevalue | No | Provide When Available | Varchar | The source code for the provider specialty as it appears in the source data, stored here for reference. | Optional. May be obfuscated if deemed sensitive by local site. |
| specialtysourceconcept_id | No | Provide When Available | Integer | A foreign key to a concept that refers to the code used in the source. | If providing this information, sites should document how they determine the specialty associated with the provider. Valid specialty concept ids for PEDSnet are found in the appendix If the specialty does not correspond to a value in this listing, please use the NUCC Listing (vocabularyid='NUCC') provided in the vocabulary as a reference. **If there is not a mapping for the source code in the standard vocabulary, use conceptid = 0** |
| gendersourcevalue | No | Provide When Available | Varchar | The source value for the provider gender. | |
| gendersourceconcept_id | No | Provide When Available | Integer | The gender of the provider as represented in the source that maps to a concept in the vocabulary | If there is not a mapping for the source code in the standard vocabulary, use concept_id = 0 |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.5.1 Additional Notes

- For PEDSnet, a provider is any individual (MD, DO, NP, PA, RN, etc) who is authorized to document care.
- Providers are not duplicated in the table.

1.6 VISIT_OCCURRENCE

The visit occurrence 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 health care system.

Exclusions:

1. Future Vists
2. Cancelled Visits (where the patient was not seen)

Note 1: For Outpatient visits, please use the following logic to assign visit concept ids:

| Visit Concept Id | Concept Name | Visit Type Inclusion |
|------------------|-----------------------------|--|
| 9202 | Ambulatory Visit (AV) | Outpatient Visits where the patient was seen in person |
| 44814711 | Other ambulatory Visit (OA) | All other outpatient visits |

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|-------------------|---------------------|------------------------|-----------|---|--|
| visitoccurrenceid | Yes | Yes | Integer | A unique identifier for each person's visits or encounter at a healthcare provider. | <p>This is not a value found in the EHR.</p> <p>VISIT_OCCURRENCEID must be unique for all patients within a single data set.</p> <p>SITE RESPONSIBILITY: This field must remain a stable identifier across submissions to the DCC.</p> <p>A mapping from the visit occurrence id to a real patient encounter from the source EHR must be kept at the local site. This mapping is not shared with the data coordinating center. It is used only by the site for re-identification for study recruitment or for data quality review. Do not use institutional encounter ID.</p> |
| person_id | Yes | Yes | Integer | A foreign key identifier to the person for whom the visit is recorded. The demographic details of that person are stored in the person table. | |
| visitstartdate | Yes | Yes | Date | The start date of the visit. | No date shifting. Full date. |
| visitenddate | No | Provide When Available | Date | The end date of the visit. | <p>No date shifting. Full date.</p> <p>If this is a one-day visit the end date should match the start date.</p> <p>If the encounter is on-going at the time of ETL, this should be null.</p> |
| visitstarttime | Yes | Yes | Datetime | The start date of the visit. | No date shifting. Full date and time. If there is no time associated with the date assert midnight for the start time |
| visitendtime | No | Provide When Available | Datetime | The end date of the visit. | <p>No date shifting.</p> <p>If this is a one-day visit the end date should match the start date.</p> <p>If the encounter is on-going at the time of ETL, this should be null. Full date and time. If there is no time associated with the date assert 11:59:59 pm for the end time</p> |

| | | | | | |
|-----------------------|-----|------------------------|---------|--|---|
| provider_id | No | Provide When Available | Integer | A foreign key to the provider in the provider table who was associated with the visit. | Use attending or billing provider for this field if available, even if multiple providers were involved in the visit. Otherwise, make site-specific decision on which provider to associate with visits and document. NOTE: this is NOT required in OMOP CDM v4, but appears in OMOP CDMv5. |
| caresiteid | No | Provide When Available | Integer | A foreign key to the care site in the care site table that was visited. | See CARESITE.caresite_id (primary key) |
| visitconceptid | Yes | Yes | Integer | A foreign key that refers to a place of service concept identifier in the vocabulary. | In PEDSnet CDM v1, this field was previously called placeofserviceconceptid Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid <i>conceptids</i> found in CONCEPT table where domainid='Visit' or (vocabularyid='PCORNet' and conceptclassid='Encounter Type') or (vocabularyid='PCORNet' and conceptclassid='Undefined' and not conceptcode ~ '-EDI-IPI-AV') and invalidreason is null). select * from concept where domainid='Visit' or (vocabularyid='PCORNet' and conceptclassid='Encounter Type' and not conceptcode ~ '-EDI-IPI-AV') or (vocabularyid='PCORNet' and conceptclassid='Undefined' and not conceptcode ~ '-EDI-IPI-AV') and invalidreason is null yields 10 valid <i>conceptids</i> . <i>If none are correct, use conceptid = 0</i> <ul style="list-style-type: none"> • Inpatient Hospital Stay: <i>conceptid</i> = 9201 • Ambulatory Visit: <i>conceptid</i> = 9202 • Emergency Department: <i>conceptid</i> = 9203 • Long Term Care Visit = 42898160 • Other ambulatory Visit = 44814711 • Non-Acute Institutional Stay: <i>conceptid</i> = 44814710) • Emergency Department Admit to Inpatient Hospital Stay (If sites are unable to split the encounter) = 2000000048 • Unknown: <i>conceptid</i> = 44814653 • Other: <i>conceptid</i> = 44814649 • No information: <i>concept_id</i> = 44814650 See note 1 for Outpatient Visits. |
| visittypeconcept_id | Yes | Yes | Integer | A foreign key to the predefined concept identifier in the standard vocabulary reflecting the type of source data from which the visit record is derived. | select * from concept where conceptclassid='Visit Type' yields 3 valid <i>conceptids</i> . <i>If none are correct, user conceptid=0.</i> The majority of visits should be type 'Visit derived from EHR record' which is <i>concept_id=44818518</i> |
| visitsourcevalue | No | Provide When Available | Varchar | The source code used to reflect the type or source of the visit in the source data. Valid entries include office visits, hospital admissions, etc. These source codes can also be type-of service codes and activity type codes. | |
| visitsourceconcept_id | No | Provide When Available | Integer | A foreign key to a concept that refers to the code used in the source. | If a site is using HCPS or CPT for their visit source value, the standard concept id that maps to the particular vocabulary can be used here. If there is not a mapping for the source code in the standard vocabulary, use <i>concept_id</i> = 0 |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.6.1 Additional Notes

- The 1/1/2009 date limitation that is used to define a PEDSnet active patient is **NOT** applied to visit_occurrence. All visits, of all types (physical and virtual) are included for an active patient.
- A Visit Occurrence is recorded for each visit to a healthcare facility.
- If a visit includes moving between different visitconcepts (ED -> inpatient) sites may opt to split the record into separate visitoccurrence records.

To show the relationship of the split (ED -> inpatient) encounter, use the FACT_RELATIONSHIP table.

An example of this is below:

VISIT_OCCURRENCE

| visitoccurrenceid | person_id | visitstartdate | visitenddate | provider_id | caresiteid | placeofserviceconceptid | placeofservicesourcevalue |
|-------------------|-----------|---------------------------|---------------------------|-------------|------------|-------------------------|---------------------------|
| 35022489 | 209846 | 2011-11-14 17:36:00-05 | 2011-11-14 22:25:00-05 | 2238 | 322 | 9203 | Emergency |
| 35022490 | 209846 | 2011-11-14 22:25:00-05 | 2011-11-15 16:33:00-05 | 2238 | 43 | 9201 | Emergency |

FACT_RELATIONSHIP

| Domainconceptid_1 | factid1 | Domainconceptid_2 | factid2 | relationshipconceptid |
|-------------------|----------|-------------------|----------|-----------------------|
| Visit | 35022489 | Visit | 35022490 | Occurs before |
| Visit | 35022490 | Visit | 35022489 | Occurs after |

Because the domainconceptid and relationshipconceptid are actually numeric values the following is an example of how the table is stored:

| Domainconceptid_1 | factid1 | Domainconceptid_2 | factid2 | relationshipconceptid |
|-------------------|----------|-------------------|----------|-----------------------|
| 8 | 35022489 | 8 | 35022490 | 44818881 |
| 8 | 35022490 | 8 | 35022489 | 44818783 |

- Operating and Anesthesia encounters that occur as part of the Inpatient stay should be rolled up into one Inpatient encounter.
- Each Visit is standardized by assigning a corresponding Concept Identifier based on the type of facility visited and the type of services rendered.
- At any one day, there could be more than one visit.
- One visit may involve multiple attending or billing providers (e.g. billing, attending, etc), in which case the ETL must specify how a single provider id is selected or leave the provider_id field null.
- One visit may involve multiple care sites, in which case the ETL must specify how a single caresite id is selected or leave the caresite_id field null.

1.7 CONDITION_OCCURRENCE

The condition occurrence domain captures records of a disease or a medical condition based on diagnoses, signs and/or symptoms observed by a provider or reported by a patient.

Conditions are recorded in different sources and levels of standardization. For example:

- Medical claims data include ICD-9-CM diagnosis codes that are submitted as part of a claim for health services and procedures.
- EHRs may capture a person's conditions in the form of diagnosis codes and symptoms as ICD-9-CM or ICD-10-CM codes, but may not have a way to capture out-of-system conditions.
- EHRs may also capture External Injury codes in different place in the source system. These types of codes are also to be included.

For the PEDSNet network, please provide clinical physician based diagnosis as opposed to billing or claim based diagnosis data.

Note 1: Please use the following logic to populate the `condition_concept_id`, `condition_source_concept_id` and `condition_source_value` based on what is available in your source system:

| Site Information | conditionconceptid | conditionsourceconcept_id | conditionsourcevalue |
|--|---------------------------------|---|-----------------------------------|
| Any diagnosis that was captured as a term or name (e.g. IMO to SNOMED) | Corresponding SNOMED concept id | Corresponding concept for site diagnosis captured (must correspond to ICD9/ICD10 concept mapping) | Diagnosis Name "I" Diagnosis Code |
| Any diagnosis that was captured directly as a code (e.g. ICD9/10) by a coder | Corresponding SNOMED concept id | Corresponding concept for site diagnosis code (must correspond to ICD9/ICD10 concept mapping) | Diagnosis Name "I" Diagnosis Code |

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|-------------------------|---------------------|------------------------|-----------|---|--|
| conditionoccurrenceid | Yes | Yes | Integer | A unique identifier for each condition occurrence event. | This is not a value found in the EHR. Sites may choose to use a sequential value for this field |
| person_id | Yes | 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. | |
| conditionconceptid | Yes | Yes | Integer | A foreign key that refers to a standard condition concept identifier in the Vocabulary. | Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table where vocabularyid ='SNOMED') select * from concept where vocabularyid ='SNOMED' yields ~440,000 valid conceptids. If none are correct, use concept_id = 0 |
| conditionstartdate | Yes | Yes | Date | The date when the instance of the condition is recorded. | No date shifting. |
| conditionenddate | No | Provide When Available | Date | The date when the instance of the condition is considered to have ended | No date shifting. If this information is not available, set to NULL. |
| conditionstarttime | Yes | Yes | Datetime | The date and time when the instance of the condition is recorded. | No date shifting. Full date and time. If there is no time associated with the date assert midnight for the start time |
| conditionendtime | No | Provide When Available | Datetime | The date and time when the instance of the condition is considered to have ended | No date shifting. If this information is not available, set to NULL. Full date and time. If there is no time associated with the date assert 11:59:59 pm for the end time |
| conditiontypeconcept_id | Yes | Yes | Integer | 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. | Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table where domainid ='Condition Type') select * from concept where conceptclassid ='Condition Type' yields 99 valid conceptids. If none are correct, use conceptid = 0 For the primary diagnosis for the inpatient or outpatient setting (may be identified as Dx#1 in a source system), Please use concepts the following concepts: <ul style="list-style-type: none"> Inpatient header - primary: conceptid = 38000199 Outpatient header - 1st position: conceptid = 38000230 All other diagnosis that is not the primary (or Dx#1) in the inpatient or outpatient setting should correspond to the following concept ids: <ul style="list-style-type: none"> Inpatient header - 2nd position: conceptid = 38000201 Outpatient header - 2nd position: conceptid = |

| | | | | | |
|---------------------------|-----|------------------------|---------|--|---|
| | | | | | 38000231 For diagnosis from the problem list, please use the following concept id: <ul style="list-style-type: none">EHR problem list entry: 38000245 |
| stop_reason | No | Provide When Available | Varchar | The reason, if available, that the condition was no longer recorded, as indicated in the source data. | Valid values include discharged, resolved, etc. Note that a stop_reason does not necessarily imply that the condition is no longer occurring, and therefore does not mandate that the end date be assigned. |
| provider_id | No | Provide When Available | Integer | A foreign key to the provider in the provider table who was responsible for determining (diagnosing) the condition. | In PEDSnet CDM v1, this field was previously called associatedproviderid Any valid provider_id allowed (see definition of providers in PROVIDER table) Make a best-guess and document method used. Or leave blank |
| visitoccurrenceid | No | Provide When Available | Integer | A foreign key to the visit in the visit table during which the condition was determined (diagnosed). | |
| conditionsourcevalue | Yes | Yes | Varchar | The source code for the condition as it appears in the source data. This code is mapped to a standard condition concept in the Vocabulary and the original code is, stored here for reference. | Condition source codes are typically ICD-9-CM or ICD-10-CM diagnosis codes from medical claims or discharge status/visit diagnosis codes from EHRs. Use source \rightarrow concept maps to translation from source codes to OMOP concept_ids. Please include the diagnosis name and source code when populating this field, by using the pipe delimiter " " when concatenating values. Example: Diagnosis Name " " Diagnosis Code |
| conditionsourceconcept_id | No | Provide When Available | Integer | A foreign key to a condition concept that refers to the code used in the source | As a standard convention this code must correspond to the ICD9/ICD10 concept mapping of the source value only. For example, if the condition is "Acute myeloid leukemia, without mention of having achieved remission" which has an icd9 code of 205.00 the condition source concept id is 44826430 which is the icd9 code concept that corresponds to the diagnosis 205.00. If there is not a mapping for the source code in the standard vocabulary, use concept_id = 0 |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.7.1 Additional Notes

- The 1/1/2009 date limitation that is used to define a PEDSnet active patient is ****NOT**** applied to conditionoccurrence. All conditions are included for an active patient. For PEDSnet CDM v2.4, we limit conditionoccurrences to final diagnoses only (not reason-for-visit and provisional surgical diagnoses such as those recored in EPIC OPTIME). In EPIC, final diagnoses includes both encounter diagnoses and billing diagnoses, problem lists (all problems, not filtered on "chronic" versus "provisional" unless local practices use this flag as intended). Medical History diagnosis are optional.
- Condition records are inferred from diagnostic codes recorded in the source data by a clinician or abstractionist for a specific visit. In the current version of the CDM, diagnoses extracted from unstructured data (such as notes) are not included.
- Source code systems, like ICD-9-CM, ICD-10-CM, etc., provide coverage of conditions. However, if the code does not define a condition, but rather is an observation or a procedure, then such information is not stored in the CONDITIONOCCURRENCE table, but in the respective tables instead. An example are ICD-9-CM procedure codes. For example, OMOP source-to-concept table uses the MAPPINGTYPE column to distinguish ICD9 codes that represent procedures rather than conditions.
- Condition source values are mapped to standard concepts for conditions in the Vocabulary. For mapping ICD9 Codes to SNOMED, use the conceptrelationship table where the icd9code = conceptid1 and relationshipid='Maps to'. Conceptid2 will be the SNOMED conceptid mapping you need to populate the conditionconceptid.
- When the source code cannot be translated into a Standard Concept, a CONDITIONOCCURRENCE entry is stored with only the corresponding sourcevalue and a conditionconceptid of 0.
- Codes written in the process of establishing the diagnosis, such as "question of" of and "rule out", are not represented here.

1.8 PROCEDURE_OCCURRENCE

The procedure occurrence domain contains records of significant activities or processes ordered by and/or carried out by a healthcare provider on the patient to have a diagnostic and/or therapeutic purpose that are not fully captured in another table (e.g. drug_exposure).

Procedures records are extracted from structured data in Electronic Health Records that capture source procedure codes using CPT-4, ICD-9-CM (Procedures), ICD-10 (Procedures), HCPCS or OPCS-4 procedures as orders.

More specifically the procedure occurrence domain is intended to store information about activity or processes involving a patient that has a billable code. This includes but is not limited to the following: - LOS Codes ((Eg. 99123) This code may not necessarily be a CPT and could require local mapping) - Lab Procedures (including a Lab Panel Order and Culture Orders) - Surgery Procedures - Imaging Procedures

Notes: Only instantiated procedures are included in this table. Please exclude cancelled procedures For CPT Codes, only include codes that are included in the standard CPT4 vocabulary from the distributed vocabulary

Note 1: Please use the following logic to populate the `procedure_concept_id`, `procedure_source_concept_id` and `procedure_source_value` based on what is available in your source system:

| Site Information | procedureconceptid | procedure_source_concept_id | procedure_source_value |
|---|---|---|--|
| Procedure codes using CPT-4, ICD-9-CM (Procedures), ICD-10 (Procedures), HCPCS or OPCS-4 procedures as orders | Corresponding CPT-4, ICD-9-CM (Procedures), ICD-10 (Procedures), HCPCS or OPCS-4 concept id | Corresponding CPT-4, ICD-9-CM (Procedures), ICD-10 (Procedures), HCPCS or OPCS-4 concept id | Procedure Name Procedure Source Code |
| Custom Procedure Coding (That a site has knowledge of corresponding to a standard code but requires manual mapping) | 0 | Corresponding CPT-4, ICD-9-CM (Procedures), ICD-10 (Procedures), HCPCS or OPCS-4 concept id | Procedure Name Custom Procedure Code |

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|-----------------------|---------------------|------------------------|-----------|--|--|
| procedureoccurrenceid | Yes | Yes | Integer | A system-generated unique identifier for each procedure occurrence | This is not a value found in the EHR. Sites may choose to use a sequential value for this field |
| person_id | Yes | Yes | Integer | A foreign key identifier to the person who is subjected to the procedure. The demographic details of that person are stored in the person table. | |
| procedureconceptid | Yes | Yes | Integer | A foreign key that refers to a standard procedure concept identifier in the Vocabulary. | Valid Procedure Concepts belong to the "Procedure" domain. Procedure Concepts are based on a variety of vocabularies: SNOMED-CT (vocabularyid='SNOMED'), ICD-9-Procedures (vocabularyid='ICD9Proc'), ICD-10-Procedures (vocabularyid='ICD10PCS' NOT YET AVAILABLE), CPT-4 (vocabularyid='CPT4'), and HCPCS (vocabulary_id='HCPCS') Procedures are expected to be carried out within one day. If they stretch over a number of days, such as artificial respiration, usually only the initiation is reported as a procedure (CPT-4 "Intubation, endotracheal, emergency procedure"). Procedures could involve the administration of a drug, in which case the procedure is recorded in the procedure table and simultaneously the administered drug in the drug table. |
| modifierconceptid | No | Provide When Available | Integer | A foreign key to a standard concept identifier for a modifier to the procedure (e.g. bilateral) | Valid Modifier Concepts belong to the "Modifier" concept class. select /* from concept where conceptclassid like '%Modifier%'. |
| quantity | No | Provide When Available | Float | The quantity of procedures ordered or administered. | |
| procedure_date | Yes | Yes | Date | The date on which the procedure was performed. | |
| procedure_time | Yes | Yes | Datetime | The date and time on which the procedure was performed. If | This field is a custom PEDSnet field |

| | | | | | |
|---------------------------|-----|-------------------------|---------|---|--|
| | | | | there is no time associated with the date assert midnight. | |
| proceduretypeconcept_id | Yes | Yes | Integer | A foreign key to the predefined concept identifier in the Vocabulary reflecting the type of source data from which the procedure record is derived. (OMOP vocabulary_id = 'Procedure Type') | Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table where vocabularyid = 'Procedure Type') select * from concept where vocabularyid ='Procedure Type' yields 93 valid conceptids. Please map all procedures to the following concept: • EHR order list entry: 38000275 |
| provider_id | No | Provide When Available | Integer | A foreign key to the provider in the provider table who was responsible for carrying out the procedure. | Any valid provider_id allowed (see definition of providers in PROVIDER table) Document how selection was made. |
| visitoccurrenceid | No | Provide When Available | Integer | A foreign key to the visit in the visit table during which the procedure was carried out. | See VISIT.visitoccurrenceid (primary key) |
| proceduresourcevalue | Yes | Yes | Varchar | The source code for the procedure as it appears in the source data. This code is mapped to a standard procedure concept in the Vocabulary and the original code is stored here for reference. | Proceduresourcevalue codes are typically ICD-9, ICD-10 Proc, CPT-4, HCPCS, or OPCS-4 codes. All of these codes are acceptable source values. Please also include the procedure name. See Note 1. |
| proceduresourceconcept_id | No | Provide When Available | Integer | A foreign key to a procedure concept that refers to the code used in the source. | For example, if the procedure is "Anesthesia for procedures on eye; lens surgery" in the source which has a concept code in the vocabulary that is 2100658. The procedure source concept id will be 2100658. If there is not a mapping for the source code in the standard vocabulary, use concept_id = 0 |
| modifiersourcevalue | No | Provide When Available | Varchar | The source code for the modifier as it appears in the source data. | |
| qualifiersourcevalue | No | Provider When Available | Varchar | The source code for the qualifier as it appears in the source data. | |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.8.1 Additional notes

- The 1/1/2009 date limitation that is used to define a PEDSnet active patient is ****NOT**** applied to procedureoccurrence. All procedures are included for an active patient. For PEDSnet CDM v2.4, we limit procedureoccurrences to billing procedures only (not surgical diagnoses).
- Procedure Concepts are based on a variety of vocabularies: SNOMED-CT, ICD-9-Proc, ICD-10-Proc, CPT-4, HCPCS and OPCS-4.
- Procedures could reflect the administration of a drug, in which case the procedure is recorded in the procedure table and simultaneously the administered drug in the drug table.
- The Visit during which the procedure was performed is recorded through a reference to the VISIT_OCCURRENCE table. This information is not always available.
- The Provider carrying out the procedure is recorded through a reference to the PROVIDER table. This information is not always available.

1.9 OBSERVATION

The observation domain captures 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 such as unstructured measurements. For the PEDSnet CDM version 2.4, the observations listed below are extracted from source data. Please assign the specific conceptids listed in the table below to these observations as observationconceptids. Non-standard PCORnet concepts require concepts that have been entered into an OMOP-generated vocabulary (OMOP provided vocabularyid = 'PCORNet').

NOTE: DRG and DRG Type require special logic/processing described below.

- Admitting source (Inpatient and outpatient visit types where available)
- Discharge disposition (Inpatient and outpatient visit types where available)
- Discharge status (Inpatient and outpatient visit types where available)
- DRG (requires special logic - see Note 1 below)
- Tobacco Information (see Note 4)

Use the following table to populate observation *concept* IDs for the observations listed above. The vocabulary id 'PCORNet' contains concept specific to PCORNet requirements and standards.

Table 1: Valid Observation concept IDs and Value as concept IDs for PEDSNet v2.4.

| Concept Name | Observation concept ID | Vocab ID | Value as concept ID | Concept description | Vocab ID | PCORNet Mapping |
|------------------------------------|------------------------|----------|---------------------|--------------------------------|----------|-----------------|
| Admitting source | 4145666 | | 44814670 | Adult Foster Home | | |
| Admitting source | 4145666 | | 44814671 | Assisted Living Facility | | |
| Admitting source | 4145666 | | 44814672 | Ambulatory Visit | | |
| Admitting source | 4145666 | | 8870 | Emergency Department | | |
| Admitting source | 4145666 | | 44814674 | Home Health | | |
| Admitting source | 4145666 | | 44814675 | Home / Self Care | | |
| Admitting source | 4145666 | | 8546 | Hospice | | |
| Admitting source | 4145666 | | 38004279 | Other Acute Inpatient Hospital | | |
| Admitting source | 4145666 | | 44814678 | Nursing Home (Includes ICF) | | |
| Admitting source | 4145666 | | 44814679 | Rehabilitation Facility | | |
| Admitting source | 4145666 | | 44814680 | Residential Facility | PCORNet | |
| Admitting source | 4145666 | | 8863 | Skilled Nursing Facility | | |
| Admitting source | 4145666 | | 44814650 | No information | PCORNet | |
| Admitting source | 4145666 | | 44814653 | Unknown | PCORNet | |
| Admitting source | 4145666 | | 44814649 | Other | PCORNet | |
| Discharge disposition (See Note 3) | 44813951 | SNOMED | 4161979 | Discharged alive | | |
| Discharge disposition | 44813951 | SNOMED | 4216643 | Expired | | |
| Discharge disposition | 44813951 | SNOMED | 44814650 | No information | PCORNet | |
| Discharge disposition | 44813951 | SNOMED | 44814653 | Unknown | PCORNet | |
| Discharge disposition | 44813951 | SNOMED | 44814649 | Other | PCORNet | |
| Discharge status (see Note 3) | 4137274 | | 38004205 | Adult Foster Home | | |
| Discharge status | 4137274 | | 38004301 | Assisted Living Facility | | |
| Discharge status | 4137274 | | 4021968 | Against Medical Advice | | |
| Discharge status | 4137274 | | 44814693 | Absent without leave | PCORNet | |
| Discharge status | 4137274 | | 4216643 | Expired | | |

| | | | | | | |
|------------------|---------|---------------------------|-----------|---|---------|---|
| Discharge status | 4137274 | | 38004195 | Home Health | | |
| Discharge status | 4137274 | | 8536 | Home / Self Care | | |
| Discharge status | 4137274 | | 8546 | Hospice | | |
| Discharge status | 4137274 | | 38004279 | Other Acute Inpatient Hospital | | |
| Discharge status | 4137274 | | 8676 | Nursing Home (Includes ICF) | | |
| Discharge status | 4137274 | | 8920 | Rehabilitation Facility | | |
| Discharge status | 4137274 | | 44814701 | Residential Facility | PCORNet | |
| Discharge status | 4137274 | | 8717 | Still In Hospital | | |
| Discharge status | 4137274 | | 8863 | Skilled Nursing Facility | | |
| Discharge status | 4137274 | | 44814653 | Unknown | PCORNet | |
| Discharge status | 4137274 | | 44814649 | Other | PCORNet | |
| Discharge status | 4137274 | | 44814650 | No information | PCORNet | |
| Tobacco | 4005823 | | 4005823 | Tobacco User | | 01 = Current user |
| Tobacco | 4005823 | | 45765920 | Never used Tobacco | | 02 = Never |
| Tobacco | 4005823 | | 45765917 | Ex-tobacco user | | 03 = Quit/Former Smoker |
| Tobacco | 4005823 | | 4030580 | Non-smoker's second hand smoke syndrome | | 04 = Passive or environmental exposure |
| Tobacco | 4005823 | | 200000040 | | | 06 = Not asked |
| Tobacco | 4005823 | | 44814650 | No information | PCORNet | NI |
| Tobacco | 4005823 | | 44814653 | Unknown | PCORNet | OT |
| Tobacco | 4005823 | | 44814649 | Other | PCORNet | UN |
| Tobacco Type | 4219336 | Multiple Response allowed | 4298794 | Smoker | | 01 = Smoked tobacco only |
| Tobacco Type | 4219336 | Multiple Response allowed | 4224317 | Pipe smoking tobacco | | 01 = Smoked tobacco only |
| Tobacco Type | 4219336 | Multiple Response allowed | 4282779 | Cigarette smoking tobacco | | 01 = Smoked tobacco only |
| Tobacco Type | 4219336 | Multiple Response allowed | 4132133 | Cigar smoking tobacco | | 01 = Smoked tobacco only |
| Tobacco Type | 4219336 | Multiple Response allowed | 4218197 | Snuff tobacco | | 02 = Non-smoked tobacco only |
| Tobacco Type | 4219336 | Multiple Response allowed | 4219234 | Chewing tobacco | | 02 = Non-smoked tobacco only |
| Tobacco Type | 4219336 | | 45765920 | Never used tobacco | | 04 = None |
| Tobacco Type | 4219336 | | 45765917 | Ex tobacco user | | 04 = None |
| Tobacco Type | 4219336 | | 4030580 | Non-smoker's second hand smoke syndrome | | 04 = Passive or environmental exposure/None |
| Tobacco Type | 4219336 | | 44814650 | No information | PCORNet | NI |
| Tobacco Type | 4219336 | | 44814653 | Unknown | PCORNet | OT |
| Tobacco Type | 4219336 | | 44814649 | Other | PCORNet | UN |

| | | | | | | |
|---------|---------|--|------------|---|---------|-------------------------------------|
| Smoking | 4275495 | | 42709996 | Smokes tobacco daily | | 01 = Current everyday smoker |
| Smoking | 4275495 | | 2000000039 | Occasional tobacco smoker - SNOMED International Code | PEDSNet | 02 = current some day smoker |
| Smoking | 4275495 | | 4310250 | Ex-smoker | | 03 = Former smoker |
| Smoking | 4275495 | | 4144272 | Never smoked tobacco | | 04 = Never smoker |
| Smoking | 4275495 | | 4298794 | Smoker | | 05 = Smoker, current status unknown |
| Smoking | 4275495 | | 4141786 | Tobacco smoking consumption(status) unknown | | 06 = Unknown if ever smoked |
| Smoking | 4275495 | USE AS DEFAULT FOR CATEGORY | 4044778 | Chain smoker | | 07 = Heavy tobacco smoker |
| Smoking | 4275495 | | 4209006 | Heavy smoker (over 20 per day) | | 07 = Heavy tobacco smoker |
| Smoking | 4275495 | USE ONLY IF QUANTITY OF CIGARETTES IS KNOWN | 4209585 | Moderate smoker (20 or less per day) | | 08 = Light tobacco smoker |
| Smoking | 4275495 | | 44814650 | No information | PCORNet | NI |
| Smoking | 4275495 | | 44814653 | Unknown | PCORNet | OT |
| Smoking | 4275495 | | 44814649 | Other | PCORNet | UN |

Note 1: For DRG, use the following logic (must use vocabulary version 5):

- The DRG value must be three digits as text. Put into valueasstring in observation
- For all DRGs, set observationconceptid = 3040464 (hospital discharge DRG)
- To obtain correct valueasconcept_id for the DRG:
 - If the date for the DRG < 10/1/2007, use conceptclassid = "DRG", invaliddate = "9/30/2007", invalidreason = 'D' and the DRG value=CONCEPT.conceptcode to query the CONCEPT table for correct conceptid to use as valueasconcept_id.
 - If the date for the DRG >=10/1/2007, use conceptclassid = "MS-DRG", invalidreason = NULL and the DRG value = CONCEPT.conceptcode to query the CONCEPT table for the correct conceptid to use as valueasconceptid.
- If your site has **APR-DRGs** please include these in the observation table. We have requested the APR-DRG vocabulary to be incorporated as apart of the OMOP standard vocabulary.

Note 2: - For each inpatient encounter or in some cases the outpatient encounter, there can be 1 admit source, 1 discharge disposition, 1 discharge status, 1 or more DRG (May not be 1:1:1:1 if patients still admitted (therefore no discharge disposition, discharge details or DRG yet)) - There should **NOT** be discharges without admission. - For each emergency dept (ED) encounters, these 4 records *may* also be populated but this is *optional*. - For outpatient encounters (OT, OA), these 4 records may be populated

Note 3: Please provide tobacco information from the primary source of data capture at your site. If tobacco information is available at the visit level, please provide this information. If it is not, sites are welcomed to make a high level assertion about tobacco use and tobacco type information for individuals in the cohort.

Note 4: Below are examples of how the observation table and the fact relationship table would be populated for tobacco, smoking and tobacco type scenarios. In the case where tobacco information is recorded at a visit but there is missing information for tobacco, smoking or tobacco type please assert. The PEDSnet standard relationship concept id for linking tobacco items will be 0. This concept id was chosen as there was not a specific concept id that exists in the standard vocabulary that adequately defined an appropriate relationship for linking the tobacco items.

Example 1:

Patient 1 smokes 5 cigarettes per day and does not use non-smoked tobacco

Observation table:

| Observation ID | Person ID | Observation concept id | Value as concept id |
|----------------|-----------|------------------------|---------------------|
| 0001 | 1 | 4005823 | 4005823 |
| 0002 | 1 | 4219336 | 4282779 |
| 0003 | 1 | 4275495 | 4209585 |

Fact relationship:

| Domainconceptid_1 | Factid1 | Domainconceptid_2 | Factid2 | relationshipconceptid |
|-------------------|---------|-------------------|---------|-----------------------|
| 27 | 0001 | 27 | 0002 | 0 |
| 27 | 0001 | 27 | 0003 | 0 |

Example 2: Patient 2 smokes 25-40 cigarettes per day and also chews tobacco

Observation table:

| Observation ID | Person ID | Observation concept id | Value as concept id |
|----------------|-----------|------------------------|---------------------|
| 0004 | 2 | 4005823 | 4005823 |
| 0005 | 2 | 4219336 | 4282779 |
| 0006 | 2 | 4219336 | 4219234 |
| 0007 | 2 | 4275495 | 4209006 |

Fact relationship:

| Domainconceptid_1 | Factid1 | Domainconceptid_2 | Factid2 | relationshipconceptid |
|-------------------|---------|-------------------|---------|-----------------------|
| 27 | 0004 | 27 | 0005 | 0 |
| 27 | 0004 | 27 | 0006 | 0 |
| 27 | 0004 | 27 | 0007 | 0 |

For more examples, or if you have a specific scenario that you have a question about, please contact the DCC.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|---------------------------|---------------------|------------------------|-----------|--|---|
| observation_id | Yes | Yes | Integer | A unique identifier for each observation. | This is not a value found in the EHR. Sites may choose to use a sequential value for this field |
| person_id | Yes | Yes | Integer | A foreign key identifier to the person about whom the observation was recorded. The demographic details of that person are stored in the person table. | |
| observationconceptid | Yes | Yes | Integer | A foreign key to the standard observation concept identifier in the Vocabulary. | Lab results and vitals are not stored in this table in V5 but are stored in the Measurement table. |
| observation_date | Yes | Yes | Date | The date of the observation. | No date shifting. Full date and time. If there is no time associated with the date assert midnight. |
| observation_time | No | Provide When Available | Datetime | The time of the observation. | No date shifting. Full date and time. If there is no time associated with the date assert midnight. |
| observationtypeconcept_id | Yes | Yes | Integer | A foreign key to the predefined concept identifier in the Vocabulary reflecting the type of the observation. | Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table where vocabularyid='Observation Type') select * from concept where vocabularyid = 'Observation Type' yields 11 valid conceptids. FOR PEDSnet CDM v2.4, all of our observations are coming from electronic health records so set this field to concept_id = 38000280 (observation recorded from EMR). When we get data from patients, we will include |

| | | | | | |
|-----------------------------|---------------------|------------------------|---------|--|---|
| | | | | | the concept_id = 44814721 |
| valueasnumber | No (see convention) | Provide When Available | Float | The observation result stored as a number. This is applicable to observations where the result is expressed as a numeric value. | Value must be represented as at least one of {valueasnumber, valueasstring or valuesasconceptid}. There are a few exceptions in vocabulary id PCORNet where all three valueas_* fields are NULL. |
| valueasstring | No (see convention) | Provide When Available | Varchar | The observation result stored as a string. This is applicable to observations where the result is expressed as verbatim text. | Value must be represented as at least one of {valueasnumber, valueasstring or valuesasconceptid}. There are a few exceptions in vocabulary id PCORNet where all three valueas_* fields are NULL. |
| valuesasconcept_id | No (see convention) | Provide When Available | Integer | 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.). | Value must be represented as at least one of {valueasnumber, valueasstring or valuesasconceptid}. There are a few exceptions in vocabulary id PCORNet where all three valueas_* fields are NULL. |
| qualifierconceptid | No | Provide When Available | Integer | A foreign key to standard concept identifier for a qualifier (e.g severity of drug-drug interaction alert) | Predefined value set (valid conceptids found in CONCEPT table where domainid='Observation' and conceptclassid='Qualifier Value') select * from concept where domainid='Observation' and conceptclassid='Qualifier Value' yields 10496 valid conceptids. If none are correct, use concept_id = 0. |
| unitconceptid | No | Provide When Available | Integer | A foreign key to a standard concept identifier of observation units in the Vocabulary. | Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table where domainid='Unit' and vocabularyid='UCUM') select * from concept where domainid='Unit' and vocabularyid='UCUM' yields 971 valid conceptids. If none are correct, use concept_id = 0. |
| provider_id | No | Provide When Available | Integer | A foreign key to the provider in the provider table who was responsible for making the observation. | |
| visitoccurrenceid | No | Provide When Available | Integer | A foreign key to the visit in the visit table during which the observation was recorded. | |
| observationsourcevalue | No | Provide When Available | Varchar | 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. | |
| observationsourceconcept_id | No | Provide When Available | Integer | A foreign key to a concept that refers to the code used in the source. | If there is not a mapping for the source code in the standard vocabulary, use concept_id = 0 |
| unitsourcevalue | No | Provide When Available | Integer | 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. | |
| qualifiersourcevalue | No | Provide When Available | Varchar | The source value associated with a qualifier to characterize the observation | |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.9.1 Additional Notes

- The 1/1/2009 date limitation that is used to define a PEDSnet active patient is ****NOT**** applied to observations. All observations are included for an active patient. For PEDSnet CDM v2.4, we limit observations to only those that appear in Table 1.
- Observations have a value represented by one of a concept ID, a string, ****OR**** a numeric value.
- The Visit during which the observation was made is recorded through a reference to the VISIT_OCCURRENCE table. This information is not always available.
- The Provider making the observation is recorded through a reference to the PROVIDER table. This information is not always available.
- Observations obtained using standardized methods (e.g. laboratory assays) that produce discrete results are recorded by preference in the MEASUREMENT table.

1.10 OBSERVATION PERIOD

The observation period domain is designed to capture the time intervals in which data are being recorded for the person. An observation period is the span of time when a person is expected to have a clinical fact represented in the PEDSNet version 2.3 data model. This table is used to generate the PCORnet CDM enrollment table.

While analytic methods can be used to calculate gaps in observation periods that will generate multiple records (observation periods) per person, for PEDSnet, the logic has been simplified to generate a single observation period row for each patient. This logic can be found [here](#)

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|-----------------------------|---------------------|---------------------|-----------|--|--|
| Observationperiodid | Yes | Yes | Integer | A system-generate unique identifier for each observation period | This is not a value found in the EHR. Sites may choose to use a sequential value for this field. |
| person_id | Yes | 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. | |
| Observationperiodstart_date | Yes | Yes | Date | The start date of the observation period for which data are available from the data source | Use the earliest clinical fact date available for this patient. No date shifting. |
| Observationperiodend_date | Yes | Yes | Date | The end date of the observation period for which data are available from the source. | Use the latest clinical fact date available for this patient. If there exists one or more records in the DEATH table for this patient, use the latest date recorded in that table. |
| Observationperiodstart_time | Yes | Yes | Datetime | The start date of the observation period for which data are available from the data source | Use the earliest clinical fact time available for this patient. No date shifting. Full date and time. If there is no time associated with the date assert midnight for the start time |
| Observationperiodend_time | Yes | Yes | Datetime | The end date of the observation period for which data are available from the source. | Use the latest clinical fact time available for this patient. If there exists one or more records in the DEATH table for this patient, use the latest date recorded in that table. For patients who are still in the hospital or ED or other facility at the time of data extraction, leave this field NULL. Full date and time. If there is no time associated with the date assert 11:59:59 pm for the end time |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.10.1 Additional Notes

- Because the 1/1/2009 date limitation for "active patients" is not used to limit *visitoccurrence*, the *startdate* of an observation period for an active PEDSnet patient may be prior to 1/1/2009.

1.11 DRUG EXPOSURE

The drug exposure domain captures any biochemical substance that is introduced in any way to a patient. This can be evidence of prescribed, over the counter, administered (IV, intramuscular, etc), immunizations or dispensed medications. These events could be linked to procedures or encounters where they are administered or associated as a result of the

encounter.

EHRs may store medications in different vocabularies (GPI,NDC etc).

Exclusions:

1. Cancelled Medication Orders
2. Missed Medication administrations

Note 1: The `effective_drug_dose` is the dose basis.(E.g. 45 mg/kg/dose). This is the discrete dose value from the source data if available. If the discrete dose value is **not** available from the source data, then compute the dose basis by looking for a weight observation +/- 60 days of the date of the medication. (E.g. Total Amount/(divided by)Weight) (Dose per kg)

The `doseunitconcept_id` is the unit of the effective dose.

Please use the following logic to populate the `effective_dose` and dose unit based on what is available in your source system:

| Site Information | Effective Drug Dose | Dose Unit Concept Id | Dose Unit Source Value |
|--|---------------------|--|------------------------|
| Pre-calculated effective dose available (E.g. 90 mg/kg) | 90 | Corresponding concept for unit (E.g. mg/kg = 9562) | mg/kg |
| Site is able to compute effective dose (E.g. Dose 500 mg and Available Weight +/- 60 days is 54.43 kg) | 9.18 | Corresponding concept for unit (E.g. mg/kg = 9562) | mg |
| Site is not able to compute effective dose(E.g. Site Only has dose (E.g. 450 mg)) | 450 | Corresponding Concept for unit (E.g. mg = 8576) | mg |
| No discrete dosing information | | 0 | |

Note 2: The quantity is the actual dose given. (E.g. 450 mg for 10 kg patient) Extract numbers as much as possible , full value should be a part of the xml sig field.

Note 3: For dispensing records, compute the dose basis by looking for a weight observation +/- 60 days of the dispensed date.

Note 4: For the sig, encode the value using XML.

- Element 1: Actual SIG from source data
- Element 2: Raw "Supply/Quantity" (Examples: "1 bottle" "10 ml Bottle" "1 pack"
- Element 3: Refills

```
<XML>
<SIG>1/2 capful in 4 oz clear liquid</SIG>
<QUANTITY>1 jar</QUANTITY>
<REFILLS>2</REFILLS>
</XML>
```

Note 5: If there are multiple RxNorm mappings associate with a mapping, choose the mapping in the following order and stop when you find your first match.

1. BPCK (Branded Pack)
2. GPCK (Clinical Pack)
3. SBD (Branded Drug, Quant Branded Drug)
4. SCD (Clinical Drug, Quant Clinical Drug)
5. SBDF (Branded Drug Form)
6. SCDF (Clinical Drug Form)
7. MIN (Ingredient)
8. SBDC
9. SCDC
10. PIN (Ingredient)
11. IN (Ingredient)

Note 6: Please use the following table as a guide to determine how to populate the `drug_source_value` , `drug_source_concept_id` and `drug_concept_id` for Drug Exposure Values

| You have in your source system | Drugsourcevalue | Drugsourceconcept_id | Drugconceptid |
|------------------------------------|---|---|--|
| Drug code is GPI/Multum/Other code | <ul style="list-style-type: none"> GPI/Multum/Other Code Local name I GPI/Multum/Other (any above are OK) | OMOP's concept_id for GPI/Multum/Other code | RxNorm code that corresponds to a mapping from <code>concept_relationship</code> |
| Drug code is RxNorm | <ul style="list-style-type: none"> RxNorm Code Local name or Local name I RxNorm code (any above are OK) | Corresponding RxNorm concept_id mapping | Corresponding RxNorm concept_id mapping |

Note 7: For medication administration events, please store all events as single drug exposure entries.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|--------------------------|---------------------|-------------------------|-----------|---|--|
| drugexposureid | Yes | Yes | Integer | A system-generated unique identifier for each drug exposure | This is not a value found in the EHR. Sites may choose to use a sequential value for this field. |
| person_id | Yes | 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. | |
| drugconceptid | Yes | Yes | Integer | A foreign key that refers to a standard drug concept identifier in the Vocabulary. | Valid drug concept IDs are mapped to RxNorm using the source to concept map table to transform source codes (GPI, NDC etc to the RxNorm target). In the event of multiple RxNorm mappings please see Note 5. See note 6 for guide. |
| drugexposurerestart_date | Yes | Yes | Date | The start date of the utilization of the drug. The start date of the prescription, the date the prescription was filled, the date a drug was dispensed or the date on which a drug administration procedure was recorded are acceptable. | If the start date of the drug is null in the source system, use the ordering date as the start date. No date shifting. |
| drugexposureend_date | No | Provide When Available | Date | The end date of the utilization of the drug | No date shifting. |
| drugexposureorder_date | No | Provider When available | Date | The order date of the drug | No date shifting. |
| drugexposurerestart_time | Yes | Yes | Datetime | The start date and time of the utilization of the drug. The start date of the prescription, the date the prescription was filled, the date a drug was dispensed or the date on which a drug administration procedure was recorded are acceptable. | No date shifting. Full date and time. If there is no time associated with the date assert midnight for the start time |
| drugexposureend_time | No | Provide When Available | Datetime | The end date and time of the utilization of the drug | No date shifting. Full date and time. If there is no time associated with the date assert 11:59:59 pm for the end time |
| drugexposureorder_time | No | Provider When available | Datetime | The order date and time of the drug | If the start datetime of the drug is null in the source system, use the ordering datetime as the start datetime. No date shifting.Full date and time. If there is no time associated with the date assert midnight for the start time |
| | | | | | Please include valid concept ids (consistent with |

| | | | | | |
|------------------------|-----|------------------------|----------------------|--|---|
| drugtypeconcept_id | Yes | Yes | Integer | A foreign key to a standard concept identifier of the type of drug exposure in the Vocabulary as represented in the source data | <p>OMOP CDMv5). Predefined value set (valid <i>conceptids</i> found in <i>CONCEPT</i> table where <i>conceptclassid</i>='Drug Type')</p> <p><i>select * from concept where domainid</i>='Drug Type' yields 13 valid <i>conceptids</i>.</p> <p>If none are correct, use <i>conceptid</i> = 0.</p> <p>For the PEDSnet drug types listed above, use the following <i>conceptids</i>:</p> <ul style="list-style-type: none"> • Prescription dispensed in pharmacy (dispensed meds pharma information): <i>conceptid</i> = 38000175 • Inpatient administration (MAR entries): <i>conceptid</i> = 38000180 • Prescription written: <i>conceptid</i> = 38000177 |
| stop_reason | No | Provide When Available | Varchar | The reason, if available, where the medication was stopped, as indicated in the source data. | Valid values include therapy completed, changed, removed, side effects, etc. Note that a <i>stop_reason</i> does not necessarily imply that the medication is no longer being used at all, and therefore does not mandate that the end date be assigned. |
| refills | No | Provide When Available | Integer | The number of refills after the initial prescription | See Note 2. Extract numbers as much as possible , full value should be a part of the xml sig field. |
| quantity | No | Provide When Available | Integer | The quantity of the drugs as recorded in the original prescription or dispensing record | See Note 2. Extract numbers as much as possible , full value should be a part of the xml sig field. |
| days_supply | No | Provide When Available | Integer | The number of days of supply the medication as recorded in the original prescription or dispensing record | |
| sig | No | Provide When Available | CLOB (XML Structure) | The directions on the drug prescription as recorded in the original prescription (and printed on the container) or the dispensing record | See Note 4 |
| routeconceptid | No | Provide When Available | Integer | A foreign key that refers to a standard administration route concept identifier in the Vocabulary. | <p>Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid <i>conceptids</i> found in <i>CONCEPT</i> table where <i>domainid</i>='Route')</p> <p><i>select * from concept where domainid</i>='Route' and <i>invalidreason</i> is null and <i>standardconcept</i>='S' yields 22 valid <i>conceptids</i>.</p> <p>If none are correct, use <i>concept_id</i> = 0.</p> |
| effectivedrugdose | No | Provide When Available | Float | Numerical value of drug dose for this drug_exposure record | See note 1 |
| effdrugdosesourcevalue | No | Provide When Available | Varchar | The drug dose for this drug_exposure record as it appears in the source | |
| doseunitconcept_id | No | Provide When Available | Integer | A foreign key to a predefined concept in the Standard Vocabularies reflecting the unit the effective drug_dose value is expressed | <p>See note 1</p> <p>Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid <i>conceptids</i> found in <i>CONCEPT</i> table where <i>vocabularyid</i> = UCUM)</p> |

| | | | | | |
|----------------------|----|------------------------|---------|---|--|
| | | | | | select * from concept where vocabularyid = 'UCUM' yields 971 valid conceptids. |
| lot_number | No | Site preference | Varchar | An identifier to determine where the product originated | |
| provider_id | No | Provide When Available | Integer | A foreign key to the provider in the provider table who initiated (prescribed) the drug exposure | Any valid provider_id allowed (see definition of providers in PROVIDER table) Document how selection was made. |
| visitoccurrenceid | No | Provide When Available | Integer | A foreign key to the visit in the visit table during which the drug exposure initiated. | See VISIT.visitoccurrenceid (primary key) |
| drugsourcevalue | No | Provide When Available | Varchar | The source drug value as it appears in the source data. The source is mapped to a standard RxNorm concept and the original code is stored here for reference. | Please be sure to include your source code and the drug name in this field. This will be useful in the event that there is no RxNorm mapping for your local medication code. Please use the pipe delimiter " " when concatenating values. See note 6. |
| drugsourceconcept_id | No | Provide When Available | Integer | A foreign key to a drug concept that refers to the code used in the source | In this case, if you are transforming drugs from GPI or NDC to RxNorm. The concept id that corresponds to the GPI or NDC value for the drug belongs here. See note 6. If there is not a mapping for the source code in the standard vocabulary, use concept_id = 0 |
| routesourcevalue | No | Provide When Available | Varchar | The information about the route of administration as detailed in the source | |
| doseunitsource_value | No | Provide When Available | Varchar | The information about the dose unit as detailed in the source | |
| frequency | No | Optional | Varchar | The frequency information as available from the source | |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.11.1 Additional Notes

- The 1/1/2009 date limitation that is used to define a PEDSnet active patient is ****NOT**** applied to drug exposures. All drug exposures are included for an active patient.
- The Visit during which the drug exposure was initiated by is recorded through a reference to the VISIT_OCCURRENCE table. This information is not always available.
- The Provider initiating the drug exposure is recorded through a reference to the PROVIDER table. This information is not always available.

1.12 MEASUREMENT

The measurement domain captures measurement orders and measurement results. The measurement domain can contain laboratory results and vital signs.

Specifically this table includes: - Height/length in cm (use numeric precision as recorded in EHR) - Height/length type - Weight in kg (use numeric precision as recorded in EHR) - Body Mass Index - Temperature in degrees Celsius - Head Circumference in cm (use numeric precision as recorded in EHR) - FVC in liters - FVC pre (if recorded differently) in liters - FVC post in liters - FEV 1 in liters - FEV 1 pre (if recorded differently) in liters - FEV 1 post in liters - FEF 25-75 in liters per minute - FEF 25-75 pre (if recorded differently) in liters per minute - FEF 25-75 post in liters per minute - Peak Flow (PF) in milliteres per second - Peak Flow post in milliteres per second - Body mass index in kg/m² (extracted only if height and weight are not present) - Systolic blood pressure in mmHg - Where multiple readings are present on the same encounter, create measurement records for ****ALL**** readings - Diastolic blood pressure in mmHg - Where multiple readings are present on the same encounter, create measurement records for ****ALL**** readings - Blood pressure position is described by the selection of a conceptid that contains the BP position as describe below. For example, in Table 1, conceptid 3018586 is Systolic Blood Pressure, Sitting. This concept_id identifies both the measurement (Systolic BP) and the BP position (sitting). - Vital source - Component Level Labs. The Lab Listing and PEDSNet LOINC Mapping can be found [here](#)

Table 3: Measurement concept IDs for PCORnet concepts. Conceptids from vocabularyid 99 are non-standard codes.

| Domain id | Observation concept ID | Vocab ID | Value as concept ID | Concept description | Vocab ID |
|------------------|------------------------|------------------|---------------------|---|----------|
| Vital | 3013762 | | See Note 1 | Weight | |
| Vital | 3023540 | | See Note 1 | Height | |
| Vital | 3038553 | | See Note 3 | BMI kg/m ² | |
| Vital | 3034703 | | See Note 2 | Diastolic Blood Pressure - Sitting | |
| Vital | 3019962 | | See Note 2 | Diastolic Blood Pressure - Standing | |
| Vital | 3013940 | | See Note 2 | Diastolic Blood Pressure - Supine | |
| Vital | 3012888 | | See Note 2 | Diastolic BP Unknown/Other | |
| Vital | 3018586 | | See Note 2 | Systolic Blood Pressure - Sitting | |
| Vital | 3035856 | | See Note 2 | Systolic Blood Pressure - Standing | |
| Vital | 3009395 | | See Note 2 | Systolic Blood Pressure - Supine | |
| Vital | 3004249 | | See Note 2 | Systolic BP Unknown/Other | |
| Vital | 2000000041 | | See Note 3 | Weight for age z score NHANES | |
| Vital | 2000000042 | | See Note 3 | Height for age z score NHANES | |
| Vital | 2000000043 | | See Note 3 | BMI for age z score NHANES | |
| Vital | 2000000044 | | See Note 3 | Weight for age z score WHO | |
| Vital | 2000000045 | | See Note 3 | Height for age z score WHO | |
| Vital | 2000000046 | | See Note 3 | Systolic BP for age/height Z score NCBPEP | |
| Vital | 2000000047 | | See Note 3 | Diastolic BP for age/height Z score NCBPEP | |
| Vital | 3020891 | | See Note 1 | Temperature | |
| Vital | 3001537 | | See Note 1 | Head Circumference | |
| Vital | 3020158 | | See Note 1 | FVC | |
| Vital | 3037879 | | See Note 1 | FVC pre (if recorded differently) | |
| Vital | 3001668 | | See Note 1 | FVC post | |
| Vital | 3024653 | | See Note 1 | FEV 1 | |
| Vital | 3005025 | | See Note 1 | FEV 1 pre (if recorded differently) | |
| Vital | 3023550 | | See Note 1 | FEV 1 post | |
| Vital | 42868460 | | See Note 1 | FEF 25-75 | |
| Vital | 42868461 | | See Note 1 | FEF 25-75 pre (if recorded differently) | |
| Vital | 42868462 | | See Note 1 | FEF 25-75 post | |
| Vital | 3023329 | | See Note 1 | Peak Flow (PF) | |
| Vital | 2000000064 | | See Note 1 | Peak Flow post | |
| Measurement Type | 44818704 | Measurement Type | See Note 3 | Patient reported | |
| Measurement Type | 2000000032 | Measurement Type | See Note 3 | Vital sign from device direct feed | |
| Measurement Type | 2000000033 | Measurement Type | See Note 3 | Vital sign from healthcare delivery setting | |
| Measurement Type | 44818702 | Measurement Type | See Note 4 | Lab Result | |

Note 1: For height, weight, temperature, head circumference, BMI and Pulmonary Function measurements, insert the recorded measurement into the valueasnumber field.

Note 2: Systolic and diastolic pressure measurements will generate two observation records one for storing the systolic blood pressure measurement and a second for storing the diastolic blood pressure measurement. Select the right SBP or DBP concept code that also represents the CORRECT recording position (supine, sitting, standing, other/unknown). To tie

the two measurements together (the systolic BP measurement and the diastolic BP measurement records), use the FACT_RELATIONSHIP table.

Example: Personid = 12345 on visitoccurrence_id = 678910 had orthostatic blood pressure measurements performed in the healthcare delivery setting as follows:

- Supine: Systolic BP 120; Diastolic BP 60
- Standing: Systolic BP 144; Diastolic BP 72

Four rows will be inserted into the measurement table. Showing only the relevant columns:

| Measurement_id | Person_id | Visitoccurrenceid | measurementconceptid | measurementtypeconcept_id | ValueasNumber | ValueasConcept_ID |
|----------------|-----------|-------------------|----------------------|---------------------------|---------------|-------------------|
| 66661 | 12345 | 678910 | 3009395 | 2000000033 | 120 | |
| 66662 | 12345 | 678910 | 3013940 | 2000000033 | 60 | |
| 66663 | 12345 | 678910 | 3035856 | 2000000033 | 144 | |
| 66664 | 12345 | 678910 | 3019962 | 2000000033 | 72 | |

- Measurementconceptid = 3009395 = systolic BP - supine; measurementconceptid = 3013940 = diastolic BP supine
- Measurementconceptid = 3035856 = systolic BP standing; measurementconceptid = 3019962 = diastolic BP standing
- measurementtypeconcept_id = 2000000033 (Vital Sign from healthcare delivery setting).

To link these two values, use the fact relationship table:

| Domainconceptid_1 | factid1 | Domainconceptid_2 | factid2 | relationshipconceptid |
|-------------------|---------|-------------------|---------|-----------------------|
| Measurement | 66661 | Measurement | 66662 | Asso with finding |
| Measurement | 66662 | Measurement | 66661 | Asso with finding |
| Measurement | 66663 | Measurement | 66664 | Asso with finding |
| Measurement | 66664 | Measurement | 66663 | Asso with finding |

Because the domain concept id and relationship concept id are integers the following is an example of how this data will be represented:

| Domainconceptid_1 | factid1 | Domainconceptid_2 | factid2 | relationshipconceptid |
|-------------------|---------|-------------------|---------|-----------------------|
| 21 | 66661 | 21 | 66662 | 44818792 |
| 21 | 66662 | 21 | 66661 | 44818792 |
| 21 | 66663 | 21 | 66664 | 44818792 |
| 21 | 66664 | 21 | 66663 | 44818792 |

- Two rows in the FACT_RELATIONSHIP table link the *supine* diastolic BP to the supine systolic BP.
- Two rows in the FACT_RELATIONSHIP table link the *standing* diastolic BP to the standing systolic BP.

Note 3: Measurement type conceptids are used as values for the measurementtypeconceptid field. In addition, the following observations are derived via the DCC (conceptids to be assigned in future version of this document). However, conceptids are not needed for ETL since these observations will be derived/calculated using scripts developed by DCC):

- Body mass index in kg/m² if not directly extracted
- Height/length z score for age/sex using NHANES 2000 norms for measurements at which the person was <240 months of age. In the absence of a height/length type for the measurement, recumbent length is assumed for ages <24 months, and standing height thereafter.
- Weight z score for age/sex using NHANES 2000 norms for measurements at which the person was <240 months of age.
- BMI z score for age/sex using NHANES 2000 norms for visits at which the person was between 20 and 240 months of age.
- Systolic BP z score for age/sex/height using NHBPEP task force fourth report norms.
- Diastolic BP z score for age/sex/height using NHBPEP task force fourth report norms.

Note 4: Please use the following table as a guide to determine how to populate the measurement_source_value, measurement_source_concept_id and measurement_concept_id for LAB Values

| You have in your source system | Measurementsourcevalue | Measurementsourceconcept_id | measurementconceptid |
|---|---|---|---|
| Lab code is institutional-specific code (not CPT/not LOINC) | <ul style="list-style-type: none"> Local code or Local name or Local name Local code/ i> (any above are OK) | 0 (zero) | PEDSnet LOINC code's concept_id (provided by DCC) |
| Lab code is CPT code | <ul style="list-style-type: none"> CPT Code Local name or Local name CPT code (any above are OK) | OMOP's concept_id for CPT code | PEDSnet's LOINC code's concept_id (provided by DCC) |
| Lab code is LOINC code that is same as PEDSnet's LOINC code | <ul style="list-style-type: none"> LOINC Code Local name or Local name LOINC code (any above are OK) | PEDSnet's LOINC code's concept_id (provided by DCC) | PEDSnet's LOINC code's concept_id (provided by DCC) |
| Lab code is LOINC code that is different than PEDSnet LOINC | Same as above | OMOP's concept_id for your LOINC code | PEDSnet's LOINC code's concept_id (provided by DCC) |

Note 5: Please use the following table as a guide to determine how to populate the `range_low`, `range_low_source_value`, `range_low_operator_concept_id`, `range_high`, `range_high_source_value` and `range_low_operator_concept_id` for LAB Values

| You have in your source system | range high/ range low | range high source value / range low source value | range low/high operator concept id |
|---|--|---|--|
| Numerical value <code>Examples: 7,8.2,100</code> | Numerical Value <code>Examples: 7,8.2,100</code> | Numerical value <code>Examples: 7,8.2,100</code> | 0 |
| Limits <code>Examples: <2, >100, less than 5</code> | Numerical Value of the limit <code>Examples: 2, 100, 5</code> | Limits <code>Examples: <2, >100, less than 5</code> | Corresponding concept to the modifier <code>Examples: 4171756, 4172704, 417175</code> |
| Categorical/Qualitative Value <code>Examples: HIGH, LOW, POSITIVE, NEGATIVE</code> | | Categorical/Qualitative Value <code>Examples: HIGH, LOW, POSITIVE, NEGATIVE</code> | 0 |

Note 6: Please only include final Lab Results.

Exclusions:

- Cancelled Lab orders
- Lab orders that are 'NOT DONE' or 'INCOMPLETE'

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|----------------|---------------------|---------------------|-----------|--|--|
| measurement_id | Yes | Yes | Integer | A system-generated unique identifier for each measurement | This is not a value found in the EHR. Sites may choose to use a sequential value for this field. |
| person_id | Yes | Yes | Integer | A foreign key identifier to the person who the measurement is being documented for. The demographic details of that person are stored in the person table. | |
| | | | | | Valid Measurement Concepts belong to the "Measurement" domain. Measurement Concepts are based mostly on the LOINC vocabulary, with some additions from SNOMED-CT. Measurement must have an object represented as a concept, and a finding. A finding (see below) is represented as a concept, a numerical value or a verbatim string or more than one of these. |

| | | | | | |
|---------------------------|-----|------------------------|----------|--|---|
| measurementconceptid | Yes | Yes | Integer | A foreign key to the standard measurement concept identifier in the Vocabulary. | <p>There are three Standard Vocabularies defined for measurements:</p> <p>Laboratory tests and values: Logical Observation Identifiers Names and Codes (LOINC) (Vocabularyid=LOINC).</p> <p>(FYI: Regenstrief also maintains the "LOINC Multidimensional Classification" Vocabularyid=LOINC Hierarchy)</p> <p>Qualitative lab results: A set of SNOMED-CT Qualifier Value concepts (vocabularyid=SNOMED)</p> <p>Laboratory units: Unified Code for Units of Measure (UCUM) (Vocabularyid=UCUM)</p> <p>All other findings and observables: SNOMED-CT (Vocabulary_id=SNOMED). For vital signs, pull information from flow sheet rows (EPIC sites only). For lab values, please see Note 4.</p> |
| measurement_date | Yes | Yes | Date | The date of the measurement. | For lab orders, this should be the specimen collection time. No date shifting. |
| measurement_time | Yes | Yes | Datetime | The time of the measurement. | For lab orders, this should be the specimen collection time. No date shifting. Full date and time. If there is no time associated with the date assert midnight. |
| measurementorderdate | No | Provide When Available | Date | This field applies to Lab Orders only. This is the date the lab was ordered in the source. | No date shifting. |
| measurementordertime | No | Provide When Available | Datetime | This field applies to Lab Orders only. This is the time the lab was ordered in the source. | No date shifting. Full date and time. If there is no time associated with the date assert midnight. |
| measurementresultdate | No | Provide When Available | Date | This field applies to Lab Orders only. This is the date the lab resulted in the source. | No date shifting. |
| measurementresulttime | No | Provide When Available | Datetime | This field applies to Lab Orders only. This is the time the lab resulted in the source. | No date shifting. Full date and time. If there is no time associated with the date assert midnight. |
| measurementtypeconcept_id | Yes | Yes | Integer | A foreign key to the predefined concept identifier in the Vocabulary reflecting the type of the measurement. | <p>Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in <i>CONCEPT</i> table where vocabularyid =Meas Type)</p> <p>select * from concept where vocabularyid = 'Meas Type' or domainid='Meas Type' yields 7 valid concept_ids.</p> <p>For Pedsnet CDM v2.4, please use the following:</p> <ul style="list-style-type: none"> • Vital Sign from healthcare delivery setting= 2000000033 • Vital Sign from healthcare device= 2000000032 • Lab result = 44818702 • Pathology finding = 44818703 • Patient reported value = 44818704 |

| | | | | | |
|---------------------------|---------------------|------------------------|---------|--|--|
| | | | | | <ul style="list-style-type: none"> Derived Value = 45754907 |
| operatorconceptid | No | Provide When Available | Integer | A foreign key identifier to the mathematical operator that is applied to the valueasnumber. Operators are <, ≤, =, ≥, > | <p>Valid operator concept id are found in the concept table</p> <p>select * from concept where domain_id='Meas Value Operator' yields 5 valid concept ids.</p> <ul style="list-style-type: none"> Operator <= : 4171754 Operator >= : 4171755 Operator < : 4171756 Operator = : 4172703 Operator > : 4172704 |
| valueasnumber | No (see convention) | Provide When Available | Float | The measurement result stored as a number. This is applicable to measurements where the result is expressed as a numeric value. | Value must be represented as at least one of {valueasnumber, valueasstring or valueasconcept_id}. |
| valueasconcept_id | No (see convention) | Provide When Available | Integer | 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.). | <p>Value must be represented as at least one of {valueasnumber, valueasstring or valueasconceptid}. <i>Valid concepts are found in the concept table</i></p> <p><i>select * from concept where domainid='Meas Value' and conceptclassid='Qualifier Value' and standard_concept='S' yields 186 valid concept ids.</i></p> |
| unitconceptid | No | Provide When Available | Integer | A foreign key to a standard concept identifier of measurement units in the Vocabulary. | <p>Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table where vocabularyid = UCUM)</p> <p><i>select * from concept where vocabularyid = 'UCUM' yields 971 valid conceptids.</i></p> <p>If none are correct, use conceptid = 0.</p> <p><i>For the PEDSnet measurements listed above, use the following conceptids:</i></p> <ul style="list-style-type: none"> Centimeters (cm): conceptid = 8582 Kilograms (kg): conceptid = 9529 Kilograms per square meter (kg/m²): conceptid = 9531 Millimeters mercury (mmHG): conceptid = 8876 degree Celsius (C): 8653 Liters (L): 8519 Liters per minute (L/min): 8698 Milliliters per second (mL/sec): 4477614 |
| range_low | No | Provide When Available | Float | The lower limit of the normal range of the measurement. It is not applicable if the observation results are non-numeric or categorical, and must be in the same units of measure as the measurement value. | |
| range/owsource_value | No | Provide When Available | Varchar | The lower limit of the normal range of the measurement as it appears in the source. | See note 5 |
| range/owoperatorconceptid | No | Optional | Integer | A foreign key to the modifier of lower limit of the normal range of the measurement as it appears in the source as a concept identifier. | See note 5 |
| | | | | The upper limit of the normal range of the | |

| | | | | | |
|-----------------------------|-----|------------------------|---------|---|---|
| range_high | No | Provide When Available | Float | measurement. It is not applicable if the observation results are non-numeric or categorical, and must be in the same units of measure as the measurement value. | |
| range_highsource_value | No | Provide When Available | Varchar | The upper limit of the normal range of the measurement as it appears in the source. | See note 5 |
| range_highoperatorconceptid | No | Optional | Integer | | A foreign key to the modifier of higher limit of the normal range of the measurement as it appears in the source as a concept identifier. |
| provider_id | No | Provide When Available | Integer | A foreign key to the provider in the provider table who was responsible for making the measurement. | |
| visitoccurrenceid | No | Provide When Available | Integer | A foreign key to the visit in the visit table during which the observation was recorded. | |
| measurementsourcevalue | Yes | Yes | Varchar | The measurement name as it appears in the source data. This code is mapped to a standard concept in the Standardized Vocabularies and the original code is, stored here for reference. | This is the name of the value as it appears in the source system. Please use the pipe delimiter " " when concatenating values. For lab values, please see Note 4. |
| measurementsourceconcept_id | No | Provide When Available | Integer | A foreign key to a concept that refers to the code used in the source. | This is the concept id that maps to the source value in the standard vocabulary. If there is not a mapping for the source code in the standard vocabulary, use concept_id = 0 |
| unitsourcevalue | No | Provide When Available | Varchar | The source code for the unit as it appears in the source data. This code is mapped to a standard unit concept in the Standardized Vocabularies and the original code is, stored here for reference. | Raw unit value (Ounces,Inches etc) For lab values, please see Note 4. |
| valuesourcevalue | Yes | Yes | Varchar | The source value associated with the structured value stored as numeric or concept. This field can be used in instances where the source data are transformed | <ul style="list-style-type: none"> For BP values include the raw 'systolic/diastolic' value E.g. 120/60 If there are transformed values (E.g. Weight,Height, Head Circumference, Pulmonary Function Values and Temperature) please insert the raw data before transformation. For Categorical/Qualitative Lab result values, please use this field to store the raw result from the source. |
| specimensourcevalue | No | Provide When Available | Varchar | This field is applicable for lab values only. This source value for the specimen source as it appears in the source | |
| | | | | | Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid conceptids found in CONCEPT table where domainid='Procedure' and vocabularyid='PEDIAnet' and conceptclassid='Qualifier Value') select * from concept where (domainid='Procedure' and vocabularyid='PEDIAnet' and conceptclassid='Qualifier Value') or (vocabularyid='PCORNet' and |

| | | | | | |
|---------------------|----|------------------------|---------|--|--|
| priorityconceptid | No | Provide When Available | Integer | This field applies to Lab Orders only. A foreign key to a concept that refers to the lab priority as described in the source | conceptclassid='Undefined') yields 7 valid conceptids. <i>For Pedsnet CDM v2.4, please use the following:</i> <ul style="list-style-type: none"> • Expedited (includes Today)=2000000059 • STAT (includes ASAP)=2000000060 • Routine = 2000000061 • Timed = 2000000062 • No Information: conceptid = 44814650 vocabularyid='PCORNet') • Unknown: conceptid = 44814653 • Other: concept_id = 44814649 |
| prioritysourcevalue | No | Provide When Available | Varchar | This field applies to Lab Orders only. The lab priority as described in the source | |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.12.1 Additional Notes

- The 1/1/2009 date limitation that is used to define a PEDSnet active patient is ****NOT**** applied to measurements. All measurements are included for an active patient. For PEDSnet CDM V2.4, we limit measurements to only those that appear in Table 3 (for vital signs).
- Measurements have a value represented by one of a concept ID, a string, ****OR**** a numeric value.
- The Visit during which the measurement was made is recorded through a reference to the VISIT_OCCURRENCE table. This information is not always available.
- The Provider making the measurement is recorded through a reference to the PROVIDER table. This information is not always available.

1.13 FACT RELATIONSHIP

The fact relationship domain contains details of the relationships between facts within one domain or across two domains, and the nature of the relationship. Examples of types of possible fact relationships include: person relationships (mother-child linkage), care site relationships (representing the hierarchical organization structure of facilities within health systems), drug exposures provided due to associated indicated condition, devices used during the course of an associated procedure, and measurements derived from an associated specimen. All relationships are directional, and each relationship is represented twice symmetrically within the fact relationship table.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|-----------------------|---------------------|---------------------|-----------|--|---|
| Domainconceptid_1 | Yes | Yes | Integer | The concept representing the domain of fact one, from which the corresponding table can be inferred. | Predefined value set: <ul style="list-style-type: none"> Visit domain (ED->Inpatient linking) = 8 Measurement domain (blood pressure linking) = 21 Observation domain (tobacco linking) = 27 |
| Factid1 | Yes | Yes | Integer | The unique identifier in the table corresponding to the domain of fact one. | |
| Domainconceptid_2 | Yes | Yes | Integer | The concept representing the domain of fact two, from which the corresponding table can be inferred. | Predefined value set: <ul style="list-style-type: none"> Visit domain (ED->Inpatient linking) = 8 Measurement domain (blood pressure linking) = 21 Observation domain (tobacco linking) = 27 |
| Factid2 | Yes | Yes | Integer | The unique identifier in the table corresponding to the domain of fact two. | |
| Relationshipconceptid | Yes | Yes | Integer | A foreign key to a standard concept identifier of relationship in the Standardized Vocabularies. | Predefined value set: <ul style="list-style-type: none"> Occurs before (ED Visit) = 44818881 Occurs after (Inpatient Visit) = 44818783 Associated with finding (blood pressures) = 44818792 No matching concept (tobacco) = 0 |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.13.1 Additional Notes

- Blood Pressure Systolic and Diastolic Blood Pressure Values will be mapped using the fact relationship table. See [Note 2 in the Measurement section](#) for instructions.
- ER Visits that result in an Inpatient Encounter will be mapped using the fact relationship table. See [Additional Notes in the Visit Occurrence section](#) for instructions.
- Tobacco, smoking and tobacco type associations will be mapped using the fact relationship table. See [Note 4 in the Observation section](#) for instructions.

1.14 VISIT_PAYER

The visit payer table documents insurance information as it relates to a visit in *visitoccurrence*. For this reason the key of this table will be *visitoccurrenceid* and *visitpayer_id*. This table is CUSTOM to Pedsnet.

Note 1: There can be multiple payers (primary/secondary) for a single visit. If you are able to obtain multiple payer information at your site please populate the visit payer table with this information. If you are not able to obtain secondary or additional payers for your visit occurrences at your site, please populate the primary payer and inform the DCC.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|-------------------|---------------------|------------------------|-----------|---|---|
| visitpayerid | Yes | Yes | Integer | A system-generated unique identifier for each visit payer relationship. | This is not a value found in the EHR. Sites may choose to use a sequential value for this field. |
| visitoccurrenceid | Yes | Yes | Integer | A foreign key to the visit in the visit table where the payer was billed for the visit. | |
| plan_name | Yes | Yes | Varchar | The untransformed payer/plan name from the source data | |
| plan_type | No | Provide When Available | Varchar | A standardized interpretation of the plan structure | <p>Please only map your plan type to the following categories:</p> <ul style="list-style-type: none"> • HMO • PPO • POS • Fee for service • Other/Unknown <p>If the categories are unclear, please work with your billing department or local experts to determine how to map plans to these values.</p> |
| plan_class | Yes | Yes | Varchar | A list of the "payment sources" most often used in demographic analyses | <p>Please map your plan type to the following categories:</p> <ul style="list-style-type: none"> • Private/Commercial • Medicaid/sCHIP • Medicare • Other public • Self-pay • Other/Unknown <p>Please work with your billing department or local experts to determine how to map plans to these values.</p> |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.14.1 Additional Notes

- If you cannot map your plan to any of the above values for *plantype* or *planclass*, please map them to Other/unknown, and inform the DCC if the above list of values is not complete or sufficient.

1.15 MEASUREMENT_ORGANISM

The measurement organism table contains organism information related to laboratory culture results in the measurement table. **This table is CUSTOM to Pedsnet.**

Note 1: There can be multiple organisms for a single culture laboratory result.

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|---------------------|---------------------|------------------------|-----------|--|--|
| measorganismid | Yes | Yes | Integer | A system-generated unique identifier for each organism culture relationship. | This is not a value found in the EHR. Sites may choose to use a sequential value for this field. |
| measurement_id | Yes | Yes | Integer | A foreign key to the lab result in the measurement table where the organism was observed. | |
| person_id | Yes | Yes | Integer | A foreign key identifier to the person who the measurement is being documented for. The demographic details of that person are stored in the person table. | |
| visitoccurrenceid | No | Provide When Available | Integer | A foreign key to the visit where the culture lab was ordered | |
| organismconceptid | Yes | Yes | Integer | A foreign key to a standard concept identifier for the organism in the Vocabulary. | Please include valid concept ids (consistent with OMOP CDMv5). Predefined value set (valid <i>conceptids</i> found in <i>CONCEPT</i> table where <i>vocabularyid</i> = SNOMED and <i>conceptclassid</i> = Organism and <i>standardconcept</i> =S) <i>select * from concept where vocabularyid = 'SNOMED' and conceptclassid= 'Organism' and standardconcept= 'S' yields 33039 valid conceptids.</i> |
| organismsourcevalue | Yes | Yes | Varchar | The organism value as it appears in the source. | |
| positivity_time | No | Optional | Datetime | The estimated date and time of initial growth as reported in the source. | |

If a field marked as "Provide when available" for the network requirement is not available at your site, please relay this information to the DCC

1.15.1 Additional Notes

- The time to positivity field is marked as optional. Please inform the DCC in the provenance files if this data is available at your site.

1.16 ADT_OCCURRENCE

The *adtoccurrence* table contains information about distinct admission, discharge, or transfer events that occur as part of a clinical visit. The typical use case is to identify portions of an inpatient admission that represent different levels of care or locations within a facility, but it can be used for additional characteristics of a visits (e.g. specialty consultation). The time of each event must fall between the start and end times of the associated *visitoccurrence*. **This table is CUSTOM to Pedsnet.**

| Field | NOT Null Constraint | Network Requirement | Data Type | Description | PEDSnet Conventions |
|-------------------|---------------------|------------------------|-----------|--|--|
| adtoccurrenceid | Yes | Yes | Integer | A unique identifier for each ADT event. | This is not a value found in the EHR. Sites may choose to use a sequential value for this field |
| person_id | Yes | Yes | Integer | A foreign key identifier to the person for whom the visit is recorded. | |
| visitoccurrenceid | Yes | Yes | Integer | A foreign key identifier to the visit containing this event. | |
| adt_date | Yes | Yes | Date | The date of the adt event | |
| adt_time | Yes | Yes | Datetime | The datetime of the adt event | No date shifting. Full date and time. If there is no time associated with the date assert midnight for the start time. |
| caresiteid | No | Provide when available | Integer | A foreign key to the care site in which this adt event occurred. | |

| | | | | | |
|-----------------------|-----|------------------------|---------|--|---|
| serviceconceptid | Yes | Yes | Integer | A foreign key that refers to a adt event service concept identifier in the vocabulary. This concept describes the type of service associated with this adt event. | <p>select * from concept where vocabularyid = 'PEDSnet' and conceptclassid = 'Service Type' and standardconcept = 'S' yields 14 valid conceptids.</p> <p>In PEDSnet CDM v2.4, only the NICU, CICU and PICU services are included.</p> <p>The value set available for PEDSnet includes:</p> <ul style="list-style-type: none"> • CICU (cardiac care) = 2000000079 • NICU (neonatal care) = 2000000080 • PICU (all other ICU) = 2000000078 • Critical care = 2000000067 • Intermediate care = 2000000068 • Acute care = 2000000069 • Observation care = 2000000070 • Surgical site (includes OR, ASC) = 2000000071 • Procedural service = 2000000072 • Behavioral health = 2000000073 • Rehabilitative service (includes PT, OT, ST) = 2000000074 • Specialty service = 2000000075 • Radiology = 2000000076 • Hospital Outpatient = 2000000077 • Unknown: conceptid = 44814653 • Other: conceptid = 44814649 • No information: conceptid = 44814650 |
| adttypeconcept_id | No | Provide when available | Integer | A foreign key that refers to an adt event type concept identifier in the vocabulary. This concept describes the type of the adt event. | <p>select * from concept where vocabularyid = 'PEDSnet' and conceptclassid = 'ADT Event Type' and standardconcept = 'S' yields 5 valid concept_ids.</p> <p>The value set for PEDSnet includes:</p> <ul style="list-style-type: none"> • Admission = 2000000083 • Discharge = 2000000084 • Transfer in = 2000000085 • Transfer out = 2000000086 • Census = 2000000087 |
| prioradtoccurrence_id | No | Provide when available | Integer | Foreign key into the adt_occurrence table pointing to the ADT record immediately preceding this record in the event stream for the visit. Must be populated for all but the first ADT even within a visit. | |
| nextadtoccurrence_id | No | Provide when available | Integer | Foreign key into the adt_occurrence table pointing to the ADT record immediately following this record in the event stream for the visit. Must be populated for all but the last ADT even within a visit. | |
| servicesourcevalue | No | Provide when available | Varchar | The source data used to derive the service type for this event. It will typically be a department code from the ADT event. | |
| adttype_source_value | No | Provide when available | Varchar | The source data used to identify the adt event type | |

1.16.1 Additional Notes

- If a site is splitting (ED->Inpatient) encounters into two records in visitoccurrence, the ADTOCCURRENCE.visitoccurrenceid should link to the Inpatient visitoccurrenceid.

APPENDIX

PEDSnet-specific is supported by OMOP-supported Vocabulary id=PCORNet, which contains all of the additional concept_id codes needed in PEDSnet for PCORnet CDM V1.0 and 2.0

A1. ABMS Specialty Category to OMOP V5 Specialty Mapping

<http://www.abms.org/member-boards/specialty-subspecialty-certificates/>

| ABMS Specialty Category | OMOP Supported Concept for Provider ID | OMOP Concept_name | Domain_id | Vocabulary id |
|--|--|--|--------------------|---------------|
| Addiction Psychiatry | 38004498 | Addiction Medicine | Provider Specialty | Specialty |
| Adolescent Medicine | 45756747 | Adolescent Medicine | Provider Specialty | ABMS |
| Adult Congenital Heart Disease | 45756748 | Adult Congenital Heart Disease | Provider Specialty | ABMS |
| Advanced Heart Failure and Transplant Cardiology | 45756749 | Advanced Heart Failure and Transplant Cardiology | Provider Specialty | ABMS |
| Aerospace Medicine | 45756750 | Aerospace Medicine | Provider Specialty | ABMS |
| Allergy and Immunology | 38004448 | Allergy/Immunology | Provider Specialty | Specialty |
| Anesthesiology | 38004450 | Anesthesiology | Provider Specialty | Specialty |
| Anesthesiology Critical Care Medicine | 45756751 | Anesthesiology Critical Care Medicine | Provider Specialty | Specialty |
| Blood Banking/Transfusion Medicine | 45756752 | Blood Banking/Transfusion Medicine | Provider Specialty | ABMS |
| Brain Injury Medicine | 45756753 | Brain Injury Medicine | Provider Specialty | ABMS |
| Cardiology | 38004451 | Cardiology | Provider Specialty | Specialty |
| Cardiovascular Disease | 45756754 | Cardiovascular Disease | Provider Specialty | ABMS |
| Child Abuse Pediatrics | 45756755 | Child Abuse Pediatrics | Provider Specialty | ABMS |
| Child and Adolescent Psychiatry | 45756756 | Child and Adolescent Psychiatry | Provider Specialty | ABMS |
| Clinical Biochemical Genetics | 45756757 | Clinical Biochemical Genetics | Provider Specialty | ABMS |
| Clinical Cardiac Electrophysiology | 45756758 | Clinical Cardiac Electrophysiology | Provider Specialty | ABMS |
| Clinical Cytogenetics | 45756759 | Clinical Cytogenetics | Provider Specialty | ABMS |
| Clinical Genetics (MD) | 45756760 | Clinical Genetics (MD) | Provider Specialty | ABMS |
| Clinical Informatics | 45756761 | Clinical Informatics | Provider Specialty | ABMS |

| | | | | |
|---|------------|---|--------------------|-----------|
| Clinical Molecular Genetics | 45756762 | Clinical Molecular Genetics | Provider Specialty | ABMS |
| Clinical Neurophysiology | 45756763 | Clinical Neurophysiology | Provider Specialty | ABMS |
| Colon and Rectal Surgery | 38004471 | Colorectal Surgery | Provider Specialty | Specialty |
| Complex General Surgical Oncology | 45756764 | Complex General Surgical Oncology | Provider Specialty | ABMS |
| Congenital Cardiac Surgery | 45756765 | Congenital Cardiac Surgery | Provider Specialty | ABMS |
| Critical Care Medicine | 38004500 | Critical care (intensivist) | Provider Specialty | Specialty |
| Cytopathology | 45756766 | Cytopathology | Provider Specialty | ABMS |
| Dermatology | 38004452 | Dermatology | Provider Specialty | Specialty |
| Dermatopathology | 45756767 | Dermatopathology | Provider Specialty | ABMS |
| Developmental-Behavioral Pediatrics | 45756768 | Developmental-Behavioral Pediatrics | Provider Specialty | ABMS |
| Diagnostic Radiology | 45756769 | Diagnostic Radiology | Provider Specialty | ABMS |
| Emergency Medical Services | 45756770 | Emergency Medical Services | Provider Specialty | ABMS |
| Emergency Medicine | 38004510 | Emergency Medicine | Provider Specialty | Specialty |
| Endocrinology, Diabetes and Metabolism | 45756771 | Endocrinology, Diabetes and Metabolism | Provider Specialty | ABMS |
| Epilepsy | 45756772 | Epilepsy | Provider Specialty | ABMS |
| General Family Medicine | 38004453 | Family Practice | Provider Specialty | Specialty |
| Female Pelvic Medicine and Reconstructive Surgery | 45756773 | Female Pelvic Medicine and Reconstructive Surgery | Provider Specialty | ABMS |
| Forensic Psychiatry | 45756775 | Forensic Psychiatry | Provider Specialty | ABMS |
| Gastroenterology | 38004455 | Gastroenterology | Provider Specialty | Specialty |
| General Pediatrics (Primary Care)* | 2000000063 | General Pediatrics | Provider Specialty | PEDSNet |
| Geriatric Medicine | 38004478 | Geriatric Medicine | Provider Specialty | Specialty |
| Geriatric Psychiatry | 45756776 | Geriatric Psychiatry | Provider Specialty | ABMS |
| Gynecologic Oncology | 38004513 | Gynecology/Oncology | Provider Specialty | Specialty |
| Hematology | 38004501 | Hematology | Provider Specialty | Specialty |

| | | | | |
|---|----------|---|--------------------|-----------|
| Hospice and Pallative Medicine | 45756777 | Hospice and Pallative Medicine | Provider Specialty | ABMS |
| Infectious Disease | 38004484 | Infectious Disease | Provider Specialty | Specialty |
| General Internal Medicine | 38004456 | Internal Medicine | Provider Specialty | Specialty |
| Internal Medicine - Critical Care Medicine | 45756778 | Internal Medicine - Critical Care Medicine | Provider Specialty | ABMS |
| Interventional Cardiology | 45756779 | Interventional Cardiology | Provider Specialty | ABMS |
| Interventional Radiology and Diagnostic Radiology | 38004511 | Interventional Radiology | Provider Specialty | Specialty |
| Maternal and Fetal Medicine | 45756780 | Maternal and Fetal Medicine | Provider Specialty | ABMS |
| Medical Biochemical Genetics | 45756781 | Medical Biochemical Genetics | Provider Specialty | ABMS |
| Medical Genetics and Genomics | 45756782 | Medical Genetics and Genomics | Provider Specialty | ABMS |
| Medical Oncology | 38004507 | Medical Oncology | Provider Specialty | Specialty |
| Medical Physics | 45756783 | Medical Physics | Provider Specialty | ABMS |
| Medical Toxicology | 45756784 | Medical Toxicology | Provider Specialty | ABMS |
| Molecular Genetic Pathology | 45756785 | Molecular Genetic Pathology | Provider Specialty | ABMS |
| Neonatal-Perinatal Medicine | 45756786 | Neonatal-Perinatal Medicine | Provider Specialty | ABMS |
| Nephrology | 38004479 | Nephrology | Provider Specialty | Specialty |
| Neurodevelopmental Disabilities | 45756787 | Neurodevelopmental Disabilities | Provider Specialty | ABMS |
| Neurological Surgery | 38004459 | Neurosurgery | Provider Specialty | Specialty |
| General Neurology | 38004458 | Neurology | Provider Specialty | Specialty |
| Neurology with Special Qualification in Child Neurology | 45756788 | Neurology with Special Qualification in Child Neurology | Provider Specialty | ABMS |
| Neuromuscular Medicine | 45756789 | Neuromuscular Medicine | Provider Specialty | ABMS |
| Neuropathology | 45756790 | Neuropathology | Provider Specialty | ABMS |
| Neuroradiology | 45756791 | Neuroradiology | Provider Specialty | ABMS |
| Neurotology | 45756792 | Neurotology | Provider Specialty | ABMS |
| Nuclear Medicine | 38004476 | Nuclear Medicine | Provider Specialty | Specialty |

| | | | | |
|---------------------------------------|----------|---------------------------------------|--------------------|-----------|
| Nuclear Radiology | 45756793 | Nuclear Radiology | Provider Specialty | ABMS |
| Obstetrics and Gynecology | 38004461 | Obstetrics/Gynecology | Provider Specialty | Specialty |
| Occupational Medicine | 38004492 | Occupational Therapy | Provider Specialty | Specialty |
| Ophthalmology | 38004463 | Ophthalmology | Provider Specialty | Specialty |
| Orthopaedic Sports Medicine | 45756794 | Orthopaedic Sports Medicine | Provider Specialty | ABMS |
| Orthopedics/Orthopaedic Surgery | 38004465 | Orthopedics/Orthopedic Surgery | Provider Specialty | Specialty |
| Otolaryngology | 38004449 | Otolaryngology | Provider Specialty | Specialty |
| Pain Medicine | 38004494 | Pain Management | Provider Specialty | Specialty |
| Pathology | 38004466 | Pathology | Provider Specialty | Specialty |
| Pathology - Anatomic | 45756795 | Pathology - Anatomic | Provider Specialty | ABMS |
| Pathology - Chemical | 45756796 | Pathology - Chemical | Provider Specialty | ABMS |
| Pathology - Clinical | 45756797 | Pathology - Clinical | Provider Specialty | ABMS |
| Pathology - Forensic | 45756798 | Pathology - Forensic | Provider Specialty | ABMS |
| Pathology - Hematology | 45756799 | Pathology - Hematology | Provider Specialty | ABMS |
| Pathology - Medical Microbiology | 45756800 | Pathology - Medical Microbiology | Provider Specialty | ABMS |
| Pathology - Molecular Genetic | 45756801 | Pathology - Molecular Genetic | Provider Specialty | ABMS |
| Pathology - Pediatric | 45756802 | Pathology - Pediatric | Provider Specialty | ABMS |
| Pathology-Anatomic/Pathology-Clinical | 45756803 | Pathology-Anatomic/Pathology-Clinical | Provider Specialty | ABMS |
| Pediatric Medicine** | 38004477 | Pediatric Medicine | Provider Specialty | Specialty |
| Pediatric Anesthesiology | 45756804 | Pediatric Anesthesiology | Provider Specialty | ABMS |
| Pediatric Cardiology | 45756805 | Pediatric Cardiology | Provider Specialty | ABMS |
| Pediatric Critical Care Medicine | 45756806 | Pediatric Critical Care Medicine | Provider Specialty | ABMS |
| Pediatric Dermatology | 45756807 | Pediatric Dermatology | Provider Specialty | ABMS |
| Pediatric Emergency Medicine | 45756808 | Pediatric Emergency Medicine | Provider Specialty | ABMS |

| | | | | |
|---|----------|---|--------------------|-----------|
| Pediatric Endocrinology | 45756809 | Pediatric Endocrinology | Provider Specialty | ABMS |
| Pediatric Gastroenterology | 45756810 | Pediatric Gastroenterology | Provider Specialty | ABMS |
| Pediatric Hematology-Oncology | 45756811 | Pediatric Hematology-Oncology | Provider Specialty | ABMS |
| Pediatric Infectious Diseases | 45756812 | Pediatric Infectious Diseases | Provider Specialty | ABMS |
| Pediatric Nephrology | 45756813 | Pediatric Nephrology | Provider Specialty | ABMS |
| Pediatric Otolaryngology | 45756814 | Pediatric Otolaryngology | Provider Specialty | ABMS |
| Pediatric Pulmonology | 45756815 | Pediatric Pulmonology | Provider Specialty | ABMS |
| Pediatric Radiology | 45756816 | Pediatric Radiology | Provider Specialty | ABMS |
| Pediatric Rehabilitation Medicine | 45756817 | Pediatric Rehabilitation Medicine | Provider Specialty | ABMS |
| Pediatric Rheumatology | 45756818 | Pediatric Rheumatology | Provider Specialty | ABMS |
| Pediatric Surgery | 45756819 | Pediatric Surgery | Provider Specialty | ABMS |
| Pediatric Transplant Hepatology | 45756820 | Pediatric Transplant Hepatology | Provider Specialty | ABMS |
| Pediatric Urology | 45756821 | Pediatric Urology | Provider Specialty | ABMS |
| Physical Medicine and Rehabilitation | 38004468 | Physical Medicine And Rehabilitation | Provider Specialty | Specialty |
| Plastic Surgery | 38004467 | Plastic And Reconstructive Surgery | Provider Specialty | Specialty |
| Plastic Surgery Within the Head and Neck | 45756822 | Plastic Surgery Within the Head and Neck | Provider Specialty | ABMS |
| Preventative Medicine | 38004503 | Preventive Medicine | Provider Specialty | Specialty |
| Psychiatry | 38004469 | Psychiatry | Provider Specialty | Specialty |
| Psychosomatic Medicine | 45756823 | Psychosomatic Medicine | Provider Specialty | ABMS |
| Public Health and General Preventive Medicine | 45756824 | Public Health and General Preventive Medicine | Provider Specialty | ABMS |
| Pulmonary Disease | 38004472 | Pulmonary Disease | Provider Specialty | Specialty |
| Radiation Oncology | 38004509 | Radiation Oncology | Provider Specialty | Specialty |
| Radiology | 45756825 | Radiology | Provider Specialty | ABMS |
| Reproductive Endocrinology/Infertility | 45756826 | Reproductive Endocrinology/Infertility | Provider Specialty | ABMS |

| | | | | |
|---------------------------------------|----------------------|---------------------------------------|--------------------|-----------|
| Rheumatology | 38004491 | Rheumatology | Provider Specialty | Specialty |
| Sleep Medicine | 45756827 | Sleep Medicine | Provider Specialty | ABMS |
| Spinal Cord Injury Medicine | concept id requested | Spinal Cord Injury Medicine | Provider Specialty | ABMS |
| Sports Medicine | 45756828 | Sports Medicine | Provider Specialty | ABMS |
| General Surgery | 38004447 | General Surgery | Provider Specialty | Specialty |
| Surgery of the Hand | 38004480 | Hand Surgery | Provider Specialty | Specialty |
| Surgical Critical Care | 45756829 | Surgical Critical Care | Provider Specialty | ABMS |
| Thoracic Surgery | 38004473 | Thoracic Surgery | Provider Specialty | Specialty |
| Thoracic and Cardiac Surgery | 45756830 | Thoracic and Cardiac Surgery | Provider Specialty | ABMS |
| Transplant Hepatology | 45756831 | Transplant Hepatology | Provider Specialty | ABMS |
| Undersea and Hyperbaric Medicine | 45756832 | Undersea and Hyperbaric Medicine | Provider Specialty | ABMS |
| Urology | 38004474 | Urology | Provider Specialty | Specialty |
| Vascular and Interventional Radiology | 45756833 | Vascular and Interventional Radiology | Provider Specialty | ABMS |
| Vascular Neurology | 45756834 | Vascular Neurology | Provider Specialty | ABMS |
| Vascular Surgery | 38004496 | Vascular Surgery | Provider Specialty | Specialty |

NOTES: - General Pediatrics refers to Primary Care - Pediatric Medicine refers to the default assignment if a site is unable to distinguish which pediatric specialty the care site or provider has an assigned

A2. PEDSNet Person Language Concept Mapping Values

The below language listing is representative of the top 10 spoken languages of each of the 8 contributing sites. This list standard list will be used to map language values for consistency.

| Language | concept_id | concept_name | domain_id | concept/classid | standard_concept |
|--------------------|------------|---------------------------|-------------|-----------------|------------------|
| Amharic | 4182354 | Amharic language | Observation | Qualifier Value | S |
| Arabic | 4181374 | Arabic language | Observation | Qualifier Value | S |
| Bengali | 4052786 | Bengali language | Observation | Qualifier Value | S |
| Burmese | 4181727 | Burmese language | Observation | Qualifier Value | S |
| Bosnian | 40481563 | Bosnian language | Observation | Qualifier Value | S |
| Cape Verde Creole | 44814649 | Other | Observation | Undefined | |
| Chinese | 4182948 | Chinese Language | Observation | Qualifier Value | S |
| Chinese(Cantonese) | 4177463 | Cantonese Chinese dialect | Observation | Qualifier Value | S |
| Chinese(Mandarin) | 4181724 | Mandarin dialect | Observation | Qualifier Value | S |
| English | 4180186 | English Language | Observation | Qualifier Value | S |
| French | 4180190 | French Language | Observation | Qualifier Value | S |
| Haitian/Creole | 44802876 | Haitian Creole Language | Observation | Qualifier Value | S |
| Japanese | 4181524 | Japanese Language | Observation | Qualifier Value | S |
| Korean | 4175771 | Korean Language | Observation | Qualifier Value | S |
| Mandarin | 4181724 | Mandarin dialect | Observation | Qualifier Value | S |
| Nepali | 4175908 | Nepali language | Observation | Qualifier Value | S |
| No information | 44814650 | No information | Observation | Undefined | S |
| None | 44814650 | No information | Observation | Undefined | S |
| null | 44814650 | No information | Observation | Undefined | S |
| Other | 44814649 | Other | Observation | Undefined | |
| Other Language | 44814649 | Other | Observation | Undefined | |
| Other/Unknown | 44814649 | Other | Observation | Undefined | |
| Portuguese | 4181536 | Portuguese language | Observation | Qualifier Value | S |
| Russian | 4181539 | Russian language | Observation | Qualifier Value | S |
| Sign | 40483152 | Sign language | Observation | Qualifier Value | S |
| Sign Language | 40483152 | Sign language | Observation | Qualifier Value | S |
| Somali | 4182350 | Somali language | Observation | Qualifier Value | S |
| Spanish | 4182511 | Spanish language | Observation | Qualifier Value | S |
| Unable to Collect | 44814650 | No information | Observation | Undefined | S |
| Unknown | 44814653 | Unknown | Observation | Undefined | S |
| Vietnamese | 4181526 | Vietnamese language | Observation | Qualifier Value | S |