Table of Contents

About ........................................................................................................................................... 3
Consortium Partners ..................................................................................................................... 3
Data Infrastructure ......................................................................................................................... 4
PCORnet Common Data Model .................................................................................................... 5
OneFlorida i2b2 .............................................................................................................................. 5
  Measures to Protect Patient Privacy ....................................................................................... 6
  Measures to Protect Partner Privacy ....................................................................................... 6
  Navigating Terms ..................................................................................................................... 6
Demographics .............................................................................................................................. 7
Diagnoses ...................................................................................................................................... 8
  Modifying Queries for Diagnoses ............................................................................................ 8
Encounters .................................................................................................................................... 10
Enrollment ..................................................................................................................................... 12
Labs ............................................................................................................................................... 13
  Modifying Queries for Labs ...................................................................................................... 14
Medication .................................................................................................................................... 15
  Modifying Queries for Medications ....................................................................................... 15
Procedures ..................................................................................................................................... 17
  Modifying Queries for Procedures ........................................................................................ 17
Vital Signs ....................................................................................................................................... 19
  Modifying Queries for Vital Signs .......................................................................................... 19
Appendix ....................................................................................................................................... 21
  Acronyms .................................................................................................................................. 21
  Funding Acknowledgements ................................................................................................... 22
Index .............................................................................................................................................. 22
About

The OneFlorida Clinical Research Consortium is a collaborative statewide network that seeks to improve health research capacity and opportunities in the State of Florida through the facilitation of clinical and translation research in communities and health care settings. OneFlorida includes 9 unique health systems that provide care for ~15* M or 74% of all Floridians through 4,100 physician providers, 1240 clinic/practice settings and 22 hospitals, with a catchment area covering all 67 Florida counties. The OneFlorida Clinical Research Consortium includes the following partners:

Consortium Partners

*Non-de-duplicated between partners and includes Medicaid payer mix
**Data Infrastructure**

The OneFlorida Data Trust is a repository of statewide healthcare data that is regularly updated with the inclusion of new partners and data refreshes from existing partners. All data is cleaned, transformed, curated, and contained in this centralized data warehouse, allowing streamlined inquiries and uniform results. The Data Trust is accessible to investigators by contacting the OneFlorida Coordinating Center. Legal agreements for data use and use of a centralized IRB have already been negotiated with all partners, reducing paperwork and administrative burden.

The Data Trust contains claims and encounter data for Floridians enrolled in Medicaid and Capital Health Plan and robust patient-level electronic health record data from public and private health care systems that are consortium partners. The data includes diagnoses, procedures, medications, patient demographics, unique patient codes for re-identification by consortium partners and other data elements in the PCORnet Common Data Model (CDM). For individual studies, data queries can be highly tailored, and the consortium is enhancing the Data Trust with data elements beyond the PCORnet CDM.
**PCORnet Common Data Model**

The OneFlorida i2b2 data presented in this data guide were mapped from the PCORnet Common Data Model (CDM). The PCORnet CDM is a way of organizing data into a standard structure that facilitates the development of an agile research platform to create streamlined, efficient queries that generate useful, timely output that supports patient-centered proposals and projects. Each OneFlorida partner maps data to the same consistent format (i.e., with the same variable name, attributes, and other metadata), which are then loaded into an i2b2 data model/instance.

The mapping and data loading of the PCORnet CDM data into the OneFlorida i2b2 environment preserves the original characteristics of the Common Data Model. However, not every table from the CDM is represented in the OneFlorida i2b2 environment, and some data dimensions serve as modifiers to query specific data dimensions. A data dimension is a table from CDM such as Vital Signs, and a modifier is a data column used to further constrain a dimension, such as Blood Pressure Position. The dimensions with query modifiers include Diagnoses, Enrollment, Labs, Medications, Procedures, and Vital Signs, and each section contains a brief description of modifier values and their effect on their respective data dimension.

*Data dimensions not included in the OneFlorida i2b2:*
- Death, death cause, patient-reported outcomes, and providers

**OneFlorida i2b2**

The OneFlorida Informatics for Integrating Biology and the Bedside (i2b2) platform allows researchers to query an IRB approved PCORnet dataset through an Internet browser and virtual private network (VPN) on a local computer and answer count-based questions about OneFlorida patients. The OneFlorida i2b2 uses patient-oriented data stored in an integrated and secure server within the OneFlorida data warehouse. New patients and records are updated quarterly from OneFlorida partner data submissions. While the i2b2 software provides direct access to the consortium data for research use, the aggregation and obfuscation of data in OneFlorida i2b2 simplifies data access and output.

This document intends to provide a descriptive overview of the data elements that are currently available for use in i2b2 queries. The data are represented as close to the original PCORnet Common Data Model (http://www.pcornet.org/pcornet-common-data-model/) with minimal deletions, de-duplication, or edits. Therefore, the data are only as good as their source. When interpreting i2b2 query results, we recommend using standard best practices for analyzing secondary data. (NOTE: We need to include the dates 2012- March 2018, we only have data back to 2012 in OneFlorida Data Trust)
Measures to Protect Patient Privacy

The i2b2 query and analysis tool is approved by the OneFlorida central IRB (UFIRB-01 #201500466) as a de-identified source of data that fully protects patient privacy when displaying search results. For all queries, the resulting numbers are obscured and counts are returned with an accuracy of plus or minus three. One exception is queries that result in fewer than 10 patients; in such case, no results are provided.

Measures to Protect Partner Privacy

Each OneFlorida partner will need to use the UFHealth VPN (https://ufhealth.org/virtual-private-network-vpn) to access the OneFlorida i2b2 environment. This provides a secure and encrypted connection between the OneFlorida i2b2 and partners. Users will log into the VPN and OneFlorida i2b2 environment using their UF Gatorlink username and password. Please see accompanying User Guide for step-by-step instructions for logging into the UFHealth VPN and OneFlorida i2b2.

Navigating Terms

Data in i2b2 are presented hierarchically, nested by expandable, tree-like icons within each of the categories listed below.

Demographics: Age, Ethnicity, Race, Sex, Preferred Language  
Diagnoses: ICD-9-CM and ICD-10-CM diagnoses codes. The ICD-9 codes applied to queries for data between 6/1/2011 and 9/30/2015 and ICD-10-CM classification codes applied for data added to i2b2 after 10/1/2015. Data available includes diagnosis, diagnosis type, diagnosis source, and a principal discharge diagnosis flag.  
Encounters: Admitting Source, Age at Visit, Diagnosis Related Group, Discharge Disposition, Discharge Status, Encounter Type, Facility Type, Facility Location, Provider, and Primary and Secondary Payer Type  
Enrollment: Enrollment is a concept that defines a period of time during which a person is expected to have complete data capture. This concept is often insurance-based, but other methods of defining enrollment are possible.  
Labs: Select laboratory tests arranged according to the LOINC hierarchy (loinc.org), quantitative and qualitative results, and an abnormal results flag  
Medication: Medications prescribed, dispensed and/or administered, classified according to NDF-RT/RXNORM drug class and ingredient. RX basis (prescribing event) and RX frequency modifiers.  
Procedures: ICD-9-CM, ICD-10-CM, CPT/HCPCS, or LOINC coded procedures, procedure source, and flag for principal or secondary procedure status  
Vital Signs: Blood Pressure, Body Mass Index, Height, Weight, Smoking Status, and Tobacco Type
Demographics

Demographics record the characteristics of individual patients. Statistical data describing the characteristics of the patient population are documented in i2b2. Data in this table are reported by the patient.

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
<th>Possible Values and Notes</th>
</tr>
</thead>
</table>
| Age**              | Patient’s age in years. The age is computed for the date the i2b2 query is run. For example, if a query is run to find the number of patients under 21, the results will be all patients under 21 at the time of query. | • 1-85 (integer values)  
• <1 or >89 (categorical)  
• Not recorded |
| Ethnicity**        | Patient is of Hispanic, Latino(a), or Spanish origin. Most recent ethnicity reported. | Value is True, if a person is of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. Otherwise False |
| Race**             | Patient’s race, most recent reported.                                        | • American Indian or Alaska Native  
• Asian  
• Black or African American  
• Native Hawaiian or Other Pacific Islander  
• White  
• Multiple race  
• Refuse to answer  
• No information  
• Unknown  
• Other |
| Sex**              | Sex assigned at birth.                                                        | • Ambiguous  
• Female  
• Male  
• No information  
• Unknown  
• Other |
| Patient’s Preferred Language | Preferred spoken language of communication as expressed by the patient. | Documented as a three-letter code |

**For your query, it is not necessary to modify these variables by a date range; these variables are not associated with a date in i2b2.
Diagnoses

Diagnosis codes indicate the results of diagnostic processes and medical coding within healthcare delivery. Data in this table are expected to be from healthcare-mediated processes and reimbursement drivers.

Investigators are able to query all International Classification of Diseases using Clinical Modification (ICD-9-CM) records assigned to diagnostic and procedure codes associated with inpatient, outpatient and physician office visits for records between 1/1/2012 and 9/30/2015. Beginning 10/1/2015 queries will need to include the ICD-10-CM codes to retrieve diagnoses data for records added to i2b2 after 9/30/2015. By placing ICD-9-CM and ICD-10-CM codes in the same query panel (example below), users may span the pre-and post-implementation periods. Not all diagnoses for Outpatient Visits will be returned if “Occurs in Same Encounter” is specified, because not all faculty group practice data have an associated encounter number.

Diagnosis codes come from a variety of sources, including:
- Insurance claims billing system
- Simple visit coding from hospital ancillary visits
- Faculty group practice coding for professional services, including outpatient visits
- Diagnoses recorded on the patient’s problem list (from the Condition table)

Modifying Queries for Diagnoses

- Condition Status (from PCORnet Condition table, CONDITION_STATUS column):
- Condition Source (from PCORnet Condition table, CONDITION_SOURCE column):
- Diagnosis Source (from PCORnet Diagnosis table, DX_SOURCE column):
- Primary Diagnosis Flag (from PCORnet Diagnosis table, PDX column):

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
<th>Possible Values and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD-9-CM Diagnosis Codes</td>
<td>ICD-9 Codes describe diseases and injuries between 1/1/2012 and 9/30/2015.</td>
<td>ICD-9 Diagnosis Codes</td>
</tr>
<tr>
<td></td>
<td>Users can find a comprehensive code listing at:  <a href="http://www.icd9data.com/2015/Volume1/default.htm">http://www.icd9data.com/2015/Volume1/default.htm</a></td>
<td></td>
</tr>
<tr>
<td>ICD-10-CM Diagnosis Codes</td>
<td>ICD-10 Codes describe diseases and injuries between 10/1/2015 to present.</td>
<td>ICD-10 Diagnosis Codes</td>
</tr>
<tr>
<td></td>
<td>Users can find a comprehensive code listing at:  <a href="http://www.icd10data.com/ICD10CM/Codes">http://www.icd10data.com/ICD10CM/Codes</a></td>
<td></td>
</tr>
<tr>
<td>Condition Status</td>
<td>Identifies current patient health conditions that have not been resolved</td>
<td><strong>Active</strong> = By dragging an ICD code’s “Condition status - active” modifier into an i2b2 query, only patients with</td>
</tr>
</tbody>
</table>
a corresponding diagnosis shown as active will be returned. **Resolved** = By dragging an ICD code’s “Condition status - resolved” modifier into an i2b2 query, only patients with a corresponding diagnosis shown as resolved will be returned.

| Data Type - Condition | Identifies if the condition was reported by the patient as a historic condition or if it is a new diagnosis.  

Please note: The “Patient-reported” category can include reporting by a proxy, such as patient’s family or guardian. | No actual values are given in i2b2, however, values from the CDM can include the following:

PR=Patient-reported medical history  
HC=Healthcare problem list  
From CONDITION_SOURCE in CONDITION table (PCORnet CDM v4.1) |
|---|---|---|
| Data Type - Diagnosis | Classification of diagnosis source. We include these categories to allow some flexibility in implementation. The context is to capture available diagnoses recorded during a specific encounter. | • Admitting = Diagnosis code for reasons of inpatient admission  
• Discharge = Diagnosis code used for billing claims  
• Final = Ambulatory encounters |
| Principal Diagnosis Flag | Principal discharge diagnosis flag. Relevant only on IP and IS encounters. | • Principal  
• Secondary  
• Unable to classify |
## Encounters

Encounters are interactions between patients and providers within the context of healthcare delivery. This category includes various attributes of the patient encounter for medical services.

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
<th>Possible Values and Notes</th>
</tr>
</thead>
</table>
| Admitting Source      | From where a patient was admitted. (Example: Health care facility where patient was admitted) | • Adult Foster Home  
• Assisted Living Facility  
• Ambulatory Visit  
• Emergency Department  
• Home Health  
• Home / Self Care  
• Hospice  
• Intra-hospital  
• Other Acute Inpatient Hospital  
• Nursing Home (Includes ICF)  
• Rehabilitation Facility  
• Residential Facility  
• Skilled Nursing Facility  
• No information  
• Unknown  
• Other |
| Age at Visit          | Patient’s age in years at time of encounter.  
In i2b2 queries, ‘age at visit’ can be used to query for patients who had encounters with the health system at a particular age. | • 1-85 (integer values)  
• <1 and >85 (categorical)  
To link age at visit to other variables, one group must contain visit type or visit location. |
| Diagnosis Related Group | DRG code version.  
The DRG is used for reimbursement for inpatient encounters. It is a Medicare requirement that combines diagnoses into clinical concepts for billing. Frequently used in observational data analyses. | 3-digit Diagnosis Related Group (DRG). |
| Discharge Disposition | Vital status at discharge. | • Discharged alive  
• Expired  
• No information  
• Unknown  
• Other |
| **Discharge Status** | To where a patient was discharged. (Example: Health care facility where patient was discharged to) | • Adult Foster Home  
• Assisted Living Facility  
• Against Medical Advice  
• Absent without leave  
• Expired  
• Home Health  
• Home / Self Care  
• Hospice  
• Other Acute Inpatient Hospital  
• Nursing Home (Includes ICF)  
• Rehabilitation Facility  
• Residential Facility  
• Still In Hospital  
• Skilled Nursing Facility  
• No information  
• Unknown  
• Other |
|---------------|-------------------------------------------------|--------------------------------------------------|
| **Encounter Type** | Location of the encounter type. | • Ambulatory Visit  
• Emergency Department  
• Emergency Department Admit to Inpatient Hospital Stay  
• Inpatient Hospital Stay  
• Institutional Professional Consult  
• Non-Acute Institutional Stay  
• Observation Stay  
• Other Ambulatory Visit  
• No information  
• Unknown  
• Other |
| **Facility Location** | Geographic location of facility (3-digit zip code). | Grouped by state.  
Example: 326xx |
| **Facility Type** | Description of the facility where the encounter occurred. | Detailed facility description selected from a comprehensive reference list. Examples include emergency department, ambulance based care, birthing center, and walk-in clinic. |
| **Payer Type** | Categorization of payer type for primary and secondary payer associated with the encounter | Examples include Medicare, Medicaid, Tricare, PPO, HMO, etc. |
## Enrollment

Enrollment is a concept that defines a period of time during which a person is expected to have complete data capture. This concept is often insurance-based, but other methods of defining enrollment are possible.

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
<th>Possible Values and Notes</th>
</tr>
</thead>
</table>
| Chart         | Flag intended to answer the question, “Are you able to request (or review) charts for this person?” Does not address availability. | • Yes = no contractual or other restrictions between provider and patient (or sponsor) that would prohibit chart abstraction  
• No = derived attribute to indicate known restrictions on chart access/abstraction |
| Enrolled      | Enrollment basis is a property of the time period defined. A patient can have multiple entries in the table. | • Algorithmic = based on an algorithm applied to start and end dates of enrollment  
• Encounter-based = populated from the earliest-observed encounter and latest-observed encounter  
• Geography = based upon geographic characteristics, such as regional isolation  
• Medical insurance coverage = based upon enrollment where the health plan has any responsibility for covering medical care for the member during this enrollment period  
• Outpatient prescription drug coverage = based on enrollment where the health plan has any responsibility for covering outpatient prescription drugs for the member during this enrollment period |

Source: PCORnet  
Based upon the HMORN VDW and Sentinel CDM v6.0
Labs

Laboratory result Common Measures (CM) use specific types of quantitative and qualitative measurements from blood and other body specimens. The common measures are defined in the same way across all CDRNs, but this table can also include other types of lab results.

The list below details the labs available in OneFlorida i2b2 and are arranged according to the LOINC (Logical Observation Identifiers Names and Codes) ontology, a coding system used primarily for clinical health information such as laboratory and clinical test results, history and physicals, discharge summaries, operative notes, tumor registry, and nursing observations. More information about LOINC as well as a search tool can be found at www.loinc.org

LOINC Parts (LOINC: MTHU000999)

- Chemistry (LOINC: LP31388-9)
  - Cardiovascular (LOINC: LP31409-3)
  - Electrolytes (LOINC: LP19403-2)
  - Enzymes (LOINC: LP31392-1)
  - Lipids (LOINC: LP15705-4)
  - Liver Function (LOINC: LP24325-3)
  - Neuromuscular (LOINC: LP31403-6)
  - Protein (LOINC: LP15838-3)
  - Renal Function (LOINC: LP24362-6)
- Hematology/Coagulation (LOINC: LP31756-7)
  - Coagulation (LOINC: LP19284-6)
  - Hematology (LOINC: LP30786-5)
- Microbiology (LOINC: LP31755-9)
  - Reagin Ab (LOINC: LP20507-0)
  - Tuberculosis Interferon (LOINC: LP71775-1)
- Serology (LOINC: LP32742-6)
  - Rheumatoid factor (LOINC: LP46437-0)
- Urinalysis (LOINC: LP32744-2)
  - Protein (LOINC: LP15838-3)
- Virus (LOINC: LP14855-8)
  - Hepatitis B (LOINC: LP14306-2)
  - Hepatitis C (LOINC: LP14400-3)
  - HIV (LOINC: LP17126-1)
  - RNA Tests

Using the Find Terms function, investigators can search i2b2 by laboratory class, laboratory part, laboratory test, or LOINC code. Searches by lab values can be constrained by the high/low flag set by the performing laboratory. Additionally, the investigator can enter the result value range on which to organize the results. If the full folder is dragged into the query, then the
search will generate the number of patients who have been administered a specific laboratory test, regardless of result value.

Largely, the menu of laboratory tests exposed has been designed to overlap the requirements set forth by the National Patient-Centered Clinical Research Network (PCORnet) and the National Center for Advancing Translational Science (NCATS) Accrual to Clinical Trials (ACT) initiative. Selected additional tests have been added to meet specific high-demand local research needs.

**Modifying Queries for Labs**

- Priority (from the PCORnet LAB_RESULT_CM table, PRIORITY column)
- Result Loc (from the PCORnet LAB_RESULT_CM table, RESULT_LOC column)
- Specimen Source (from the PCORnet LAB_RESULT_CM table, SPECIMEN_SOURCE column)
- Results (from PCORnet LAB_RESULT_CM table)

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
<th>Possible Values and Notes</th>
</tr>
</thead>
</table>
| Abnormal Indicator Flag | Abnormal result indicator.                  | • Normal  
                        |                                                                 | • Abnormally high  
                        |                                                                 | • Abnormally low |
| Lab LOINC           | LOINC code of the lab result                  |                                                               |
| Lab PX              | Variable for local and standard procedure codes, used to identify the originating order for the lab test. | If the same LOINC procedure code is used to identify both the order and the result, make sure Lab LOINC is populated. |
| Priority            | Immediacy of test result data in relation to routine care. | Three modifiers:  
                        |                                                                 | • Routine = data for patients with routine/normal priority as part of routine care  
                        |                                                                 | • Stat = data for patients with an emergent priority as part of routine care.  
                        |                                                                 | • Other = data for patients with a priority of other than Routine or Stat. |
| Result Loc          | Location of the test result. Point of Care locations may include anticoagulation clinic, newborn nursery, finger stick in provider office, or home. | Five modifiers:  
                        |                                                                 | • Lab  
                        |                                                                 | • Point of Care  
                        |                                                                 | • No information  
                        |                                                                 | • Unknown  
                        |                                                                 | • Other |
Medication

Provider orders for medication dispensing and/or administration. These orders may take place in any setting, including the inpatient or outpatient basis (from PRESCRIBING table).

Medications included in i2b2 represent the full continuum of care for the patient. They are not limited to the hospital encounters in the instance. Medications are represented by their RxNorm Name(s) and Code(s). [http://www.nlm.nih.gov/research/umls/rxnorm/overview.html](http://www.nlm.nih.gov/research/umls/rxnorm/overview.html)


In i2b2, you can search the NDF--RT hierarchy through Navigate Terms to explore drug products by VA Class. Additionally, users can use the Find Terms search function to locate a medication not found in the nested categories. Once you identify a specific medication, hover the cursor over the name to show the location of the medication in the Navigate Terms hierarchy.

RxNorm codes were assigned based on mapping of OneFlorida partners’ specific medication codes to RxNorm codes. Because of the process required to map partners’ medications to RxNorm codes, specific distinctions between two similar medications may not be maintained. For example, a medication dispensed in tablet form for a specific ingredient/dose combination may appear in i2b2 as a capsule form. Therefore, we recommend that researchers who require high specificity in terms of a medication’s dose, route, or form contact and work with the OneFlorida team to verify their results.

Modifying Queries for Medications

For each of the strategies i2b2 users take to search patients by medications, there are additional modifiers that can be included in the search. Investigators can limit search results by specifying:

- Medications that were outpatient dispensed, administered by healthcare professional and/or other (RX_BASIS column from PCORnet PRESCRIBING table).
- Medications that were prescribed by frequency: as needed; every afternoon, day, and/or morning; two to four times a day; no information; other and/or unknown (RX_FREQUENCY column from PCORnet PRESCRIBING table).
- Medications that were administered by a provider (MEDADMIN_CODE from PCORnet MED_ADMIN table).
<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
<th>Possible Values and Notes</th>
</tr>
</thead>
</table>
| RX Basis      | Used as a modifier to select medications that were dispensed outpatient or administered by a healthcare provider. This modifier is intended to connect the provider’s prescribing order with how the order was fulfilled (such as outpatient dispensing or administration by a healthcare professional). | Three modifiers:  
- **Prescribed for administration** selects medications administered by a healthcare professional as part of a procedure  
- **Prescribed for Dispensing** selects medications dispensed for the patient by the hospital or providers office to the pharmacy  
- **Prescribed for Other** selects medications ordered by other means not described above. |
| RX Frequency  | Contains modifiers to select medications based on the specified frequency from prescription | Twelve modifiers:  
- Every day  
- Two times a day (BID)  
- Three times a day (TID)  
- Four times a day (QID)  
- Every morning  
- Every afternoon  
- Before meals  
- After meals  
- As needed (PRN)  
- No information  
- Unknown  
- Other |
Procedures

Procedure codes indicate the discrete medical interventions and diagnostic testing, such as surgical procedures and lab orders, delivered within a healthcare context.

Investigators can query procedure codes using ICD-9-CM records for procedures performed between 1/1/2012 and 10/1/2015. Beginning 10/1/2015, queries need to include the ICD-10-PCS codes for records added to i2b2 post 9/30/2015. By placing ICD9 and ICD10 codes in the same query panel, users may span the pre-and post-implementation periods. CPT codes are also available, though use across partners is not necessarily consistent or comprehensive.

Modifying Queries for Procedures

- PX Source (from PCORnet table PROCEDURES, column PX_SOURCE)
- Principal PX flag (from PCORnet table PROCEDURES, column PPX)
- Data Source (determined from OneFlorida CDM to i2b2 ETL process)

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
<th>Possible Values and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCPCS Modifiers</td>
<td>Code modifiers based on the Healthcare Common Procedure Coding System (HCPCS) Level II.</td>
<td>Three modifiers:</td>
</tr>
<tr>
<td></td>
<td>Applied only to the HCPCS Level II procedures</td>
<td>• A1-VP: HCPCS National Level II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• DD-SX: Ambulance Service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• PI-PS: PET Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A1-VP: HCPCS National Level II and PI-PS: PET Scan modifiers contain additional value choices below the main grouping level. Users can explore these to determine suitability to modify the Procedures query.</td>
</tr>
<tr>
<td>Principal PX</td>
<td>Principal procedure flag.</td>
<td>• Principal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Secondary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Unknown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Other</td>
</tr>
<tr>
<td>PX Source</td>
<td>Source of the procedure information.</td>
<td>Six modifiers:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Billing returns data for patients with procedures identified by internal healthcare processes and data sources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Claim returns data for patients with procedures identified by bill fulfillment, generally data</td>
</tr>
</tbody>
</table>
sources held by insurers and other health plans.

- **Order** returns data for patients with procedures identified by internal healthcare processes and data sources.
- **No Information** returns data for patients with procedures identified by an unidentified source.
- **Other** returns data for patients with procedures identified by a source other than billing, claims or order.
- **Unknown** returns data for patients with procedures identified by an unknown source.

| HCPCS Level II | Healthcare Common Procedure Coding System (HCPCS) Level II are procedure codes based on AMA’s CPT code system. HCPCS Level II primarily includes non-physician services and represents items and supplies, and non-physician services, not covered by CPT-4 codes (Level I) (Source: Wikipedia). | HCPCS Level II Procedure Codes
|----------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| ICD-9-CM Procedures | Hospital-coded procedure for queries of data between 1/1/2012 and 9/30/2015. | ICD-9-CM Procedure Codes
Users can find a comprehensive code listing at: [http://www.icd9data.com/2015/Volume1/default.htm](http://www.icd9data.com/2015/Volume1/default.htm) |
| ICD-10-PCS Procedures | Hospital-coded procedure post 10/1/2015 | ICD-10-PCS Procedure Codes
Users can find a comprehensive code listing at: [http://www.icd10data.com/ICD10CM/Codes](http://www.icd10data.com/ICD10CM/Codes) |
Vital Signs

i2b2 includes data of interest related to vital signs/conclusions resulting from the examination of patients in clinical, hospital and/or outpatient settings. Vital signs include blood pressure, body mass index (BMI), height, weight, smoking status, and form of tobacco use and directly measure an individual’s most current state of attributes.

Vital signs represent the multiple measurements of a given item taken during an encounter and as such allow the investigator to query all recordings of the finding during the course of a single encounter.

Modifying Queries for Vital Signs

- Blood Pressure Position (from PCORnet table VITAL, column BP_POSITION)
- Vital Source (from PCORnet table VITAL, column VITAL_SOURCE)

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
<th>Possible Values and Notes</th>
</tr>
</thead>
</table>
| Blood Pressure Position | Position for orthostatic blood pressure.  
Systolic and diastolic blood pressure can be modified according to position for orthostatic blood pressure (Sitting, standing, supine, other or no information) | Five modifiers:  
- **No information** returns data for patients with no information about blood pressure position.  
- **Other** returns data for patients with blood pressure taken in a position other than sitting, standing, or supine.  
- **Sitting** returns data for patients with no information with blood pressure taken in the sitting position.  
- **Standing** returns data for patients with no information with blood pressure taken in the standing position.  
- **Supine** returns data for patients with no information with blood pressure taken in the supine position. |
<p>| Blood Pressure | Systolic and diastolic blood pressure. | Units are mmHg. |
| BMI | Body mass index (BMI) is a measure of body fat based on BMI if calculated in the source system. This reflects originating |</p>
<table>
<thead>
<tr>
<th>Height</th>
<th>Height (in inches) measured by standing.</th>
<th>Units are inches</th>
</tr>
</thead>
</table>
| Tobacco Type | Type(s) of tobacco used. | Smoked tobacco only  
Non-smoked tobacco only  
Use of both smoked and non-smoked tobacco products  
None  
Use of smoked tobacco but no information about non-smoked tobacco use  
No information  
Unknown  
Other |
| Weight | Weight (in pounds). | Units are pounds |
| Vital Source – Healthcare delivery setting | Source of vital signs | **Healthcare delivery setting** returns data for patients with vital signs taken in a healthcare delivery setting.  
**Device Direct Feed** returns data for patients with vital signs taken by a device with direct data feed.  
**Patient-reported** returns data for patients with vital signs taken by the patient. |
Appendix

Acronyms

**CDM**
Common Data Model (from PCORnet)

**ED**
Emergency Department

**EMR**
Electronic Medical Record

**HCPCS**
Healthcare Common Procedure Coding System is a set of health care procedure codes based on the American Medical Association’s Current Procedural Terminology (CPT) used by the Centers for Medicare and Medicaid Services (CMS) for purposes of medical billing.

**ICD-9-CM**
International Classification of Diseases, 9<sup>th</sup> Revision, Clinical Modification. The World Health Organization’s official system of assigning codes to diagnoses and procedures associated with inpatient, outpatient and physician office visits in the United States.

**ICD-10-CM**
International Classification of Diseases, 10<sup>th</sup> Revision, Clinical Modification. The World Health Organization’s official system of assigning codes to diagnoses and procedures associated with inpatient, outpatient and physician office visits in the United States. Beginning October 1, 2015.

**i2b2**
Informatics for Integrating Biology and the Bedside a cohort discovery tool based on an ontology of standardized terms to describe clinical and research patient observations.

**LOINC**
Logical Observation Identifiers Names and Codes (LOINC) is a database and universal standard for identifying medical laboratory observations. It is used for the electronic reporting of laboratory tests and their results. LOINC codes have a fixed length field of 7 characters within the LOINC database. Current codes range from 3 to 7 characters. More information at LOINC from Regenstrief -- loinc.org.

**NDF—RT**
National Drug File —Reference Terminology. It is an extension of the VHA National Drug File (NDF). It is used for modeling drug characteristics including ingredients, chemical structure, dose form, physiologic effect, mechanism of action, pharmacokinetics, and related diseases.

**PCORnet**
The National Patient-Centered Clinical Research Network (PCORnet), is an innovative initiative of the Patient-Centered Outcomes Research Institute (PCORI). It is designed to make it faster, easier, and less costly to conduct clinical research than is now possible by harnessing the power of large amounts of health data and patient partnerships. In the process, it is transforming the culture of clinical research from one directed by researchers to one driven by the needs of patients and those who care for them.
RxNorm
RxNorm is a standardized, controlled terminology for medications in the United States. It includes multiple components – medication name (both generic and brand), dosage, route of administration, ingredients, and fully-specified “common dose forms” (i.e., what a physician might enter as part of a prescription to a pharmacy).

VA Drug Class Code
A US. Department of Veterans Affairs, drug classification system used by VA that separates drugs into different categories based upon their characteristics.

Funding Acknowledgements

The OneFlorida Clinical Research Consortium is supported by multiple funding agencies and grant awards. All publications, manuscripts, and presentations must acknowledge the funding agency with the inclusion of an acknowledgement statement like the following:

Research reported in this publication was supported in part by the OneFlorida Clinical Data Network, funded by the Patient-Centered Outcomes Research Institute #CDRN-1501-26692, in part by the OneFlorida Cancer Control Alliance, funded by the Florida Department of Health’s James and Esther King Biomedical Research Program #4KB16, and in part by the University of Florida Clinical and Translational Science Institute, which is supported in part by the NIH National Center for Advancing Translational Sciences under award number UL1TR001427. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Patient-Centered Outcomes Research Institute (PCORI), its Board of Governors or Methodology, the OneFlorida Clinical Research Consortium, the University of Florida’s Clinical and Translational Science Institute, the Florida Department of Health, or the National Institutes of Health.

Index

Acronyms, 21
CDM, 5
HCPCS, 17, 18
i2b2, 5
ICD-10-CM, 8, 17
ICD-9-CM, 8, 17
LOINC, 13
NDF—RT, 15
OneFlorida, 4, 5
PCORnet, 3, 5
RxNorm, 15