OHDSI Vocabulary Development and Release Process
Raising Requests

Standardizing procedures (call for non-US based collaborators)

- Researchers

Absence of concept relations between ICD10 PCS and SNOMED in Athena

Vojtech_H
I am working data
In OHDSI medication procedures their CDM-
I would be they current with interp
Please em hoping to go if you are for procedures
Vojtech

Srikan
Hello,
The rest mappin proced I could PCS to

ICD10 PCS Maps to Relationship includes ICD10PCS Hierarchy

Vocabulary Users

DTorol
A head ICD10 mappin code is

Missing ICD10PCS Codes #165

https://github.com/OHDSI/Vocabulary-v5.0/issues

cukarthik opened this issue on Mar 5, 2018 · 4 comments

cukarthik commented on Mar 5, 2018

When is the next update of ICD10 procedure codes? Our data has many missing code. Here are a few that seem to be new:

3E0P3VZ
099680Z
09BQ8ZX
09BQ8ZZ
09BW8ZZ
0BD88ZX
0BDC8ZX
0BF80ZX
0BF80ZZ
Discussing details

ICD10PCS standardization - LOINC usage

Eduard_Korchmar

During ongoing procedure consolidation process, 7th level ICD10PCS concepts are going to be integrated in SNOMED procedure subhierarchy, essentially becoming extension of existing SNOMED model. These relations in early version are already written in standardized vocabularies and we plan on releasing a much cleaner version very soon – most likely this week.

However, ICD10PCS includes a chapter for “Measurement and Monitoring” – all codes that start with character ‘4’. Given that SNOMED has poor hierarchy for measurement procedures and SNOMED’s attribute model doesn’t accommodate aspects of measurements well, we consider standardizing them to LOINC vocabulary instead. LOINC has own hierarchy built from LOINC part codes (LP) and could serve as a great target.

My question is: would it be still convenient for vocabulary users if part of the ICD10PCS vocabulary becomes mapped to (or becomes descendents of) LOINC concepts? This will also mean that these concepts’ domain_id will be “Measurement” instead of “Procedure” – this could also possibly break things?

For context: 4A039R1 Measurement of Arterial Saturation, Peripheral, Percutaneous Approach (ICD10PCS) currently is a 104847001 Oxygen saturation measurement (SNOMED). We could manually extend definitions to 113080007 Oxygen saturation measurement, arterial (SNOMED), since it will be not automatically picked up (any reference to arteries/arterial blood is absent from attributes).

At the same time, 2708-6 Oxygen saturation in Arterial blood (LOINC) has corresponding relation to LOINC classification/atom concepts – which are not currently present in CDM, but could be added.

All in all, relations to LOINC concepts would be easier to implement since it is better defined by attributes.

http://forums.ohdsi.org
**ICD10PCS standardization: first stable version**

Last Friday we have updated ICD10PCS Vocabulary to include new relations built from ICD10PCS leaf-level concepts to SNOMED.

**Changes since November release:**

1. Relations to SNOMED parents are now much cleaner
2. Eliminated redundancy in relations to SNOMED attributes
3. Fixed ICD10PCS redundant internal hierarchy links — now relations are built only to the next immediate hierarchical level.

Changes include hierarchical relations from ICD10PCS procedure concepts to SNOMED parents, e.g.:

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<td>Gastroduodenostic</td>
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ICD10PCS

ICD10PCS, often spelled “ICD-10-PCS”, is a vocabulary in the USA for coding hospital-based medical procedures. It is currently implemented as a standard vocabulary, with OMOP-generated hierarchical relations to Procedure concepts from SNOMED CT vocabulary and other relationships mimicking SNOMED CT’s internal model.

## Hierarchy and standard concepts

ICD10PCS concepts have up to 7 levels of hierarchy with the transition to each next level being represented by addition of one alphanumeric character to the parent concept’s code. Only leaf-level concepts are allowed to be used in clinical setting and are Standard concepts. Hierarchical levels 1 through 6 are always Classification concepts.

### Concept Classes

Classes for concepts in the ICD10PCS vocabulary are either ‘ICD10PCS’ for leaf-level concepts or ‘ICD10PCS hierarchy’ for preceding hierarchical levels.

### Domains

Currently all concepts from the ICD10PCS Vocabulary belong to the Procedure domain. Some of them may relate to taking Measurements or administering Drugs in a clinical setting, but rely on other coding systems to specify important details (results of measurements or exact drug and dose that was administered). ICD10PCS concepts themselves still represent only the nature of actions performed by provider.

### External relations to SNOMED CT

Leaf-level ICD10PCS concepts have custom relationships to SNOMED CT concepts. ICD10PCS procedures have attribute-value relationships built following SNOMED CT conventions to various SNOMED CT concepts that serve as attributes or concepts in procedure subhierarchy. Following the attribute assignment, hierarchical relationships are built to multiple SNOMED concepts, closest in meaning to ICD10PCS concepts themselves.

Due to differences in concept building between two vocabularies, complete match on attributes and meaning is never guaranteed even when concept names sound alike. Because of this, equivalence mappings are never built and all concepts remain Standard.

### Hierarchy

Internal ICD10PCS hierarchy is straightforward with each concept always having only one immediate ancestor.
Update of ICD10PCS

Prerequisites:

- Schema DevV5 with copies of tables concept, concept_relationship and concept_synonym from ProdV5, fully indexed.
- Working directory ICD10PCS.

1. Run create_source_tables.sql
3. Extract icd10pcs_order_YYYY.txt and rename to icd10pcs.txt
4. Run in devv5 (with fresh vocabulary date and version): SELECT sources.load_input_tables('ICD10PCS','TO_DATE('20180101','YYYYMMDD'),ICD10PCS 20180101); (pVocabularyDate=YYYY-1)
5. Run load_stage.sql
6. Run generic_update; devv5.GenericUpdate();
### Athena Search Page

[http://athena.ohdsi.org/search-terms/terms](http://athena.ohdsi.org/search-terms/terms)

#### Search by Keyword

Search term: **aspirin**

#### Download Results

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- EULA required
Release notes

Release notes 20190422
OHDSI/VocabularyReleaseRobot edited this page 22 days ago · 1 revision
https://github.com/OHDSI/Vocabulary-v5.0/releases/

Domain changes

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Newly added concepts grouped by Vocabulary_id and Domain

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Standard concept changes
What was done lately and what we are going to do
Procedure domain

done:
• ICD9Proc, OPCS4, ICD10PCS, HCPCS

upcoming
• OPS – we are working on them using ICD10PCS approach
• CPT4 – no attributes defined, needs investigation

The same principles as for ICD10PCS are used
Drug domain

Done:

Added:
• JMDC - Japan Medical Data Center Drug Code (JMDC)
• KDC - Korean Drug Code (HIRA)

Improved:
• dm+d, Gemscript, GGR, BDPM, DPD, AMT, HCPCS drugs,
  • added missing NDC concepts and missing mappings
Drug domain

**Upcoming additions**

- European drug vocabularies - article 57 database
- HemOnc as a Oncology Drug Regimen vocabulary

**Improvements**

- CVX - it needs better hierarchy
- ATC - it still gaps and some ambiguity
- NDC - still has gaps

- make drug vocabularies updates as much as possibly automated
Condition domain

**Added:**
- SNOMED Veterinary

**Improved:**
ICD9CM, ICD10CM, ICD10, ICDO
Multiple domains

Done
• More accurate domain assignment for LOINC, MedDRA, SNOMED

Upcoming
• NAACCR as a Cancer Registry source vocabulary
  https://github.com/OHDSI/OncologyWG/issues
• Genomic vocabularies
  https://github.com/OHDSI/Genomic-CDM
• SNOMED Extension allowing to map conditions flawlessly
Structural changes

done:
- Outdated HCPCS and CPT4 remain standard if they don't have replacement, as these concepts existed in the patient data and still need to be represented in CDM

to do:
• make ATC concepts standard
• support concepts changing their meaning over time (HCPCS, NDC, DRG)

We’ll discuss this on the next CDM workgroup;
see forum threads:
http://forums.ohdsi.org/t/hcpcs-codes-change-their-meaning-over-time/6182
http://forums.ohdsi.org/t/ndcs-changing-over-time/903
http://forums.ohdsi.org/t/drg-codes-change-their-meaning-over-time/6529
Other gaps and improvements

• Improvement - more automation is needed to be added for refreshes
• Opportunity - Better collaboration and curation capabilities with web-based interfaces that do not require deep SQL and database structure knowledge (for example, the mapping tool from France?)
• Improvement - how to better enable accepting external contributions (see new OHDSI process proposed by Patrick R. on http://forums.ohdsi.org/t/a-proposal-for-maturing-our-open-community-development-activities/6728/1)
• Improvement - more streamlined and consistent release process
• Opportunity - enabling the diff between new and previous vocab releases with Tantalus https://github.com/OHDSI/Tantalus