

FPAR VSAC value sets and LOINC

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Recall: Family Practice Annual Report is represented in LOINC with a Panel

- Each data element was modeled and a LOINC code associated with it.
 - *Including a few panels of Lab concepts*
- Value sets were created for each data element where required
- Value sets have been published in VSAC, and the VSAC value set is indicated using the VSAC API in the FHIR profile.

RESTful API connections

- E.g. FHIR profile binding using **FHIR Terminology Server**

```
<binding>
```

```
  <strength value="preferred"/>
```

```
  <description value="A VSAC value set that describes one's sexual activity state used by FPAR."/>
```

```
    <valueSetReference>
```

```
      <reference
```

```
value="https://cts.nlm.nih.gov/fhir/ValueSet/2.16.840.1.113762.1.4.1166.16"/>
```

```
      </valueSetReference>
```

```
    </binding>
```

- USE VSAC directly, see <https://www.nlm.nih.gov/vsac/support/usingvsac/vsacsvsapi2.html>

Alternative to APIs: Collaboration Web Site

<https://vsaccollab.nlm.nih.gov/collab/page/site/2x16x840x1x113762x1x4x1143x255/dashboard>

Panels of LOINC labs: HPV tests - FPAR 2.0 set

Example value set:

Human Papilloma Virus Tests, FPAR VSAC OID:

2.16.840.1.113762.1.4.1166.12

<https://vsac.nlm.nih.gov/valueset/2.16.840.1.113762.1.4.1166.12/expansion>

Applies to LOINC code: 86658-2

<https://r.details.loinc.org/LOINC/86658-2.html?sections=Comprehensive>

SNOMED CT answers: Human papilloma virus
16+18+31+33+35+39+45+51+52+56+58+66 DNA

Example value set:

Positive Negative VSAC OID: 2.16.840.1.113762.1.4.1166.6

<https://vsac.nlm.nih.gov/valueset/2.16.840.1.113762.1.4.1166.6/expansion>

Applies to LOINC code: 73959-9

<https://s.details.loinc.org/LOINC/73959-9.html?sections=Comprehensive>

LOINC answers: Annual Household Income

Example value set:

FPAR Annual Household Income Ranges VSAC OID:

2.16.840.1.113762.1.4.1166.25

<https://vsac.nlm.nih.gov/valueset/2.16.840.1.113762.1.4.1166.25/expansion>

Applies to LOINC code: 77244-2

<https://r.details.loinc.org/LOINC/77244-2.html?sections=Comprehensive>

Source of Payment Typology: 'Payer for Visit'

Example value set:

Source of Payment Typology VSAC OID:

2.16.840.1.114222.4.11.3591

<https://vsac.nlm.nih.gov/valueset/2.16.840.1.114222.4.11.3591/expansion>

Applies to LOINC code: To be finalized

Note: For 'Payer for Visit', we recommend using LOINC 52556-8. In the instance of the FPAR set, we will point to the Source of Payment typology.

Methods used by Intermountain to determine values
for LOINCs with coded values

Query

- with
 loinc_codes as (
 select column_value "loinc_code"
 from table(sys.dbms_debug_vc2coll('32146-3','16126-5','40750-2','801-1','5393-4','38506-2','22415-4','32637-1','19295-5','32140-6','33910-1','28005-7','15218-1','11266-4','22587-0','5034-4','29641-8','11276-3','15210-8','22131-7','19415-9','19141-1','8234-7','8149-7','8191-9','28008-1','38908-0','21033-6','56491-4','56490-6','5876-8','32765-0','48035-0','20513-8','9327-8','5199-5','46735-7','4023-8','3297-9','5639-0','6565-6','5353-8','5351-2','10976-9','10998-3','20404-0','3414-0','10900-9','7792-5','13954-3','16131-5','2006-5','5866-9','20444-6','13953-5','5222-5','24012-7','31204-1','32198-4','20512-0','21190-4','22496-4','17859-0','3299-5','11259-9','32764-3','45371-2','5862-8','6357-8','46154-1','22314-9','12248-1','5332-2','14314-9','5813-1','40752-8','21440-3','34468-9','8248-7','34701-3','10459-6','5774-5','41477-1','19554-5','802-9','19343-3','703-9','33804-6','25160-3','13532-7','3779-6','2761-5','19550-3','14563-1','44877-9','1977-8','4993-2','2118-8','14565-6','14564-9','9588-5','9596-8','9595-0','9598-4','9599-2','9592-7','9591-9','9589-3','9594-3','9590-1','9593-5','11004-9','9597-6','47238-1','6561-5','13951-9','18390-5','9587-7','10362-2','46765-4','3389-4','11006-4','546-2','3376-1','25145-4','49541-6','29891-9','20761-3','65633-0','803-7','13952-7','2110-5','5569-9','24475-6','12232-5','38479-2','38486-7','29571-7','32854-2','29574-1','19312-8','7918-6','16128-1','8246-1','7790-9','4073-3','3773-9','10381-2','38478-4','1305-2','13955-0','17790-7','5783-6','19162-7','22322-2','3426-4','800-3','7791-7','547-0','31201-7','3936-2','25428-4','32356-8','779-9','3397-7','15199-3','3393-6','33051-4','15198-5','15150-6','35691-5','19659-2','12258-0','15180-3','12454-5','774-0','702-1','5195-3','33903-6','3349-8','8061-4','3377-9','48345-3','3390-2','3879-4','25162-9','10378-8','20453-7','9317-9','5818-0','8247-9','728-6','2349-9','741-9','2514-8','738-5','20454-5','5794-3','5799-2','5770-3','5802-4'))
),
 loinc_ncids as (
 select r.representation "loinc_code"
 , r.ncid "loinc_ncid"
 , r1.representation "loinc_name"
 from loinc_codes, cdr.rsform r, cdr.rsform_context rc, cdr.rsform r1, cdr.rsform_context rc1
 where r.rsform_id = rc.rsform_id
 and rc.context_ncid = 223
 and rc.preferred_score = 0
 and loinc_codes."loinc_code" = r.representation
 and r1.rsform_id = rc1.rsform_id
 and rc1.context_ncid = 521106494
 and rc1.preferred_score = 0
 and r.ncid = r1.ncid
 and r.representation in (select * from loinc_codes)
),
 testresult_ncids as (
 select
 loinc_codes."loinc_code"
 ,loinc_ncids."loinc_ncid"
 ,loinc_ncids."loinc_name"
 ,cr.concept_relation_ncid "testresult_ncid"
 from loinc_codes,loinc_ncids,concept_relations cr

Results

A	C	D	E	G
loinc_cod	loinc_name	testresult_	COUNT(*)	code_disp
10362-2	Endomysium IgA Ab [Presence] in Serum	25407	19	Not detected
10362-2	Endomysium IgA Ab [Presence] in Serum	25407	6	See Note
10362-2	Endomysium IgA Ab [Presence] in Serum	25407	2	See reference lab report
10362-2	Endomysium IgA Ab [Presence] in Serum	25407	1	AB not detected.
10362-2	Endomysium IgA Ab [Presence] in Serum	25407	1	See additional report form
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	329535	1+
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	56158	2+
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	4895	3+
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	298	4+
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	280	Occasional
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	21	Few
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	17	Specimen integrity questionable.
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	16	Space
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	14	Rare
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	6	Negative
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	2	Slight Increase
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	1	Other Specimen
10378-8	Polychromasia [Presence] in Blood by Light microscopy	20144	1	Present

Usage of results

- Reviewed results to determine appropriateness of values, where values existed.
- Compared them to LOINC answer list for the LOINC code, if one exists
- Created our value sets based on the following criteria:
 - If LOINC answer list is normative, create value set with equivalent SNOMED codes
 - If no LOINC answer list, use SNOMED codes equivalent to local values
 - If no local values but LOINC answer list exists, use SNOMED equivalents to LOINC
 - If neither exist, no value set created.