Proposal for Versioning and Publish of LOINC Value Sets

Version 1.0

LOINC
from Regenstrief
Background

In the upcoming LOINC release, the *Universal Lab Orders Value Set from LOINC* artifact will contain no additional LOINC terms, but the referenced display name (i.e. the Long Common Name) was updated to its latest form from the current LOINC release. Based on interpreting our current LOINC Versioning Policy, it is somewhat unclear whether the *Artifact Version* number should be incremented or not.

This case illustrates that we need more clarity about naming or versions with respect to Value Sets of LOINC terms, as opposed to other kinds of content artifacts. We would also do well to simply our approach to publishing Value Sets...which also influences how we think about versioning them.

In general, we should anchor our approach with the (now Normative) Characteristics of a Formal Value Set Definition standard (aka the VSD) from HL7.

It will be increasingly important that LOINC and HL7 are aligned in their thinking about this as HL7 may consider LOINC as the authoritative source/steward for some referenced value sets (e.g. Imaging Documents).

The main idea is that a "Value Set" has two parts: a definition and an expansion. When we talk about "versioning" a valueset we are almost always talking about the definition. This same idea is represented in the FHIR ValueSet resource. In FHIR, each expansion gets an instance identifier, and the concept of versioning applies to the upper level of defining the valueset. Part of our trouble is that out published artifact could be thought of as a representing the value set expansion (as of LOINC 2.66 or whatever), when we should be thinking of it as the definition (even if it is defined by enumerating the concepts it contains).

Further, although we haven't been clear about this yet, nearly all of our definitions should be specified as applying to any LOINC version. (There is a way for locking a definition to a specific terminology version, but I can't see we'd ever want to do that.) As a result, the expansion set (what got returned from a query) would depend on which LOINC version the definition is executed against.

In addition, the VSD describes a key distinction between **Definitional** and **Non-definitional** elements.

> The definitional elements impose baseline process expectations in the Standard, i.e., all compliant implementations of the Standard must create new Value Set Definitions or new Value Set Definition versions when a definitional element has a substantive change. A new Value Set Definition or Value Set Definition version that is based on a change in a non-definitional element is not considered best practice but may occur in certain business scenarios.

The definitional elements are:

- **Scope**
- **Immutable (flag)**

So, in the case of the Universal Lab Orders Value Set from LOINC for this release, we didn’t change the definition/scope. The new names are getting picked up because of a change in the underlying concepts as represented in a particular LOINC version, not because we modified or altered our definition. This kind of change is expected and noted in Section 9.5 Impact of Code System Evolution:
A central tenet to the specification is the fact that Value Set Definitions are often created with the expectation that the information is robust and will stand “the test of time” – most importantly, it will continue to generate appropriate Value Set Expansion Code Sets as the Code System matures. This means that a single Value Set Definition version that is not tied to a particular Code System Version is expected to continue to produce appropriate and usable Value Set Expansion Code Sets for every new Code System version. Authors/stewards may review these new Value Set Expansion Code Sets to be assured that assumption remains correct.

Related note: Value sets can be defined as either containing or not containing retired concepts. If retired (deprecated) concepts are not included, a change in status of a term from one release to the next can also alter its membership in a value set.

Proposal

Recommendation 1

For the current release, the file name for the Universal Lab Orders Value Set from LOINC will be Loinc_2.66_LoincUniversalLabOrdersValueSet_2.1 reflecting the fact that it was "expanded" using the current LOINC version, but that the definition didn't change.

Recommendation 2

I recommend that we amend our Versioning policy to specifically address value sets as a subcategory of artifact versions, and anchor our definition to the VSD constructs.

Corollary: We will seek advice and review by the HL7 vocabulary committee (incl. Rob McClure) about our proposed versioning policy prior to bringing the changes for consideration by the Committee (anticipated at our Fall Committee meeting).

Recommendation 3

We should move our primary publication structure of LOINC-curated value sets the FHIR ValueSet resource so that these kinds of definitions, attributes, and functionality can be properly represented. Included artifacts:

1. Universal Lab Orders Value Set from LOINC
2. LOINC Imaging Documents
3. (if/when revived) LOINC Common Observation (aka Top 2000)
4. …future ValueSets as we planning for attachment terms.

Corollary: We will make an "easy" mechanism to get the expansion code list in a familiar format (e.g. CSV), in addition to FHIR-based API access.