

New concept proposal

Lab Test

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Dataset release	2022.1	Consulted expert	-

1 Rationale

The LOINC code provides detailed information for a lab test. However, some laboratory test results are not comparable based only on the same LOINC code. In some cases, the instrument and/or the test kit play an important role for assessing the comparability of laboratory results. Therefore, in addition to the LOINC code, information about the instrument and test kit should be shared with the researcher. Several measurement methods only use an instrument but not a test kit, or vice versa. In such case only the information on the instrument or only the information on the test kit is provided, e.g. for a urine pH test with a test strip test kit, only the information on the test kit is provided since no instrument is required to collect the result.

2 Comparison to other standards/data models

2.1 HL7 FHIR

Laboratory test results in FHIR are represented in the resource *Observation*. The resource contains an element called *device* which can hold up to one (0..1) measurement device.

2.2 OMOP

OMOP measurement table does not contain device information.

3 Concept information

Concept name	Description	Type	Standard	Meaning binding SNOMED CT	Meaning binding LOINC
Lab Test	lab test information including information elements provided by LOINC, instrument and test kit			15220000 Laboratory test (procedure)	
code	code, name, coding system and version of the lab test	Code	LOINC		
instrument	instrument used to assess medical laboratory samples	Lab Analyzer			
test kit	test kit used to assess medical laboratory samples	Lab Analyzer			

4 Impact on the SPHN Dataset

Lab Test concept can be reused in *Lab Result* concept.

Currently released version of the concept Lab Result

Concept name	Description	Type	Standard	Meaning binding SNOMED CT	Meaning binding LOINC	Additional information
Lab Result	laboratory analysis transmitted			118246004 Laboratory test finding (navigational concept)		
unstructured lab result	comments up to full report	string				
lab test	code of the lab test	Code	LOINC			use for standard laboratory tests (not for microbiology or pathology)
...				

Proposed adaptation of the concept Lab Result

Concept name	Description	Type	Meaning binding SNOMED CT	Meaning binding LOINC	Additional information
Lab Result	laboratory analysis transmitted		118246004 Laboratory test finding (navigational concept)		
unstructured lab result	comments up to full report	string			
lab test	lab test information including information elements provided by LOINC, instrument and test kit	Lab Test			use for standard laboratory tests (not for microbiology or pathology)
...			

5 Discussion

With the opportunity of reusing the new *Lab Tests* concept in the *Lab Result* concept it is possible to share additional metadata to the lab result: the instrument that has been used to measure the result and the test kit that has been used.

6 Example

Lab Test	
Code	1743-4 (Alanine aminotransferase [Enzymatic activity/volume] in Serum or Plasma by With P-5'-P)
Instrument	
Type identifier	GMDN code: 56676 (name : Multiple clinical chemistry analyser IVD, laboratory, automated) EMDN code: W02010101 (name : CHEMISTRY ANALYSERS)
Product identifier	GUDID code: 04015630930845
Test kit	
Type identifier	GMDN code: 52923 (name : Alanine aminotransferase (ALT) IVD, kit, enzyme spectrophotometry) EMDN code: W0101 (name : CLINICAL CHEMISTRY)
Product identifier:	GUDID code: 04015630927425

Further details to instrument and test kit examples are available in the concept description document for *Lab Analyzer*.