

### **5.2.3 Guideline C - Laboratory Test Results (Observation Names and Values)**

# Laboratory Test Name (Observation Name)

## Recommendation:

LOINC should be used as the standard coding system to identify the test (observation).

## Alternative 1:

The SNOMED CT expression associated with a LOINC code may be used.

## Alternative 2:

SNOMED CT concepts from the 15220000 |Laboratory test| or 363787002 |Observable entity| hierarchy may be used.

## Laboratory Result Value (Observation Value)

### Recommendation:

Laboratory test results are reported different value types. For example, an LDL cholesterol level may be reported as a numeric value type, the results of a blood culture might identify an organism, and the results of a genetic mutation analysis may be reported as narrative text. In LOINC, these value types are distinguished in the Scale attribute.

When a laboratory result observation requires a coded value, SNOMED CT should be used as the standard coding system for such result values. The majority of coded results for reportable laboratory results fall into one of the following SNOMED CT hierarchies:

- [Microorganism](#)
- [Substance](#)
- [Evaluation finding \(finding\)](#)
- [Presence and absence findings](#)
  - [Presence findings](#)
  - [Absence findings](#)

## Implications of using SNOMED CT for result values

In laboratory test result reporting, the semantic relationship between the identification of the observation and its value is that the asserted value "refines" or "qualifies" the meaning of the laboratory test that is specified in the identification of the observation. In other words, how a particular result should be reported depends upon what is being used as an identification of the observation. This is true regardless of whether SNOMED CT is used.

When SNOMED CT is used for a coded result value, this understanding of the semantic relationship is consistent with the use of refinement as specified in the SNOMED CT Concept Model.

## Examples

### Example 1: Reportable Condition Mapping Table (RCMT)-Lab Test & Results. CDC Vocabulary Server

The Reportable Condition Mapping Table (RCMT) provides mappings between reportable conditions and their associated LOINC laboratory tests and SNOMED results.

The RCMTs use standards suggested for the meaningful use measure "reportable lab result reporting to public health". They can be used to filter the output of clinical labs for test results that are of interest to public health.

[Concept Relationships](#) | [Concept Details](#)

**Parent Concepts**

- Parent Concepts
  - Reportable Conditions [immediate parent 1]

**Child Concepts**

No child relationships exist for selected concept

**Download Relationships**

**Other Relationships**

Relationship Type: Associated Lab Tests \*

- Lab Test Name (Tuberculosis) [ValueSet]
- Lab Test Name (TB Antimicrobial susceptib

Relationship Type: Associated Lab Test Result

- Lab Result (Tuberculosis) [ValueSet]
  - attenuated Mycobacterium bovis
  - Mycobacterium africanum
  - Mycobacterium bovis
  - Mycobacterium canetti
  - Mycobacterium caprae
  - Mycobacterium microti
  - Mycobacterium pinnipedii
  - Mycobacterium tuberculosis
  - Mycobacterium tuberculosis African I v
  - Mycobacterium tuberculosis African II
  - Mycobacterium tuberculosis Asian vari
  - Mycobacterium tuberculosis classical v
  - Mycobacterium tuberculosis complex
  - Mycobacterium tuberculosis hominis

Figure 5.2.3-1: CDC Vocabulary Server (PHIN VADS). RCMT Tree (Navigator) e.g: Tuberculosis

Table 5.2.3-1: Relationships - Condition and Lab Tests/Results Notifiable Event (Disease /Condition) Code list: Tuberculosis

Code 1	Name 1	Relationship Type	Concept Name 2	Concept Code 2	Code System Name 2
10220	Tuberculosis	Associated Lab Test Results	Attenuated Mycobacterium bovis (organism)	33610009	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium africanum (organism)	51320008	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium bovis (organism)	27142009	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium canetti (organism)	414789006	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium caprae (organism)	430579009	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium microti (organism)	70801007	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium pinnipedii (organism)	430914003	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium tuberculosis (organism)	113861009	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium tuberculosis African I variant (organism)	243372002	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium tuberculosis African II variant (organism)	243373007	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium tuberculosis Asian variant (organism)	243371009	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium tuberculosis classical variant (organism)	243370005	SNOMED CT
10220	Tuberculosis	Associated Lab Test Results	Mycobacterium tuberculosis complex (organism)	113858008	SNOMED CT

10220	Tuberculosis	Associated Lab Test Results	Mycobacterium tuberculosis hominis (organism)	36354002	SNOMED CT
10220	Tuberculosis	Associated Lab Tests	Gamma interferon background Bld EIA-aCnc	71776-9	LOINC
10220	Tuberculosis	Associated Lab Tests	IGNF neg cntrl Bld	74279-1	LOINC
10220	Tuberculosis	Associated Lab Tests	M bovis Ab Ser QI	23239-7	LOINC
10220	Tuberculosis	Associated Lab Tests	M bovis Ab Ser QI EIA	23240-5	LOINC
10220	Tuberculosis	Associated Lab Tests	M bovis Ag Bld QI	23242-1	LOINC
10220	Tuberculosis	Associated Lab Tests	M bovis Ag Tiss QI ImStn	23241-3	LOINC
10220	Tuberculosis	Associated Lab Tests	M bovis tuberc IGNF Pnl Bld	53703-5	LOINC
10220	Tuberculosis	Associated Lab Tests	M bovis tuberc-control IGNF Bld-aCnc	53704-3	LOINC
10220	Tuberculosis	Associated Lab Tests	M bovis-M avium tuberc IGNF Bld-aCnc	53702-7	LOINC
10220	Tuberculosis	Associated Lab Tests	M tb A60 Ab Ser QI EIA	55224-0	LOINC
10220	Tuberculosis	Associated Lab Tests	M tb A60 IgM Ser QI EIA	55223-2	LOINC
10220	Tuberculosis	Associated Lab Tests	M TB Cmplx DNA XXX QI PCR	38379-4	LOINC
<a href="https://phinvads.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.114222.4.5.277&amp;code=10220">https://phinvads.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.114222.4.5.277&amp;code=10220</a>					

## Example 2: CIMI

The Clinical Information Modeling Initiative (CIMI) is an international collaboration dedicated to improving the interoperability of healthcare information systems through shared implementable clinical information models. CIMI's goal is to provide a common format for detailed specifications for the representation of health information content so that semantically interoperable information may be created and shared in health records, messages, and documents.

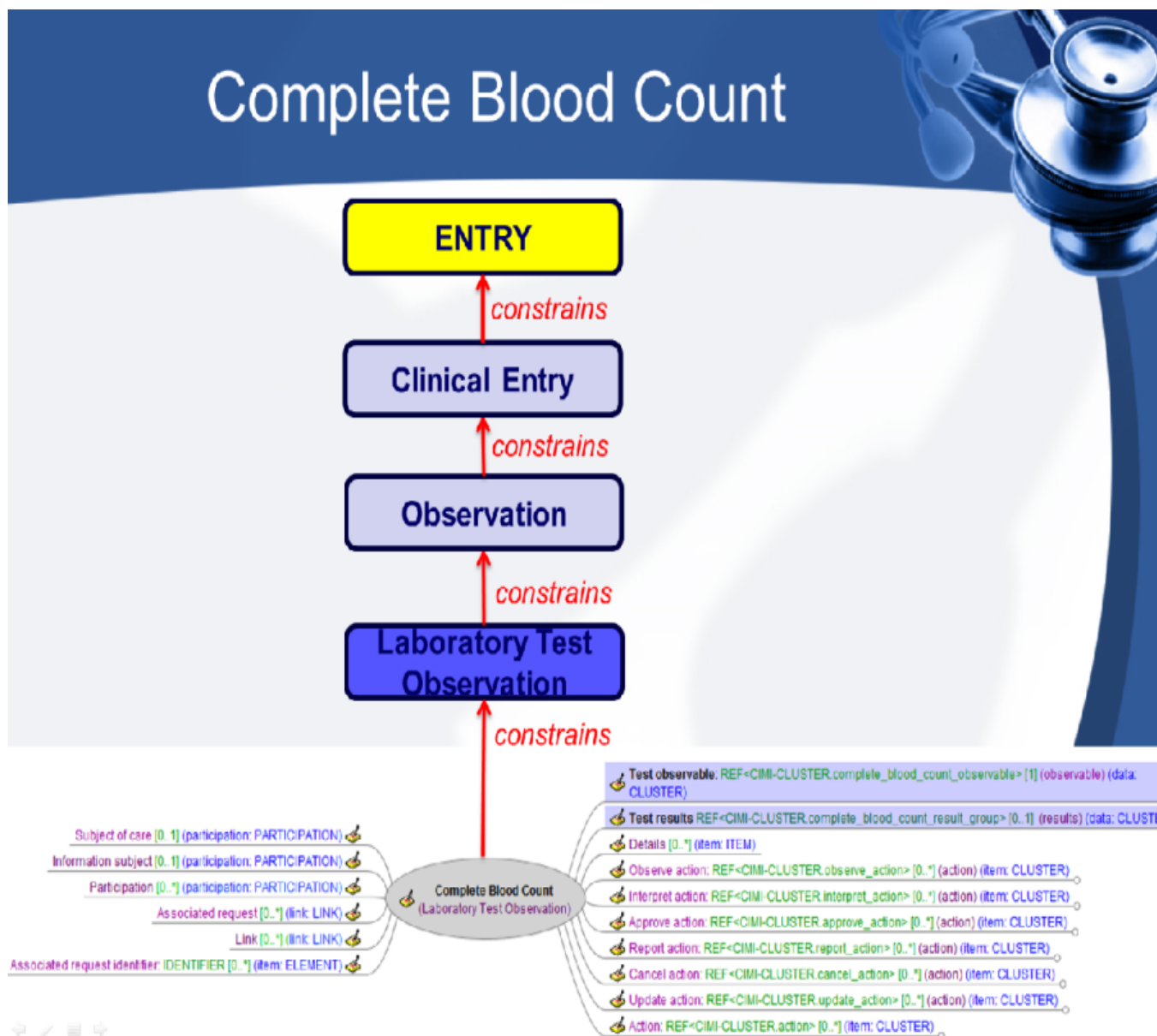


Figure 5.2.3-2: CIMI archetype map for laboratory results report

# Complete Blood Count

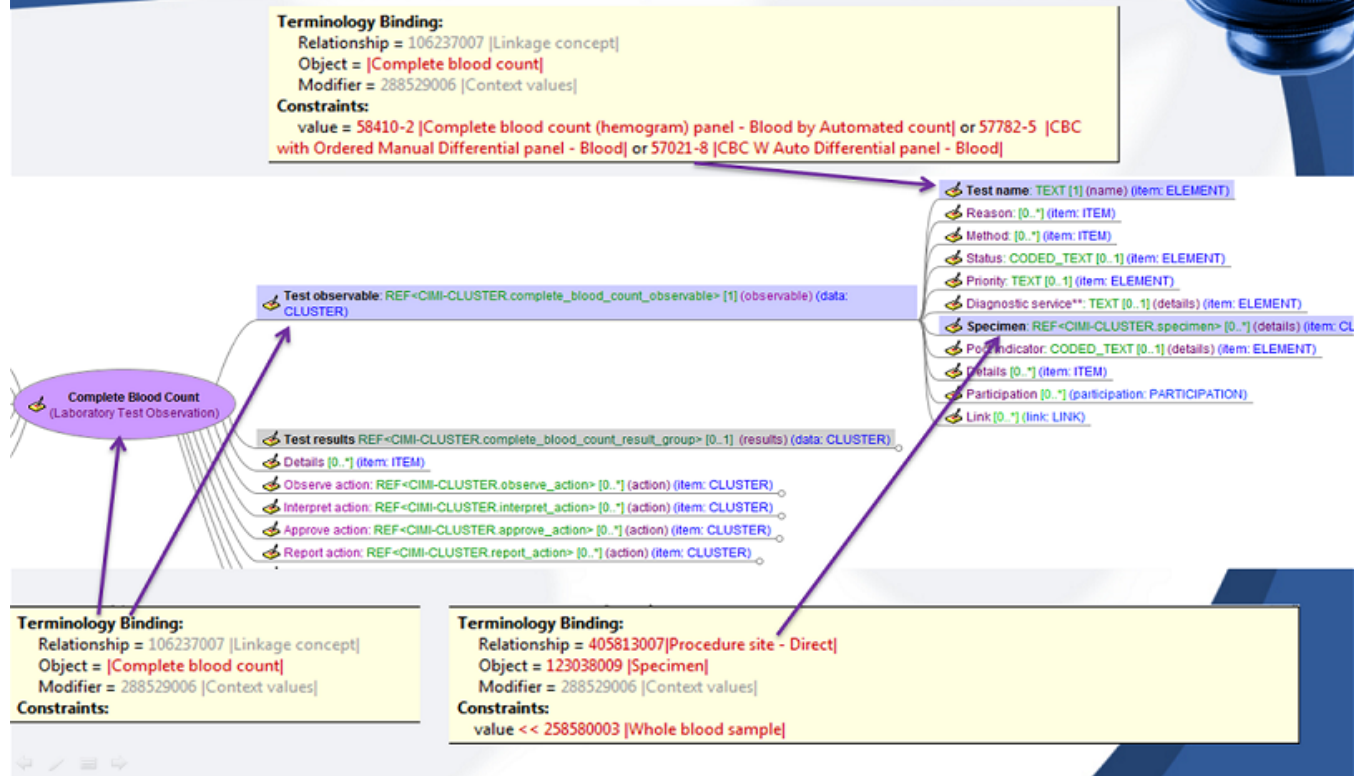


Figure 5.2.3-3: CIMI Modelling Taskforce Report

## Example 3: Value set for Microorganisms/Infectious agents (PHIN-VADS CDC)

Microbiology reporting is a common example of laboratory tests that are reported with coded result values (i.e. the microorganism identified). Use of SNOMED CT to code such results enables reporting and decision support capabilities.

Table 5.2.3-2: Value Set Code PHVS\_Microorganism\_CDC

Concept Code	Preferred Concept Name	Code System Name
54857005	63U-11 virus	SNOMED CT
66177001	75V-2374 virus	SNOMED CT
77627007	75V-2621 virus	SNOMED CT
54454006	78V-2441 virus	SNOMED CT
11946001	Abadina virus	SNOMED CT
113714003	Abiotrophia defectiva	SNOMED CT
409815006	Abiotrophia para-adiacens	SNOMED CT
372391001	Abiotrophia species	SNOMED CT
17822001	Abras virus	SNOMED CT

<https://phinvads.cdc.gov/vads/ViewValueSet.action?id=06B09CEF-0E37-E111-A720-0050568D00F8#>



