

LOINC and Other Coding Systems

Indy FHIR February 2018

LOINC History

Logical Observation Identifiers Names and Codes

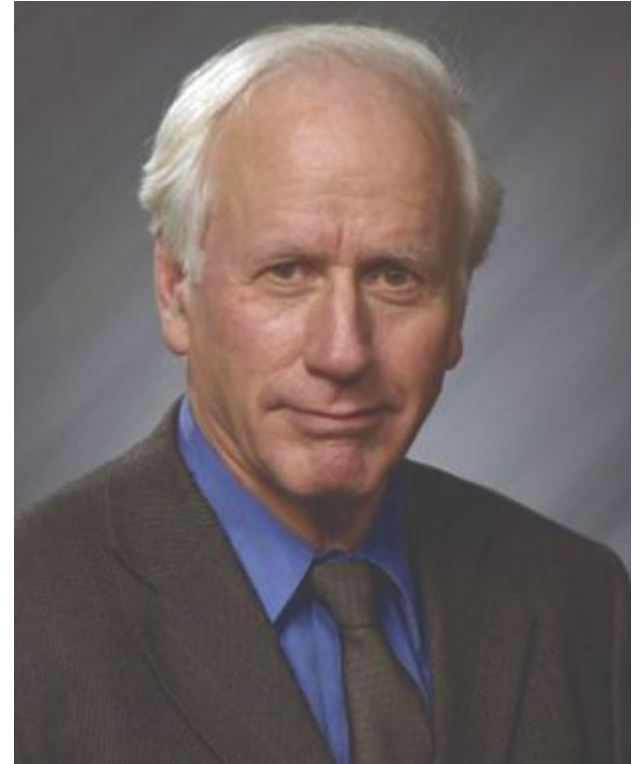
Started in 1994 by Clem J. McDonald, MD while at Regenstrief Institute

Developed into an International Standard

Committee formed early on.

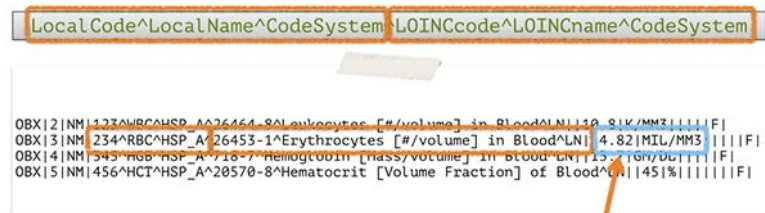
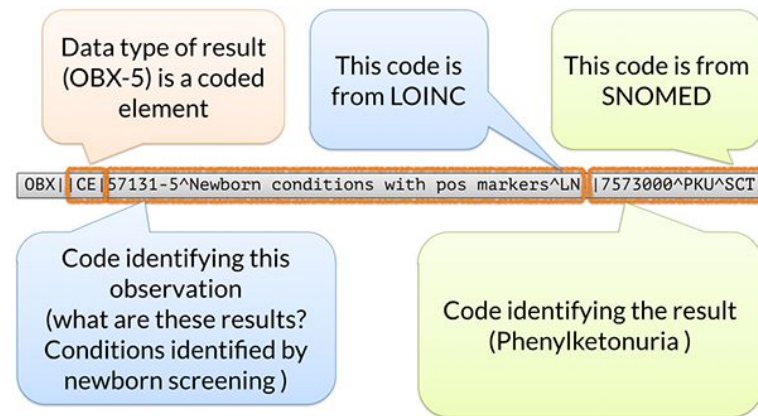
Formed to facilitate exchange of clinical laboratory and observational data results.

<https://loinc.org/about/>



LOINC Basics

- LOINC codes represent the “question” for a test or measurement
- Other coding systems provide the Qualitative Answers
 - Such as SNOMED CT
- Standard FHIR Coding System for Observations and Laboratory Results
<http://hl7.org/fhir/us/core/StructureDefinition-us-core-observationresults.html>
- LOINC also provides some “answers” such as survey answers link Smoking Status



Notice how the result value and units have their own places in the message

LOINC Parts

LOINC Parts:

COMPONENT (ANALYTE) - The substance or entity being measured or observed.

PROPERTY - The characteristic or attribute of the analyte.

TIME - The interval of time over which an observation was made.

SYSTEM (SPECIMEN) - The specimen or thing upon which the observation was made.

SCALE - How the observation value is quantified or expressed: quantitative, ordinal, nominal.

METHOD - OPTIONAL A high-level classification of how the observation was made. Only needed when the technique affects the clinical interpretation of the results.

LOINC Example

COMPONENT (ANALYTE) - Leukocytes (white blood cells)

PROPERTY - NCnc (Number concentration)

TIME - Pt (Point in time)

SYSTEM (SPECIMEN) - CSF (Cerebral spinal fluid)

SCALE - Qn (Quantitative)

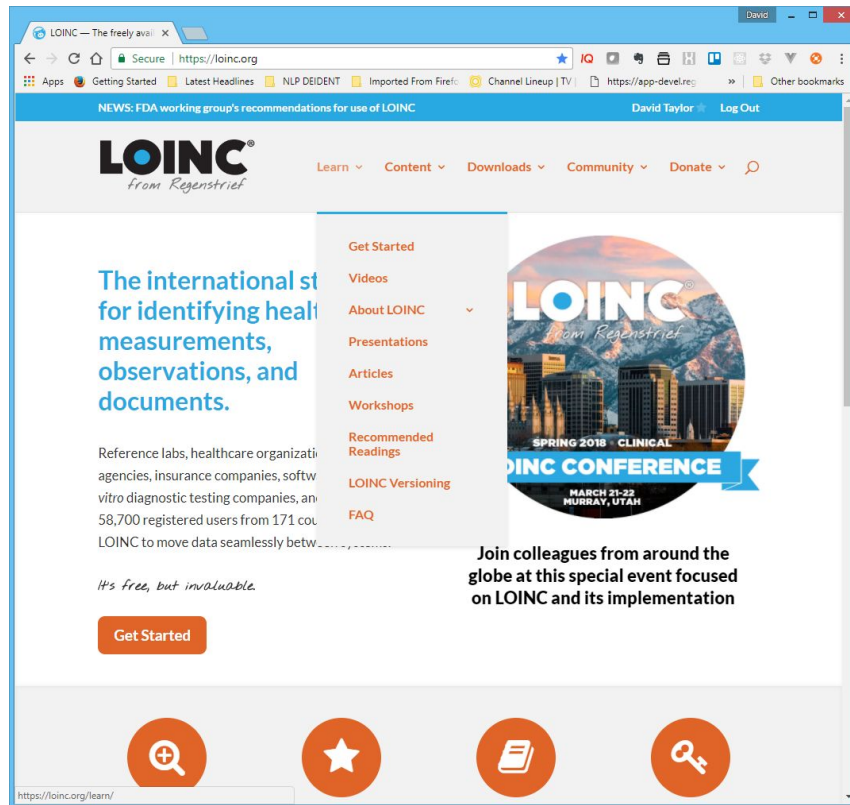
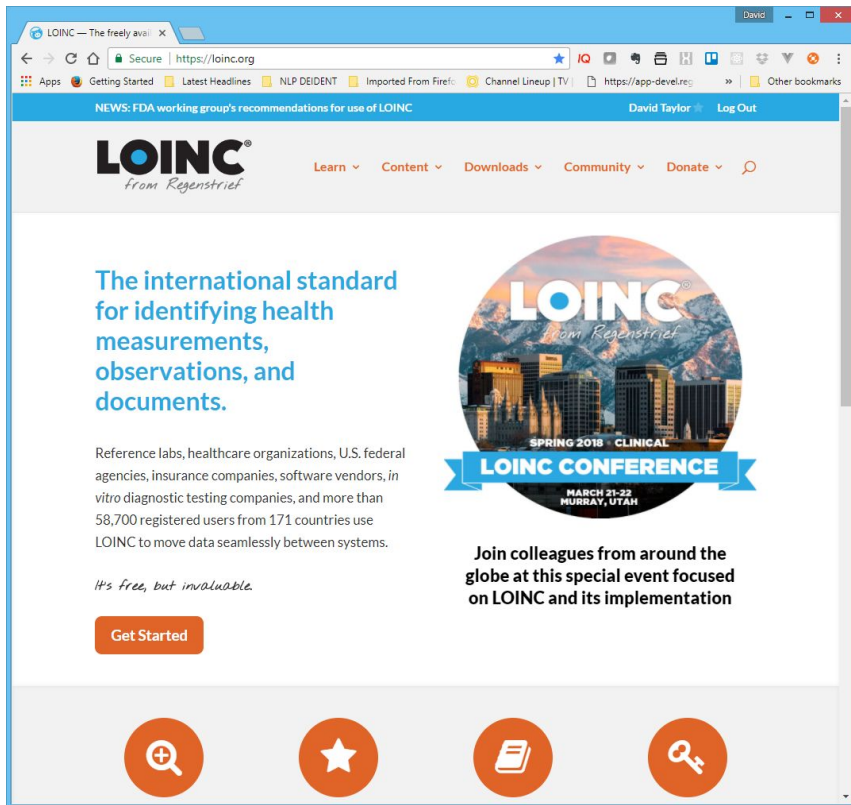
METHOD - Manual Count

6-part Fully-Specified Name (FSN) - Leukocytes: NCnc: Pt: CSF: Qn: Manual count

Clinically Friendly Long Common Name (LCN) - Leukocytes [# /volume] in Cerebral spinal fluid by Manual count

Short Name -WBC # CSF Manual

LOINC Website Overview



LOINC Key Downloads and Tools

- LOINC User Guide
<https://loinc.org/download/loinc-users-guide/>
- LOINC Top 2000 Lab Results - 98% of used codes
<https://loinc.org/usage/obs/>
- LOINC Top 300 Orders - 95% of used codes
<https://loinc.org/usage/orders/>
- LOINC Relma Tool - Search, etc. for Windows
<https://loinc.org/downloads/relma/>
- LOINC Accessory Files
<https://loinc.org/downloads/accessory-files/>

UCUM – Unified Code for Units of Measure

- Another FHIR Specified Coding Standard
- Managed by the same group at Regenstrief that manages LOINC
- Provides a standard specification for Units of Measure
- Used in the standard FHIR Profiles
 - <http://hl7.org/fhir/us/core/StructureDefinition-us-core-observationresults.html>

SNOMED CT –

Systematized Nomenclature of Medicine -- Clinical Terms

<https://www.snomed.org/snomed-ct>

In FHIR typically used to specify

- Observation “Answers”
- Conditions
- Included in the UMLS