LOINC® from Regenstrief

An Introduction to LOINC

Based on slides from Daniel J. Vreeman, PT, DPT, MSc, @djvreeman

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Regenstrief Institute Medical Informatics

INDIANA UNIVERSITY DEPARTMENT OF MEDICINE School of Medicine

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I have no potential conflicts of interest to report.

Acknowledgements

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LOINC Committee

Supporters

NLM, Regenstrief Institute, Regenstrief Foundation, APTA, RSNA, the LOINC Premium Members and Donors

Overview

1. Origins and purpose of LOINC
2. The LOINC way
3. LOINC today
4. Overview of implementation resources

photo via Vernio77

Logical Observation Identifiers Names and Codes

A universal code system that facilitates exchange, pooling, and processing of clinical data.

Established in 1994 by Regenstrief Institute.

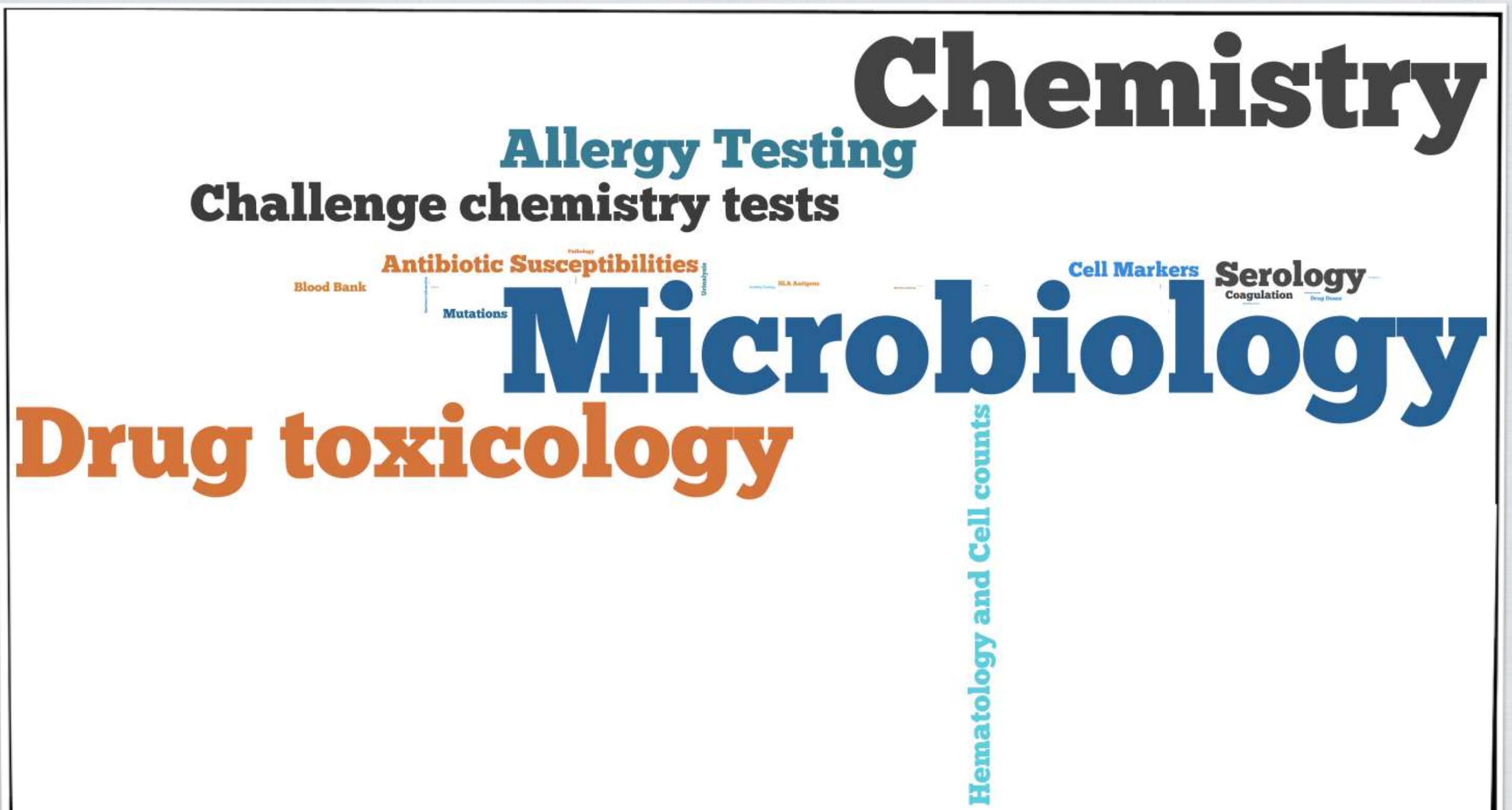
Vocabulary standard for observation identifiers.

LOINC is like a bar code for measurements and reports

WE DO MEASUREMENTS

photo via puuikibeach

Laboratory LOINC



Top 10 Lab Domain Overview

Microbiology	10,700
Chemistry	9,200
Drug/Toxicology	7,200
Allergy	3,900
Chemistry - Challenge	3,700
Serology	2,500
Hematology	2,100
Antibiotic Susceptibilities	1,700
Cell Markers	1,500
Molecular Pathology(genetics)	1,644

Journal of the American Medical Informatics Association Advance Access published February 5, 2015

Deckard J, et al. J Am Med Inform Assoc 2015;0:1–7. doi:10.1093/jamia/ocu012, Perspective

Supporting interoperability of genetic data with LOINC

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REVISED 17 September 2014
ACCEPTED 24 October 2014

Jamalynne Deckard[1], Clement J McDonald[2], Daniel J Vreeman[1,3]

ABSTRACT

Electronic reporting of genetic testing results is increasing, but they are often represented in diverse formats and naming conventions. Logical Observation Identifiers Names and Codes (LOINC) is a vocabulary standard that provides universal identifiers for laboratory tests and clinical observations. In genetics, LOINC provides codes to improve interoperability in the midst of reporting style transition, including codes for cytogenetic or mutation analysis tests, specific chromosomal alteration or mutation testing, and fully structured discrete genetic test reporting. LOINC terms follow the recommendations and nomenclature of other standards such as the Human Genome Organization Gene Nomenclature Committee's terminology for gene names. In addition to the narrative text they report now, we recommend that laboratories always report as discrete variables chromosome analysis results, genetic variation(s) found, and genetic variation(s) tested for. By adopting and implementing data standards like LOINC, information systems can help care providers and researchers unlock the potential of genetic information for delivering more personalized care.

Key words: Genetics, LOINC, Medical records systems, Clinical laboratory information systems, Vocabulary, controlled

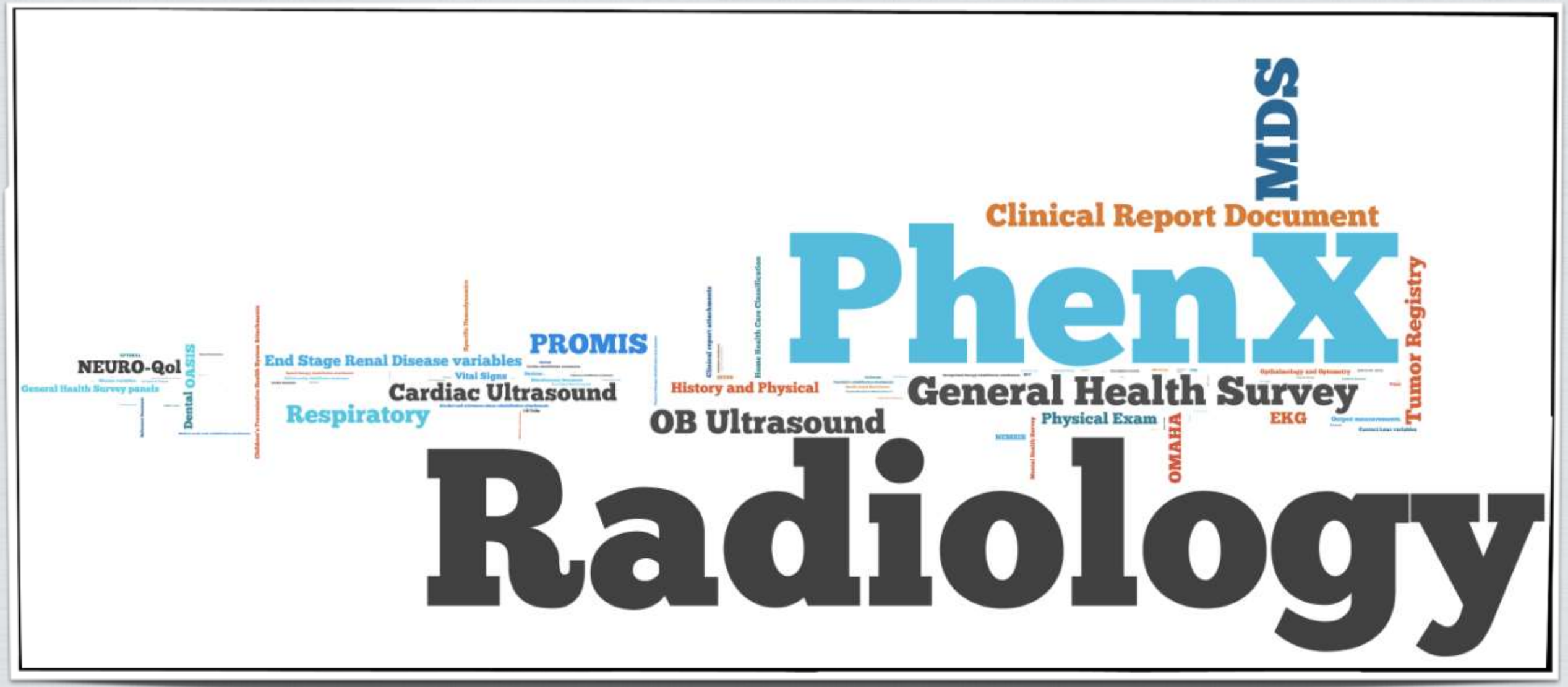
PERSPECTIVE

INTRODUCTION

Strong arguments exist for delivering molecular genetic test results to electronic health records (EHRs) as standards-based, structured (computable) electronic reports for clinical and research purposes.[1–4] The fact that most genetic tests apply for a lifetime and may have to be automatically reinterpreted as new knowledge becomes available[3] only strengthens these arguments. Laboratory test reporting is facilitated by standard terminologies for test names and their associated answer lists, panels of individual observations, other details like help text, and units of measure.[15] New versions of the standard are published twice yearly. LOINC has been widely adopted as the standard for laboratory test result names in the United States, where it is a national standard,[16,17] and internationally.[18,19] Many genetic test reporting initiatives,[20,21] including the HL7 Clinical Genomics Working Group,[22,23] have

Deckard J, McDonald CJ, Vreeman DJ. Supporting interoperability of genetic data with LOINC. J Am Med Inform Assoc. 2015 Feb 5. PMID: 25656513.

Clinical LOINC



If an observation is a question and the observation value is an answer…

LOINC provides codes for questions

LOINC also provides codes for answers in some cases, but other vocabularies esp. SNOMED CT are preferred in many cases

What is my patient’ s hemoglobin level?

718-7:Hemoglobin:MCnc:Pt:Bld:Qn

How fast does my patient usually walk?

41959-8:Walking speed:Vel:1W^mean:^Patient:Qn:Calculated

photo via Ed Yourdon

Indiana Network for Patient Care

HL7 v2.x Message

LocalCode^LocalName^CodeSystem^LOINCcode^LOINCname^CodeSystem

```
MSH|^~\&|HOSPITAL_A|SAMPLE_HOSPITAL_A|||$YearMonthDay||||||||||||||||
PID|||$patientId$||$patientName$|||||||||||||||||||||||
PV1|||||||||$attendingDoctor$||$consultingDoctor$|||||||||
OBR|1|||012^CBC/Auto Diff^HSPA^57021-8^CBC W Auto Diff^LN||$regDate|||||||||
OBX|2|NM|123^WBC^HSP_A^26464-8^Leukocytes [#/volume] in Blood^LN|10.8|K/MM3|||||F|
OBX|3|NM|234^RBC^HSP_A^26453-1^Erythrocytes [#/volume] in Blood^LN||4.82|MIL/MM3|||||F|
OBX|4|NM|345^HGB^HSP_A^718-7^Hemoglobin [Mass/volume] in Blood^LN||15.7|GM/DL|||||F|
OBX|5|NM|456^HCT^HSP_A^20570-8^Hematocrit [Volume Fraction] of Blood^LN||45|%|||||||F|
```

Covers much more than laboratory test results

Codes for many other kinds of clinical content in LOINC

- Radiology studies – 5,165 LOINC terms
  - Partnership with Radiologic Society of North America and RadLex
- Ophthalmology/Optometry measurements and studies now > 700 terms , 250 more coming through partnership with US National Eye Institute
- Cardiac Echo terms – partnership with American and Japanese Society of Echocardiography- Partial release in December

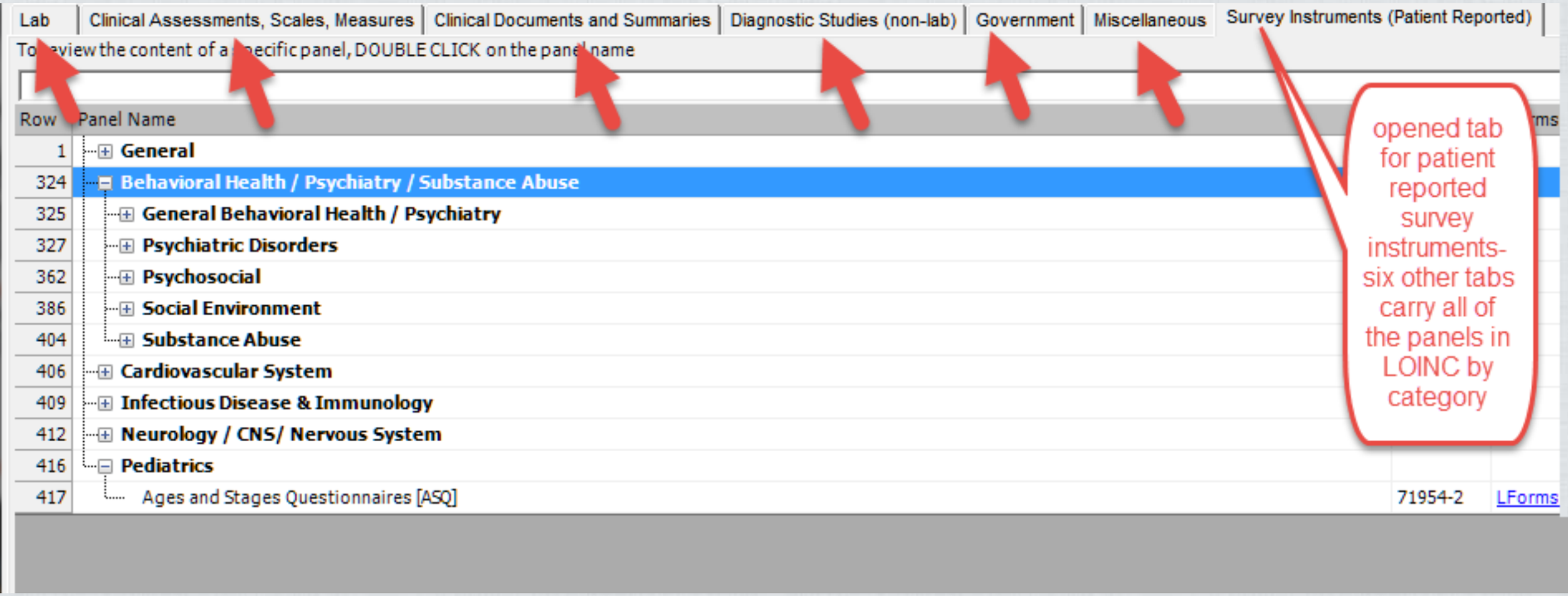
Other content more

- Device outputs
  - MOU with IEEE
    - More than 600 Variables for anesthesia and ventilator machines, settings and measures out in December mapped to IEEE codes
      - Agreement covers home devices and more – expect in June release
- Survey instruments/ questionnaires – more than 6000 individual items over 700 different survey panels, including PROMIS, PHQ, lots of US government forms for home health care, nursing homes, dialysis.

Survey instruments

- Can find them all in Relma under FILE - >

Review Panels, Forms and Surveys



Financial Support

Many sources

AHCPR, ASPE, CDC, CHCF, CMS, Hartford Foundation, IN CTSA, Regenstrief Foundation*, Regenstrief Institute, NCRR, NIBIB*, NLM*, LOINC User Community*

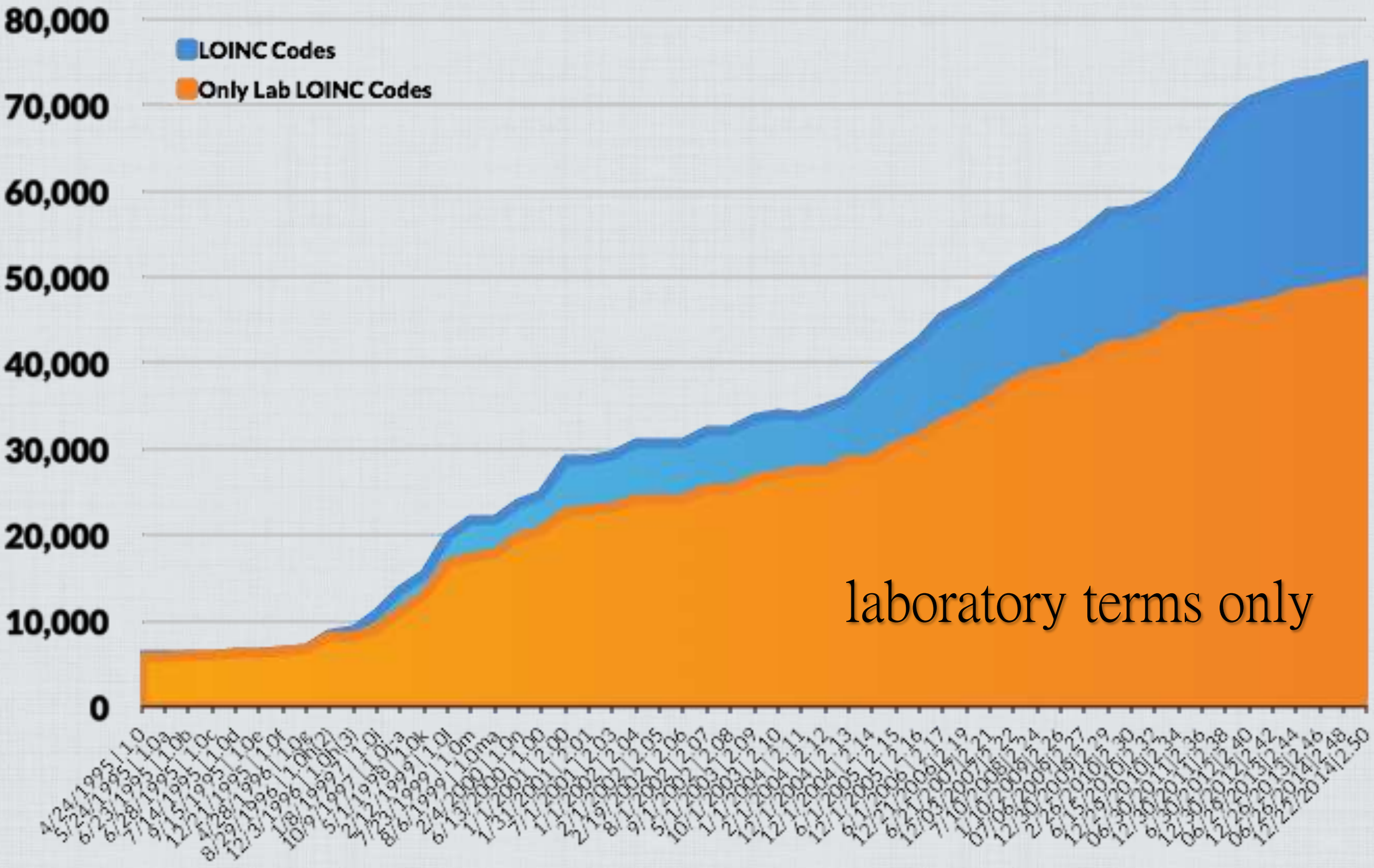
*active now

Today, the U.S. National Library of Medicine (NLM) accounts for about 2/3 of our funding.

Major releases twice per year (June and December)

photo via striatic

LOINC Codes Over Time by Release



LOINC information per term

One Record Per Term

Long Common Name	Cholesterol in LDL [Mass/volume] in Serum or Plasma by Direct assay
Short Name	LDLc SerPl Direct Assay-mCnc
Class Type	Lab
Class	Chem
Example Units (local)	mg/dL
Example Units	mg/dL
Order/Obs	Both

Per term

- Terms have structure
  - Term links to parts- 6 main parts and up to 13 parts total
- Parts have synonyms that link to the term
- Parts or terms can have translations
- Numeric terms have UCUM units
  - http://unitsofmeasure.org/trac
  - UCUM is also from Regenstrief (by Gunther Schadow MD)
- Categorical terms have answer lists – which have LOINC answer codes, universal codes (such as SNOMED CT).
- Individual terms have links to the panels in which they are members

Term/part have descriptions that provide encyclopedic info

Cells.HPV E6+E7 mRNA/cells [Presence] in Cervix by Flow cytometry (FC)

Most human papilloma virus (HPV) genomes encode for eight major proteins, six "early" (E1, E2, E3, E4, E6, and E7) and two "late" (L1 and L2). The "early" are regulatory in function. E6 and E7 genes in high-risk HPV genotypes are known as oncogenes because of their continuous expression, which leads to disruption of cell-cycle check points and cell genome instability through alteration of cellular p53 and retinoblastoma protein functions. This test identifies cervical cells containing HPV E6 and E7 polycistronic mRNA using in situ hybridization with oligonucleotides specific for the mRNA transcripts. The cells remain intact, and following fixation and permeabilization, the probes enter the cells. The flow cytometer measures two things: 1. Quantification of E6 and E7 mRNA in each cell and 2. The percentage of cells over-expressing E6 and E7 mRNA.

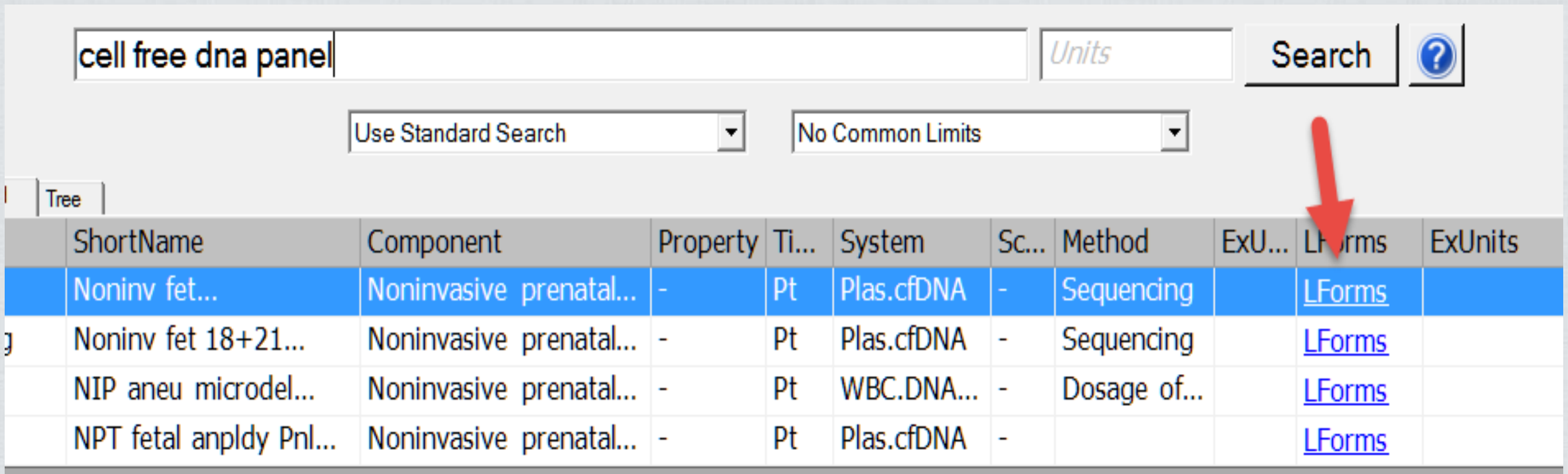
LOINC Panels & Forms

LOINC panels/forms

- Panels are LOINC terms (with LOINC IDs) that can contain multiple child terms
- Panels can be nested
- Panels have many special attributes contained in the relationship table that connects terms with panels
- Can pull this from LOINC Panels and forms
  - https://loinc.org/downloads/accessory-files

LOINC panels/forms

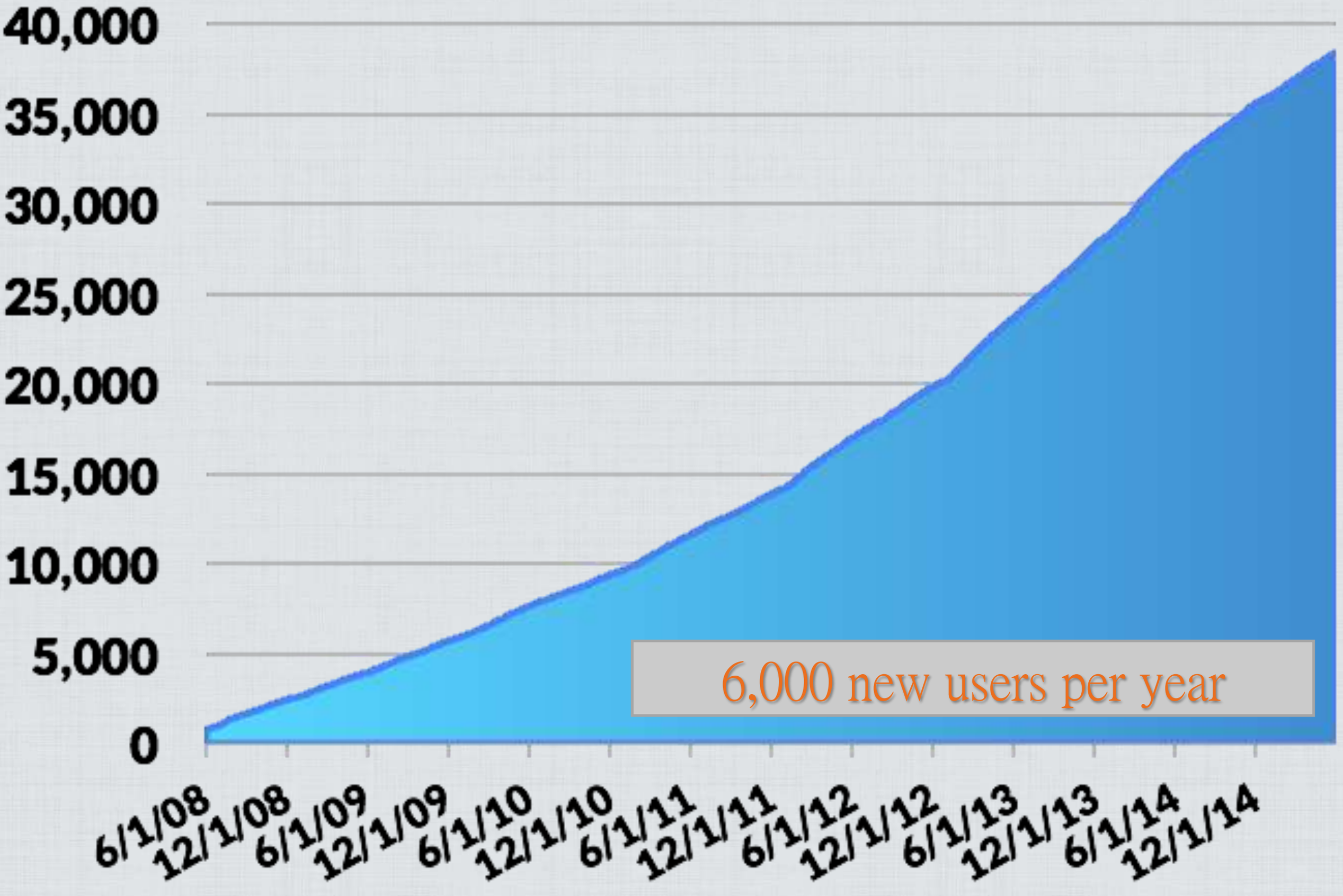
- Panels are also executable forms
  - Via a JSON structure
- Terms in forms can have defaults, calculations, skip logic, required and other special statuses.
- To generate an input from from a panel, click on "L-forms"



World Wide use

40,730+ registered users in 170 countries

loinc.org registered users



A universal code system for tests, measurements, and observations.

More than 35,000 people in 163 countries use LOINC to make bridges across their islands of health data.

It's free, but invaluable.

Start fast with the free Quick Start Guide

Get instant access to the official LOINC Quick Start Guide for free.
Plus, we'll send you notices of new versions, new resources, other key news.

Ready to learn more?

Watch the Introduction to LOINC class online

Faculty: Daniel J. Vreeman, PT, DPT, MSc
Runtime: 71 mins

Get LOINC

Download LOINC and the RELMA Mapping program for free.

loinc.org/downloads

Explore LOINC

Search the latest version of LOINC right from your browser.

search.loinc.org

Go Premium

Get an extra check on your mappings. Support a noble cause.

members.loinc.org

RELMA now lets you tap the wisdom of the crowd. Read how here.

Public Laboratory LOINC Workshop & Committee Meeting 06/03/2015-06/04/2015
Public Clinical LOINC Tutorial & Committee Meeting 08/12/15 - 08/14/15

Current Versions

LOINC 2.50
Released: 2014-12-22

RELMA 6.8
Released: 2014-12-22

Download

Mailing List

Keep up to date with LOINC

Get notices of new releases and our free LOINC Quick Start eBook bonus.

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LOINC @LOINC 29 May
Great interview of @smatney59 who chairs the Clinical LOINC Nursing Subcommittee. Yea Susan! #nurses4hit allianceni.org/documents/ANII...
Expand

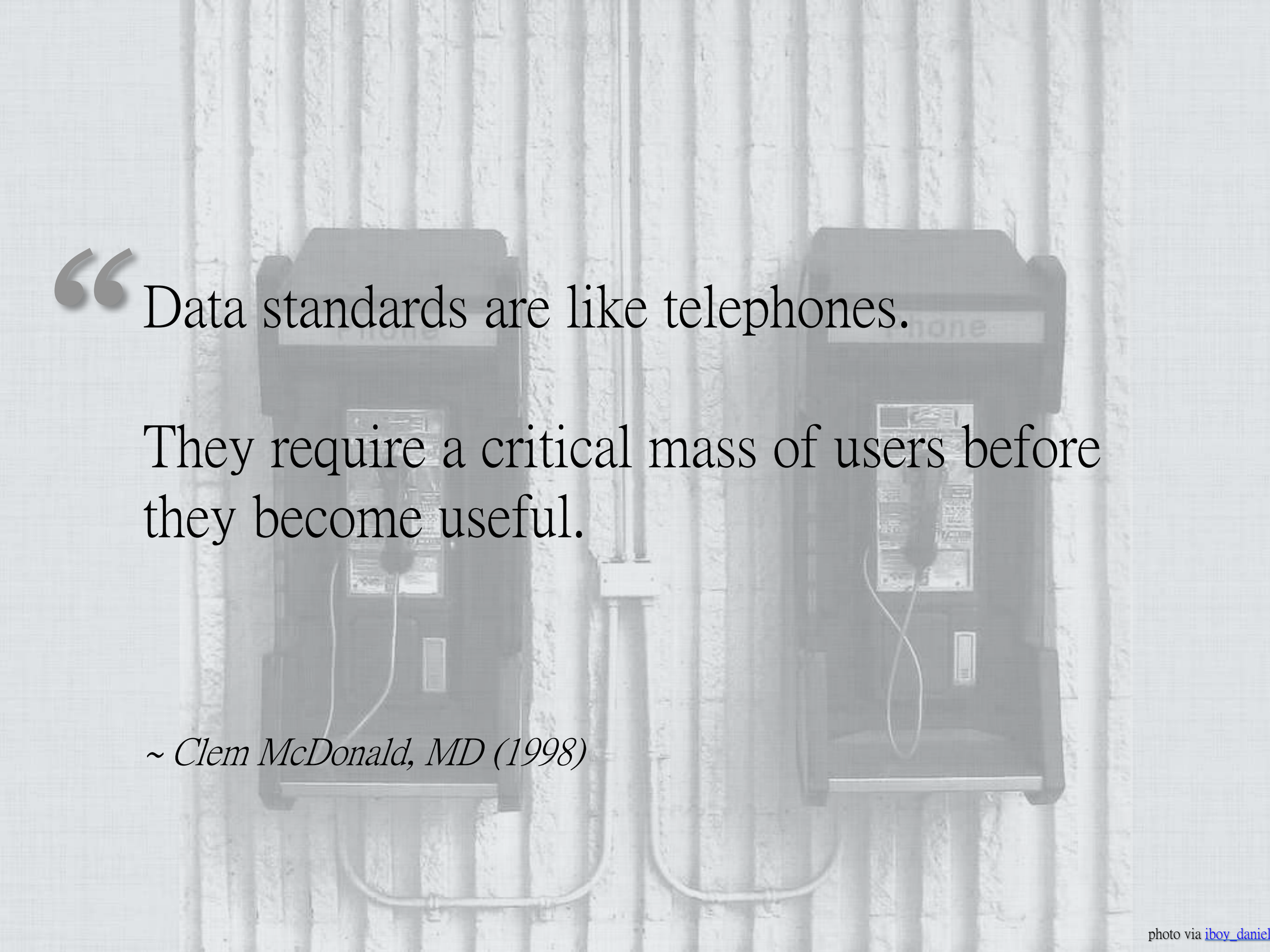
LOINC 19 May

Recent Forum Posts

Reply To: 75219-6 Summary registry report

75219-6 Summary registry report

More posts...



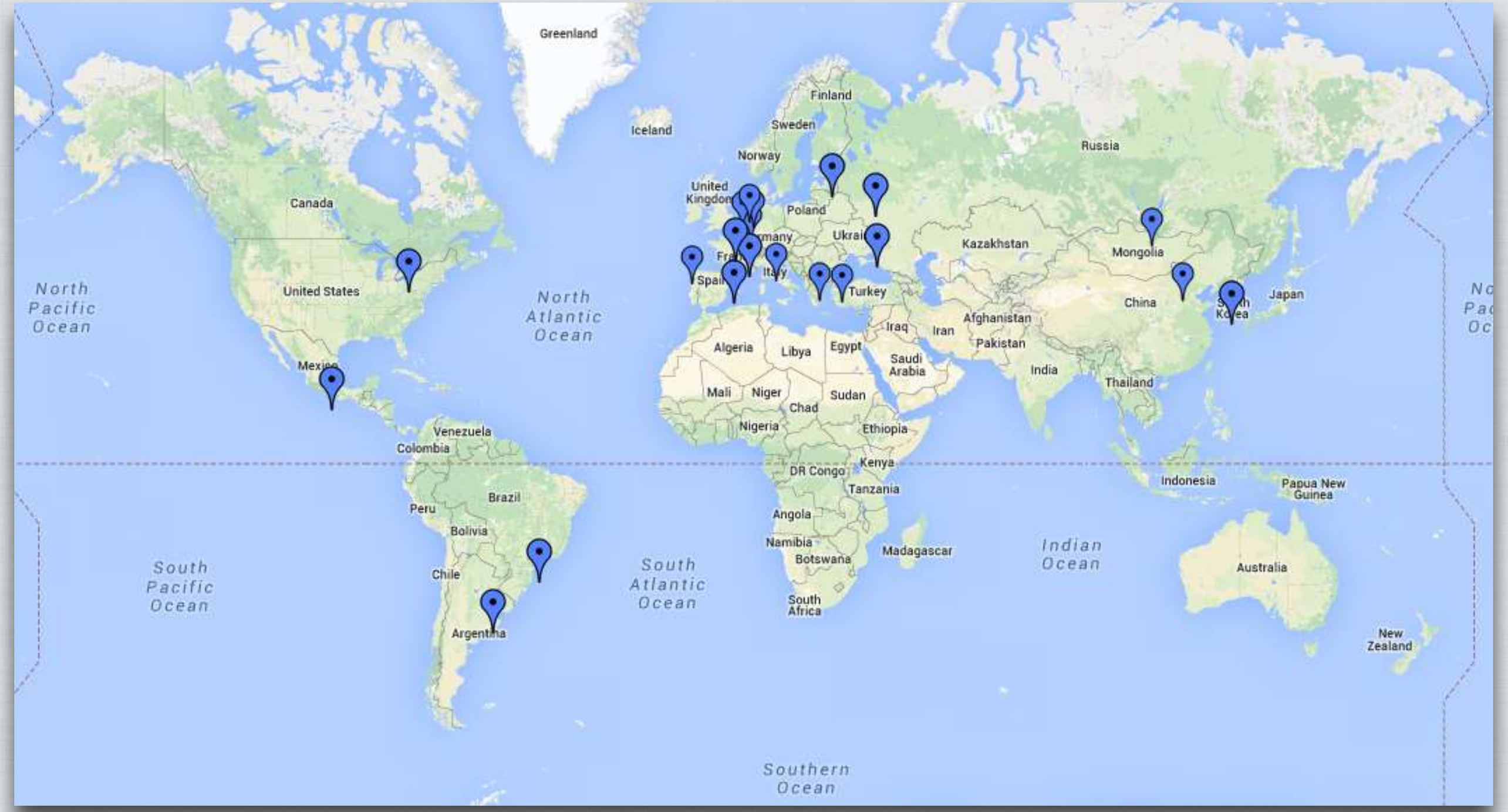
> Data standards are like telephones.
>
> They require a critical mass of users before they become useful.

~ Clem McDonald, MD (1998)

photo via iboy_daniel

LOINC languages and international use

LOINC Translators



22 organizations.
Currently translations into 18 variants of 12 languages

Languages

Available Linguistic Variants

- Chinese (China)
- Estonian (Estonia)
- English (United States) - *Official Distribution*
- French (Canada)
- French (France)
- French (Switzerland)
- German (Germany)
- German (Switzerland)
- Greek (Greece)
- Italian (Italy)
- Italian (Switzerland)
- Korean (Korea, Republic of)
- Portuguese (Brazil) - *Draft*
- Russian (Russian Federation)
- Spanish (Argentina)
- Spanish (Mexico)
- Spanish (Spain)
- Turkish (Turkey)

Capabilities

Display	Searchable	Documentation	Other Resources
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓		
✓	✓	✓	
✓			
✓	✓	✓	✓
✓			
✓			
✓	✓		
✓	✓		
		✓	✓
✓	✓		
✓	✓	✓	

How do you say glucose?

Glucose 葡萄糖 Glucose Glükoos Glucose Glucose Glukose Γλυκόζη

LOINC

the clinical data exchange **lingua franca**

Glucosio 포도당 Glicose Глюкоза Glucosa Glucosa Glucosa Glukoz

Countries where Lab and/or other portions of LOINC adopted as National Standard :

Australia
Austria
Belgium
Brazil
Canada
Cyprus
Estonia
Finland
France
Germany
Iceland
India
Malaysia
Mexico
Mongolia
The Netherlands
New Zealand
Philippines
Portugal
Qatar
Rwanda
Saudi Arabia
Slovakia
Slovenia
Spain
Thailand
Turkey
United States

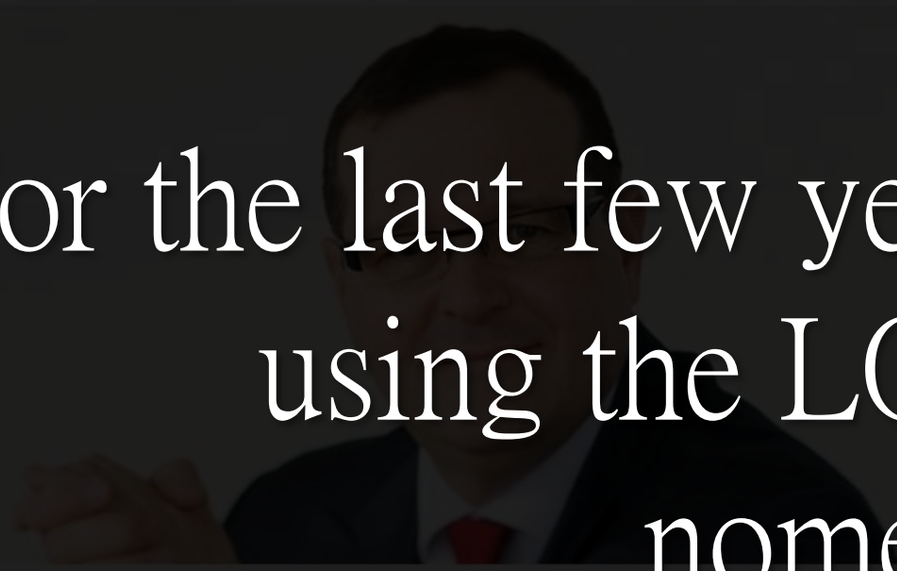
Large international Implementations

SIGA Saúde project
7+ Provincial systems in Canada
8+ Regional Health Information Exchanges in Spain
ePSOS
Assistance publique - Hôpitaux de Paris
Hong Kong Hospital Authority
Philippine Health Insurance Corporation
InFSE Project in 5 regions in Italy (LOINC Italia)

Many more...

Publié le *07-02-2011* (http://esante.gouv.fr)

Accueil > Interopérabilité en biologie : le cadre technique et fonctionnel est posé



For the last few years, the AP-HP has been using the LOINC international nomenclature…

Interopérabilité en biologie : le cadre technique et fonctionnel est posé

Thanks to this catalogue, the AP-HP is able to use the nomenclature in its treatment processes, whenever biology analyses and test results are requested.

Par Jean-François TANGUY, Directeur du pôle référentiels, architecture et sécurité de l'ASIP Santé et par le Professeur Eric LEPAGE, Directeur du Centre de Compétences et de Services Système d'Information Patient (CCS SI Patient) de l'Assistance Publique Hôpitaux de Paris (AP-HP).

En France, plusieurs années d'échanges et de concertations entre professionnels de santé, industriels et pouvoirs publics ont été nécessaires pour que la dématérialisation des données de santé et de leur échange soit désormais une réalité. Avec la création de l'ASIP Santé en 2009, dotée de missions spécifiques pour consolider l'interopérabilité des systèmes d'information dans le secteur de la santé, une impulsion nouvelle aux travaux entrepris par les différents acteurs du secteur a été donnée.

Parallèlement, et au titre de ses missions de promotion du développement et de l'évolution des logiciels de laboratoires d'analyses médicales, la SFIL[2] a réalisé une traduction en français des analyses du référentiel LOINC le plus couramment utilisé en France.

A la fin de l'année 2009, sous l'égide de l' ASIP Santé, l'AP-HP et la SFIL ont pris la décision de fusionner leurs traductions afin de produire le document LOINC de référence en français pour l'expression des résultats de biologie [3] . Ce référentiel est désormais partie intégrante du Cadre d'Interopérabilité des Systèmes d'Information de santé (CI-SIS) approuvé par les industriels en octobre 2009 et publié par l'ASIP Santé dans le Répertoire National des Référentiels (RNR). L'intégration à ce référentiel de l'ensemble de la traduction des libellés LOINC est en cours.

Parallèlement, l'AP-HP et la SFIL ont chacune apporté leur contribution directe à l'élaboration par l'ASIP Santé du modèle HL7 CDA de compte rendu électronique de biologie, puis à l'approbation aux côtés des industriels en avril 2010, de ce modèle, disponible depuis lors dans le CI-SIS.

Grâce à ces deux référentiels - LOINC et modèle de compte rendu CDA - les résultats de biologie peuvent désormais être échangés entre professionnels de santé, et partagés dans le DMP - dossier médical personnel, dont le service national a été ouvert le 5 janvier 2011- dans une forme et une sémantique univoques, dotant le médecin qui reçoit ou consulte ces résultats de la

Implementation and management of a biomedical observation dictionary in a large healthcare information system

Pierre-Yves Vandenbussche,[1,2] Sylvie Cormont,[3] Christophe André,[3] Christel Daniel,[3] Jean Delahousse,[1] Jean Charlet,[2] Eric Lepage[3,4]

▶ Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/amiajnl-2012-001410).

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ABSTRACT

Objective This study shows the evolution of a biomedical observation dictionary within the Assistance Publique Hôpitaux Paris (AP-HP), the largest European university hospital group. The different steps are detailed as follows: the dictionary creation, the mapping to logical observation identifier names and codes (LOINC), the integration into a multiterminological management platform and, finally, the implementation in the health information system.

Methods AP-HP decided to create a biomedical observation dictionary named AnaBio, to map it to LOINC and to maintain the mapping. A management platform based on methods used for knowledge engineering has been put in place. It aims at integrating AnaBio within the health information system and [illegible]

Results This new management platform is now active in AP-HP. The AnaBio dictionary is shared by 120 laboratories and currently includes 50 000 codes. The mapping implementation to LOINC reaches 40% of the AnaBio entries and uses 26% of LOINC records. The results of our work validate the choice made to develop a local dictionary aligned with LOINC.

Discussion and Conclusions This work constitutes a first step towards a wider use of the platform. The next step will support the entire biomedical production chain, from the clinician prescription, through laboratory tests tracking in the laboratory information system to the communication of results and the use for decision support and biomedical research. In addition, the increase in the mapping implementation to LOINC ensures the interoperability allowing communication with [illegible]

The results of our work validate the choice made to develop a local dictionary aligned with LOINC.

chain. This dictionary should ideally remain independent of any system constraints and be common to all laboratories.

The biomedical observation dictionary, named AnaBio, is based on previous works (C-NPU,[1] Euclides,[2] Names-Lab,[3] Cumul[4] and logical observation identifier names and codes (LOINC)).[5–7] It consists of all codes and labels for the definition of each observation (the laboratory domain of the international initiative 'integrating the healthcare enterprise', IHE LAB, defines a laboratory test result as an observation that is a measurement of a single variable or a single value derived logically and/or algebraically from other measured or derived values). It standardizes other elements, such as the display label, the edition label, the mne- [illegible] on a terminology shared by as many as possible to secure the communication of the test results to health practitioners, no matter where the practice is located. Considering that LOINC has now the widest international development,[8] AP-HP decided to map its biomedical observation dictionary to LOINC and ensures the maintenance of this mapping. Other hospitals showing a more or less complete mapping to LOINC have also made this choice.[9–11] In addition, the French translation of LOINC labels is part of a cooperative work between the French Society of Laboratory Computing (SFIL) and the AP-HP, promoted by the shared healthcare information system agency (ASIP-Santé: Agence des Systèmes d'Information Partagés de Santé.[12]

Vandenbussche PY, Cormont S, André C, et al. Implementation and management of a biomedical observation dictionary in a large healthcare information system. J Am Med Inform Assoc. 2013 May 1. PMID: 23635601.

PhilHealth Advisory

No. 09-01-2012

PhilHealth to Adopt LOINC in its eClaims System

The Philippine Health Insurance Corporation is adopting the Logical Observations, Identifiers, Names and Codes (LOINC) for use in its electronic claims system. LOINC is produced and managed by the Regenstrief Institute, Indianapolis, Indiana and is used for consistently coding common clinical and laboratory events that occur in the healthcare setting.

LOINC was selected because of its popularity and no-cost licensing. *"Health informatics standards are important building blocks for an integrated national health information system. The earlier we prepare our stakeholders on what these standards are and how to use them, the sooner we will achieve automation and efficiency,"* according to Dr. Alvin Marcelo, Chief Information Officer.

"In our efforts to automate our core processes, we have found the need to use internationally accepted standards for common data elements in our claims system. LOINC is an important standard which we can quickly leverage at no cost to PhilHealth and to hospitals but will dramatically improve our ability to exchange data with each other. This is our first step towards energizing the health informatics community in the country and delighting our stakeholders," says PCEO Dr. Eduardo P. Banzon.

PhilHealth is preparing for the deployment of paperless electronic claims processing system. Releasing these standards are part of the preparations for eClaims with the objective of paying Health Care Providers faster.

LOINC can be downloaded for free at www.loinc.org. Another free software, RELMA, helps users browse the LOINC database.

DR. EDUARDO P. BANZON
President and CEO

RECOMMENDED HEALTHCARE IT STANDARDS (FOR INDIA)

Name	Class	Comments
Phase 1		
UHID	Unique Health Identifier – to act as Patient Identifier	UID as a unique (primary or secondary) patient identifier. The UID should be used to identify a particular patient across all organizations (and their EMR systems); Aadhar number is recommended for use in EMR as either the primary or secondary, where the primary is an internal unique health identifier used by the healthcare provider organisation.
CCD (HL7/ASTM)	Clinical Data for Inter Department documents (the CDA CCD)	Likely to be used for exchanging the clinical documentation between two EHR solutions both within an organisation and outside
ATC Pharmacologic-Therapeutic Classification Indian Drugs – MIMS/CIMS from CMPmedica	Medicines	Needs to be researched as there is no universal drug reference database. The WHO Drug Dictionary ATC – anatomic therapeutic classification – may be a good choice to begin with
LOINC	Clinical Laboratory Observations	Published and maintained by the Regenstrief Institute, USA, this is a universally accepted code for laboratory observations

5.2. LOINC

LOINC è un sistema di nomi e codici universali che identificano in maniera univoca osservazioni cliniche e di laboratorio al fine di facilitare la condivisione e lo scambio di risultati di indagini diagnostiche fra sistemi elettronici di strutture sanitarie differenti. Il Regenstrief Institute si occupa dell'aggiornamento dello standard terminologico con release semestrali.

La classificazione LOINC adottata per i documenti del FSE è la versione 2.3.4 in lingua italiana.

Il portale www.fascicolosanitario.gov.it nasce per la presentazione e il monitoraggio dei piani di progetto regionali per la realizzazione del Fascicolo Sanitario Elettronico (FSE). Il comma 15-bis dell'art. 12 del decreto legge 18 ottobre 2012, n. 179, recante "Ulteriori misure urgenti per la crescita del Paese", convertito, con modificazioni, dalla legge 17 dicembre 2012, n. 221, stabilisce, infatti, che le regioni e le province autonome debbano presentare, entro il **30 giugno 2014**, il piano di progetto per la realizzazione del FSE, redatto sulla base delle linee guida rese disponibili dall'**Agenzia per l'Italia Digitale** e dal **Ministero della Salute**, entro il **31 marzo 2014**.

Dal portale è possibile scaricare le Linee guida per la presentazione dei piani di progetto regionali per la realizzazione del fascicolo sanitario elettronico, come risultato del lavoro congiunto svolto dal Tavolo tecnico, coordinato dall'Agenzia per l'Italia Digitale e dal Ministero della salute, nel quale sono stati coinvolti attivamente i rappresentanti delle Regioni, del Ministero dell'economia e delle finanze e il CNR, per analizzare gli aspetti tecnici, normativi e procedurali e disegnare gli scenari di riferimento nella progettazione dell'intervento.

المجلس الأعلى للصحة
Supreme Council Of Health

دولة قطر
State Of Qatar

مكتب مساعد الأمين العام لشؤون السياسات
Office of Assistant Sec. General for Policy Affairs

Ref. : A G P A / 6 / 2015
Date : 11 February 2015

Circular

To: All Licensed Healthcare Providers

Subject : Implementation of Logical Observation Identifiers Names and Codes (LOINC) as the national standardized laboratory coding system

Dear respected Health Care Providers,

The purpose of this circular letter is to clarify matters related to the implementation of LOINC. The use and implementation of LOINC as the national standardized laboratory coding system was mandated by the Qatar National Clinical Coding Committee (QNCCC) as of 24 November 2014. As such, health care providers are obliged to implement LOINC as the national standardized laboratory coding system in the State of Qatar. Technical implementation and operational details will be reviewed subsequently as the SEHA implementation progresses.

Please refer to subsequent circular from NHIC regarding compliance dates.

For any further enquiries, please email us at infoshi@sch.gov.qa.

Sincerely yours,

Dr. Faleh Mohamed Hussain Ali
Assistant Secretary General for Policy Affairs
Chair of Qatar National Clinical Coding Committee

Adoption by instrument vendors and other organizations

Other Key Adoptions

Many "big" US Referral labs –

Quest, Lab Corp, Mayo medical Laboratories, ARUP, etc.

All health-related federal agencies in USA

Lots of care organizations

Geisinger, Partners of Boston, IU Health, etc.

Health Insurance companies

United Health Care,

International Laboratory Instrument Manufacturers

Abbott , Siemens, Roche, Biomerieux, Sysmex, Etc.

i-STAT® TECHNICAL BULLETIN

LOINC® CODING FOR i-STAT® TESTS

OVERVIEW

LOINC® coding is a universal standard coding system for laboratory and clinical observations. It is the key to interoperability and analysis of clinical results/observations for evidence-based outcomes measurement. Standard terms are used for both observations and measurements, allowing an efficient exchange and aggregation of electronic health data across independent and disparate systems, making LOINC the preferred code set for electronic exchange among health care facilities, laboratories and public health agencies.

ASSIGNMENT OF CODES

In response to customer requests for LOINC codes related to i-STAT® test components, Abbott Point of Care reviewed the information in the LOINC coding data base and identified LOINC codes expected to be suitable for each i-STAT analyte. The code(s) that Abbott Point of Care is recommending is based on the LOINC Long Test Name and has been evaluated with the other parameters for each given code as described in the LOINC data base.

Each LOINC code presented here provides the following information:

- Analyte
- System/sample type
- Property measured
- Units of measure

The codes provided in this bulletin are intended as a recommended guideline for customers when assigning LOINC codes to their laboratory test menu and compendia and are not intended to be definitive codes. Customers are responsible for reviewing the information presented here and determining if a different code may be more appropriate for their laboratory needs.

To confirm appropriate laboratory coding, the LOINC coding data base is available free of charge through the Regenstrief LOINC website, www.loinc.org. For more information on LOINC coding, please refer to the *Logical Observation Identifiers Names and Codes (LOINC®) Users' Guide* at http://loinc.org/downloads/files/LOINCManual.pdf.

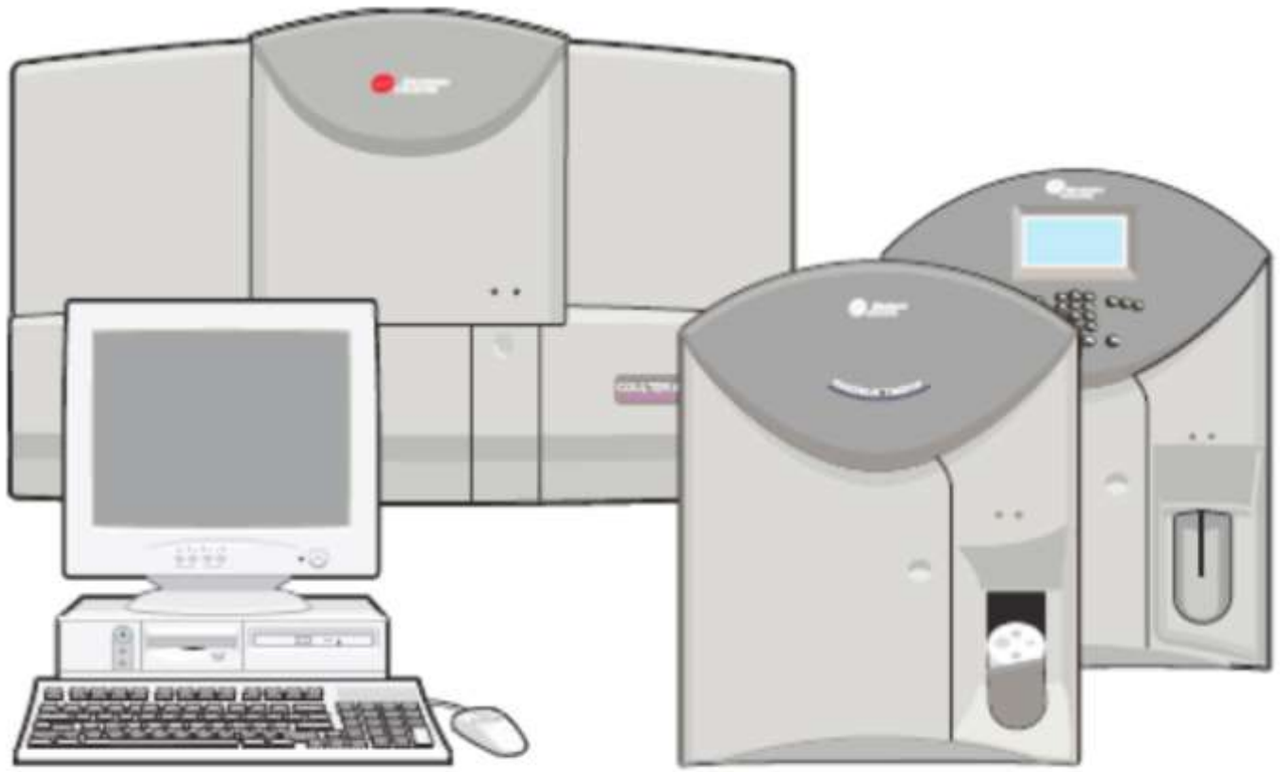
LOINC®, Logical Observation Identifiers Names and Codes, is a registered United States trademark of Regenstrief Institute, Inc.
i-STAT® is a registered trademark of the Abbott Group of Companies in various jurisdictions.

Abbott Point of Care

Abbott Point of Care Inc. • Abbott Park, IL 60064 • USA
Art: 730776-00A Rev. Date: 21-Feb-13

COULTER® A^{C}•T™ 5diff Hematology Analyzer
COULTER® A^{C}•T™ 5diff CP Hematology Analyzer
COULTER® A^{C}•T™ 5diff AL Hematology Analyzer

Host Transmission Specification



PN 4277065EA (June 2010)

Manufactured for
Beckman Coulter, Inc.
250 S. Kraemer Blvd.
Brea, CA 92821

BECKMAN COULTER

Terminator Record

See Table 5.39.

Table 5.39 Terminator Record Fields (Upload): ASTM Format on AL

ASTM Field	Definition	Data Transmitted	Number of Bytes
13.1.1	Record Type	L	1
13.1.2	Sequence Number	1	1
13.1.3	Termination Code	N = normal	1

Test Identification

See Table 5.40.

Table 5.40 Test Identification Fields

Parameter	Units	LOINC Identifier	nglish Test Code
White Blood Cell Count	US format	804-5	VBC
Lymphocytes	US format	731-0	YM#
	US format	736-9	YM%
Monocytes	US format	742-7	MON#
	US format	744-3	MON%
Neutrophils	US format	751-8	NEU#
	US format	770-8	NEU%
Eosinophils	US format	711-2	OS#
	US format	713-8	OS%
Basophils	US format	704-7	AS#
	US format	706-2	AS%
Atypical Lymphocytes	US format	733-6	TL#
	US format	735-1	TL%
Large Immature Cells	US format	X-LIC	MM#
	US format	11117-9	MM%
Red Blood Cell Count	US format	789-9	BC
Hemoglobin	US format	717-9	GB
Hematocrit	US format	4544-3	CT
Mean Cell Volume	US format	787-2	CV
Mean Cell Hemoglobin	US format	785-6	CH
Mean Cell Hemoglobin Concentration	US format	786-4	CHC
Red Cell Distribution Width	US format	788-0	DW
Platelet Count	US format	777-3	LT
Mean Platelet Volume	US format	776-5	PV
Plateletcrit	US format	X-PCT	CT

PN 4277065EA

Go Upstream

Ask your IVD vendor which LOINC codes to use for each of their test results Ask lab system to send you the LOINC code along with their test code.

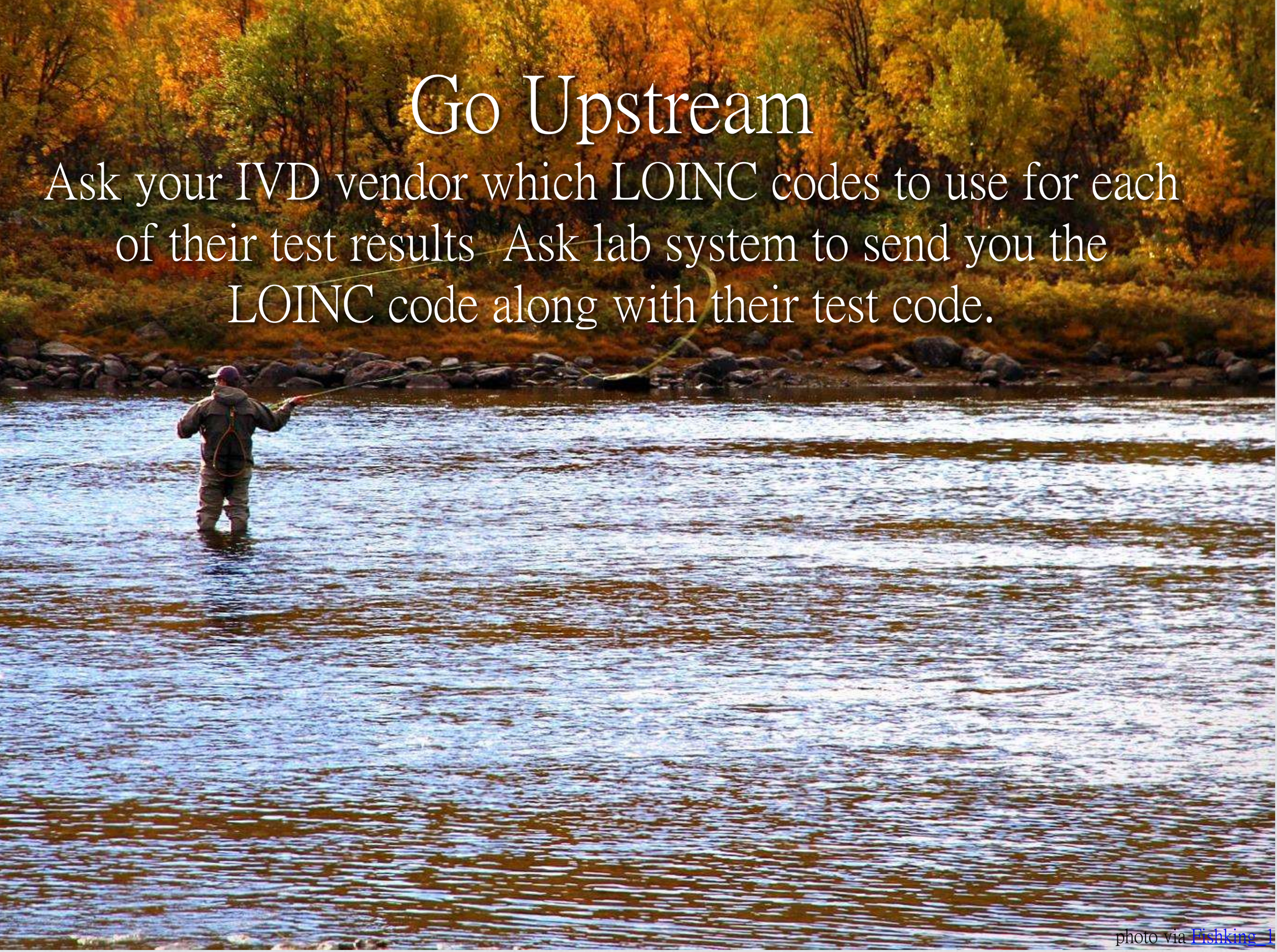


photo via Fishking_1

In USA, major driver of
eHealth standards adoption is

EHR Incentive Program

a.k.a. “Meaningful Use”

Blumenthal D, Tavenner M. The "meaningful use" regulation for electronic health records. N Engl J Med. 2010 Aug 5;363(6):501-4. Epub 2010 Jul 13. PubMed PMID: 20647183.

LOINC and UCUM ties to other standards

Both deep in HL7 standards

V2 and CDA

Lab reporting to EHRs But…

V251_IG_SIF_LABRESULTS_DSTUR1_2012JUL

HL7 VERSION 2.5.1 IMPLEMENTATION GUIDE:
S&I FRAMEWORK LAB RESULTS INTERFACE,
RELEASE 1 – US REALM

[HL7 Version 2.5.1: ORU^R01]

DRAFT STANDARD FOR TRIAL USE

July 2012

Publication of this draft standard for trial use and comment has been approved by Health Level Seven International (HL7). This draft standard is not an accredited American National Standard. The comment period for use of this draft standard shall end 24 months from the date of publication. Suggestions for revision should be submitted at http://www.hl7.org/dstucomments/index.cfm.

Following this 24 month evaluation period, this draft standard, revised as necessary, will be submitted to a normative ballot in preparation for approval by ANSI as an American National Standard. Implementations of this draft standard shall be viable throughout the normative ballot process and for up to six months after publication of the relevant normative standard.

TABLE 3-13. OBSERVATION RESULT SEGMENT (OBX)

SEQ	Element Name	DT	Usage	Cardinality	Value Set	Description/Comments
1	Set ID – OBX	SI	R	[1..1]		For the first repeat of the OBX segment, the sequence number shall be one (1), for the second repeat, the sequence number shall be two (2), etc.
2	Value Type	ID	C(R/X)	[0..1]	HL70125 (constrained)	Condition Predicate: If OBX-5 (Observation Value) is valued This field identifies the data type used for OBX-5.
3	Observation Identifier	CWE_CR	R	[1..1]	Logical Observation Identification Name and Codes (LOINC)	LOINC shall be used as the standard coding system for this field if an appropriate LOINC code exists. Appropriate status is defined in the LOINC Manual Section 11.2 Classification of LOINC Term Status. If a local coding system is in use, a local code should also be sent to help with identification of coding issues. When no valid LOINC exists the local code may be the only code sent. When populating this field with values, this guide does not give preference to the triplet in which the standard (LOINC) code should appear.
4	Observation Sub-ID	ST	C(R/RE)	[0..1]		Condition Predicate: If there are multiple OBX segments associated with the same OBR segment that have the same OBX-3 values for (OBX-3.1 and OBX-3.3) or (OBX-3.4 and OBX-3.6).
5	Observation Value	Varies	RE	[0..1]		**Note:** If value is coded, ST should not be used See Section 4.2 SNOMED CT for guidance on how to value this field for Microbiology.

HL7 VERSION 2.5.1 IMPLEMENTATION GUIDE: S&I FRAMEWORK LABORATORY ORDERS FROM EHR, DSTU RELEASE 2 – US REALM

[HL7 Version 2.5.1: OML^O21]

DSTU BALLOT

September 2014

Sponsored by:
Orders and Observations Work Group
in collaboration with the Health and Human Services Standards and Interoperability Framework Laboratory Orders Interface Working Group

5.5.11 OBR – OBSERVATION REQUEST SEGMENT

TABLE 5-18. OBSERVATION REQUEST SEGMENT (OBR)

SEQ	Element Name	DT	Usage	Cardinality	Value Set	Description/Comments
1	Set ID - OBR	SI	R	[1..1]		For the first occurrence of the OBR segment, the Sequence number shall be one (1), for the second occurrence, the Sequence number shall be two (2), etc.
2	Placer Order Number	Varies	R	[1..1]		GU Data Type: EI_GU NG Data Type: EI_NG
3	Filler Order Number	Varies	RE	[0..1]		GU Data Type: EI_GU NG Data Type: EI_NG
4	Universal Service Identifier	CWE_CR	R	[1..1]	LOINC	LOINC shall be used as the standard vocabulary to identify the ordered test in OBR-4 (Universal Service Identifier) when an applicable LOINC code is available and provided by the laboratory. When no valid orderable LOINC code exists, the local code may be the only code sent.
5	Priority – OBR		X			Excluded for this Implementation Guide, see Section 2.3.1.
6	Requested Date/Time		X			Excluded for this Implementation Guide, see Section 2.3.1.
7	Observation Date/Time	TS_5	RE	[0..1]		This reflects the specimen collection date/time when the test involves a specimen. Since a test may also involve drawing specimens at different times, e.g., tolerance tests, this date/time only covers the draw of the first specimen. All other specimen collection date/times, including the first one, are communicated in the SPM segment.

HL7 Version 2.5.1 Implementation Guide: S&I Framework Laboratory Test Compendium Framework R2, DSTU Release 2 - US Realm

Also referred to as eDOS (Electronic Directory Of Service)

HL7 Draft Standard for Trial Use Ballot

January 2015

Sponsored by:

Orders and Observations Work Group

in collaboration with the Health and Human Services Standards and Interoperability Framework Laboratory Orders Interface Working Group

eDOS Work Group Co-chair:	Freida Hall, Quest Diagnostics
eDOS Work Group Co-chair:	Mark Jones, Orchard Software
LOI Work Group Co-Chair	Hans Buitendijk, Siemens Healthcare
LOI Work Group Co-Chair	Ken McCaslin, Quest Diagnostics
LOI Vocabulary Work Group Co-chair:	Cindy Johns, LabCorp
LOI Vocabulary Work Group Co-chair:	Riki Merrick, iConnect Consulting
LOI Vocabulary Work Group Co-chair	Virginia Sturmfels, Quest Diagnostics

Questions or comments should be directed to the Orders and Observations Workgroup (.ord@lists.hl7.org).

6.1 LOINC

The laboratory's local test code and coding system shall be used to identify the orderable test in its electronic Directory of Services. LOINC shall be used as the standard alternate vocabulary to identify an orderable test. The performing laboratory makes the determination of an applicable LOINC order code. When no applicable LOINC code exists, the local code may be the only code defined in the eDOS.

LOINC Codes may be used for both orders and observations and are applicable in the following fields:

- OM1-2 - Producer's Service/Test/Observation ID
- OM1-7 - Other Service/Test/Observation IDs for the Observation
- OM1-31 - Observations Required to Interpret the Observation (Ask at Order Entry)
- OM5-2 - Tests/Observations Included Within an Ordered Test

For further information on LOINC and access to tools, please visit http://loinc.org.

Also DICOM and IEEE

- DICOM uses LOINC codes for radiology ad cardiac echo studies
- IEEE collaborated with LOINC on instrument measure codes
- UCUM is strongly required for all quantitative measures everywhere in HL7, DICOM and IEEE

Federal policy committee says use LOINC for observations

Health IT Policy Committee
A Public Advisory Body on Health Information Technology to the National Coordinator for Health IT

September 9, 2011

Farzad Mostashari, MD, ScM
National Coordinator for Health Information Technology
Department of Health and Human Services
200 Independence Avenue, SW
Washington, DC 20201

Dear Dr. Mostashari:

The HIT Standards Committee's (HITSC) Clinical Quality Measures Workgroup (CQMWG) and Vocabulary Task Force (VTF) jointly developed recommendations on the assignment of code sets to clinical concepts [data elements] for use in quality measures.

The CQMWG and VTF held a series of joint meetings to develop the set of recommendations. This letter transmits the recommendations to the Department of Health and Human Services (HHS) on the assignment of code sets to clinical concepts for use in quality measures. On August 17, 2011, the CQMWG and VTF reported on and discussed their findings with the HITSC, which were subsequently approved as outlined below.

US federal policy committee details

Patient Characteristics

Patient experience

Family history

Functional status

Interventions (that produce an assessment or measured results)

Laboratory tests

Imaging and other diagnostic studies

Physical exam

Patient preference

Risk evaluation

System resources (healthcare resources)

FDA Adoption and Promotion of LOINC

Laboratory instrument vendors to provide the LOINC codes for reporting their instrument (test kit) output

On the pharma side encouraging use of LOINC codes for observations tied to drug research.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2004–N–0451]

Food and Drug Administration Modernization Act of 1997: Modifications to the List of Recognized Standards, Recognition List Number: 038

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is announcing a publication containing modifications the Agency is making to the list of standards FDA recognizes for use in premarket reviews (FDA Recognized consensus standards) and in medical device submissions. A standard may be recognized in whole or in part or in various editions. FDA intends that this publication will assist manufacturers who elect to declare conformity with consensus standards to meet certain requirements for medical devices.

DATES: Submit either electronic or written comments concerning this document at any time. See section VII of this document for the effective date of the recognition of standards announced in this document.

ADDRESSES: An electronic copy of Recognition List Number: 038 is available on the Internet at *http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/Standards/ucm123792.htm*. See section VI of this document for electronic access to the searchable database for the current list of FDA recognized consensus standards, including Recognition List Number: 038 modifications and other standards related information.

Submit written requests for single copies of this document to the Division of Consumer Education, Center for Devices and Radiological Health, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 66, Rm. 4613, Silver Spring, MD 20993–0002. Send one self-addressed adhesive label to assist that office in processing your request, or fax your request to 301–847–8149.

Submit electronic comments on this document to *http://www.regulations.gov*. Submit written comments to the Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852. Identify comments with the docket number found in brackets in the heading of this document.

FOR FURTHER INFORMATION CONTACT: Scott A. Colburn, Center for Devices and Radiological Health, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 66, Rm. 3632, Silver Spring,

TABLE 2—NEW ENTRIES TO THE LIST OF RECOGNIZED STANDARDS—Continued

Recognition No.	Title of standard [1]	Reference No. and date
	J. Software/Informatics	
13–70	Application of risk management for IT-networks incorporating medical devices—Part 2–5: Application guidance—Guidance on distributed alarm systems.	IEC TR 80001–2–5 2014.
13–71	Logical Observation Identifiers Names and Codes (LOINC) ...	LOINC 2.48 2014–06–27.
13–72	Health informatics—Personal health device communication—Part 10425: Device Specialization—Continuous Glucose Monitor (CGM).	IEEE Std 11073–10425–2014.
	K. Sterility	
14–456	Packaging for terminally sterilized medical devices—Guidance on the application of ISO 11607–1 and ISO 11607–2.	ISO/TS 16775 First edition 2014–05–15.

[1] All standard titles in this table conform to the style requirements of the respective organizations.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA-2015-N-1349]

Electronic Study Data Submission; Data Standards; Support for the Logical Observation Identifiers Names and Codes

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice; request for comments.

SUMMARY: The Food and Drug Administration (FDA) is encouraging sponsors and applicants to provide Logical Observation Identifiers Names and Codes (LOINC) codes (available at http://loinc.org/) for clinical laboratory test results in investigational study data provided in regulatory submissions submitted to the Center for Drug Evaluation and Research and to the Center for Biologics Evaluation and Research. LOINC code is defined as electronic messages for laboratory test results and clinical observations. The decision to adopt LOINC for lab test results is part of a larger FDA effort to align the use of data standards for clinical research with ongoing nationwide health information technology initiatives. FDA invites public comment on appropriate steps the Agency could take to promote the use and utility of LOINC-coded clinical data submitted to the Agency. The LOINC common terminology will be listed in the FDA Data Standards Catalog that is posted to FDA's Study Data Standards Resources Web page at

Know LOINC? Get Hired!

June 1, 2015

SimplyHired

Keywords: loinc

Location: city, state or zip

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theranos
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1 - 10 of 239 loinc jobs

Consulting Data Analyst - CDM
HCA Healthcare - Nashville, TN
information exchange (i.e. **LOINC**, SNOMED-CT, RxNorm, ICD-9, etc). * Detailed working knowledge of the health care industry including EHR strategies and applications, clinical...
5 days ago from HCA Healthcare

PL/SQL Developer - Prior Experience Required
Principle Solutions Group - Charlotte, NC
h Principle Solutions Group, visit our career page at http://jobs.principlesolutions.com/ Keywords: Oracle, PL/SQL, SQL, Oracle 11g, ETL SNOMED, **LOINC**, Multum, hierarchies...
26 days ago from Principle Solutions Group

Medical Technologist - 6 Month Remote Work **LOINC** Project
Maestro Consulting Solutions - Dallas, TX
Techniciansto assist our client with a **LOINC** mapping project.Ideal candidates will ... knowledge to assist with mapping of **LOINC** codeswithin a client database. Our...
29 days ago from ZipRecruiter

Healthcare Architect
Aboutweb - Baltimore, MD
mapping (ICD9 to ICD-10, SNOMED, **LOINC**, CVX, CPT), EHR (e.g. Cerner, Epic, AllScripts), and Radiology Imaging (DICOM, MRI/CT) Ã¢Â?Â¢ Experienced in Health IT standards for HL7...
10 days ago from The Washington Post

Clinical Analyst II - CDM
HCA Healthcare - Nashville, TN
and health information exchange (i.e. **LOINC**, SNOMED-CT, RxNorm, ICD-9, etc). * Detailed working knowledge of the health care industry including EHR strategies and applications,...
17 days ago from HCA Healthcare

Need DGS HL7 Interface Developer @
Technodrive - Richmond, VA
knowledge of health-coded vocabularies like **LOINC** and SNOMED. Experience in Oracle ... and health-coded vocabularies like **LOINC** and SNOMED Working knowledge of Orion...
5 days ago from Tech Fetch

HL7 Developer
ASK IT Consulting - Richmond, VA
knowledge of health-coded vocabularies like **LOINC** and SNOMED. Experience in Oracle programming and .Net programming. This is an excellent contract opportunity for a...
5 days ago from Dice

HL7 Interface Developer NEW
Spurgetech - Richmond, VA
knowledge of health-coded vocabularies like **LOINC** and SNOMED. Experience in Oracle programming and .Net programming. This is an excellent contract opportunity for a...
1 day ago from Tech Fetch

HL7 Interface Developer W/ Health-coded vocabularies
Keybusinessglobal.com - Richmond, VA
knowledge of health-coded vocabularies like **LOINC** and SNOMED. Experience in Oracle programming and .Net programming. This is an excellent contract opportunity for a...
5 days ago from Tech Fetch

Registered Nurse-ED, PRN
HCA Healthcare - Ft. Pierce, FL
and health information exchange (i.e. **LOINC**, SNOMED-CT, RxNorm, ICD-9, etc). * Detailed working knowledge of the health care industry including EHR strategies and applications,...
17 days ago from HCA Healthcare

< Prev 1 2 3 4 5 6 7 8 9 10 Next >

photo via heyyu

photo via mccaughan

The LOINC Distribution

LOINC Table, Accessory Files, and Tools and Resources for Implementers

loinc.org/downloads

Get LOINC

LOINC and RELMA Complete Package

LOINC and RELMA Complete Download File (All Formats Included) (446.7 MB)
File Version: LOINC 2.50 and RELMA 6.8 | Release Date: 2014-12-22 | File type: application/zip

Zip file with the RELMA® program installer and all of the core LOINC® files, including the LOINC® Table (all formats), documentation, and accessory files.

Download

Want an extra check on your LOINC mappings? Become a LOINC Premium Member today.

LOINC Table

LOINC 2.50
Released: 2014-12-22

The LOINC table with fields for LOINC codes, each of the six parts of the formal name of the LOINC, synonyms, comments, and other information. Distributed as a CSV format text file, an Access database, and a release to release Change File and Change Report. Documentation includes LOINC Release Notes and the comprehensive LOINC User's Guide.

Download

Accessory Files

LOINC 2.50
Released: 2014-12-22

Additional files available in the LOINC distribution.

- LOINC Panels and Forms File
- LOINC Multiaxial Hierarchy File
- LOINC Document Ontology File
- LOINC Context-specific Hierarchy Template File
- LOINC Top 2000 Results
- LOINC Top 300 Orders
- Common UCUM units
- LOINC - SNOMED CT Expression Association and Map Sets - Technology Preview

Download

RELMA

RELMA 6.8
Released: 2014-12-22

Regenstrief LOINC Mapping Assistant (RELMA®) is a Windows program for searching the LOINC database and helping you map local codes to LOINC codes. Documentation includes RELMA Release Notes and a comprehensive RELMA User's Manual.

Download

LOINC Accessory Files

Special representations of LOINC content

Accessory Files

LOINC Panels and Forms File

An export of key panels, survey instruments, and forms in a detailed data structure.

LOINC Multiaxial Hierarchy File

Hierarchical organization of LOINC terms based on their axes. Lab terms are organized first by Component, then by System.

LOINC Document Ontology File

Special file for the detailed naming conventions for clinical document titles (e.g. Discharge Summary, Progress Note, etc).

Tools for Implementers

photo via Robert S Donovan

LOINC®
from Regenstrief

Quick Start Guide

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loinc.org/mailing-lists

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Mailing Lists

Join Our Mailing Lists and Stay Informed

Joining our mail list is the best way to get notified of when new releases are available and stay up to date with what's happening in the LOINC community. This isn't a discussion list, so you won't get bombarded with messages. You'll just get a few choice morsels from our team here at Regenstrief to help you stay informed.

Everyone should join the Main LOINC Announcement list.

When you do, you'll get our special free bonus eBook: *The Official LOINC Quick Start Guide*

Join the LOINC list and get our free eBook

Get notices of when new LOINC releases are available, upcoming meetings, and other key news.

If you're interested in the non-laboratory content in LOINC, you should also join the Clinical LOINC Announcement list.

Join the Clinical LOINC list

Get Clinical LOINC meeting handouts, work group communications, etc.

Don't want to hear about LOINC anymore? Unsubscribe from the Main LOINC list or the Clinical LOINC list.

Current Versions

LOINC 2.50
Released: 2014-12-22

RELMA 6.8
Released: 2014-12-22

Download

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LOINC 29 May
@LOINC
Great interview of @smatney59 who chairs the Clinical LOINC Nursing Subcommittee. Yea Susan! #nurses4hit allianceni.org/documents/ANII…
Expand

LOINC 19 May

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75219-6 Summary registry report

More posts...

search.loinc.org

Options Help loinc.org Set Language

LOINC from Regenstrief

glucose commonlabresult:true Search

1 /2 [1 - 18 / 25]

LOINC	LongName	Component	Property	Timing	System	Scale	Method	exUCUM
1501-6	Glucose [Mass/volume] in Serum or Plasma --1 hour post 100 g glucose PO	Glucose^1H post 100 g glucose PO	MCnc	Pt	Ser/Plas	Qn		mg/dL
1504-0	Glucose [Mass/volume] in Serum or Plasma --1 hour post 50 g glucose PO	Glucose^1H post 50 g glucose PO	MCnc	Pt	Ser/Plas	Qn		mg/dL
1507-3	Glucose [Mass/volume] in Serum or Plasma --1 hour post 75 g glucose PO	Glucose^1H post 75 g glucose PO	MCnc	Pt	Ser/Plas	Qn		mg/dL
20438-8	Glucose [Mass/volume] in Serum or Plasma --1 hour post dose glucose	Glucose^1H post dose glucose	MCnc	Pt	Ser/Plas	Qn		mg/dL
1514-9	Glucose [Mass/volume] in Serum or Plasma --2 hours post 100 g glucose PO	Glucose^2H post 100 g glucose PO	MCnc	Pt	Ser/Plas	Qn		mg/dL
1518-0	Glucose [Mass/volume] in Serum or Plasma --2 hours post 75 g glucose PO	Glucose^2H post 75 g glucose PO	MCnc	Pt	Ser/Plas	Qn		mg/dL
20436-2	Glucose [Mass/volume] in Serum or Plasma --2 hours post dose glucose	Glucose^2H post dose glucose	MCnc	Pt	Ser/Plas	Qn		mg/dL
1527-1	Glucose [Mass/volume] in Serum or Plasma --30 minutes post 75 g glucose PO	Glucose^30M post 75 g glucose PO	MCnc	Pt	Ser/Plas	Qn		mg/dL
1530-5	Glucose [Mass/volume] in Serum or Plasma --3 hours post 100 g glucose PO	Glucose^3H post 100 g glucose PO	MCnc	Pt	Ser/Plas	Qn		mg/dL
20437-0	Glucose [Mass/volume] in Serum or Plasma --3 hours post dose glucose	Glucose^3H post dose glucose	MCnc	Pt	Ser/Plas	Qn		mg/dL
1549-5	Glucose [Mass/volume] in Serum or Plasma --pre 100 g glucose PO	Glucose^pre 100 g glucose PO	MCnc	Pt	Ser/Plas	Qn		mg/dL
27353-2	Glucose mean value [Mass/volume] in Blood Estimated from glycated hemoglobin	Estimated average glucose	MCnc	Pt	Bld	Qn	Estimated from glycated hemoglobin	mg/dL
10449-7	Glucose [Mass/volume] in Serum or Plasma --1 hour post meal	Glucose^1H post meal	MCnc	Pt	Ser/Plas	Qn		mg/dL
1521-4	Glucose [Mass/volume] in Serum or Plasma --2 hours post meal	Glucose^2H post meal	MCnc	Pt	Ser/Plas	Qn		mg/dL
1558-6	Fasting glucose [Mass/volume] in Serum or Plasma	Glucose^post CFst	MCnc	Pt	Ser/Plas	Qn		mg/dL
2357-2	Glucose-6-Phosphate dehydrogenase [Enzymatic activity/volume] in Red Blood Cells	Glucose-6-Phosphate dehydrogenase	CCnc	Pt	RBC	Qn		U/g{Hb}
32546-4	Glucose-6-Phosphate dehydrogenase [Enzymatic activity/mass] in Red Blood Cells	Glucose-6-Phosphate dehydrogenase	CCnt	Pt	RBC	Qn		U/g{Hb}
2349-9	Glucose [Presence] in Urine	Glucose	ACnc	Pt	Urine	Ord		

5036-9 Streptococcus pyogenes rRNA [Presence] in Unspecified specimen by DNA probe

NAME

Fully-Specified Name:

Component	Property	Time Aspect	System	Scale	Method
Streptococcus pyogenes rRNA	ACnc	Pt	XXX	Ord	Probe

DEFINITION/DESCRIPTION

Source: Wikipedia

Streptococcus pyogenes is a Gram-positive bacterium that grows in long chains depending on the culture method. S. pyogenes displays group A antigen on its cell wall and beta-hemolysis when cultured on blood agar plate. S. pyogenes typically produces large zones of beta-hemolysis, the complete disruption of erythrocytes and the release of hemoglobin, and it is therefore called Group A (beta-hemolytic) Streptococcus (abbreviated GAS). S. pyogenes has several virulence factors. A carbohydrate capsule surrounds the bacterium, protecting it from attack by macrophages. Further, there are proteins, lipoteichoic acids, embedded within the capsule (M protein) that also increase virulence by facilitating attachment to host cells. M protein inhibits complement activation, an important component of the immune system.

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URL: Streptococcus pyogenes (Wikipedia)

Last Updated: 2011/11/21 07:04:10 AM

Source: National Library of Medicine, MeSH 2006

A species of gram-positive, coccoid bacteria isolated from skin lesions, blood, inflammatory exudates, and the upper respiratory tract of humans. It is a group A hemolytic Streptococcus that can cause scarlet fever and rheumatic fever.

Last Updated: 2011/11/21 07:04:10 AM

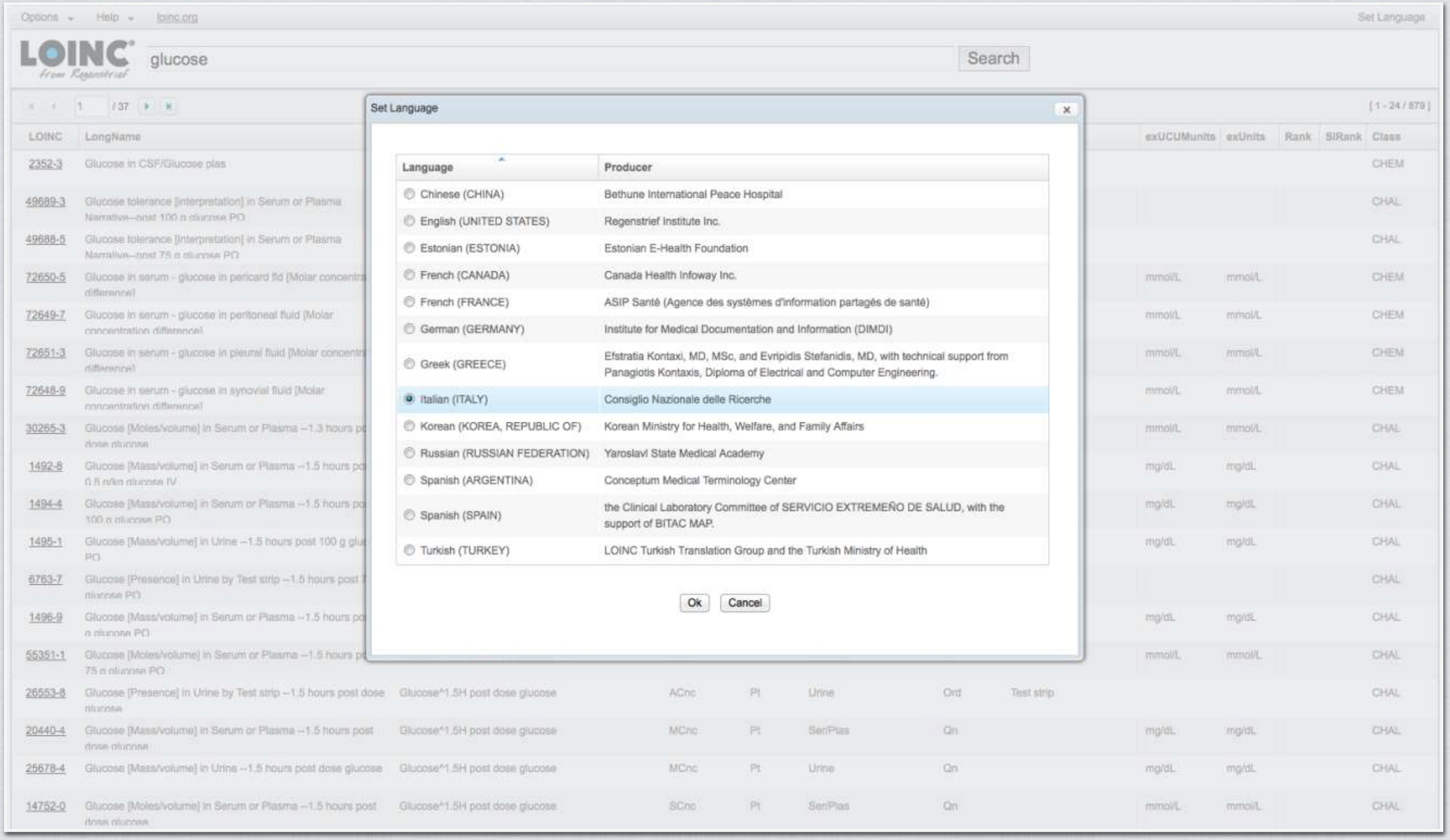
BASIC ATTRIBUTES

Class/Type:	MICRO/Lab
Common Lab Results Rank:	#1470
Common SI Lab Results Rank:	#1470
Last Updated:	1998/03/30
Order vs. Obs.:	Both
Status:	Active

MEMBER OF THESE PANELS

54037-7	HEDIS 2009 panel
54048-4	HEDIS 2009 Codes to identify group A Streptococcus tests (CWP-D)
57820-3	HEDIS 2010 panel
60442-1	HEDIS 2011 panel
60480-1	HEDIS 2010-11 Codes to identify group A Streptococcus tests (CWP-D)
67760-9	HEDIS 2012 Codes to identify group A Streptococcus tests (CWP-D)
67767-4	HEDIS 2012 panel

Alternate Language Search



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LOINC from Regenstrief

emoglobina media Cerca

LOINC	LongName	Component	Property	Timing	System	Scale	Method	esempio unitá	esempi
28539-5	Erythrocyte mean corpuscular hemoglobin [Entitic mass]	Eritrociti, emoglobina corpuscolare media	EntMass	Pt	RBC	Qn		pg	pg
47278-7	Erythrocyte mean corpuscular hemoglobin [Entitic mass] in Cord blood	Eritrociti, emoglobina corpuscolare media	EntMass	Pt	Sangue cordone ombelicale	Qn		pg	pg
59468-9	Erythrocyte mean corpuscular hemoglobin [Entitic substance]	Eritrociti, emoglobina corpuscolare media	EntSub	Pt	RBC	Qn		fmol	fmol
62243-1	Erythrocyte mean corpuscular hemoglobin [Entitic mass] in Blood from Fetus by Automated count	Eritrociti, emoglobina corpuscolare media	EntMass	Pt	Sangue^feto	Qn	Conta automatica	pg	pg
785-6	Erythrocyte mean corpuscular hemoglobin [Entitic mass] by Automated count	Eritrociti, emoglobina corpuscolare media	EntMass	Pt	RBC	Qn	Conta automatica	pg	pg
28540-3	Erythrocyte mean corpuscular hemoglobin concentration [Mass/volume]	Eritrociti, concentrazione emoglobinica corpuscolare media	MCnc	Pt	RBC	Qn		g/dL	g/dL
47279-5	Erythrocyte mean corpuscular hemoglobin concentration [Mass/volume] in Cord blood	Eritrociti, concentrazione emoglobinica corpuscolare media	MCnc	Pt	Sangue cordone ombelicale	Qn		g/L	g/L
59467-1	Erythrocyte mean corpuscular hemoglobin concentration [Moles/volume]	Eritrociti, concentrazione emoglobinica corpuscolare media	SCnc	Pt	RBC	Qn		mmol/L	mmol/L
62246-4	Erythrocyte mean corpuscular hemoglobin concentration [Mass/volume] in Blood from Fetus by	Eritrociti, concentrazione emoglobinica corpuscolare media	MCnc	Pt	Sangue^feto	Qn	Conta automatica	g/L	g/L
786-4	Erythrocyte mean corpuscular hemoglobin concentration [Mass/volume] by Automated count	Eritrociti, concentrazione emoglobinica corpuscolare media	MCnc	Pt	RBC	Qn	Conta automatica	g/dL	g/L;g/dL

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Forum	Topics	Posts
Welcome to the LOINC User Forum A discussion board for system implementers, users, terminologists, and others with an interest in LOINC®. LOINC System Status (1, 0) LOINC Forum Information (2, 0) General Discussion (48, 75)	51	126
LOINC Implementation Discussion about LOINC implementation in electronic systems. System Implementation (11, 11) Public Health ELR Community Implementation (0, 0)	11	22
LOINC Development Discussion about LOINC development. Translations (6, 5) Data Model (5, 12) Other LOINC Enhancements (8, 19)	19	55
Laboratory LOINC Discussion about Laboratory LOINC. Lab LOINC Content Areas Laboratory Order Panels (22, 25) LOINC Properties and Units of Measure (11, 21) Other Lab (13, 9)	113	267

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Common LOINC Result and Universal Order Codes

Get LOINCing *fast.*

We know you want to hit the ground running, so we've created a few lists that help focus on some low hanging fruit. With help from the LOINC community, we've compiled three data-driven lists to jump start your standardization effort: a list of the most **common result codes** and mapping advice to go with it, a collection of **frequently used universal order codes**, and a **starter set of UCUM codes** *(for those of you brave enough to standardize your units of measure).*

You can get them all right here.

Top 2000 Results
An empiric list of the most frequently used LOINC result codes.
Expert mapping advice included.
Top 2000 Results plus Mapper's Guide

Universal Order Codes from LOINC
A super short list of LOINCs covering >95% of U.S. lab orders.
Empirically derived and vetted by consensus.
Universal Order Codes from LOINC

Common UCUM Codes
Lost with UCUM?
This list makes it easy for your typical reporting units of measure.
Example UCUM Codes for Electronic Messaging

Current Versions

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Text for new version in another hand out

6/1/2011 11:58 AM

LOINC MAPPER'S GUIDE TO TOP 2000+ LAB TESTS v1.0a

SORT BY: Class Override >System Adjusted > Long Common Name

	B	C	E	F	G	H	I	P
1	LOINC #	Long Common Name	Class Override	Rank	Example UCUM	Example UCUM Display	Comment	System Adjusted
126	**Antibacterial susceptibility**							
	The statistics for antibiotic susceptibility tests in the Top 2000 List are not as broadly based as most of the other test categories, because antibiotic susceptibilities were available from only one of our 3 sources. LOINC provides codes for antibiotic suceptibility testing based on method used. The four major categories are as follows: 1) A general flavor that does not specify the method of testing used 2) Minimum Inhibitory Concentrations (MIC) 3) Kirby Bauer disc testing (KB) and 4) Gradient strip (E-test) The general flavor can be used to report results for any of the three more specific approaches (Kirby Bauer, MIC or E-test susceptibilities) assuming that the details regarding the method of testing is provided elsewhere in the messages or in other OBX segments. The majority of the antibiotic susceptibility tests that made it into the top 2000 list are of this general flavor type, but a few MIC tests and gradient strip LOINC codes also appear. In case your laboratory prefers the more specific codes for the antibiotics listed here, you can find them under the Antibiotic susceptibility class in the full LOINC database. Some of the antibiotics used to treat tuberculosis are also used to treat more common bacterial infections. LOINC provides specific codes for reporting antibiotic susceptibilities to slow growing Mycobacteria – such as M.tuberculosis, M.avium and M.intracellular, and these codes should be used for reporting antibiotic susceptibilities for such bacteria. These codes can be identified by the phrase "slow growing mycobacteria" in the method part of the LOINC name. Antibiotic susceptibilities to a fast growing mycobacteria can be reported under the same codes as any other bacteria.						
127								
128	13317-3	Methicillin resistant Staphylococcus aureus [Presence] in Unspecified specimen by Organism specific culture	Antibacterial susceptibility	146			Methicillin Resistant Staphlocuss via culture--	Any
129	18860-7	Amikacin [Susceptibility]	Antibacterial susceptibility	414				Isolate
130	18862-3	Amoxicillin+Clavulanate [Susceptibility]	Antibacterial susceptibility	549				Isolate
131	18864-9	Ampicillin [Susceptibility]	Antibacterial susceptibility	331				Isolate
132	18865-6	Ampicillin+Sulbactam [Susceptibility]	Antibacterial susceptibility	330				Isolate
	18868-0	Aztreonam [Susceptibility]	Antibacterial	454				Isolate

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Presentations About LOINC

LOINC and RELMA Presentations

An Introduction to LOINC

- LOINC Overview and Introduction - Brief (December 2013)
  Daniel Vreeman
- LOINC Overview and Introduction - with Mapping Best Practices (August 2013)
  Daniel Vreeman
- LOINC Overview and Introduction - 1hr - Webinar with Audio (March 2012)
  Daniel Vreeman
  slidedeck available online here

Clinical LOINC Tutorials (February 2013)

- Introduction and Foundations
  Stan Huff
- Documents
  Daniel Vreeman
- Patient Assessment Instruments (Panels, Forms, and Survey Instruments)
  Daniel Vreeman
- Imaging Reports
  Pat Wilson

LOINC Mapping with RELMA - Tutorials and Boot Camps

- Laboratory LOINC and RELMA Tutorial (December 2013)
  Jim Case & Clem McDonald & Daniel Vreeman
  Other Available Languages:
  Estonian (December 2007)
  Simplified Chinese (June 2008)
- Advanced LOINC Mapping Topics (August 2013)
  Daniel Vreeman
- LOINC Introduction and Mapping Boot Camp for Public Health - PHI 2011 Conference (August 2011)
  Daniel Vreeman & Kathy Mercer
- Laboratory LOINC Introduction and Mapping "Boot Camp" - CHITREC Workshop (May 2011)
  Daniel Vreeman & Clem McDonald

Current Versions

LOINC 2.46
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LOINC Adopters

Up one level

Organizations, institutions, and other LOINC adopters. Not certified or otherwise verified - just offered here for reference.

Indian Health Service Office of Information Technology

The Indian Health Service (IHS), an agency within the Department of Health and Human Services, is responsible for providing federal health services to American Indians and Alaska Natives. The IHS provides a comprehensive health service delivery system for approximately 1.9 million American Indians and Alaska Natives who belong to 562 federally recognized tribes in 35 states. The IHS Office of Information Technology will begin a comprehensive LOINC project to assign correct LOINC codes to laboratory tests and test results in their hospital information systems to comply with CMS 'meaningful use' mandates and agency interoperability mandates.

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Informedika Inc.

Keywords: Health IT Vendor

Informedika provides secure ordering and results portal as part of the overall practice workflow management solution.

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Instituto Mexicano del Seguro Social

We are using it as part of HL7 messages to send medical information to our Clinical Fail (ECE) in services such as Laboratory, Blood Bank, Transfusion Service, and soon in Hemodialysis service; all of this are called Integral Services. We are considering including them for clinical notes at hospitalization and external service.

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Intellicure, Inc.

Intellicure uses LOINC codes in IntelliTrak, our electronic medical records application. We use them as a codebase during data capture to facilitate interoperability with CDA, CDA4CDT, CCD, and C32 documents.

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ISIS Health Informatics Resource Group Inc.

ISIS Health Informatics offers a variety of services using both the international LOINC standard as well as the adaptation of the Canadian Approved Standard for LOINC, pCLOCD. Resources include LOINC Subject Matter experts with considerable mapping and maintenance experience and a depth of clinical and lab experience which covers all lab domains as well as established working relationships with Regenstrief and Infoway. Services include LOINC to local LIS test catalogue mapping, LOINC to LIS code map maintenance and update analysis as well as auditing for existing LOINC to LIS code maps. ISIS has developed workflow and change control processes to support large or small mapping projects. ISIS is a Canadian based health information management company providing strategic, implementation, auditing, benefits evaluation, governance consulting, and clinical subject matter experts support electronic health records development in Canada since 2004 and trhe US since 2005.

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Kern Valley Healthcare District

Keywords: Critical-access Hospital

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RELMA®

REgenstrief LOINC Mapping Assistant

RELMA Features

Browse LOINC content

Map local terms to LOINC

import/export

translate local words and local units of measure to words and units that LOINC understands

manual/automated mapping

Search Window

Regenstrief LOINC Mapping Assistant (RELMA) - Map Local Terms for SAMPLE

File Tools HIPAA Lab Auto Mapper View Help

log out | Welcome dvreeman

Search | Mapping | View All Working Set Terms | Hierarchy & Search Limits | Part Search | Answer List Search |

ldl ser

Units

Search

Use Standard Search

No Common Limits

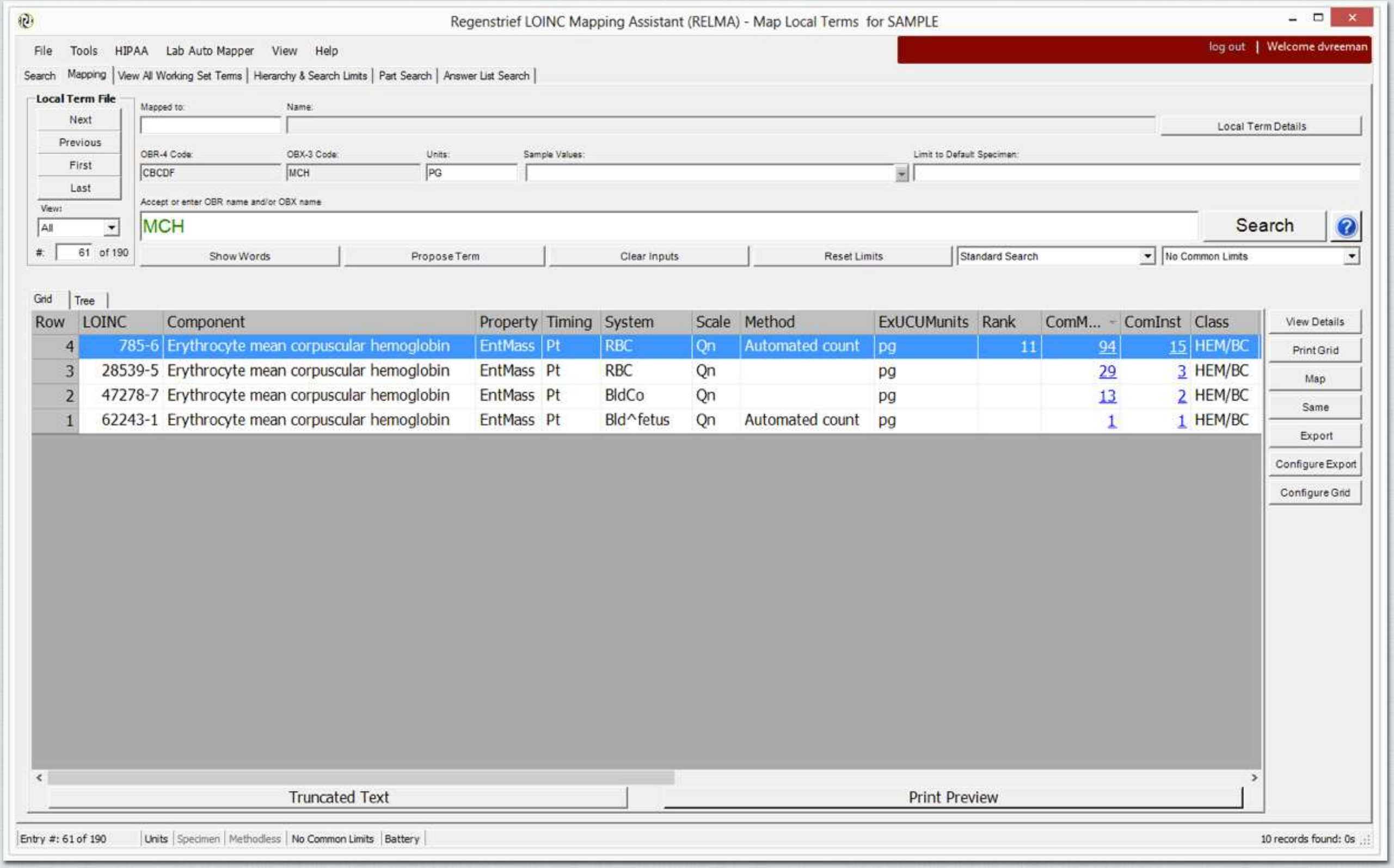
Grid | Tree |

Ro	LOINC	Component	Property	Ti...	System	Sc...	Method	ExUCUMun...	ExUnits	Ra...	SIR...	Com...	Co...	Class	LongName
5	13457-7	Cholesterol.in LDL	MCnc	Pt	Ser/Plas	Qn	Calculated	mg/dL	mg/dL	63		66	12	CHEM	Cholesterol in LDL [M
4	2089-1	Cholesterol.in LDL	MCnc	Pt	Ser/Plas	Qn		mg/dL	mg/dL	92		6	4	CHEM	Cholesterol in LDL [M
21	11054-4	Cholesterol.in LDL/Cholesterol.in HDL	MRto	Pt	Ser/Plas	Qn		{ratio}	ratio	135		12	6	CHEM	Cholesterol in LDL/Ch
6	18262-6	Cholesterol.in LDL	MCnc	Pt	Ser/Plas	Qn	Direct assay	mg/dL	mg/dL	249		24	11	CHEM	Cholesterol in LDL [M
24	43396-1	Cholesterol.non HDL	MCnc	Pt	Ser/Plas	Qn		mg/dL	mg/dL	289		15	7	CHEM	Cholesterol non HDL
17	47213-4	Cholesterol.in LDL real size pattern	Prid	Pt	Ser/Plas	N...				761	761	4	3	CHEM	Cholesterol in LDL rea
41	68935-6	LDL.oxidized Ab	ACnc	Pt	Ser	Qn	EIA	[arb'U]/mL	U/mL					SERO	LDL.oxidized Ab [Unit
44	2574-2	Lipoprotein.beta	MCnc	Pt	Ser/Plas	Qn		mg/dL	mg/dL					CHEM	Lipoprotein.beta [Mass
43	17846-7	Lipoprotein.beta	ACnc	Pt	Ser/Plas	Ord						1	1	CHEM	Lipoprotein.beta [Pres
42	57698-3	Lipid panel with direct LDL	-	Pt	Ser/Plas	Qn								PANEL...	Lipid panel with direct
40	48143-2	LDL.oxidized Ab	ACnc	Pt	Ser	Qn		mU/mL	mU/mL					SERO	LDL.oxidized Ab [Units
35	56139-9	LDL 4	SCnc	Pt	Ser/Plas	Qn		nmol/L	nmol/L					CHEM	LDL 4 [Moles/volume]
34	43393-8	LDL 4	MCnc	Pt	Ser/Plas	Qn		mg/dL	mg/dL			3	2	CHEM	LDL 4 [Mass/volume] i
33	56138-1	LDL 3	SCnc	Pt	Ser/Plas	Qn		nmol/L	nmol/L					CHEM	LDL 3 [Moles/volume]
36	57938-3	LDL 5	MCnc	Pt	Ser/Plas	Qn		mg/dL	mg/dL			1	1	CHEM	LDL 5 [Mass/volume] i
39	54238-1	LDL.oxidized	ACnc	Pt	Ser/Plas	Qn		[arb'U]	U/L					CHEM	LDL.oxidized [Units/vc
38	49027-6	LDL 7	MCnc	Pt	Ser/Plas	Qn		mg/dL	mg/dL			2	2	CHEM	LDL 7 [Mass/volume] i
37	49026-8	LDL 6	MCnc	Pt	Ser/Plas	Qn		mg/dL	mg/dL			2	2	CHEM	LDL 6 [Mass/volume] i
54	15122-5	Lipoprotein.beta/Lipoprotein.total	MFr	Pt	Ser/Plas	Qn		%	%			2	2	CHEM	Lipoprotein.beta/total
53	44717-7	Lipoprotein.beta/Lipoprotein.alpha	MRto	Pt	Ser/Plas	Qn						1	1	CHEM	Lipoprotein.beta/Lipop
52	43727-7	Lipoprotein.beta.subparticle.small	SCnc	Pt	Ser/Plas	Qn		nmol/L	nmol/L			5	4	CHEM	Lipoprotein.beta.subp
55	14816-3	Lipoprotein.pre-beta	SCnc	Pt	Ser/Plas	Qn	Electrophor...	umol/L	umol/L					CHEM	Lipoprotein.pre-beta [
58	3046-0	Triglyceride+ester.in LDL	MCnc	Pt	Ser/Plas	Qn		mg/dL	mg/dL			1	1	CHEM	Triglyceride+ester in
57	56777-6	Lipoprotein.pre-beta/Lipoprotein.beta	MRto	Pt	Ser/Plas	Qn						2	2	CHEM	Lipoprotein.pre-beta/L

Units | Specimen | Methodless | No Common Limits | Battery

58 records found: 7.64s

Mapping Screen



22 organizations, 5 countries, 102,000 mappings