



# Updates on LOINC

**Daniel J. Vreeman, PT, DPT, MSc**

Associate Research Professor, Indiana University School of Medicine  
Associate Director for Terminology Services, Regenstrief Institute, Inc

@djvreeman



INDIANA UNIVERSITY

DEPARTMENT OF MEDICINE  
School of Medicine



**Regenstrief Institute**  
Center for Biomedical Informatics  
Better Care. Better Health.



# Overview

1. Growth and adoption
2. Key publications and presentations
3. Highlights and discussion of recent US Federal initiatives





# **Growth and Adoption**

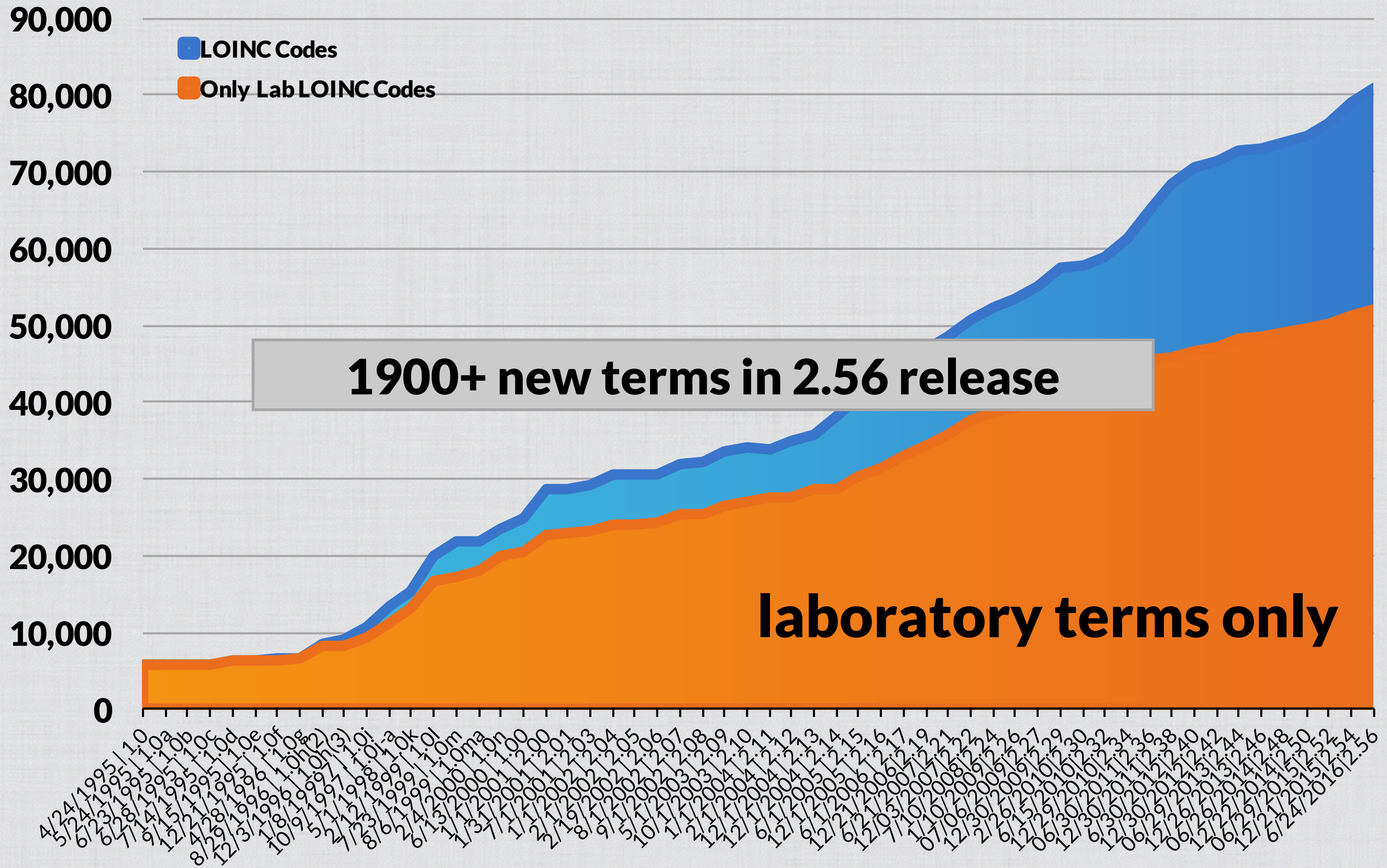


**45,000+ registered users in 172 countries**



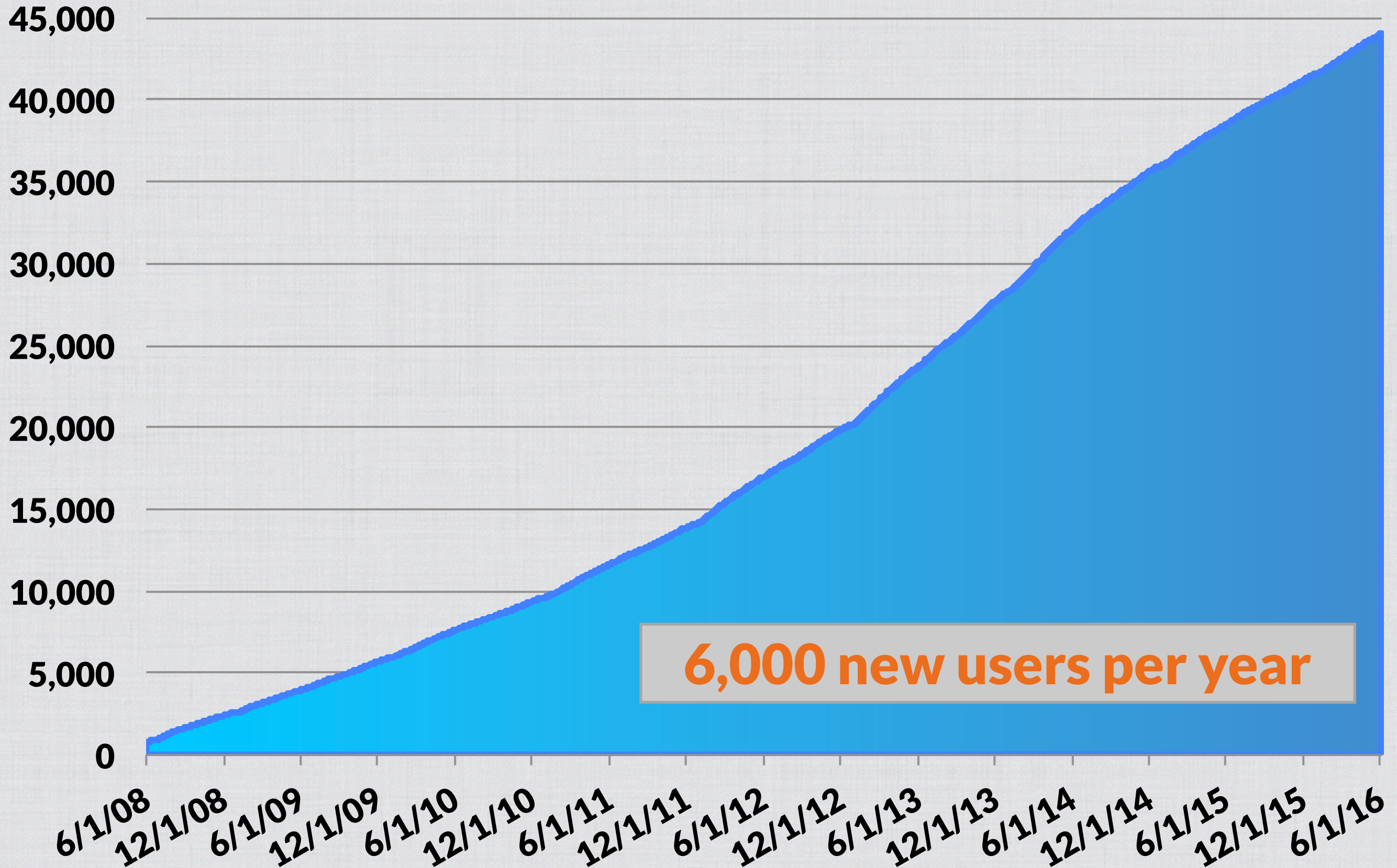


# LOINC Codes Over Time by Release



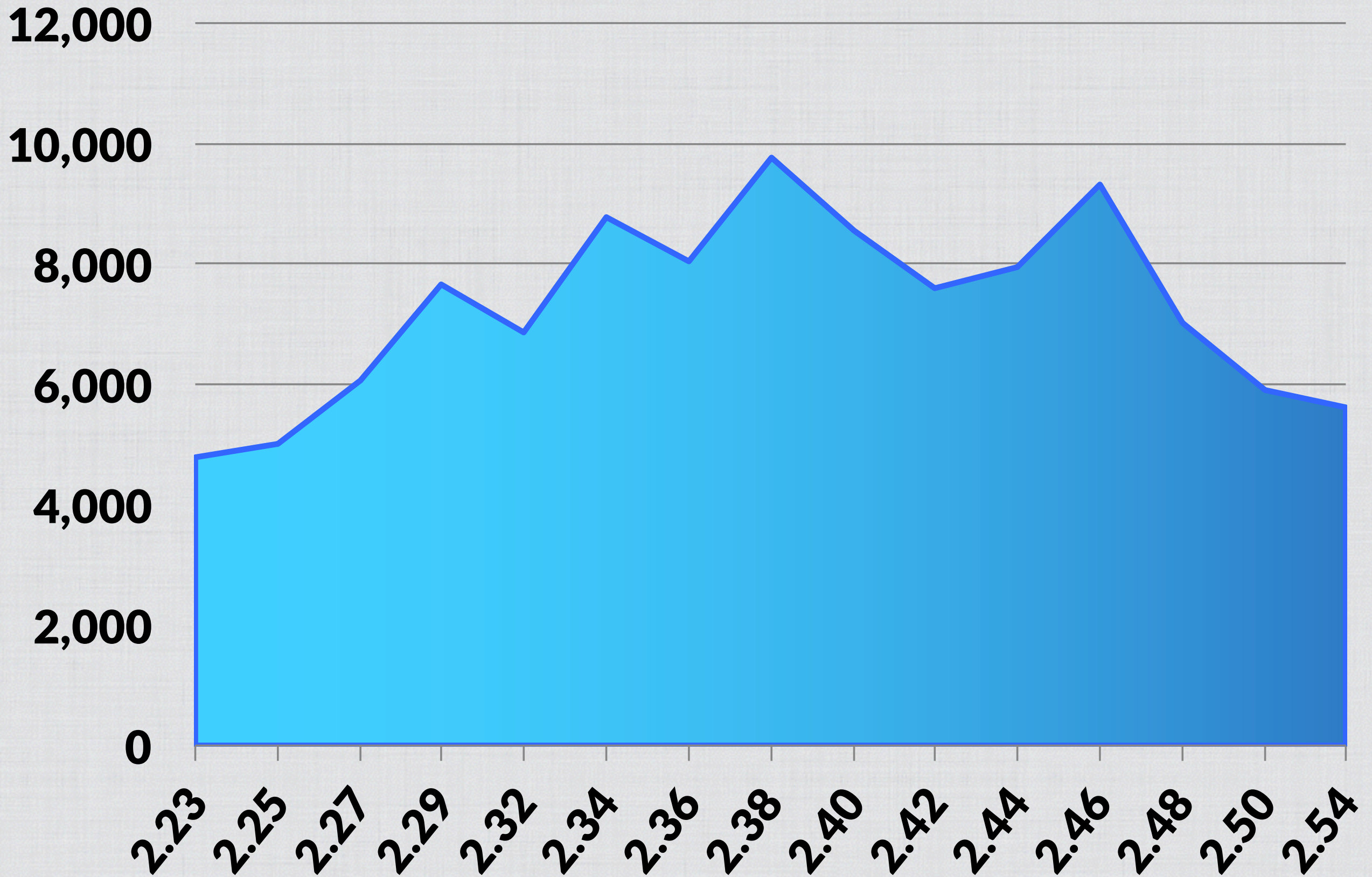


# loinc.org registered users



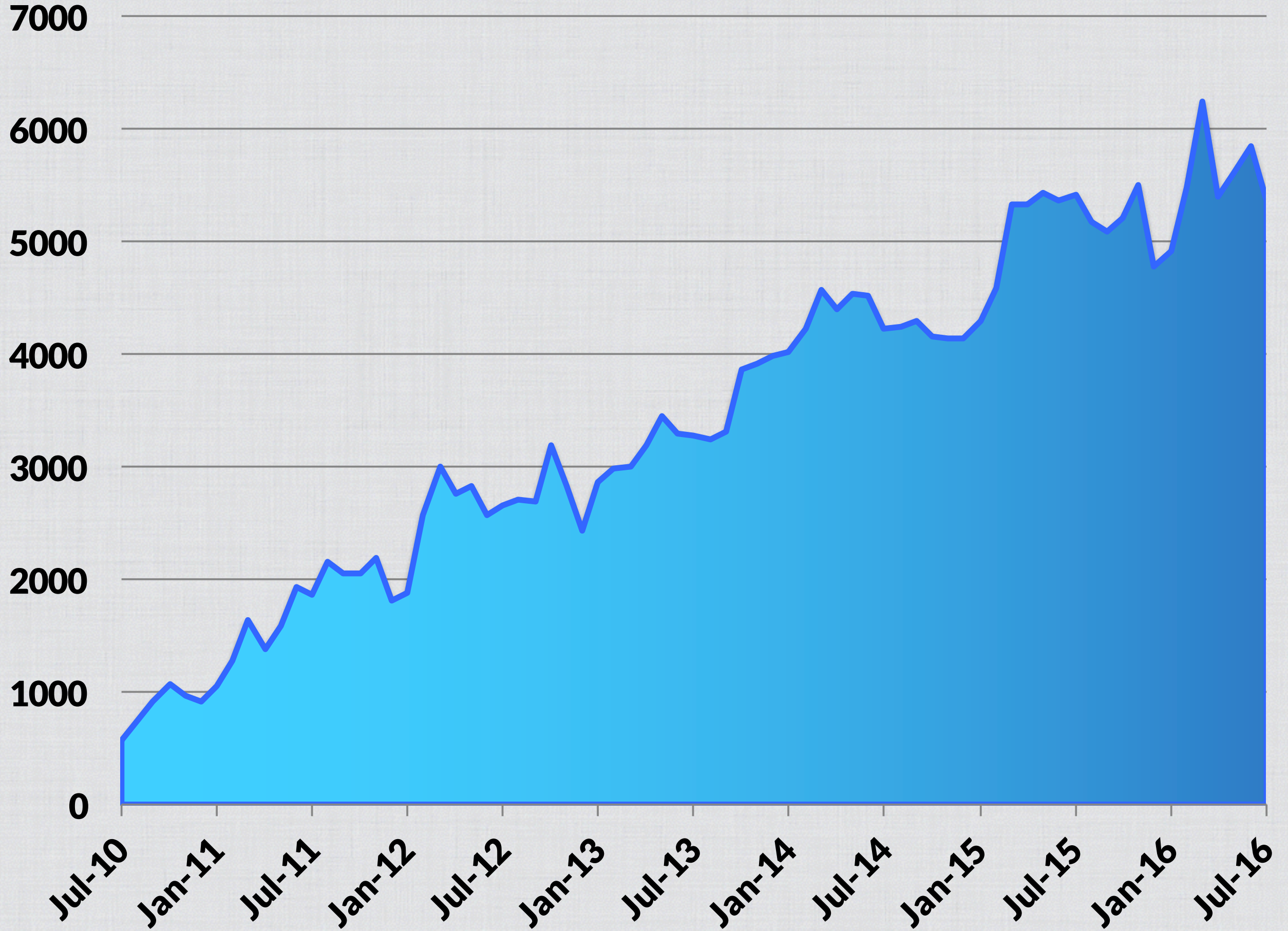


# LOINC Downloads By Release





# search.loinc.org unique visitors





# FDA Adoption and Promotion of LOINC

2015 to 2016



**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

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.

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 <sup>1</sup>	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 .....	Part 10425: Device Specialization—Continuous Glucose Monitor (CGM).	ISO 11173-1:2014
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.

<sup>1</sup> 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





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Vaccines, Blood & Biologics

Animal & Veterinary

Cosmetics

Tobacco Products

## Medical Devices

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### Workshops & Conferences (Medical Devices)

[2015 Medical Device Meetings  
and Workshops](#)

[2014 Medical Device Meetings  
and Workshops](#)

[Medical Device Webinars and  
Stakeholder Calls](#)

# Public Workshop FDA/CDC/NLM Workshop on Promoting Semantic Interoperability of Laboratory Data, September 28, 2015

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[p PIN IT](#)

[e EMAIL](#)

[p PRINT](#)

The Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC), and the National Library of Medicine (NLM) of the National Institutes of Health are announcing the following public workshop titled "FDA/CDC/NLM Workshop on Promoting Semantic Interoperability of Laboratory Data."

The purpose of the workshop was to receive and discuss input from stakeholders regarding proposed approaches to promoting the semantic interoperability of laboratory data between *in vitro* diagnostic devices and database systems, including laboratory information systems and electronic health records.

- [Discussion Paper](#)
- [Date, Time and Location](#)
- [Federal Register Notice](#)
- [Webcast](#)



Stay tuned for follow-up meeting  
this Fall

November



1           **Design Considerations and Pre-**  
2                           **market Submission**  
3           **Recommendations for Interoperable**  
4                           **Medical Devices**

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6           **Draft Guidance for Industry and**  
7           **Food and Drug Administration Staff**

10                           ***DRAFT GUIDANCE***

12           **This guidance document is being distributed for comment purposes only.**  
13                           **Document issued on: January 26, 2016**

15           Submit comments and suggestions regarding this draft document within 60 days of  
16           publication in the *Federal Register* of the notice announcing the availability of the draft  
17           guidance. Submit electronic comments to <http://www.regulations.gov>. Submit written  
18           comments to the Division of Dockets Management (HFA-305), Food and Drug  
19           Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852. Identify all comments  
20           with the docket number listed in the notice of availability that publishes in the *Federal*  
21           *Register*.

23           For questions about this document regarding CDRH-regulated devices, email them to:  
24           DigitalHealth@fda.hhs.gov;

25           For questions about this document regarding CBER-regulated devices, contact the Office of  
26           Communication, Outreach and Development (OCOD), by calling 1-800-835-4709 or 240-  
27           402-8010



U.S. Department of Health and Human Services  
Food and Drug Administration  
Center for Devices and Radiological Health  
Center for Biologics Evaluation and Research



# **ONC 2016 Interoperability Standards Advisory**





**2016**  
**Interoperability**  
**Standards**  
**Advisory**

Office of the National Coordinator for Health IT


*BEST AVAILABLE  
STANDARDS AND  
IMPLEMENTATION  
SPECIFICATIONS*



# HITSC ISA 2017 Task Force

Clem, Susan Matney,  
and I are members

1st set of  
recommendations  
published



Collaboration of the Health IT Policy and Standards Committees  
Policy and Standards Federal Advisory Committees on Health Information Technology  
to the National Coordinator

July 27, 2016

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

Dear Dr. DeSalvo,

The 2017 Interoperability Standards Advisory Task Force (ISATF) convened on March 8, 2016, as part of a joint collaboration between the Health IT Policy Committee (HITPC) and Health IT Standards Committee (HITSC). The Task Force was charged to submit recommendations to the Health IT Standards Committee regarding revisions and enhancements ONC should consider as it creates the Draft 2017 Interoperability Standards Advisory (ISA), taking into account feedback from the public comment process. This transmittal offers these recommendations, which are informed by the deliberations among the Task Force members, and consideration of testimony from public and private industry stakeholders.

**Charge:**  
Over the course of two phases, the 2017 ISA Taskforce is charged to develop recommendations for the HITSC on the following:

Phase 1 (May -> July)

- Updates to the ISA based on an analysis of public comments;
- Structural and framing improvements to the ISA, including elements that could provide additional clarity and context for stakeholders that would use and consult the ISA;
- Limited set of new "interoperability needs" that should be included in the ISA along with attributed standards and implementation specifications;
- The explicit "best available" designation to a standard or implementation specification, where appropriate (and in consideration of available implementation experience).

Phase 2 (July -> Nov 1)

- Discussion and recommendations around the TF's priority list for inclusion in the 2017 ISA's "Projected Additions" section.

**Background:**  
The Interoperability Standards Advisory (ISA) was ONC's first deliverable in support of the Nationwide Interoperability Roadmap towards a Learning Health System. The document provides the industry with a single, public list of the standards and implementation specifications necessary to fulfill specific clinical health information technology interoperability needs. The ISA Documents known limitations, preconditions, and dependencies as well as known security patterns among referenced standards and implementation specifications when they are used to fulfill a specific clinical health IT interoperability



# HITSC ISA 2017 Recommendations

Focus on needs for certified EHRs (not research)

Evolve to be more dynamic

Use consistent format for Q/A style vocab recommendations

“Best Available” -> “Recognized Standards”

Be more transparent / data-driven

Clarify listed value sets (normative, starter, etc)

LOINC / SNOMED for functional status

Add more detail re API-based approaches



# Draft 2017 ISA Open For Comment



The screenshot shows the HealthIT.gov website with a blue header and a red navigation bar. The main content area is white and features a yellow banner with the title "Draft 2017 Interoperability Standards Advisory". Below the banner, there is a table of contents on the left and a main text area on the right. The table of contents includes links to various sections and appendices. The main text area contains an introduction to the ISA process, a list of changes from the 2016 version, and a section on the scope of the draft.

**Draft 2017 Interoperability Standards Advisory**

The Interoperability Standards Advisory (ISA) process represents the model by which the Office of the National Coordinator for Health Information Technology (ONC) will coordinate the identification, assessment, and public awareness of interoperability standards and implementation specifications that can be used by industry to fulfill specific clinical health IT interoperability needs.

The Draft 2017 Interoperability Standards Advisory remains focused on clinical health information technology (IT) interoperability and its updates and improvements are due largely to recommendations received from public comments and the Health IT Standards Committee. For historical background on the ISA please review [prior Interoperability Standards Advisory publications](#).

At a high-level, the most substantial changes between the 2016 and the Draft 2017 ISA are largely related to the ISA's content and framing. This includes the following:

- 1) The beginning transition of the ISA from a stand-alone document to a Web-based resource with greater interactive potential.
- 2) The discontinued use of the label "best available" as an overall concept for the ISA. This change, at the recommendation of the Health IT Standards Committee, seeks to address feedback that stakeholders may perceive varied standards and implementation specifications associated with an interoperability need as "best" despite known limitations or low adoption levels. Further, that the ISA serves as a way to "identify" standards and implementation specifications and should be as inclusive as possible in order to increase public awareness about a standard or implementation specification's applicability to an interoperability need. Thus, a determination as to whether one standard listed in the ISA may be more "fit for purpose" than another (for the same interoperability need) could be reflected by referenced industry experience and the ISA's associated informative characteristics.
- 3) Where applicable, the addition of "Applicable Starter Set(s)" alongside appropriate code sets in Section I.
- 4) Links to active projects listed in ONC's Interoperability Proving Ground as a way to indicate their use of an ISA-listed standard or implementation specification to showcase ongoing implementations.
- 5) Better representation of the pairing of standards for observations (i.e., questions) and standards for observation values (i.e., answers).

The Draft 2017 ISA includes revisions and additional descriptive text for several of the six informative characteristics.

Per the process first established with the publication of the 2015 ISA, this document represents the Draft ISA for 2017. The comment period on this version will open in August upon publication and run to mid-October, 2016. Based on public comments, the Draft 2017 ISA will be revised and the Final 2017 ISA will be published in December 2016. Your continued feedback and engagement is critical to improve and refine the ISA.

**Scope**

The standards and implementation specifications listed in this Draft 2017 ISA focus explicitly on clinical health IT systems"

<https://www.healthit.gov/standards-advisory/draft-2017>





# FEDERAL REGISTER

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# Meaningful Use Stage 3

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Part II

Department of Health and Human Services

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Office of the Secretary

45 CFR Part 170

2015 Edition Health Information Technology (Health IT) Certification  
Criteria, 2015 Edition Base Electronic Health Record (EHR) Definition, and  
ONC Health IT Certification Program Modifications; Final Rule





# FEDERAL REGISTER

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Vol. 80

Friday,

No. 200

October 16, 2015

87 mentions of LOINC.

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Part II

Department of Health and Human Services

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Office of the Secretary

45 CFR Part 170

2015 Edition Health Information Technology (Health IT) Certification  
Criteria, 2015 Edition Base Electronic Health Record (EHR) Definition, and  
ONC Health IT Certification Program Modifications; Final Rule



# Social, Psychological, and Behavioral Data

Financial resource strain

Education

Stress

Depression

Physical activity

Alcohol use

Social connection and isolation

Exposure to violence

*All have specific LOINC codes identified*



Work in behavioral/mental health  
data standards is percolating

New HL7 WG being discussed, recent Health Affairs  
paper



By Piper A. Ranallo, Amy M. Kilbourne, Angela S. Whatley, and Harold Alan Pincus

DOI: 10.1377/hlthaff.2016.0013  
HEALTH AFFAIRS 35,  
NO. 6 (2016): 1106–1113  
©2016 Project HOPE—  
The People-to-People Health  
Foundation, Inc.

**ANALYSIS & COMMENTARY**

# Behavioral Health Information Technology: From Chaos To Clarity

**Piper A. Ranallo** is organizer and chair of the National Mental Health Informatics Workgroup and founder of nonprofit Six Aims for Behavioral Health, located in Minneapolis, Minnesota.

**Amy M. Kilbourne** (amykilbo@umich.edu) is director of the Veterans Affairs Quality Enhancement Research Initiative (QUERI) in the Health Services Research and Development Service, Veterans Health Administration, Department of Veterans Affairs, and a professor in the Department of Psychiatry at the University of Michigan, both in Ann Arbor.

**ABSTRACT** The use of health information technology (IT) in general health care has been shown to have significant potential to facilitate the delivery of safe, high-quality, and cost-effective care. However, its application to behavioral health care has been slow, limiting the extent to which consumers seeking care for mental health or substance use disorders can derive its benefits. The goal of this article is to provide an overview of the use of health IT in behavioral health and to describe some unique challenges experienced in that domain. We also highlight current obstacles to, and recommendations for, the use of health IT in improving the quality of behavioral health care. We conclude with recommendations for prioritizing the work that we believe will move the US health care system toward more effective, efficient, and patient-centric care in behavioral health.



# French LOINC Adoption



« Les éléments de l'identification qui figurent sur l'étiquette apposée sur le prélèvement sont définis par le laboratoire dans le cadre de ses procédures préanalytiques. Le numéro d'identification du patient fait partie de ces éléments.

« Lors de la transmission d'un échantillon dans le cadre des dispositions de l'article L. 6211-19, les deux laboratoires s'assurent de la traçabilité du prélèvement par le numéro d'identification du patient.

« Art. D. 6211-3. – I. – Le résultat de l'examen de biologie médicale est validé par un biologiste médical avant toute communication.

« Le nom et le prénom du biologiste médical apparaissent en toutes lettres sur le résultat communiqué de l'examen.

« II. – L'interprétation contextuelle du résultat mentionnée aux articles L. 6211-2 et L. 6211-19 consiste à écrire la signification biologique d'un ou de plusieurs résultats, pris individuellement ou dans leur ensemble, en fonction des éléments cliniques pertinents. L'interprétation contextuelle peut être postérieure à la validation du résultat dans les cas de décision thérapeutique urgente ou dans les périodes de permanence de l'offre de biologie médicale. Elle est réalisée dans le même temps que la validation dans les autres cas. L'interprétation comporte la signature du biologiste médical.

« III. – Les résultats validés du ou des examens de biologie médicale et leur interprétation contextuelle figurent dans un compte rendu qui comporte les éléments mentionnés à l'article D. 6222-3, les éléments d'identification mentionnés à l'article D. 6211-2, l'identification du ou des biologistes médicaux signataires. Le compte rendu reprend les principaux éléments pertinents du contexte clinique. Lorsque des résultats sont communiqués de façon partielle, le compte rendu porte la mention "résultat partiel" ou "résultats partiels".

« IV. – La communication appropriée du résultat au prescripteur et au patient se fait, pour chaque examen, dans le délai que permettent les données acquises de la science pour la phase analytique, en urgence si nécessaire. Le laboratoire est organisé de façon telle que les délais de rendu en urgence sont respectés pour toutes les situations médicales qui le nécessitent.

« V. – La communication du compte rendu au prescripteur s'effectue par la voie électronique.

« La communication du compte rendu au patient s'effectue par la voie électronique ou, à sa demande, sur support papier.

« Art. R. 6211-4. – Le compte rendu des examens de biologie médicale est structuré conformément au référentiel d'interopérabilité dénommé "volet compte rendu d'examens de biologie médicale", pris en application du quatrième alinéa de l'article L. 1111-8. L'identification et l'authentification du biologiste médical sont réalisées conformément aux référentiels mentionnés à ce même alinéa. Ce compte rendu structuré est produit, conservé et échangé par voie électronique conformément aux référentiels d'interopérabilité et de sécurité arrêtés par le ministre chargé de la santé après avis du groupement d'intérêt public chargé du développement des systèmes d'information de santé partagés mentionné à l'article L. 1111-24.

« Lorsque le compte rendu des examens de biologie médicale est communiqué au prescripteur par voie électronique, l'échange se fait en utilisant une messagerie électronique sécurisée de santé. Dès lors qu'il contribue à la coordination des soins, le compte rendu des examens de biologie médicale est inséré dans le dossier médical personnel mentionné à l'article L. 1111-14.

« Art. D. 6211-5. – Un arrêté du ministre chargé de la santé détermine la nature des échantillons à conserver après la réalisation de la phase analytique ainsi que la durée et les conditions de conservation de ces échantillons. En cas de transmission d'un échantillon, le laboratoire qui a la responsabilité de la réalisation des examens du patient au sens de l'article L. 6211-19 s'assure que le laboratoire qui réalise la phase analytique respecte cette disposition dans ses procédures.

French law mandating LOINC for identifying lab tests via  
IHE XD-LAB profile



A close-up photograph of a gold-colored microphone with a mesh grille, positioned in the foreground. The background is a blurred crowd of people, suggesting a public event or presentation. The overall image has a dark, moody atmosphere with soft lighting.

# Key Publications and Presentations



Now available!



[danielvreeman.com/loinc-essentials](http://danielvreeman.com/loinc-essentials)



# Disclosure



*If you buy the book, I will get some money.*

*This isn't likely to be a NYT Best Seller.*

*I'm hoping to cover hosting/development costs.*



# LOINC and RELMA Release Highlights

<http://loinc.org/news/loinc-version-2-56-and-relma-version-6-14-available.html/>





**A note about this past  
development cycle**



Content development team has done a remarkable job tackling our backlog of term requests

On track to make great progress on submissions in the queue

We have a large body of pending work in non-lab areas





# **LOINC Team Updates**



# Special welcome and introduction of our newest LOINC team members

Tim Briscoe

Katie Allen

Mary Zabriskie

Sara Armson (transition to content development)



Support for a larger team the  
result of increased external  
funding success





Farewell to Katy Holck...




# We're Hiring!

We have three positions available: an entry-level and an experienced content developer, and a systems engineer.

If you know people who'd be great LOINCers, send them my way!

[loinc.org/jobs](http://loinc.org/jobs)





# **LOINC Award for Distinguished Contributions**



# LOINC Award Honors Outstanding Contributors to Advancement of Health Data Interoperability

by [Daniel Vreeman](#) — last modified 2016-07-13 09:01

INDIANAPOLIS (June 30, 2016) -- LOINC, the world's most commonly used universal code system for identifying medical test results, observations and other clinical measurements, has announced the inaugural recipients of the LOINC Award for Distinguished Contributions. The new award honors individuals whose work advances the interoperability that ensures that medical data can be recorded, electronically exchanged and ultimately used to improve health -- when and where needed.

J. Gilbert Hill, M.D., Ph.D., of Canada and Cindy Johns, MSA of the United States were presented with the award at the annual LOINC meeting in June. Both are long-time active members of the LOINC participant community.

Hill, who worked at the Hospital for Sick Children in Toronto as director of the Clinical Biochemistry Service for 30 years, then as consultant to the electronic Child Health Network (eCHN) for 20 years, is an internationally respected scientist who, working with Canada Health Infoway, has influenced terminology standardization and the employment of LOINC for lab tests across Canada for over a decade.

Johns, a senior information technology specialist for LabCorp with responsibility for maintaining LabCorp's LOINC database, has presented LOINC courses throughout the medical laboratory industry. Three years ago she was recognized at the American Society for Clinical Pathologists with a Lifetime Achievement Award and currently serves on the organization's Board of Directors.

In addition to hospital systems, clinical laboratories, health information exchanges and other private and quasi-private sector entities, LOINC users include ministries and departments of health around the world. U.S. government agencies in the LOINC community include the National Library of Medicine, the departments of Veterans Affairs and Defense, the Indian Health Service, the National Cancer Institute and the Centers for Disease Control and Prevention.

LOINC is used in 172 countries and is available in Chinese, Dutch, Estonian, French, German, Greek, Italian, Korean, Portuguese, Russian, Spanish, and Turkish in addition to English.

LOINC traces its roots to the mid-1990s when Regenstrief Institute investigators, using their extensive experience with electronic medical records, developed the Indiana Network for Patient Care, the nation's first citywide health information exchange. They found they could receive data from various INPC-member institutions but that the clinical content was difficult to interpret because each used a different code for the same test or observation. A blood sugar result at one institution might be called a blood glucose score at another and something different at a third facility. It was as if the computer system was receiving messages in Vulcan, Klingon and Ferengi when all it had been programmed to understand was English.

To solve the problem the Regenstrief researcher-clinicians, led by Clement McDonald, M.D., developed the lingua franca they called LOINC, short for [Logical Observation Identifiers Names and Codes](#). The Regenstrief Institute is the owner, developer, and overall steward for LOINC.

"Today, LOINC is the most accepted and used international standard of names and codes for medical results, observations and other clinical measurements in the world," said Regenstrief Institute investigator Daniel Vreeman, DPT. "Thanks to dedicated people like Gil Hill and Cindy Johns we are constantly expanding both in terms of codes and users with the ultimate goal of improving human health." Vreeman serves as associate director for terminology services in the Center for Biomedical Informatics at the Regenstrief Institute.

With support from the National Library of Medicine, the Regenstrief Institute and other organizations, LOINC is an open, freely available standard. Updates to LOINC are issued twice annually.

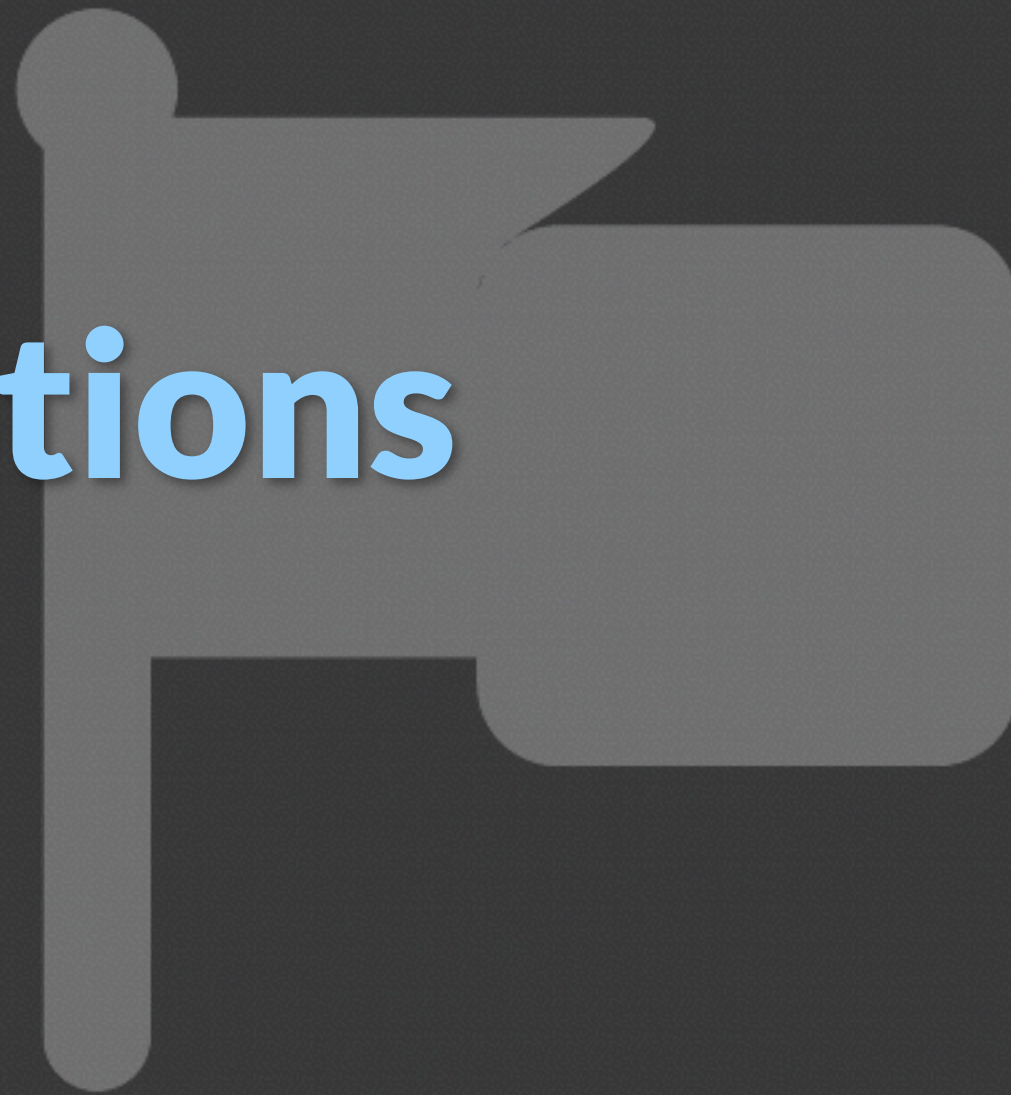


## Media Contacts

Regenstrief Institute  
Cindy Fox Alsen  
+1 317-843-2276  
caisen@iupui.edu



# Translations





# Updated Linguistic Variants

Chinese (China)

French (Canada)

French (France)

Italian (Italy)

Spanish (Spain)

Turkish (Turkey)



# Content Highlights

Swapna Abhyankar, MD



# RELMA Highlights



# Mapping Feature Highlights

Multi-word replacements in *Check the Test Names in Local Term File*

Filter by user tags with NOT on *View all Working Set* grid

**Map** local terms right on *View all Working Set Terms*

New **Comment** button on the mapping screen

New search restriction on *Hierarchy & Search Limits* screen: **Exclude non-routine challenge tests**





Structured Attachments | Unstructured Attachments | Request Modifier Codes

Document (Attachment) Type Codes

Consolidated CDA (C-CDA) R2.1	
<b>Consolidated CDA (C-CDA) R2.1</b>	
Consolidated CDA (C-CDA) R2.0	
Consolidated CDA (C-CDA) R1.1	
Clinical Document for Payers (CDP) R1.1	
Clinical Document for Payers (CDP) R1.0	
..... Plan of care	18776-5
<b>[-] Consultation note</b>	
..... Consult note	11488-4
..... Adolescent medicine Hospital Consult note	68619-6
..... Allergy and immunology Consult note	77429-9
..... Allergy and immunology Hospital Consult note	68633-7
..... Anesthesiology Consult note	77403-4
..... Anesthesiology Outpatient Consult note	34749-2
..... Audiology Consult note	75424-2
..... Audiology Hospital Consult note	68639-4
..... Blood banking and transfusion medicine Consult note	80736-2
..... Cardiac surgery Consult note	80575-4
..... Cardiology Consult note	34099-2
..... Cardiology Medical student Hospital Consult note	68486-0
..... Cardiopulmonary Consult note	78498-3
..... Cardiothoracic surgery Consult note	34849-0
..... Cardiothoracic surgery Medical student Hospital Consult note	64076-3
..... Chemical pathology Consult note	81191-9
..... Child and adolescent psychiatry Hospital Consult note	68648-5
..... Clinical biochemical genetics Hospital Consult note	68651-9
..... Clinical genetics Consult note	78254-0
..... Clinical genetics Hospital Consult note	68661-8

CDA Recommended Sections and Entries

Row	R/O	Section Name	LOINC
1	R	Evaluation + Plan note	51847-2
2	R	Evaluation note	51848-0
3	R	Plan of care	18776-5
4	R	History of Past illness Narrative	11348-0
5	R	Physical findings Narrative	29545-1
6	R	Reason for visit Narrative	29299-5
7	O	Advance directives	42348-3
8	O	Allergies and adverse reactions Document	48765-2
9	O	Chief complaint+Reason for visit Narrative	46239-0
10	O	Chief complaint Narrative - Reported	10154-3
11	O	History of family member diseases Narrative	10157-6
12	O	Functional status assessment note	47420-5
13	O	Physical findings of General status Narrative	10210-3
14	O	History of Present illness Narrative	10164-2
15	O	History of Immunization Narrative	11369-6
16	O	History of medical device use	46264-8
17	O	History of Medication use Narrative	10160-0
18	O	Mental status Narrative	10190-7
19	O	Diet and nutrition Narrative	61144-2
20	O	Problem list - Reported	11450-4
21	O	History of Procedures Document	47519-4
22	O	Relevant diagnostic tests/laboratory data Narrative	30954-2
23	O	Review of systems Narrative - Reported	10187-3
24	O	Social history Narrative	29762-2
25	O	Vital signs	8716-3

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Close



# Collaboration Updates

IEEE (heard)

IHTSDO

CMS (new)

Duke University - ADAPTABLE (new)

RSNA

Other possibilities



IHTSDO



# IHTSDO

## Continue EPG meetings

Still working on a contract amendment to allow us to distribute SNOMED CT codes for answers outside of the initial domain areas.

*(We originally asked about this in March 2015)*

Trying to engage to prevent duplicative work in radiology and functioning observables, but little tangible progress.

Possible update of joint guidance on use of LOINC and SNOMED CT together.



# IHTSDO

Alpha (phase 3) Edition Technology Preview  
releases April 2016

3 Formats: RF2, OWL, Excel (with term names!)

13756 LOINC Terms associated with SNOMED CT post-coordinated Expressions

4070 LOINC Part to SNOMED CT mappings

Covers majority (around 75%) of the Top 2000 LOINC Lab Observations and Parts needed to represent them.

1500+ SNOMED CT codes added to produce the expressions



# Centers for Medicare and Medicaid Services

Post Acute Care Data Element Standardization  
and Interoperability

2016 through 2021 (hopefully)



Recently awarded contract with CMS to create and update LOINC for assessment data elements that will be included in the CMS Data Element Library.



# Background

IMPACT Act (2014) requires CMS to make certain assessment data elements standardized and interoperable.

Why? For data exchange by post-acute care and other providers to support care coordination and improved outcomes.

CMS must like the data elements to adopted HIT standards, including LOINC.



# Scope

## Instruments:

Nursing Home Minimum Data Set (MDS)

Long-term Care Hospital CARE Data Set (LCDS)

In-Patient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI)

Home Health Outcome and Assessment Information Set (OASIS).

Focus on legacy data elements (that are expected to be retained) and new data elements.

Prioritized to target data elements used to construct IMPACT Act quality measures and in health information exchange activities.



# Linking Assessment Data Elements to HIT Standards

Supporting Health Information Exchange Across the Care Continuum

Identifying Data Element Question and Answer Pairs Across Instruments

MDS

OASIS

LCDS

IRF-PAI

Mapping Data Elements (Question and Answers Pairs) to Nationally Accepted HIT Standards

Data Elements Mapped to HIT Vocabulary Standards:

LOINC

SNOMED

Data Elements Mapped to Document Exchange Standards:

CCDA



# Regenstrief's Role

5 year award:

base year + 4 option years

Our work

Answer questions/resolve issues

Update modeling as needed

Create new codes where needed



# Duke University

## ADAPTABLE Trial

beginning Sept 2015



# ADAPTABLE Trial

First major randomized comparative effectiveness trial conducted by the National Patient-Centered Clinical Research Network (PCORnet)

Aims to identify the optimal dose of aspirin therapy for secondary prevention in atherosclerotic cardiovascular disease.

Includes both patient-reported and EHR data



# Connection to LOINC

After vetting, patient-reported data elements from ADAPTABLE (i.e., symptoms, side effects and quality of life) will be submitted for inclusion in LOINC for use in future studies

DV to advise on use of existing LOINC content, how LOINC serves as universal catalog, and efficient submission mechanisms



# RSNA

Phase II: Oct 2015 through September 2017



You've heard about the good progress thus far...

CT, MR, US, NM, complete (mostly)

XR is well underway

Next up: mammography



# Annex in LOINC Users' Guide

## Annex - RadLex-LOINC Radiology Playbook User Guide

Welcome to the RadLex-LOINC Radiology Playbook User Guide. This work is the result of a multi-year collaboration between Regenstrief Institute and the Radiological Society of North America (RSNA), supported by the National Institute of Biomedical Imaging and Bioengineering (NIBIB). The participants have developed a model that combines and unifies the useful aspects of LOINC Radiology and the RSNA RadLex Playbook. Both of these terminology initiatives are designed to represent concepts of radiology orderables and results and their attributes.

Each term in the unified Playbook model has a name (a.k.a. description), and takes on a number of attributes. This guide is intended to describe the semantics, syntax, and proper usage of those attributes. Within the terminology, these attributes are used as building blocks to construct several types of standard names, including a fully specified name, long name, and short name.

A list of the Playbook attributes is shown below. Attributes are organized according to attribute groups, consisting of the major bullet headings below, and by more specific sub-attributes, shown in the minor bullets below and denoted by a dot after the attribute group, such as *Pharmaceutical.Route*.

- *Modality*
  - *Modality.Subtype*
- *Anatomic Location*
  - *Anatomic Location.Region Imaged*
  - *Anatomic Location.Imaging Focus*
  - *Anatomic Location.Laterality.Presence*
  - *Anatomic Location.Laterality*
- *View*
  - *View.Aggregation*
  - *View.View type*
  - *View.View type.Maneuver*
- *Pharmaceutical*
  - *Pharmaceutical.Substance Given*
  - *Pharmaceutical.Route*
  - *Pharmaceutical.Timing*
- *Reason for Exam*
- *Guidance*
  - *Guidance for.Presence*
  - *Guidance for.Approach*
  - *Guidance for.Action*
  - *Guidance for.Object*
- *Subject*

The chapters that follow provide a guide to the usage of each of the above attributes.

# Feedback Welcome



# Governance



# Main Deliverables

Integrated governance process for new terms

Creating single point-of-contact and governance structure for the unified terminology

New joint LOINC/RadLex Committee to be advisory body  
*(Approved at Clinical LOINC Meeting 02/2014)*

LOINC codes as the primary identifier for radiology procedures (e.g. the universal codes) while linking to the RadLex attribute/values for each term so that they can be used as meta-data



Agreement covering IP issues, non-duplication, etc was signed by RSNA and Regenstrief in September 2015.



# Ongoing discussion topics

Scope of orderables, protocols, procedure steps

Translations

Playbook->CPT mapping

Recommended approach to local “extensions”



# Distribution Artifacts



# Distribution Artifacts

LOINC Table, RELMA (Regenstrief)

As is today

LOINC RSNA Playbook Table (Regenstrief)

December 2015 LOINC release

Will be expanded with other modalities as completed

RadLex Playbook Table (RSNA)

Format determined by RSNA

New format for Version 2 (learned a lot from LOINC)

Includes “EXPORTED\_TO\_LOINC” attribute that points people to LOINC as we complete our work



# Other Possibilities

Social determinants of health

Chronic kidney disease data elements

“Equivalence class” roll-ups



We are breaking for  
lunch until 1pm