Director’s Update
State of LOINC

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Regenstrief-McDonald Scholar in Data Standards
*Indiana University School of Medicine*

Director, LOINC and Health Data Standards
*Regenstrief Center for Biomedical Informatics*
We want to hear your feedback
More than 35 onsite and 45 remote participants are joining us from around the world.
This is the LOINC Team
(they rock)
A freely available global standard
delivered with a rich set of implementation tools...
used by a diverse global community...
who propel its continuous development.
Growth and Usage
FY19 Funding Updates

Lots of organizations make LOINC’s work possible:

- U.S. National Library of Medicine
- Office of the National Coordinator for Health IT
- U.S. Food and Drug Administration
- U.S. Centers for Medicare and Medicaid Services
- bioMérieux
- Research Triangle Institute (NIEHS)
- Regenstrief Institute and Regenstrief Foundation
- LOINC Community and Premium Members

FY18 Completed projects:
- National Center for Advancing Translational Sciences
- U.S. Food and Drug Administration
- National Institute of Diabetes and Digestive and Kidney Diseases
- Duke University
69,000+ registered users from 172 countries
Registered Users

De-dupe & Purge!

searchloinc.org

login requirement
Registered Users: Last 24 Months

This pace is about 11,500 new users per year.
Overall loinc.org traffic (YTD)

Overview

Sessions
- Jan 1, 2018 - Sep 30, 2018: 18,90%
  168,494 vs 141,713
- Jan 1, 2017 - Sep 30, 2017: 18.04%
  95,725 vs 81,094

Users
- Jan 1, 2018 - Sep 30, 2018: 16.37%
  571,045 vs 490,721
- Jan 1, 2017 - Sep 30, 2017: 18.04%
  95,725 vs 81,094

Pageviews
- Jan 1, 2018 - Sep 30, 2018: 55.2%
  168,494 vs 141,713
- Jan 1, 2017 - Sep 30, 2017: 44.8%
  95,725 vs 81,094

Pages / Session
- Jan 1, 2018 - Sep 30, 2018: -2.13%
  3.39 vs 3.46
- Jan 1, 2017 - Sep 30, 2017: 0.70%
  0.03:31 vs 0.03:30

Avg. Session Duration
- Jan 1, 2018 - Sep 30, 2018: 0.70%
  0:03:31 vs 0:03:30
- Jan 1, 2017 - Sep 30, 2017: 1.55%
  47.30% vs 48.04%

Bounce Rate
- Jan 1, 2018 - Sep 30, 2018: -1.55%
  47.30% vs 48.04%
- Jan 1, 2017 - Sep 30, 2017: 0.70%
  0:03:31 vs 0:03:30
Overall loinc.org traffic (YTD)
## Overall loinc.org traffic (YTD)

<table>
<thead>
<tr>
<th>Country</th>
<th>Acquisition</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sessions</td>
<td>% New Sessions</td>
</tr>
<tr>
<td></td>
<td>% of Total: 100.00% (168,494)</td>
<td>55.23% Avg for View: 55.23% (0.00%)</td>
</tr>
<tr>
<td>1. United States</td>
<td>108,978 (64.68%)</td>
<td>55.53%</td>
</tr>
<tr>
<td>2. India</td>
<td>7,491 (4.45%)</td>
<td>56.92%</td>
</tr>
<tr>
<td>3. Canada</td>
<td>5,482 (3.25%)</td>
<td>48.21%</td>
</tr>
<tr>
<td>4. Germany</td>
<td>4,604 (2.73%)</td>
<td>51.02%</td>
</tr>
<tr>
<td>5. United Kingdom</td>
<td>2,495 (1.48%)</td>
<td>57.11%</td>
</tr>
<tr>
<td>6. China</td>
<td>2,281 (1.35%)</td>
<td>52.92%</td>
</tr>
<tr>
<td>7. Australia</td>
<td>2,192 (1.30%)</td>
<td>56.39%</td>
</tr>
<tr>
<td>8. Netherlands</td>
<td>1,936 (1.15%)</td>
<td>52.74%</td>
</tr>
<tr>
<td>9. France</td>
<td>1,919 (1.14%)</td>
<td>60.14%</td>
</tr>
<tr>
<td>10. Spain</td>
<td>1,689 (1.00%)</td>
<td>52.46%</td>
</tr>
</tbody>
</table>
search.loinc.org traffic (YTD)

Overview

Sessions vs. Select a metric

Jan 1, 2018 - Sep 30, 2018: ⬠ Sessions
Jan 1, 2017 - Sep 30, 2017: ⬠ Sessions

20,000

Login requirement

Users
4.93%
34,255 vs 32,646

New Users
3.97%
32,103 vs 30,876

Sessions
-1.20%
113,189 vs 114,562

Number of Sessions per User
-5.84%
3.30 vs 3.51

Pageviews
-6.84%
856,610 vs 919,524

Pages / Session
-5.71%
7.57 vs 8.03

New Visitor
Returning Visitor
Jan 1, 2018 - Sep 30, 2018

24.6%
75.4%
## Website Uptime YTD

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<tr>
<th>Date</th>
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<th>search.loinc.org</th>
</tr>
</thead>
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<td>99.97%</td>
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<td>2018 04</td>
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<td>99.98%</td>
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<td>2018 05</td>
<td>99.99%</td>
<td>99.99%</td>
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<tr>
<td>2018 06</td>
<td>99.99%</td>
<td>99.99%</td>
</tr>
<tr>
<td>2018 07</td>
<td>100%</td>
<td>99.99%</td>
</tr>
<tr>
<td>2018 08</td>
<td>99.99%</td>
<td>99.99%</td>
</tr>
<tr>
<td>2018 09</td>
<td>99.99%</td>
<td>99.99%</td>
</tr>
<tr>
<td>Ave</td>
<td><strong>99.99%</strong></td>
<td><strong>99.98%</strong></td>
</tr>
</tbody>
</table>
Canada Health Infoway

Publish and maintain pCLOCD subset of LOINC codes (incl fr-CA translation)

Province-wide lab data repositories throughout the country

Clinical Data Repository projects using document and other LOINC terms
Creating My Kanta Personal Health Record (Kanta PHR), a national data repository in which citizens may enter information on their health and wellbeing.

Using FHIR as the infrastructure platform

LOINC for vital signs
International Patient Summary (IPS)

A non-exhaustive patient summary, specialty-agnostic, condition-independent, but readily usable by clinicians for the cross-border unscheduled care of a patient.

Coordinated with the IPS project mandated to CEN TC 251 by the European Commission.

Uses LOINC for:
- Document type, sections, lab results, other clinical observations, and radiology reports
United States

ONC

Meaningful Use regulations, 21st Century Cures Act, Interoperability Standards Advisory

FDA

Requiring LOINC for lab test data in studies starting after March 2020

Broad vision towards using real-world evidence in post market surveillance

CDC

Longtime users of LOINC: electronic lab reporting, case reporting, immunization messaging, National EMS Info System, National Trauma Data Standards, etc

CMS

Under Impact Act 2014, all CMS-required patient assessment instruments are standardized in LOINC
Other Notables

CMS has Attachments [NPRM on Unified Agenda for Fall 2018](#)

LOINC has central role in current HL7 specs for this

NCVHS has a current project reviewing terminology standards

FHIR ImagingStudy

The LOINC/RSNA Radiology Playbook is now the terminology binding for `ImagingStudy.procedureCode`
Large-scale observational research networks have adopted LOINC:

- FDA’s Mini-Sentinel project
- PCORnet
- Observational Health Data Sciences and Informatics (OHDSI)
New and Noteworthy
Recent Enhancements and Features
Submission Queue Stats

LOINC Queue

Requests 80
Requested LOINCs 1,286
Requested LOINCs Pending Copyright Approval 149
LOINCs Created Since Last Release 767
Median Turnaround for New Terms 125 DAYS

Last updated 16 hours ago
<table>
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<th>Updated</th>
<th>ID</th>
<th>Set</th>
<th>Class</th>
<th>Component</th>
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<th>Time</th>
<th>System</th>
<th>Scale</th>
<th>Method</th>
<th>LOINC</th>
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<tbody>
<tr>
<td>In Process</td>
<td>4 days ago</td>
<td>38419</td>
<td>4728</td>
<td></td>
<td>What number best describes how pain has interfered with your enjoyment of life during the past week</td>
<td>Find</td>
<td>1W</td>
<td>*Patient</td>
<td>Ord</td>
<td>Pain intensity, Enjoyment of life, General activity (PEG)</td>
<td></td>
</tr>
<tr>
<td>In Process</td>
<td>4 days ago</td>
<td>38420</td>
<td>4728</td>
<td></td>
<td>What number best describes how pain has interfered with your general activity during the past week</td>
<td>Find</td>
<td>1W</td>
<td>*Patient</td>
<td>Ord</td>
<td>Pain intensity, Enjoyment of life, General activity (PEG)</td>
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<tr>
<td>In Process</td>
<td>4 days ago</td>
<td>38421</td>
<td>4728</td>
<td></td>
<td>Mean score</td>
<td>Score</td>
<td>Pt</td>
<td>*Patient</td>
<td>Qn</td>
<td>Pain intensity, Enjoyment of life, General activity (PEG)</td>
<td></td>
</tr>
<tr>
<td>Done</td>
<td>2 weeks ago</td>
<td>35479</td>
<td>4564</td>
<td></td>
<td>Response section or team responsibility</td>
<td>Find</td>
<td>Pt</td>
<td>Organization</td>
<td>Nom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Done</td>
<td>2 weeks ago</td>
<td>35487</td>
<td>4564</td>
<td></td>
<td>Date and time of scheduled task</td>
<td>TmStp</td>
<td>Pt</td>
<td>*Event</td>
<td>Qn</td>
<td></td>
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<tr>
<td>Done</td>
<td>2 weeks ago</td>
<td>35488</td>
<td>4564</td>
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<td>Location of task</td>
<td>Loc</td>
<td>Pt</td>
<td>*Event</td>
<td>Nom</td>
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<tr>
<td>Done</td>
<td>2 weeks ago</td>
<td>35495</td>
<td>4564</td>
<td></td>
<td>Date and time of event response status</td>
<td>TmStp</td>
<td>Pt</td>
<td>*Event</td>
<td>Qn</td>
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</table>
# My Submissions

Showing 1 to 14 of 14 entries

<table>
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<th>Set ID</th>
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<th>Class</th>
<th>Requested</th>
<th>Created</th>
<th>Last Updated</th>
<th>Date Imported</th>
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<tbody>
<tr>
<td>In Process</td>
<td>4776</td>
<td>Lean body weight</td>
<td>📰</td>
<td>1</td>
<td>0</td>
<td>1 week ago</td>
<td>2018-09-27</td>
</tr>
<tr>
<td>Completed</td>
<td>4563</td>
<td>We need more Easter eggs in LOINC.</td>
<td>📰</td>
<td>1</td>
<td>1</td>
<td>4 months ago</td>
<td>2017-12-11</td>
</tr>
<tr>
<td>Completed</td>
<td>4496</td>
<td>CDP and Attachments supplement implementation guides</td>
<td>📰</td>
<td>3</td>
<td>3</td>
<td>4 months ago</td>
<td>2017-09-20</td>
</tr>
<tr>
<td>Completed</td>
<td>4399</td>
<td>Honorary code</td>
<td>📰</td>
<td>6</td>
<td>6</td>
<td>10 months ago</td>
<td>2017-05-29</td>
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<tr>
<td>Completed</td>
<td>4398</td>
<td>LOINC / Radlex Playbook unification project.</td>
<td>📰</td>
<td>1</td>
<td>1</td>
<td>1 year ago</td>
<td>2017-05-29</td>
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<tr>
<td>Completed</td>
<td>4072</td>
<td>LOINC Radlex Collaboration</td>
<td>📰</td>
<td>6</td>
<td>6</td>
<td>1 year ago</td>
<td>2016-04-26</td>
</tr>
<tr>
<td>Completed</td>
<td>2923</td>
<td>LOINC / Radlex Collaboration</td>
<td>📰</td>
<td>38</td>
<td>38</td>
<td>4 months ago</td>
<td>2015-09-18</td>
</tr>
<tr>
<td>Completed</td>
<td>2922</td>
<td>CCDA/2</td>
<td>📰</td>
<td>1</td>
<td>1</td>
<td>7 months ago</td>
<td>2015-09-17</td>
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<tr>
<td>Completed</td>
<td>1617</td>
<td>CDP and Attachments supplement implementation guides</td>
<td>📰</td>
<td>25</td>
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<td>1 year ago</td>
<td>2014-07-24</td>
</tr>
<tr>
<td>Completed</td>
<td>586</td>
<td>LOINC Playbook unification project.</td>
<td>📰</td>
<td>9</td>
<td>9</td>
<td>1 year ago</td>
<td>2014-05-27</td>
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<tr>
<td>Completed</td>
<td>585</td>
<td>CDP and Attachments supplement implementation guides</td>
<td>📰</td>
<td>2</td>
<td>2</td>
<td>1 year ago</td>
<td>2014-05-27</td>
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<td>5</td>
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<td>1 year ago</td>
<td>2013-09-13</td>
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<td>Completed</td>
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<td>1</td>
<td>10 months ago</td>
<td>2012-09-07</td>
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<tr>
<td>Completed</td>
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<td>LOINC / Radlex Playbook unification project.</td>
<td>📰</td>
<td>8</td>
<td>7</td>
<td>1 year ago</td>
<td>2012-08-06</td>
</tr>
</tbody>
</table>

Note: This display only includes submissions received after 2014.
90128-0

Disclaimer
This LOINC code has not been officially released. Even after a LOINC code is assigned, the term is still considered to be under development and is subject to change prior to inclusion in a public release. It is also possible that the code may not be published in the next, or any, public release. All information provided here is for informational purposes only.

<table>
<thead>
<tr>
<th>LOINC</th>
<th>90128-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
<td>Your child has trouble remembering where he or she put things, like his or her watch or his or her homework in past 4W</td>
</tr>
<tr>
<td>Property</td>
<td>Find</td>
</tr>
<tr>
<td>Time</td>
<td>4W</td>
</tr>
<tr>
<td>System</td>
<td>^Patient</td>
</tr>
<tr>
<td>Method</td>
<td>PROMIS.PARENTPROXY</td>
</tr>
</tbody>
</table>

Visit the [Submission Queue](https://s.details.loinc.org/LOINC/90128-0.html?sections=Comprehensive) page to see all LOINC terms currently in development.
Access LOINC's terminology content through the HL7® FHIR® API

Great news! You can now access current LOINC content programmatically. Our server uses the terminology services defined by HL7's FHIR standard.

The service base URL is:

https://fhir.loinc.org

**BETA** LOINC's FHIR services are BETA status. Things may change, and we will update this documentation to stay current. They may not be available 100% of the time, so don't rely on them for production use. You can visit our dedicated User Forum to discuss this server. If you notice something not working as expected, please let us know.
loinc.org performance boosts

New server caching approach + global content delivery network

Results: cut response time in half
RELMA 6.23

Improved Panels and Forms export:
Matches format of other artifacts
Support for override answer lists
FDA-funded development of Guide for Using LOINC Microbiology Terms

Our first (but hopefully not last) “Implementation Guide”

Grant HHSF223201710178P and HHS223201810268P from U.S. Food and Drug Administration
Enhancing LOINC to support U.S. interoperability

5 yr cooperative agreement with ONC

Technical infrastructure updates

Routine user feedback survey
Upgrading technical infrastructure (e.g. FHIR, panels and forms, RELMA)

Enrichment of LOINC content

LOINC content relevant to USCDI
LOINC hierarchy and other search ability improvements

Grant 90AX0021/01-00 from Office of the National Coordinator for HIT (ONC)
LOINC Committee

Applications for membership are ongoing

Officially launched the LOINC/RadLex Committee
Co-chairs: Ken Wang and Daniel Vreeman
LOINC Representatives: Swapna Abhyankar, Oscar Beitia, Shaun Shakib
RSNA Representatives: Judy Gichoya, Ross Filice, Stacy O’Connor
At-large representatives: Roger Boodoo, David Clunie, Sarah Maulden

Officially launched the Document Ontology Subcommittee
LOINC Committee Officers

Seeking your volunteer leadership for 4 positions

- Laboratory LOINC Committee (Co-chair)
- Clinical LOINC Committee (Co-chair)
- Document Ontology Subcommittee (Chair, Co-chair)

Apply by sending:

- Statement indicating willingness to serve in the identified role
- Statement summarizing your contributions to the domain of the selected (sub) Committee and why you are interested in serving in this role

Submit your nomination at: committee@loinc.org
Recent Publications


Coming Attractions
Your LOINC term request

About your request
Are you making this request on behalf of another organization?
Yes  No

Project Description
Please provide some background information on the proposed LOINC terms that will be included as part of this request.

Do you have a spreadsheet containing values for the proposed LOINC terms?
Yes  No
About your request

Are you making this request on behalf of another organization?

Yes  No

Project Description
Please provide some background information on the proposed LOINC terms that will be included as part of this request.

New term request in support of USCDI

Do you have a spreadsheet containing values for the proposed LOINC terms?

Yes  No

On the following page you will upload your spreadsheet for processing.
Upload spreadsheet

Upload your spreadsheet of terms to be added to your request.

The order of the columns should be as follows. You may download our submissions template to compile your term requests.

**TIP** You can also select and copy the headings below and then paste into a spreadsheet.

<table>
<thead>
<tr>
<th>Reference #</th>
<th>Local observation code</th>
<th>Local observation name</th>
<th>Observation description</th>
<th>Reference Info/URL</th>
<th>Component</th>
<th>Property</th>
<th>Timing</th>
<th>System</th>
<th>Scale</th>
<th>Method</th>
<th>Answers</th>
<th>Units</th>
<th>Formula</th>
</tr>
</thead>
</table>

On the following page you can then review and edit those values prior to final submission.

Select your spreadsheet (.xlsx or .xls) to be uploaded

Choose File: no file selected

Remember that your request it limited to 50 terms.

Your spreadsheet should NOT contain any embedded reference files. On the following page you will be able to upload reference files for each requested term.

Next
Requested terms

We ask that you submit no more than 50 proposed terms per request. If your project requires more terms, please contact us for alternate submission methods.

Guidance? We may want to refer users back to documentation.

Tip: Use the buttons at right to add or remove term rows.

Reference # | Local observation code | Local observation name
---|---|---

Observation description

Reference info/URL

Component | Property | Timing
---|---|---

System | Scale | Method
---|---|---

Answers | Units | Formula
---|---|---

Upload File

Next
LOINC License Update

Has gotten too verbose and unnecessarily complicated

Revisions in process
- Separate out LOINC content from RELMA licenses
- Label sets of files rather than lots of lists repeating each artifact
- Pull out data policies into Privacy Policy

Will be tracked with new Version Policy
LOINC Panels and Forms File Update

New LOINC Answer File supersedes our old format
Last release we just pointed to those files
Decided to (re)create a bundle of all the files you need

Look for this in December release