Content highlights in LOINC 2.64 release and Work in progress

Swapna Abhyankar, MD
Associate Director for Content Development,
LOINC and Health Data Standards
Overview

- LOINC 2.64 release
  - New terms
  - Term edits
  - Other content updates
- Work in progress
Highlights from LOINC 2.64 Release in June 2018
LOINC 2.64

• 1335 new terms

• 3700 term edits

• 44 deprecated terms
New Laboratory terms

Total # of new terms = 1335
New Clinical terms

Total # of new terms = 1335
New Survey terms

Total # of new terms = 1335
Term edits

Total # of term edits = 3700
New Clinical Panels

• ADAPTABLE patient reported item set (89070-7)
• International Physical Activity Questionnaire
  • International Physical Activity Questionnaire self-administered long form (88379-3)
  • International Physical Activity Questionnaire telephone short form (88412-2)
  • International Physical Activity Questionnaire telephone long form (88434-6)
• Everyday Cognition panels
  • Everyday Cognition - Study Partner Report Form (89090-5)
  • Everyday Cognition - Participant Self Report Form (89133-3)
• Patient Health Questionnaire-9: Modified for Teens (89206-7)
• Timed Up and Go test & physical findings of gait panel (89422-0)
• Rose Dyspnea Scale panel (89440-2)
• Exercise Vital Sign (EVS) (89574-8)
For specific details about new and edited LOINCs in 2.64, see the LOINC Release Notes.
RSNA Collaboration

- Primary work finished 9/2017
- Focused effort prior to 2.64 release to finish cleaning up existing LOINC radiology terms per the LOINC/RadLex model and fix parsing issues
- Updated 2000+ short names for readability
- Still not completely finished...but much closer!!
Groups

• Wrapped up CTSA-funded Groups work in June
• In this cycle, we added new Groups, including:
  • Groups for Radiology by Region imaged
  • Groups based on manual tagging of specific terms rather than automated roll-ups by query
    • Social Determinants of Health
    • Exercise/Physical activity
• Addition of molecular weights from PubChem as Group Attributes
• FHIR implementation
Group Example #1

**GroupId:** LG11363-5

**Group:** Sodium|SCnc|Pt|ANYBldSerPl

**UsageNotes:** Many studies have been done comparing whole blood and serum or plasma sodium measurements, primarily using point-of-care (POC) and central laboratory (CL) analyzers, respectively, with mixed results. Some have found that there is insufficient correlation between POC and CL methods to make these methods interchangeable for direct clinical care. [PMID: 25431133] [PMID: 2721806] [PMID: 21633542] Others have reported good correlation between POC and CL measurements [PMID: 16776641] [PMID: 26658635] [PMID: 21504373] [PMID: 28072822], though there is general consensus that CL methods may slightly overestimate the sodium measurement, especially in patients with hypoproteinemia or other conditions in which the solid fraction of the serum phase will be less than normal because the CL method for measuring sodium concentration typically includes dilution of the sample. [PMID: 28072822] [PMID: 28072822]. In one study that compared POC to CL methods for patients with hyponatremia, eunatremia and hypernatremia, the difference between the POC and CL results became more pronounced in patients with hypernatremia compared to those with hyponatremia. [PMID: 2721806]

**LOINCs:**

32717-1  Sodium [Moles/volume] in Arterial blood  
2947-0   Sodium [Moles/volume] in Blood  
39792-7  Sodium [Moles/volume] in Capillary blood  
41657-8  Sodium [Moles/volume] in Mixed venous blood  
2951-2   Sodium [Moles/volume] in Serum or Plasma  
77139-4  Sodium [Moles/volume] in Serum, Plasma or Blood  
39791-9  Sodium [Moles/volume] in Venous blood
**Group Example #2**

**GroupId:** LG41764-8  
**Group:** SDH.Food  
**LOINC:**

<table>
<thead>
<tr>
<th>LOINC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>67597-5</td>
<td>A large selection of fresh fruits and vegetables is available in my neighborhood [PhenX]</td>
</tr>
<tr>
<td>67598-3</td>
<td>A large selection of low-fat products is available in my neighborhood [PhenX]</td>
</tr>
<tr>
<td>77234-3</td>
<td>How often in the past 12Mo would you say the patient was worried or stressed about having enough money to buy nutritious meals [BRFSS]</td>
</tr>
<tr>
<td>65464-0</td>
<td>I did not feel like eating, I wasn't very hungry [CES-DC]</td>
</tr>
<tr>
<td>87303-4</td>
<td>Mother WIC food recipient</td>
</tr>
<tr>
<td>63024-4</td>
<td>PhenX - healthy food environments protocol</td>
</tr>
<tr>
<td>45738-2</td>
<td>Regular or repetitive complaints of hunger [Minimum Data Set]</td>
</tr>
<tr>
<td>88123-5</td>
<td>Within the past 12 months the food we bought just didn't last and we didn't have money to get more [U.S. FSS]</td>
</tr>
<tr>
<td>88122-7</td>
<td>Within the past 12 months we worried whether our food would run out before we got money to buy more [U.S. FSS]</td>
</tr>
</tbody>
</table>
Group File Beta.1 Numbers

• June 2018 release file contains:
  • 37 Parent Groups
  • 5,500+ Groups
  • 24,000+ LOINC terms
Other content in 2.64

- PubChem mappings to several hundred analytes
  - Can get to molecular weights through PubChem
- Continued work with CMS on representing their Long-Term Post-Acute Care (LTPAC) assessments
  - Caught up to current versions
  - Working on new versions with the intent of staying ahead of CMS releases for new versions moving forward
- Updates to the American Physical Therapy Association’s Outcomes Registry panel
- Display Names
  - Alpha.1 release (for Lab terms only)
Other content work (cont.)

- Collaboration with software development team on Submitter’s portal
- Review and update of terms based on community feedback
- Obtained copyright permission for 10 different copyrighted assessments
  - And worked on an improved process around copyright and engaging submitters in the copyright approval process
Work in Progress
Guide for Using LOINC Micro Terms

- Published in August!
- Working on expansion project to add
  - Answer list support
  - Feedback site for Micro Guide implementers

https://loinc.org/guides/micro
Display Names

• Continued work on enhancing the Display Names for laboratory terms, including new names for DEPRECATED terms
  • <Complement C1q binding ID (S)>

• December release of RELMA will include Display Names on the search grid as well as on the details pages

• Online search will have them on the details pages
Collaborations

• Worked with CDC and APHL on the LOINC mapping for IVD HIV tests published in LIVD format
  • Published in August 2018
• Working with CDC, APHL, and state Public Health labs on a more sustainable model for reporting microbiology resistance information (similar to the Clinical Genomics model)

https://www.cdc.gov/hiv/guidelines/reporting.html
Collaborations (cont.)

• Working with PhenX team at RTI on representing measures of environmental exposures in LOINC

• Continued work with Northwestern University to update PROMIS content in LOINC
  • December release will have at least 15 new item banks

• Continued work with CMS on the LT-PAC instruments
  • Goal is to release instruments two cycles prior to when they will be required for use – e.g., IRF-PAI 3.0 will be released in 2.65 release so that developers can implement it for the October 2019 effective date