

# a LOINC Order Code S&I Framework Initiative

**N. Cornish, MD**

**M. Gagnon, CT**

**A. Pollock, MT**

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# Background

- ❑ The Centers for Medicare & Medicaid Services (CMS) is providing incentive payments to health care providers who adopt certified electronic health record technology (EHR) and use it to demonstrate meaningful use (MU) of that technology.
- ❑ The CMS incentive program is being implemented in several stages or phases. Stage 2 criteria for meaningful use focuses on the electronic capturing of health information, including *laboratory test results*, in a structured format.
- ❑ The structured format for laboratory tests and orders allows the ability to incorporate LOINC (Logical Observation Identifiers Names and Codes) terminology for ordering and reporting laboratory testing.
- ❑ Because of meaningful use certification requirements, laboratories are required to use LOINC terminology in the electronic transmission of laboratory results.
- ❑ However, at this time, laboratories are not required to adopt any standardized vocabulary for the electronic *ordering of laboratory tests*.

## The Challenge

- ❑ **Non-standardized local codes or terminology to describe laboratory test orders (and results) varies widely among laboratories across the United States**
- ❑ **Universal use of LOINC coding for laboratory order and result information in a structured and systematic fashion is an essential component of communication or interoperability between providers, clinical laboratories and public health laboratories**
- ❑ **Goal: map local codes to LOINC codes for the same test**

# What Is LOINC?

- ❑ Logical observation identifiers, names and codes or LOINC
- ❑ Developed by the Regenstrief Institute at Indiana University and released in 1995, the data base continues to be updated
- ❑ Provides universal standard for reporting Lab results, previously a variety of local codes were used
- ❑ Scope is broader than laboratory orders and results and many clinical observations are included such as vital signs, EKG findings, Glasgow coma scale....
- ❑ As of 2009, 54,000 codes in LOINC and 40,000 of these are lab related (the number continues to grow)
- ❑ CDC LabHIT is leading a team to continue development of a LOINC order code set with a special focus on ambulatory lab test orders

# Why LOINC?

- ❑ Provides standardization for laboratory tests across multiple organizations and platforms allowing for comparability and analysis of consolidated laboratory data
- ❑ Provides options for standardizing laboratory test names and reporting units across different lab systems for use in a consolidated system
- ❑ Facilitates computer communication between different laboratory systems and the EHR
- ❑ Supports all commonly used laboratory tests and the majority of tests done in specialty areas
- ❑ Supports both ordering and reporting lab tests

## **Benefits of Standardized Codes**

- ❑ Increases access to laboratory test results across the continuum of care**
- ❑ Reduces the need to repeat laboratory tests since all existing tests are accessible**
- ❑ Improves quality and timeliness of laboratory results and interpretations since tests can be reviewed electronically**
- ❑ Reduces storage, dissemination and duplication costs – tests can be stored and shared electronically**

# LOINC and National Library of Medicine (NLM)

- ❑ LOINC is one of a suite of designated standards for use in U.S. Federal Government systems for the electronic exchange of clinical health information. LOINC is likely to become a HIPAA standard for some segments of the Claims Attachment transaction. In 1999, it was identified by the *HL7 Standards Development Organization* as a preferred code set for laboratory test names in transactions between health care facilities, laboratories, laboratory testing devices, and public health authorities.
- ❑ NLM supports the ongoing development of LOINC through a contract arrangement

# Health Level 7 code (what is it?)

- ❑ **A computer communication protocol developed in 1987**
  - Message or language to describe a laboratory order or a result
  - The structure is series of data element segments which completely describe the specimen and patient attached to it
  - Goal is to standardize between computer interfaces
- ❑ **All volunteer nonprofit organization ([www.HL7.org](http://www.HL7.org))**
- ❑ **Globally used reference interface for exchange of healthcare information**
- ❑ **American National Standards Institute (ANSI) accredited in 1994**
- ❑ **Several 2.x versions in use which make interoperability between systems a challenge, also 3.x and RIM in the works**



## What is ONC?

- ❑ The Office of the National Coordinator for Health Information Technology (ONC) is under the Office of the Secretary for the U.S. Department of Health and Human Services (HHS).
- ❑ ONC is the principal federal entity charged with coordination of nationwide efforts to implement and use the most advanced health information technology and the electronic exchange of health information.
- ❑ The position of National Coordinator was created in 2004, through an Executive Order, and legislatively mandated in the Health Information Technology for Economic and Clinical Health Act ([HITECH Act](#)) of 2009.

## ONC and S & I Framework

- ❑ The S&I Framework is one of the approach's adopted by ONC's Office of Standards & Interoperability to assist in the support national health outcomes and healthcare priorities, including Meaningful Use and the ongoing efforts to create better care, better population health and cost reduction through delivery improvements.
- ❑ The S&I Framework is a collaborative community of participants from the public and private sectors who are focused on providing the tools, services and guidance to facilitate the functional exchange of health information. The S&I Framework uses a set of integrated functions, processes, and tools that enable execution of specific value-creating initiatives. Each S&I Initiative tackles a critical interoperability challenge <http://wiki.siframework.org/>

## How CDC Got Involved

- ❑ **S&I Framework Initiatives identified the need to incorporate LOINC<sup>(1)</sup> order codes in the Electronic Health Record (EHR) to improve interoperability of test ordering between the EHR and the Lab Information System (LIS)**
- ❑ **ONC approached CDC with the opportunity to lead on a new S&I Framework Initiative to develop a standard list of the most common ambulatory care LOINC Order Codes (will expand the order code list which already exists)**
- ❑ **CDC agreed to lead and made suggestion that a list of public health tests included**

1) Logical Observation Identifiers Names and Codes

## How CDC Got Involved

- ❑ A planning group was formed with participation from ONC <sup>(1)</sup>, NLM<sup>(2)</sup>, Regenstrief, laboratory industry, and CDC
- ❑ CDC also formed an intra-agency workgroup to develop the public health test list
- ❑ Created S&I Framework wiki<sup>(3)</sup> December 2013
- ❑ S&I Initiative – a<sup>(4)</sup>LOINC Order Code began January 8, 2014

1) Office of the National Coordinator

2) National Library of Medicine

3) <http://wiki.siframework.org/a+LOINC+Order+Code+Homepage>

4) a stands for agreed upon, based on a consensus approach, amongst various stakeholders

## Purpose and Goals

- ❑ This project will focus on the enhancement and expansion of the standardized list of Logical Observation Identifiers Names and Codes (LOINC) Codes for the Most Commonly Ordered Laboratory Tests in ambulatory care settings (Common Order Codes Value Set) that is published by Regenstrief Institute ([www.loinc.org](http://www.loinc.org)).

**Objective: Identify and standardize LOINC codes for the most frequently ordered laboratory tests in ambulatory care settings (80-95% by test volume) resulting in a more complete and up-to-date Common Order Codes Value Set for use in implementation of the EHR Certification Requirements to support Meaningful Use (MU) Stage 3.**

## **Accomplish Purpose By:**

- ❑ **Identify and provide standardized LOINC order codes for two sets of laboratory tests**
  - Most commonly performed clinical laboratory tests in ambulatory care settings
  - Public health tests
- ❑ **Regenstrief will publish both lists on the web for laboratories to use**
- ❑ **Provide lists to ONC for consideration on whether MU3 should require LOINC codes for laboratory test orders**

# Planned Approach

- ❑ **Compiled a list of test called the baseline list**
  - Top 2000 LOINC result codes developed by Regenstrief
  - Top 300 order codes for panels developed by American Clinical Laboratory Association (ACLA)
- ❑ **Regenstrief will analyze new data\* from the Indiana Health Information Exchange (HIE)**
- ❑ **Invite participation from S&I Initiative members**
  - To provide laboratory test name and LOINC results and order codes for tests not on the list (if codes available)
  - Identify tests on the baseline list that should be removed
  - Assist in submitting new LOINC code requests, if needed to Regenstrief
- ❑ **Regenstrief will publish the final list on their website for laboratories to use**

\* Funded by the California Health Foundation

# Development of Standardized LOINC Laboratory Order Code List

- **In-Scope for discussion by S & I Framework attendees**
  - Testing performed for patients in the ambulatory setting
  - Fixed panels (such as CMS approved panels & panels already present in Regenstrief LOINC list )
  - Variable panels ( such as geographically defined allergens)
  - Reflex testing
  - Orders placed by the ambulatory provider in the EHR and sent to the laboratory's information system
  - Laboratory test orders that are specific for reportable diseases
  - Laboratory tests for public health (in addition to the 80-95% volume for ambulatory care tests) (TBD)



# What is NOT in the List

## ❑ Out of Scope

- Laboratory Orders that are not commonly placed in an ambulatory setting.
- “Custom” panels
- Testing performed in the physician office that are not reported to the EHR (such as, Point of Care Testing or waived test)

# Stakeholders

- ❑ Laboratories that perform testing for patients in the ambulatory care setting
- ❑ Public Health Laboratories
- ❑ State HIEs
- ❑ Local, State, Federal governments
- ❑ Patients and patient advocates
- ❑ Health organizations
- ❑ Standards and Accreditation Organizations
- ❑ EHR/EMR Vendors
- ❑ Others that should be included?

## **Accomplishments Public Health Workgroup**

- ❑ **Discussed project with other CDC groups involved with laboratory test coding**
- ❑ **Obtained copy of all CDC infectious disease tests which was used by DLPSS to participate in Regenstrief LOINC coding training**
- ❑ **Brought Dr. Clem McDonald at CDC to provide team education, assistance and support around LOINC coding – March 4<sup>th</sup> 2014**

## Next Steps Public Health Workgroup

- ❑ Collect common list of tests performed at CDC (include LOINC order & result codes, Snomed codes) to use as the baseline Public Health test list
- ❑ Harmonize Public Health test list with Ambulatory Care Test list to ensure LOINC codes match
- ❑ Post Public Health test list on Wiki for comment, encourage participation by other public health agencies such as state public health labs
- ❑ Request new LOINC order codes from Regenstrief as needed
- ❑ Publish Public Health test list on Regenstrief site and link to this site from other sites such as CDC, APHL, others

# What Are The Deliverables

- ❑ Two laboratory test lists that are based on analysis of LOINC Order Code and Public Health Order Code data obtained from HIEs, laboratories that perform ambulatory care laboratory testing, and laboratories performing public health testing will be used to:
  - Identify the missing orderable laboratory tests or miscoded laboratory test order codes (including panels).
- ❑ If needed, develop/create new LOINC order codes for panels/tests identified as missing from the LOINC Order Code and Public Health Order Code data.
- ❑ Publish a recommended list of Standard LOINC Order Codes in a publication(s) or communication format which will reach the audience for which this work is intended.
- ❑ Provide recommendations for possible incorporation into Meaningful Use Stage 3 Certification Criteria

## **Timeline**

- ❑ **S&I Framework Initiative Announcement - 12/10/2013**
- ❑ **a LOINC Order Code launch – 1/8/2014**
- ❑ **Post baseline LOINC Order Codes – 1/22/2014**
- ❑ **Post baseline Public Health Order Codes – TBD**
- ❑ **Completed LOINC Order Codes and Public Health Order Codes – 4/30/2014**

## Just What Is A Wiki?

- ❑ A collaborative Web site comprises the perpetual collective work of many authors. Similar to a blog in structure and logic, a wiki allows anyone to edit, delete or modify content that has been placed on the Web site using a browser interface, including the work of previous authors. In contrast, a blog, typically authored by an individual, does not allow visitors to change the original posted material, only add comments to the original content. The term *wiki* refers to either the Web site or the software used to create the site.
- ❑ *Wiki wiki* means "quick" in Hawaiian. The first wiki was created by Ward Cunningham in 1995.



**Thank you**



**For more information please contact the LOINC Team**

Nancy Cornish – [ncornish@cdc.gov](mailto:ncornish@cdc.gov) or 404 498-2720

MariBeth Gagnon – [mgagnon@cdc.gov](mailto:mgagnon@cdc.gov) or 404 498-2745

Anne Pollock – [apollock@cdc.gov](mailto:apollock@cdc.gov) or 404 498-2750

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