Laboratory Semantic Interoperability

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Excellent Laboratories, Outstanding Health

Semantic Interoperability

Semantics concerns the study of meanings.

Semantic interoperability is the **ability of computer systems to exchange data with unambiguous, shared meaning**.

Why is this Important?

- Access to laboratory test results across the continuum of care
- Improve Clinical Decision Support (CDS)
- Improve public health surveillance during emergencies / outbreak
- Provide Real World Evidence (RWE) for more efficient medical research
- Support quality assurance of laboratory testing

September 2005 – Claire Broome

"I hope that laboratory information management system (LIMS) vendors will integrate coding and message formatting tasks into newer systems, thereby reducing the burden of coding, formatting, and reporting. ***Laboratories have the opportunity to be leaders in*** *the national health data exchange using Logical Observation Identifier Names and Codes (LOINC), Systematized Nomenclature of Medicine (SNOMED), and Health Level Seven (HL7)* ***coding and messaging standards for communicating laboratory results and other patient data.*** *A reliable coding of a complete set of laboratory results would expedite the flow of critical information among federal, state, local, and private sector laboratories during emergencies."*

Claire Broome, MD/ CDC
September 7, 2005

2005 – 2018 CLIAC Meetings

- Discussed interoperability 14 times – 41 presentations
- 7 recommendations
- Since 2009 laboratory informatics has been a regular topic
- Topics include interoperability, coding, patient safety, usability, and public health needs
- ONC provided 5 updates

Systemic Harmonization and Interoperability Enhancement for Laboratory Data (SHIELD)

- Promotes semantic interoperability of laboratory data
- 50 Supporting partners
  - Government, laboratory, manufacturers, EHR vendors, professional organizations and standards development organizations
- Accomplishments
  - Digital format
  - LOINC to Vendor IVD Test Results (LIVD)

Questions for CLIAC

- What challenges remain for achieving semantic interoperability?
- How can CMS, FDA, and CDC facilitate addressing those challenges?
- How can CMS, FDA and CDC support industry in their efforts to provide standard test codes for laboratories?
- What incentives would laboratories need to voluntarily implement the laboratory data exchange standards? (HL7, LOINC, SNOMED, UCUM, LIVD)

Speakers

- **Stanley M. Huff, MD** -- Information Models to Standardize Access to Laboratory Data
- **Daniel J. Vreeman, PT, DPT, MS** -- Regenstrief Harmonization Efforts
- **Edwin O. Heierman, Ph.D.** -- IVD Instrument Standards for Interoperability and the Harmonization of Laboratory Data

Disclaimer

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