HL7 in Meaningful Use & Interoperability

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HL7 is more than you think!

- Messaging standards...of course
- ISO-approved Information Model
- Functional Models for EHRs & PHRs...and the Profiles & Domain Analysis Models supporting them
- Implementation Tooling & Implementation Guides
- Certification
- Mobile Health & mobility
- Clinical Research
- Genomics & Genetics
- Education & Training
HL7 is for Education

- Educational Summits
- Topic-focused Training Programs
- Distance Learning & eLearning Programs
- Certification training & testing
- Topical Webinars
- Work Group Tutorials
- Webinar Series
The Meaningful Use Series

- Consolidated CDA
- Family Health History
- S&I Framework Laboratory Result Interface
- Immunization Messaging
- Electronic Laboratory Reporting to Public Health
- Infobuttons for Clinical Decision Support
- Quality Reporting Document Architecture
Topics Covered in the Series

- Dates by which EHRs are required to send/receive MU artifacts
- Specifics requirements (and examples) for sending and/or receiving
- Understanding Meaningful Use 2 Implementation Guides
- Required vocabularies
- Required HL7 standards & how they must be applied
MU Series Topics

Consolidated CDA
Consolidated CDA
Stage 2 Measures

• Eligible professionals (EP), Eligible Hospitals, or Critical Access Hospitals that transition or refer their patient to another setting of care or provider of care provides a summary of care record for more than 50% of transitions of care and referrals.

• More than 50% of all unique patients seen by the EP during the EHR reporting period are provided timely (within 4 business days after the information is available to the EP) online access to their health information subject to the EP's discretion to withhold certain information.
Consolidated CDA Certification Criteria

- Display. EHR technology must be able to electronically display *in human readable format* the data included in transition of care/referral summaries received and formatted according to any of the following standards (and applicable implementation specifications) specified in: § 170.205(a)(1), § 170.205(a)(2), and § 170.205(a)(3).
Consolidated CDA Standards


- § 170.205(a)(2) – ASTM E2369 Standard Specification for Continuity of Care Record and Adjunct to ASTM E2369

Consolidated CDA Implementation Guide Part 1 & 2

February 20 & 27

Presenter: Calvin Beebe, HL7 Treasurer & Technical Specialist, Mayo Clinic, Rochester, MN
Consolidated CDA for Meaningful Use Part 1 - Objectives

- HL7 Implementation Guides for CDA Release 2: IHE Health Story Consolidation, DSTU Release 1.1 - US Realm, or C-CDA Implementation Guide
- Requirements for C-CDA in Meaningful Use Stage 2, Including EMR Certification Rules and the Eligible Provider & Eligible Hospital C-CDA related goals
- S&I Companion Guide, including useful clarification for mapping Stage 2 data requirements to the HL7 C-CDA standard
Consolidated CDA for Meaningful Use Part 2 - Objectives

- Key sections of the C-CDA Implementation Guide, with examples
- Process & examples for building a C-CDA solution
- Specific C-CDA instances
- Resources & tools available for developers
MU Series Topics

Family Health History
Family Health History
Stage 2 Measure

- More than 20% of all unique patients seen by the EP or admitted to the EH’s or CAH's inpatient or emergency department (POS 21 or 23) during the EHR reporting period have a structured data entry for one or more first-degree relatives.
Family Health History
Stage 2 Measure

Courtesy: Grant Wood, Intermountain Health
Enable a user to electronically record, change, and access a patient’s family health history according to:

(i) At a minimum, the version of the standard specified in § 170.207(a)(3); or

(ii) The standard specified in § 170.207(j)
Family Health History Standards

- § 170.207(j) – HL7 Version 3 Standard: Clinical Genomics; Pedigree.
Family Health History and Beyond

March 6

Presenter: Grant Wood, HL7 Clinical Genomics Work Group & Senior IT Strategist, Intermountain Healthcare’s Clinical Genomics Institute
Family Health History and Beyond

Objectives

- Why Family Health History?
- Review of the Meaningful Use Stage 2 Requirements
- Personalized Medicine Story – Family Health History Use Case and Model
- Web-based Patient Tool Demo
- Clinical Workflow, Clinical Decision Support Example
- Going Beyond Family Health History (Genomics)
MU Series Topics

S&I Framework Laboratory Result Interface
Lab Result Interface
Stage 2 Measures

- More than 55% of all clinical lab tests results ordered by the EP or by authorized providers of the EH or CAH for patients admitted to its inpatient or emergency department (POS 21 or 23) during the EHR reporting period whose results are either in a positive/negative affirmation or numerical format are incorporated in CEHRT as structured data.

- Hospital labs send structured electronic clinical lab results to the ordering provider for more than 20% of electronic lab orders received.
Lab Result Interface
Certification Criteria

- Incorporate laboratory tests and values/results
  
  (i) Receive results.

  (A) **Ambulatory setting only:** Electronically receive and incorporate clinical laboratory tests and values/results in accordance with the standard specified in § 170.205(j) and, at a minimum, the version of the standard specified in § 170.207(c)(2).

  (B) **Inpatient setting only:** Transmission of electronic laboratory tests and values/results to ambulatory providers. EHR technology must be able to electronically create laboratory test reports for electronic transmission in accordance with the standard specified in § 170.205(j) and with laboratory tests expressed in accordance with, at a minimum, the version of the standard specified in § 170.207(c)(2).
Lab Result Interface

Standards

- § 170.205(j) – HL7 Version 2.5.1. Implementation Guide: S&I Framework Lab Results Interface
- § 170.207(c)(2) – LOINC® version 2.40, June 2012, a universal code system for identifying laboratory and clinical observations produced by the Regenstrief Institute
S&I Framework Laboratory Result Interface Implementation Guide
Using HL7 Version 2.5.1

March 13
Presenter: Hans J. Buitendijk
Co-chair, HL7 Clinical Statement Work Group & Co-chair, HL7 Orders and Observations Work Group
HS Standards & Regulations Manager, Siemens Healthcare
Laboratory Result Interface - Objectives

- Meaningful Use rules/requirements driving lab results for ambulatory providers
- Overview of the Implementation Guide used to support the exchange of lab results between laboratories and ambulatory providers
  - Key concepts and approach
  - Vocabularies
  - Sample message extracts
- MU Test procedures and Data
- Pre-Requisite Standards
MU Series Topics

Immunization Messaging
Immunization
Stage 2 Measures

- The EP, EH, or CAH who transitions their patient to another setting of care or provider of care or refers their patient to another provider of care provides a summary care record for each transition of care or referral.

- Successful ongoing submission of electronic immunization data from CEHRT to an immunization registry or immunization information system for the entire reporting period.
Immunization Certification Criteria

- Transitions of care: (b)(2) – create and transmit transition of care/referral summaries.
  
  (i) Create. Enable a user to electronically create a transition of care/referral summary formatted according to the standard adopted at § 170.205(a)(3) that includes, at a minimum, the Common MU Data Set** and the following data expressed, where applicable, according to the specified standard(s):

  (ii) Immunizations. The standard specified in § 170.207(e)(2);

- Immunization information. Enable a user to electronically record, change, and access immunization information.

- Transmission to immunization registries. EHR technology must be able to electronically create immunization information for electronic transmission in accordance with:

  (i) The standard and applicable implementation specifications specified in § 170.205(e)(3); and

  (ii) At a minimum, the version of the standard specified in § 170.207(e)(2).
Immunization Messaging Standards

- § 170.205(e)(3) – HL7 2.5.1. Implementation specifications: HL7 2.5.1 Implementation Guide for Immunization Messaging, Release 1.4
Immunization Messaging
Using HL7 Version 2.5.1

March 20
Presenter: Rob Savage, Co-chair, HL7 Public Health & Emergency Response Work Group
Author of V2.5.1 Implementation Guide for Immunization Messaging, Northrop Grumman Contractor
Immunization Messaging Using HL7 Version 2.5.1 - Objectives

- List the differences between Version 2.3.1 and Version 2.5.1 of the implementation guide for immunization messaging.
- List the core data elements of immunization histories that need to be supported.
- Discuss use cases supported by the messages in the implementation guide and those included in Meaningful Use 2.
- Describe and Conform to the usage guidance pre-adopted from Version 2.7.1 in Release 1.4 of the Implementation Guide.
- Validate conformance of messages to the guide using the tools developed by NIST.
- Gain the knowledge that will allow you to generate immunization messages that will conform to Meaningful Use certification testing.
MU Series Topics

Electronic Laboratory Reporting to Public Health
Lab Reporting to Public Health

Stage 2 Measures

- Successful ongoing submission of electronic syndromic surveillance data from CEHRT to a public health agency for the entire EHR reporting period
Lab Reporting to Public Health Certification Criteria

- Transmission to public health agencies – syndromic surveillance. EHR technology must be able to electronically create syndrome-based public health surveillance information for electronic transmission in accordance with:
  
  (i) **Ambulatory setting only.**
  
  (A) The standard specified in § 170.205(d)(2).
  
  (B) **Optional.** The standard (and applicable implementation specifications) specified in § 170.205(d)(3).

  (ii) **Inpatient setting only.** The standard (and applicable implantation specifications) specified in § 170.205(d)(3).

- **Inpatient setting only:** Transmission of reportable laboratory tests and values/results. EHR technology must be able to electronically create reportable laboratory tests and values/results for electronic transmission in accordance with:

  (i) The standard (and applicable implementation specifications) specified in § 170.205(g); and

  (ii) At a minimum, the versions of the standards specified in § 170.207(a)(3) and (c)(2).
Lab Reporting to Public Health Standards

- § 170.205(g) – HL7 2.5.1. Implementation specifications: HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health, Release 1 (US Realm) with Errata and Clarifications, and ELR 2.5.1 Clarification Document for EHR Technology Certification
Electronic Laboratory Reporting to Public Health Using HL7 Version 2.5.1

March 27

Presenter: John A. Roberts
Co-chair, HL7 Public Health & Emergency Response Work Group; Interim Chair, National ELR Work Group; Director, Interoperability and Standards, Office of Information Technology Services, Tennessee Department of Health.

Presenter: Erin Holt, MPH
HL7 PHER Work Group member; Director of Surveillance Systems and Informatics Program, Communicable and environmental Disease Services and Emergency Preparedness Section, Tennessee Department of Health.
Electronic Laboratory Reporting to Public Health Using HL7 Version 2.5.1

Objectives

- Electronic Laboratory Reporting Preparation
- Characteristics of ELR messages
- Message testing resources
- Operations and Maintenance
- Additional resources
MU Series Topics

Infobuttons for Clinical Decision Support
Clinical Decision Support
Stage 2 Measures

• Implement five clinical decision support interventions related to four or more clinical quality measures at a relevant point in patient care for the entire EHR reporting period
Clinical Decision Support Certification Criteria

- (ii) Linked referential clinical decision support.
  
  (A) EHR technology must be able to:
  
  (1) Electronically identify for a user diagnostic and therapeutic reference information; or
  
  (2) Electronically identify for a user diagnostic and therapeutic reference information in accordance with the standard specified at § 170.204(b) and the implementation specifications at § 170.204 (b)(1) or (2)
Clinical Decision Support Standards

- § 170.204(b) – HL7 V3 Standard: Context-Aware Retrieval Application (Infobutton).

Infobuttons for Clinical Decision Support

April 3

Presenter: Guilherme Del Fiol, Co-chair HL7 Clinical Decision Support (CDS) Work Group & Lead author of the HL7 Infobutton standard; Assistant Professor, University of Utah, Department of Biomedical Informatics.
Infobuttons for Clinical Decision Support

Objectives

- Background on clinicians’ information needs
- Examples of Infobutton implementations
- Infobutton Standard architecture and specification walk-through
- Examples of Infobutton requests and responses
- Meaningful Use criteria related to the Infobutton standard
MU Series Topics

Quality Reporting Document Architecture
Clinical Quality Reporting
Stage 2 Measures

• The 2014 Edition EHR certification criteria final rule, adopted the QRDA III, Release 1, standard at 45 CFR 170.205(k) and incorporated the standard by reference at 45 CFR 170.299(f)(14).

• The QRDA III is included in the certification criterion at 45 CFR 170.314(c)(3), which requires EHR technology presented for certification to be capable of electronically creating a data file for transmission of clinical quality measurement data in accordance with QRDA III and that can be electronically accepted by CMS.
Clinical Quality Reporting Certification Criteria

- EPs, EHs, and CAHs must electronically report their Clinical Quality Measures (CQMs) in the QRDA Category I format, which will be the basis for EHR-based reporting, or may also submit aggregate-level data in QRDA III format.
- EPs must report on 9 of the 64 approved CQMs
- Eligible Hospitals and CAHs must report on 16 of the 29 approved CQMs
Clinical Quality Reporting Standards

HL7 Quality Reporting Document Architecture (QRDA)

April 10

Presenter: Bob Dolin, MD, FACP
Chair-Elect, HL7 Board of Directors
President and Chief Medical Officer
Lantana Consulting Group
Objectives

• Overview of end to end quality reporting from EHRs
• Role of QRDA in Meaningful Use Stage 2 clinical quality reporting
• Introduction to QRDA Category I & QRDA Category III specifications
HL7 Meaningful Use Education Programs

- Weekly 90-minute, 8-session Webinar Series, which began February 20, but which is still available
- Two and a half-day *hands-on* Workshop, March 26-28, in Chicago
- Certification Exams immediately following the hands-on Workshop
Special Thanks

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Thanks

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