Overview of Meaningful Use Certification in the US

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Overview

- US laws and regulations (we LOVE acronyms!)
  - ARRA
  - HITECH
  - MU
- Creation of some of the MU related Implementation Guides
- Lab related examples
- Certification procedures
- Testing tools

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American Recovery and Reinvestment Act (ARRA)

February 2009:

- ARRA includes Health Information Technology for Economic and Clinical Health Act (HITECH Act) to improve the use of Electronic Health Records (EHR) by providers and increase the quality of care in order to establish a foundation for health care reform

- ARRA mandated the creation of the Office of the National Coordinator for Health Information Technology (ONCHIT), or ONC for short, to oversee this

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American Recovery and Reinvestment Act (ARRA)

Goals:

- Create new jobs and save existing ones
- Spur economic activity and invest in long-term growth
- Foster unprecedented levels of accountability and transparency in government spending

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HITECH Act and ONC

The Office of the National Coordinator (ONC):

- Create incentive program for meaningful users of EHRs

- Adopt initial standards for EHR related data exchange

- Create Federal Advisory Groups:

  - Health IT Policy Committee:

Recommendation on policy framework to advance the meaningful use (MU) of health information technology (HIT)

  - Health IT Standards Committee:

Recommendation on standards to be used in implementation specifications and certification criteria

Meaningful Use (MU)

- Incentive payments to hospitals and providers using certified EHR technology based on CMS objectives, core and menu objectives across 5 domains to be implemented in stages

D1 Improve Quality, Safety, Efficiency	D2 Engage Patients & Families	D3 Improve Care Coordination	D4 Improve Public & Population Health	D5 Ensure Privacy & Security for Personal Health Information

- Stage 1 – data capture and sharing - 2011 certification

- Stage 2 – advanced clinical processes - 2014 certification

- Stage 3 – improved outcomes - in planning

LINK: http://www.healthit.gov/policy-researchers-implementers/meaningful-use

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Meaningful Use (MU)

- $44.7B estimated incentive payments
- Focuses on clinician behavior to improve care
- Eligible provides and hospitals must demonstrate being a *meaningful user* of EHR to receive payment
- A "meaningful user" must:
  - ✓ Use a certified EHR product
  - ✓ Meet core objectives and at least 5 "menu" objectives
  - ✓ Report quality measures
- A *voluntary* program

Adapted from Bill Brand HITECH and Meaningful Use slides 8/19/2012

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Meaningful Use (MU)
Examples of Core Objectives in stage 1

- Computerized physician order entry (CPOE)
- Provide electronic copy of patient's health information, upon request
- Record demographics
- Maintain active medication list
- Record smoking status for patients 13 years or older
- Exchange key clinical information among providers of care and patient-authorized entities electronically
- Check drug-drug and drug-allergy interaction
- E-Prescribing (eRx)
- Provide clinical summaries for patients for each office visit

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8

Meaningful Use (MU)
Examples of Menu Objectives in stage 1

- **Incorporate clinical lab test results as structured data**
- Generate lists of patients by specific conditions
- Summarize care record for each transition of care/referral (core in stage 2)
- Send reminders to patients per patient preference for preventive/follow up care
- Submit electronic data to immunization registries/systems (core in stage 2)
- Provide electronic syndromic surveillance data to public health agencies (core in stage 2)
- **Provide electronic submission of reportable lab results to public health agencies** (core in stage 2)

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9

Creation of some of the MU related Implementation Guides

- Stage 1 used existing implementation guides
- For stage 2 desire to use mature, i.e. at least pilot tested implementation guides

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Standards and Interoperability (S&I) Framework

S&I Framework
Overview

National Coordinator for Health IT

- Deputy National Coordinator for Programs & Policy
- Office of Economic Analysis & Modeling
- Office of the Chief Privacy Officer
- Deputy National Coordinator for Operations
- Office of the Chief Scientist

- Office of Policy & Planning
- **Office of Standards & Interoperability**
- Office of Provider Adoption Support
- Office of State & Community Programs

- The Standards and Interoperability (S&I) Framework is a forum – enabled by integrated functions, processes, and tools – for implementers and experts to achieve harmonized interoperability for healthcare information exchange

- It represents one investment and approach adopted by the Office of Standards & Interoperability to fulfill its charge of enabling harmonized interoperability specifications to support national health outcomes and healthcare priorities, including Meaningful Use, the Nationwide Health Information Network, etc.

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S&I Framework
How it works – looks familiar?
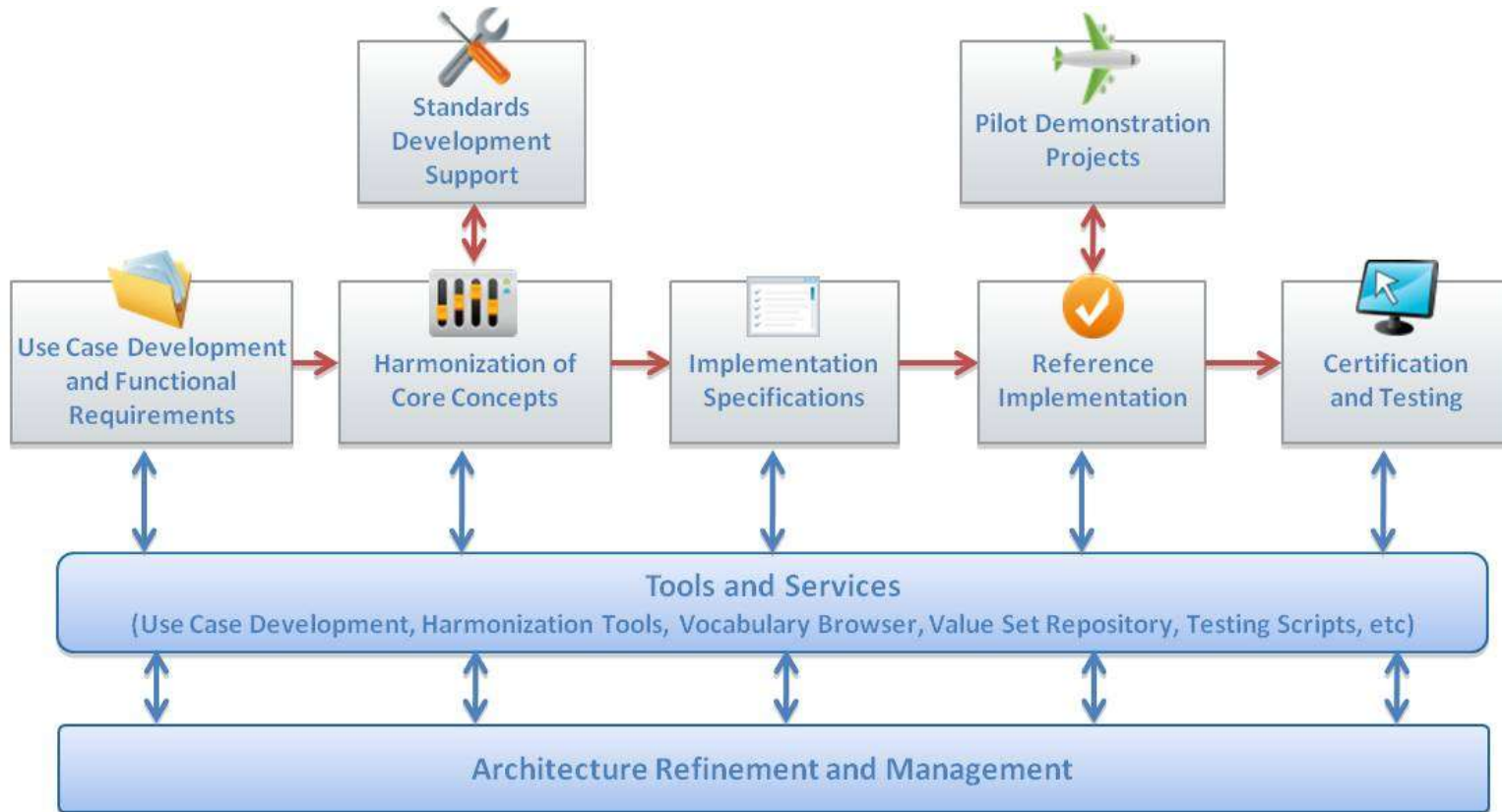
Lab related examples

Electronic Lab Results (ELR) to Public Health (pre-S&I)

S&I Lab Result Interface (LRI)

S&I Lab Orders Interface (LOI)

S&I electronic Directory of Services (eDOS)

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Electronic Lab Results to Public Health (ELR)

Mission:

To enable ambulatory primary care physicians to receive and meaningfully use standardized structured electronic lab results

Focus:

- Establish the nationwide Implementation Guide for electronic submission of Lab Results to Public Health Agencies
- Build on existing HL7 2.5.1-based lab reporting guide

Objectives:

- EHR and LIS vendors agree that they can implement and use the IG while minimizing intermediaries, customization and translation
- Providers adopt EHRs that conform to the LRI IG, facilitated by MU, State HIEs, and broad product availability

S&I Laboratory Results Interface (LRI)

Mission:

To enable ambulatory primary care physicians to receive and meaningfully use standardized structured electronic lab results

Focus:

- Establish the nationwide Implementation Guide for electronic submission of Lab Results to Ambulatory EHRs
- Built on existing HL7 2.5.1-based lab reporting guides
- Incremental approach: ambulatory use case today, others later

Objectives:

- EHR and LIS vendors agree that they can implement and use the IG while minimizing intermediaries, customization and translation
- Providers adopt EHRs that conform to the LRI IG, facilitated by MU, State HIEs, and broad product availability

LINK: http://wiki.siframework.org/Lab+Results+Interface+%28LRI%29+Initiative

S&I Laboratory Results Interface (LRI) - STATUS

- Successfully passed HL7 ballot after 2 cycles

- Included in MU stage 2

- NIST has created message validation tool for certification 2014

- NIST has created testing procedures for certification 2014

- Pilot implementations providing feedback

- Harmonization with ELR and LOI ongoing

LINK: http://hl7v2-lab-testing.nist.gov/mu-lab/

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S&I Laboratory Orders Interface
(LOI)

Mission:

To enable ambulatory primary care physicians to electronically manage (order, add, request cancelation) lab test requests

Focus:

Establish the nationwide Implementation Guide for electronic submission of Lab Orders from Ambulatory EHRs

Built on existing HL7 2.5.1-based lab order guide

Harmonize with LRI guide

Objectives:

"close the circle" for round trip orders and results

LINK: http://wiki.siframework.org/Laboratory+Orders+Interface+Initiative

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S&I Laboratory Orders Interface
(LOI) - STATUS

- Includes Vocabulary considerations for Order code representation

- Collaborates with pilot implementations of the electronic test compendium (eDOS)

- Order Specification has undergone second round of HL7 balloting – resolving comments

- Proposed for MU stage 3

- NIST testing tool under development

LINK: http://hit-testing.nist.gov:8080/mu3-loi/

S&I electronic Directory of Services (eDOS)

Mission:

To enable laboratories to electronically share their test compendium of lab tests with their partners

Focus:

Establish the nationwide Implementation Guide for electronic exchange of lab test compendium of a laboratory

Built on existing HL7 2.5.1 master file messages

Harmonize with LOI and LRI guide

Objectives:

"setting the stage for electronic communication " for round trip orders and results

LINK: http://wiki.siframework.org/LOI+-+eDOS

S&I electronic Documentation of Services (eDOS) - STATUS

- Includes Ask at Order Entry question listings

- Collaborates with pilot implementations of the Laboratory Order Interface (LOI)

- Revision is now in HL7 balloting – resolving comments

- Proposed for MU stage 3

- NIST testing tool under development

LINK: http://hit-testing.nist.gov:8080/mu3-eDOS/

Certification Overview

Parties involved:

- Developers & Vendors

  Create Electronic Health Record (EHR) products to be tested and certified.

- Accredited Testing Laboratories (ATL):

  Test and certify products against the standards and certification criteria to provide assurance and maintain quality and consistency across certified products.

- ONC Authorized Certification Bodies (ONC-ACB):

  ONC-ACBs certify the tested products.

- ONC Certified Health IT Product List (CHPL):

  Identifies all Certified EHR Technology (CEHRT)

- Eligible Professionals (EPs) & Eligible Hospitals (EHs):

  Use CEHRT to meet MU requirements to qualify for incentive payments under the CMS EHR Incentive Programs.

And indirectly Patients & General Public:

  Doctors have more accurate and complete information about an individual's health, enabling them to provide patients with the best possible care.

For more information:

http://www.healthit.gov/policy-researchers-implementers/onc-hit-certification-program

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Certification Procedures
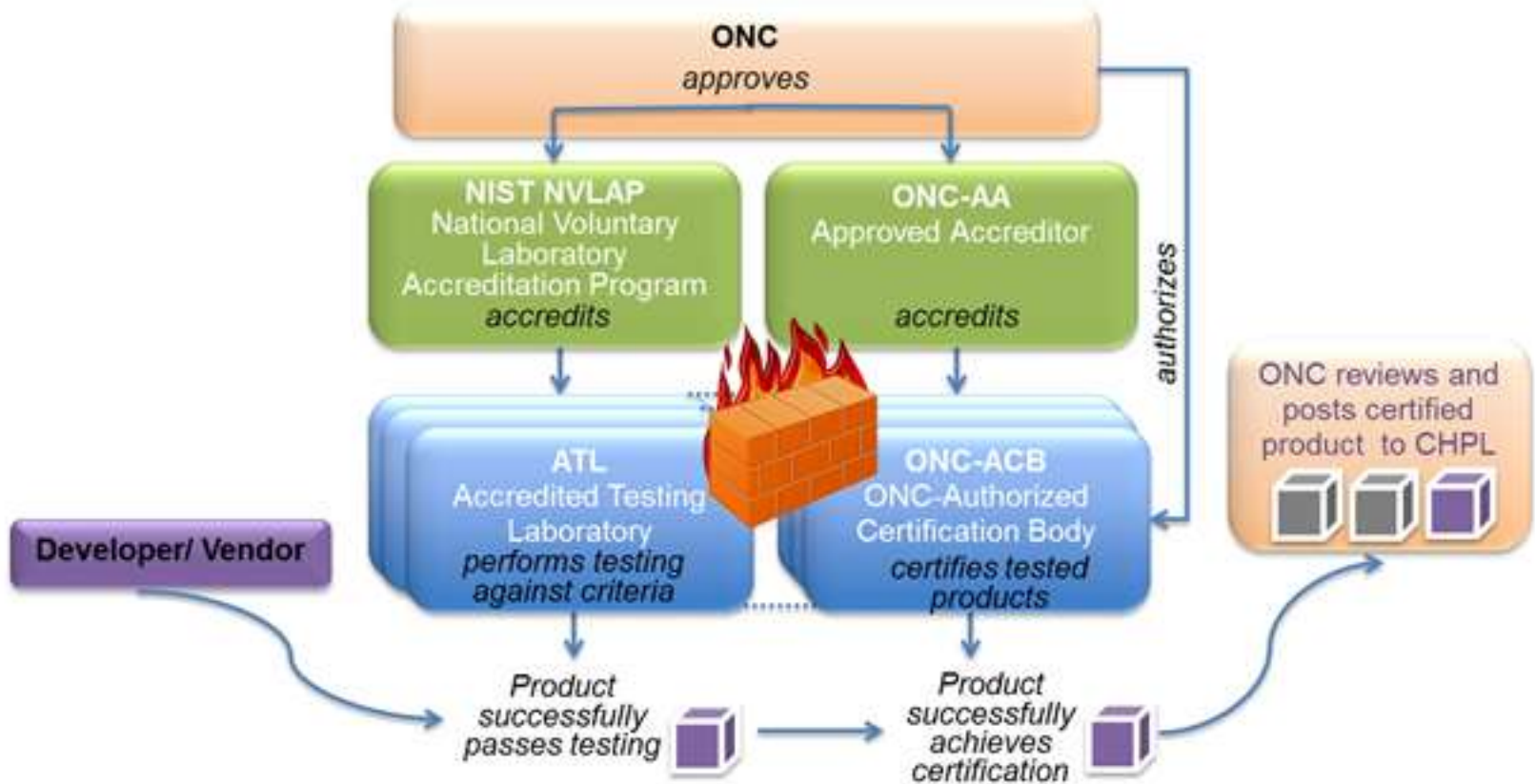
ATLs

The National Voluntary Laboratory Accreditation Program (NVLAP) has been acknowledged by ONC, by regulation, as the Accreditation Body for Testing Laboratories in the ONC HIT Certification Program.

In July 2012, NVLAP accredited the following test laboratories, as Accredited Testing Laboratories (ATLs), qualified to test EHR technology under the ONC HIT Certification Program:

- Drummond Group
- Certification Commission for Health Information Technology (CCHIT)
- ICSA Labs
- InfoGard Laboratories, Inc.
- SLI Global Solutions

View more information on the NVLAP HIT Laboratory Accreditation Program (LAP).

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ONC-ACBs

In July 2012, ANSI accredited the following certification bodies, which then applied to ONC for authorization at ONC-ACB@hhs.gov to certify EHR technologies in the ONC HIT Certification Program.

ONC has authorized the following certification bodies to serve as ONC-ACBs in the ONC HIT Certification Program:

- Certification Commission for Health Information Technology (CCHIT)
- Drummond Group
- ICSA Labs
- InfoGard Laboratories, Inc.

ONC-ACBs are required by regulation to renew their ONC-ACB status every three years.

Certification Goal:
Make *THE LIST*!

Link: http://oncchpl.force.com/ehrcert?q=CHPL

Testing Procedures and Tools

The test tools and test procedures

- For the 2011 Edition EHR Certification Criteria:

http://www.healthit.gov/policy-researchers-implementers/2011-edition-approved-test-methods

For the 2014 Edition EHR Certification Criteria:

http://www.healthit.gov/policy-researchers-implementers/2014-testing-and-certification

ONC works with NIST on tools and procedure for future requirements, but allows other entities to develop and submit test tools and test procedures to the National Coordinator for approval.

Scope of IFR Criteria and Testing

As indicated in the Final Report (FR), testing is directed at an EHR product, not specific instances (implementations) of an EHR system	• Meaningful Use (MU) specifies testing the capability of the EHR product to create and send data reportable lab results • Receiving systems are not being certified • However, MU requirements placed on the EHR product clearly indicates that receiving system should be capable of processing the data specified in the MU criteria
Testing focus and scope is narrow	• Testing encompassing only the specific use case indicated in the Final Rule • Testing does not attempt to address the entire spectrum of use cases found in practice or specified in implementation guides
MU tests are driven by the test data	• NIST is testing the capability of an EHR product to create and send specific data to public health • The tests do not cover the full extent of use cases specified in the implementation guide. Through consultation with HL7 experts an important subset of elements were established • The tests will not demonstrate complete compliance to the implementation guide as it is not practical in stage 1 of MU testing to be exhaustive

From Rob Snelick slides - 10/1/2010: 2011 Meaningful Use Testing Approach Overview: Using the Validation Tool

Example: Lab Results to Public Health MU Test Procedure
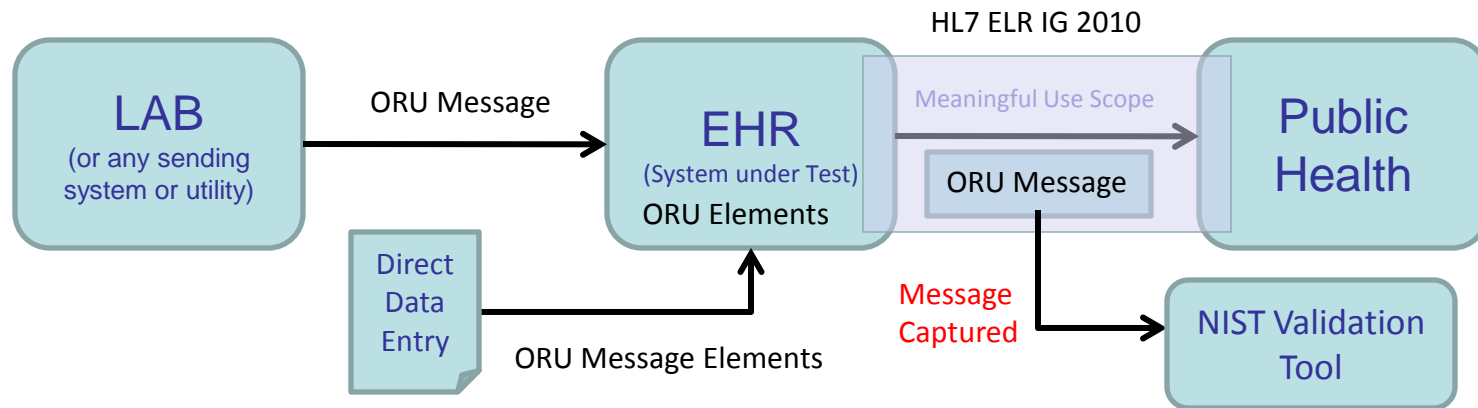
1. The EHR is the system being tested. The EHR system is required to send (create) messages that conform to the referenced standards (See previous slides).
2. Test data can be entered into EHR directly via the EHR's user interface or be imported via an incoming message
3. The EHR is expected to process the test data to create a message. This message is captured and uploaded into the testing tool for validation.
4. The test can be conducted using NIST supplied test data or vendor supplied test data. When using NIST data sets, the appropriate validation context needs to be selected. When choosing vendor supplied data an appropriate generic validation context needs to be selected.

From Rob Snelick slides - 10/1/2010: 2011 Meaningful Use Testing Approach Overview: Using the Validation Tool

Test Data Categories

<u>Test Data-NIST Supplied</u>
- Data provided by NIST for the test case in which the vendor is expected to use to populate with exact content
- Validation of certain message elements will be on exact content

<u>Test Data-Vendor Supplied</u>
- Data that is necessary for the transaction but is system dependent or example data is provided by the vendor
- E.g., Patient Data from vendor's EHR test database
- Validation is on the existence of content
- For each test case, NIST provides example data even for vendor supplied elements.

Example:

Test data calls for a Lead BldC-mCnc which is10368-9 in the LOINC code set. The validation tool will check for exact content in elements OBX.3.1 and OBX.3.3 and check for the presence of the value in element OBX.3.2. The test organization may also inspect the value of OBX.3.2 for valid content.

Element	Value	Category	Assessment
OBX.3.1	10368-9	NIST Supplied	Content must be "10368-9"
OBX.3.2	Lead BldC-mCnc	Vendor Supplied	Should be some text indicating "Lead BldC-mCnc"
OBX.3.3	LN	NIST Supplied	Content must be LN

Based on Rob Snelick slides - 10/1/2010: 2011 Meaningful Use Testing Approach Overview: Using the Validation Tool

ELR Validation Tool Overview

Purpose: The tool validates ELR messages created by Electronic Health Records (EHR) technology and is intended for certifying 2014 Edition Meaningful Use EHR technology.

Tool Key Capabilities	
Context-free Testing	**(No Test Cases - Test any ELR message created by EHR)** • Context is unknown to validation tool • Provides a simple and convenient method for testing message structure and most vocabulary
Context-based Testing	**(Test Cases - Test ELR message associated with a specific test scenario)** • Context is known to validation tool • All conformance requirements of the ELR implementation guide can be assessed • Used for certifying 2014 Edition Meaningful Use EHR technology
Profile Viewer	Provides a browsable version of the conformance profile which encapsulates the requirements. Can be used to assist in the interpretation of errors.
Vocabulary Browser	Provides a browsable view of the vocabulary requirements. Can be used to assist in the interpretation of value set errors.
Documentation	Provides access to documents which will assist in using the tool (including test procedure, test cases, profile descriptions, vocabulary descriptions and validation tool download).

Get started today! No registration or log in credentials are needed. Simply click link on the link below and send/paste/load message into tool to obtain Validation report.

http://hl7v2-elr-testing.nist.gov

NOTE: The Test Tool (.war file) can also be downloaded and installed locally.
NOTE: Web Application is compatible with Firefox; Chrome; IE8; IE9

More Info? Register to Google Group at: https://groups.google.com/d/forum/hl7v2-reportable-lab-testing to ask questions and provide feedback.

ELR Testing Process

ELR Testing Workflow
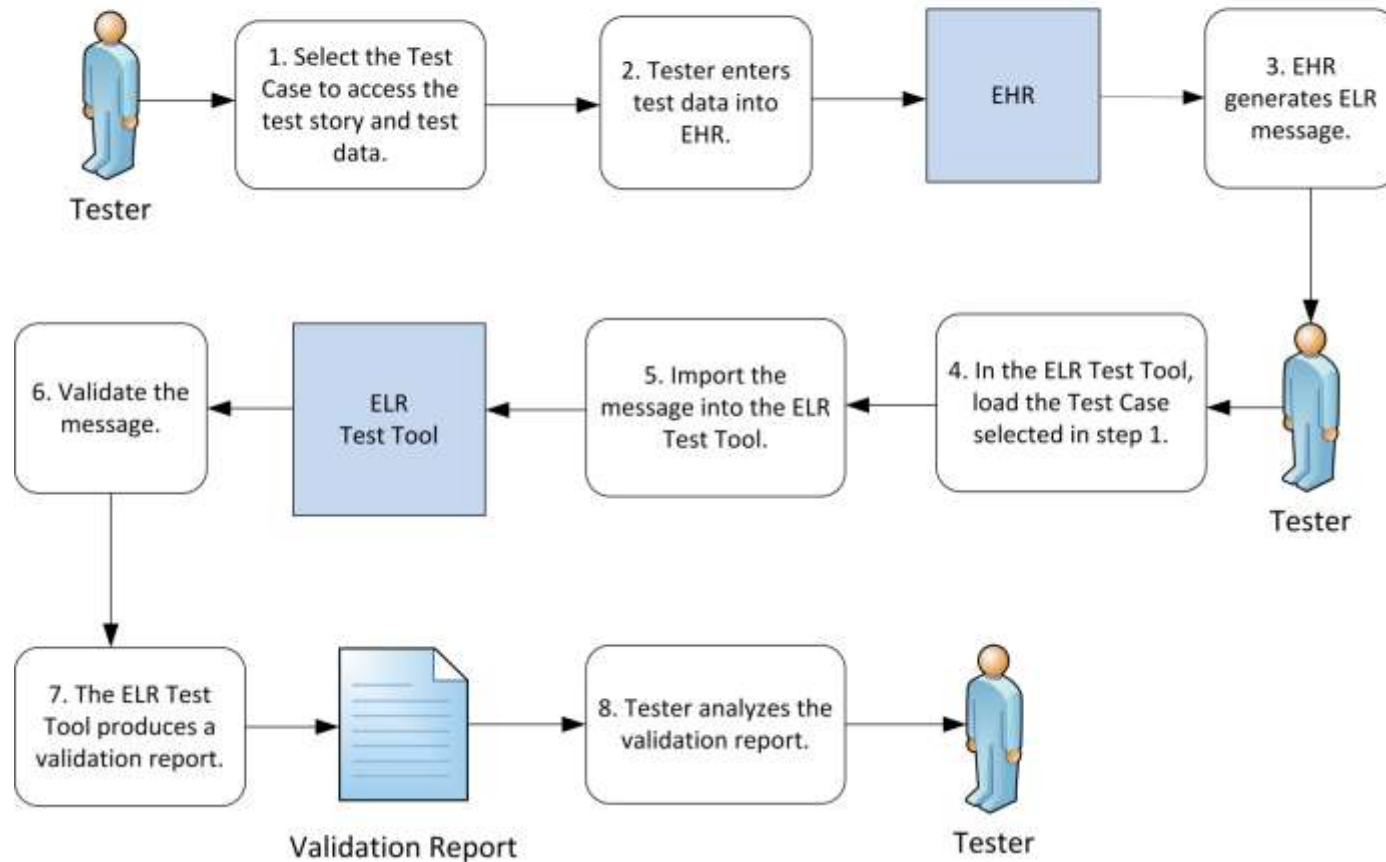
From Rob Snelick slides - 12/8/2012: Electronic Laboratory Results (ELR) Validation Tool Tutorial and Guide

1) Import test message

1 Open ELR Validation tool using link: http://hl7v2-elr-testing.nist.gov.

2 Click on Context-free Validation tab.

Context-free Validation page

This page validates any ELR message. It is disassociated from a test script, test case, or specific content. Testing will include the technical requirements and content-specific requirements specified in the selected profile.

Home   Context-free Validation   Context-based Validation   Profile Viewer   Vocabulary   Documentation

Validation   Report

Message Tree

Message Content   📂 Browse Message   🗑 Clear
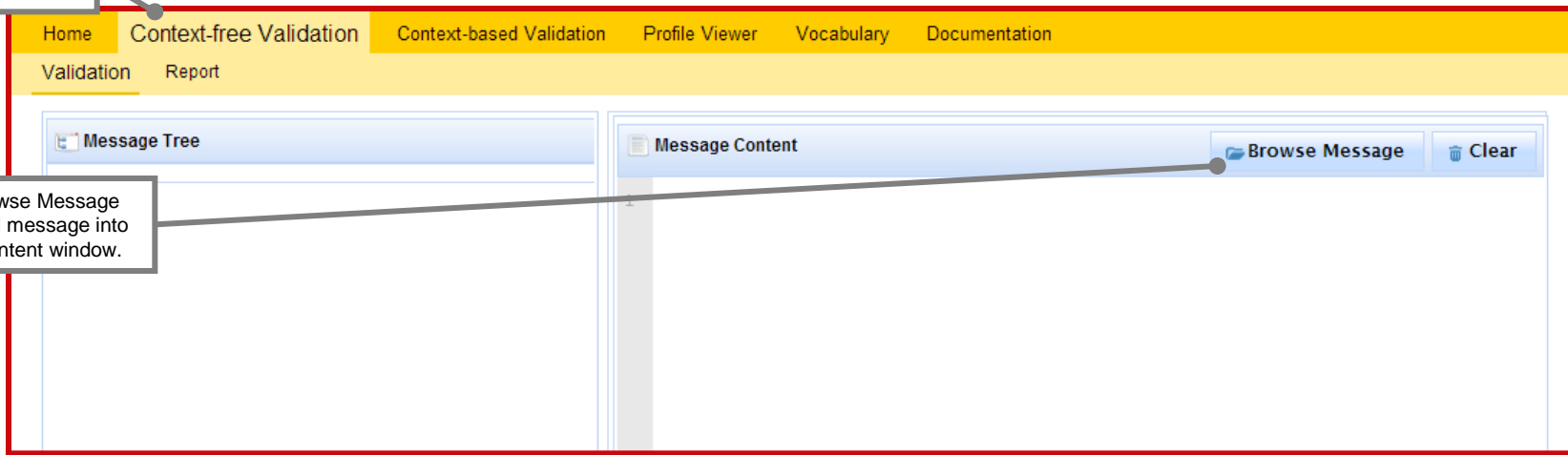
3 Click on Browse Message button to load message into Message Content window.

4 Message Uploader Dialog window displays.
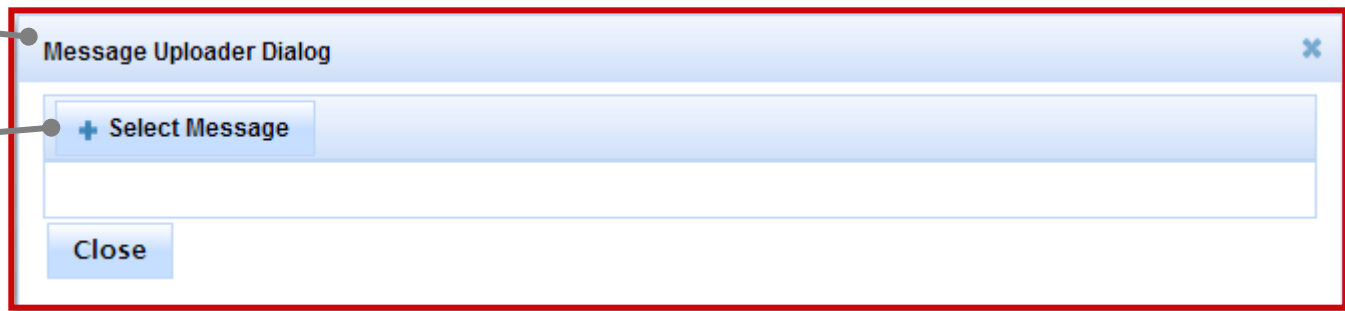
5 Click on Select Message button.

6 Open test message file to upload it.

Message Uploader Dialog   ✖

➕ Select Message

Close

2) Validate test message and review message validation errors

1 Uploaded test message displays.

2 If message fails validation, errors will display in Message Validation Result section of page.

3 Click on location link to highlight the data element causing the error within the Message Tree and Content.

Note: Location link may not be available if the message element location does not map to a message element in the message tree.

2) Validate test message and review message validation errors (cont'd)

4 Total number of errors displays.

5 Description explains why error occurred. Format or table of data element may be provided.

6 Line number and column of errors are provided.

7 Location link displays the location of the data element.

8 Click on page numbers to view additional pages of errors.

Message Validation Result — Settings — Invalid

Errors (8) | **Affirmatives (1)**

Description	Line	Column	Location
[ELR-22] MSH.21.3 (Universal ID) of an occurrence of MSH.21 (Message Profile Identifier) SHALL contain the value " 2.16.840.1.113883.9.11"	1	0	MSH[1]
[ELR-014] MSH.7 (Date/Time Of Message) SHALL follow the format YYYYMMDDHHMMSS[.S[S[S[S]]]]]+/-ZZZZ	1	159	MSH[1].7[1]
[ELR-015] MSH.9.1 SHALL contain the constant value 'ORU'	1	182	MSH[1].9[1].1
[ELR-019] MSH.15 (Accept Acknowledgment Type) SHALL contain the constant value 'AL' IF any occurrence of MSH.21.1 (Entity Identifier) is 'PHLabReport-Ack' , ELSE, if valued, SHALL contain the constant value 'NE'.	1	226	MSH[1].15[1]
[ELR-032] PV1.45 (Discharge Date/Time) SHALL follow the format YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ]	7	60	PV1[1].45[1]

1 2

3) Look up valid data element values and tables

1 Click on Profile Viewer tab.

2 Data elements may be filtered by Usage.

Select R, RE, C (Only) to view only required, required but may be empty and conditional elements.

Select R, RE, C, O, X (All) to view all data elements, including optional and not supported elements.

3 Click on a tab to filter data elements by segment. The Full tab displays data elements of all segments.

4 Locate data element using element name from the location link.

5 Usage will indicate whether data element is required. The value R indicates it is required.

6 Minimum and maximum valid lengths of data element are listed.

7 Make a note of the table ID.

Home   Context-free Validation   Context-based Validation   Profile Viewer   Vocabulary   Documentation

Profile   Data Type

G Group **S** Segment **F** Field **C** Component **S** Subcomponent

○ R,RE,C (Only)   ○ R,RE,C,O,X (All)

| FULL | MSH | SFT | PID | NTE | NK1 | PV1 | ORC | OBR | OBX | SPM |

Location	Usage	Cardinality	Data Type	Length	Table	Predicate	Conformance Statement
MSH.1 : Field Separator	R	[1,1]	ST	[1,1]			ELR-012 : MSH.1 (Field Separator) SHALL contain the constant value '|'.
MSH.2 : Encoding Characters	R	[1,1]	ST	[4,5]			ELR-013 : MSH.2 (Encoding Characters) SHALL contain the constant value '^~\&#'.
MSH.3 : Sending Application	R	[1,1]	HD_ELR	[1,227]			
MSH.4 : Sending Facility	R	[1,1]	HD_ELR	[1,227]			
MSH.5 : Receiving Application	R	[1,1]	HD_ELR	[1,227]			
MSH.6 : Receiving Facility	R	[1,1]	HD_ELR	[1,227]			
MSH.7 : Date/Time Of Message	R	[1,1]	TS_ELR	[1,26]			ELR-014 : MSH.7 (Date/Time Of Message) SHALL follow the format YYYYMMDDHHMMSS[.S[S[S]]]]+/-ZZZZ
MSH.9 : Message Type	R	[1,1]	MSG_ELR	[1,15]			
MSH.9.1 : Message Code	R	[1,1]	ID	[3,3]	0076		

Profile Viewer page

This page allows tester to view data element information including usage, cardinality, data type, length, table, condition predicate and conformance statements.

3) Look up valid data element values and tables (cont'd)

8 Click on Vocabulary tab.

9 Locate and select table ID.

10 Valid values are listed.

11 Use the search box to search for value code, value set, table name, table ID or description.

12 Click on Context-free Validation tab to return to message.

Vocabulary page

This page provides the ability to browse the vocabulary requirements. Search capabilities are provided and include searching on value, table name, table ID and description.

1) Select Test Case and Review Test Story

1 Open ELR Validation tool using link: http://hl7v2-elr-testing.nist.gov.

2 Click on Context-based Validation tab.

5 Test Story may be downloaded as a PDF file.

6 Test Case Package may be downloaded as a PDF file.

3 Click on arrows to expand the Test Scenarios and Test Cases. Click on a Test Step.

4 Test Story displays.

2) Review Test Data Specification and Message Content

1 Click on Test Data Specification tab.

2 Full tab is selected by default. To view a specific section, click on a tab.

3 Relevant real-world clinical data is displayed.

4 Test Data Specification may be downloaded as a PDF file.

Test Data Specification page

This page specifies the data that are entered (automatically/manually) into the EHR and included in the message that is created and submitted from the EHR to the ELR validation tool. The tester shall identify an existing patient record in the EHR or shall create a patient record in the EHR using the data in the Data Sheet associated with the Test Case.
USED IN CERTIFICATION TESTING!

2) Review Test Data Specification and Message Content (cont'd)

5 Click on Message Content tab.

6 Location specifies the location of a data element within the message.

7 Name of data element is provided.

8 Exact value of the data element for the selected Test Step is provided.

9 Categorization indicates if the data is fixed or can be changed.

10 Message Content may be downloaded as a PDF file.

Message Content page

This page provides details of the message segment, as well as an example of a valid instance of each data element.

3) Create test message

1 Using the EHR technology, create the ELR test message with the test data provided for the selected Test Step (step 2).

4) Load Test Step and import test message – same process as context free!

1 Click on Select button to load the Test Step.

2 Validation page displays.
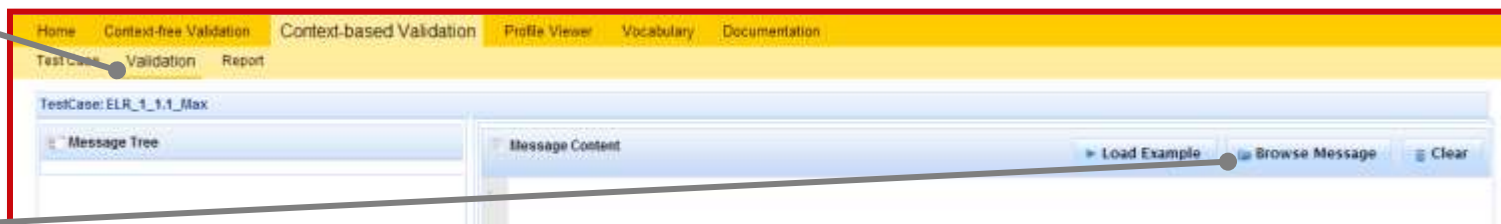
3 Click on Browse Message button.

4 Message Uploader Dialog window displays.
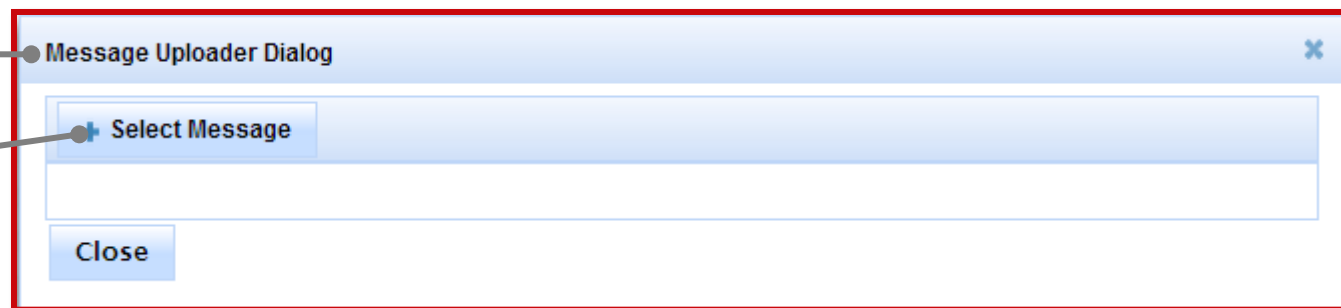
5 Click on Select Message button.

6 Open test message file created in step 3 to upload it.

5) Validate test message and review validation errors –
same process as context free!

1 Uploaded test message displays.

2 If message fails validation, errors will display in Message Validation Result section of page.

3 Click on location link to highlight the data element causing the error within the Message Tree and Content.

Note: Location link may not be available if the message element location does not map to a message element in the message tree.

5) Validate test message and review validation errors (cont'd)

Message Validation Result Settings ▼   ⊖ Invalid

Errors (6)   Affirmatives (346)

Description	Line	Column	Location
[ELR-067] XAD.9 (County/Parish Code) SHALL be formatted as 99999	5	170	NK1[1].4[1].9
[EL]R-031] PV1.44 (Admit Date/Time) SHALL follow the format YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ]	6	51	PV1[1].44[1]
The line '0120615|20120615' is not a valid segment	7	1	
The given location (PID[1].8[1]) in the message does not match one of the expected values 'M'	3	274	PID[1].8[1]
The value '2T06-3' at the given location (PID[1].10[1].1) in the message does not match one of the expected values '2106-3'.	3	277	PID[1].10[1].1

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4 — Total number of errors displays.

5 — Description explains why error occurred. Format or table of data element may be provided.

6 — Line number and column of errors are provided.

7 — Location link displays the location of the data element.

8 — Click on page numbers to view additional pages of errors.

6) Generate Message Validation Report

1 Click Report Details icon to view Validation Report details.

2 Message Validation Report may be downloaded as a PDF, XML, Word doc, HTML file.

3 Message Validation Report may be printed.

Other Utilities

1 Message Validation Report may be downloaded as a PDF, XML, Word or HTML file.

2 Message Validation Report may be printed.

3 Scroll through report to view data that passed validation and any errors.

4 Click on Validation to go back to the message.

Home	Context-free Validation	Context-based Validation	Profile Viewer	Vocabulary	Documentation
Test Case	Validation	Report			

Message Validation Report

Date: 12 08 2012, 08:43:07.783-05:00

Testing Tool	Name	Electronic Laboratory Reporting - HL7 V2.5.1 Validation Tool - Meaningful Use 201 Edition Certification Testing
	URL	http://hit-testing.nist.gov/mu-elr
	Version	1.0.16-SNAPSHOT

Profile	Name	Electronic Laboratory Results
	Organization	NIST
	Type	ORU^R01^ORU_R01
	Profile Version	3.0.1
	HL7 Version	2.5.1

Message Header	Encoding	ER7

Message Content

```
MSH|^~\&#|NIST^2.16.840.1.113883.3.72.5.20^ISO|
SFT|NIST Lab, Inc.^L^^^^NIST&2.16.840.1.113883.
PID|1||18547545^^^NIST MPI&2.16.840.1.113883.3.
NTE|1|P|Patient is English speaker.|RE^Remark^H
```

Message Validation Report

The Message Validation Report is the output of the ELR Test Tool. This report states if the test message has passed or failed the test and identifies the points of failure.

Other Utilities

Documentation page

The Documentation page provides the ability to download all documents and files for testing, including Data Spreadsheet, Test Cases, Profile and Vocabulary Description files, and validation tool application file (.war file).

| Home | Context-free Validation | Context-based Validation | Profile Viewer | Vocabulary | Documentation |

▼ User Documentation

⇕Description	⇕File Name/Link
ELR Data Spreadsheet	ELR_Data_V1.0_NOV30-2012_CR.xlsx
ELR 2.5.1 Clarification Document for EHR Technology Certification V1.1	http://www.cdc.gov/ehrmeaningfuluse/Docs/1ELR251_Clarification_EHR_Tech_Cert_v1_1-20121016.pdf

▼ Test Case Documentation

Test Case Name	Message Content	Test Data Specification	Test Story	Test Package	Example Message	Valida
▸ ELR_1_Maximally_Populated_Final_Quantitative_Result	-	-	-	-	-	-
▸ ELR_2_Final_Quantitative_Result	-	-	-	-	-	-
▸ ELR_3_Preliminary_Multiple_Coded_Culture_Results	-	-	-	-	-	-
▸ ELR_4_Final_Single_Coded_Culture_Result_with_Susceptibility_Testing	-	-	-	-	-	-
▸ ELR_5A_Final_Quantitative_Result_with_Reflex_Testing	-	-	-	-	-	-
▸ ELR_5B_Final_Quantitative_Result_with_Reflex_Testing	-	-	-	-	-	-
▸ ELR_6_Final_Titer_Result	-	-	-	-	-	-
▸ ELR_7_Final_Qualitative_Result	-	-	-	-	-	-
▸ ELR_8_Final_Multiple_Qualitative_Results	-	-	-	-	-	-
▸ ELR_9_Final_Single_Coded_Culture_Result	-	-	-	-	-	-

▼ Resource Documentation

⇕Profile Description	⇕File Name
ELR Conformance Profile	elr-profile.xml

Alphabet Soup (Acronyms)

Acronym	Description
AA	Approved Accreditor
ACB	Authorized Certification Body
ARRA	American Recovery and Reinvestment Act
ATL	Accredited Testing Laboratory
CCHIT	Certification Commission for Health Information Technology
CEHRT	Certified Electronic Health Record Technology
CET	Community Enabling Toolkit
CHPL	Certified Health IT Product List
CMS	Centers for Medicare and Medicaid Services
CPOE	Computerized physician order entry
eDOS	Electronic Directory of Service
EH	Eligible Hospital
EHR	Electronic Health Record
ELR	Electronic Laboratory Reporting (to Public Health)
EP	Eligible Provider
FR	Final Report
HIE	Health Information Exchange
HIT	Health Information Technology

Acronym	Description
HITECH	Health Information Technology for Economic and Clinical Health
HL7	Health Level Seven
IG	Implementation guide
LAP	Laboratory Accreditation Program
LIS	Laboratory Information System
LOI	Laboratory Orders Interface
LOINC	Logical Observation Identifier Names and Codes
LRI	Laboratory Results Interface
MU	Meaningful Use
NIST	National Institute of Standards and Technology
NVLA	National Voluntary Laboratory Accreditation Program
ONC	Office of the National Coordinator
ONCHIT	Office of the National Coordinator for Health Information Technology
S&I	Standards and Interoperability