

The Office of the National Coordinator for
Health Information Technology



Immunization certification and future interoperability plans

Public Health - EHR Vendors Collaboration Initiative

June 21, 2016

Public Health – EHR Vendors Collaboration Initiative



URL: <http://www.cdc.gov/ehrmeaningfuluse/public-health-ehr-vendors-collaboration-initiative.html>

The screenshot shows a web browser window displaying the CDC website. The address bar shows the URL: <http://www.cdc.gov/ehrmeaningfuluse/public-health-ehr-vendors-collaboration-initiative.html>. The page header includes the CDC logo and the text "Centers for Disease Control and Prevention CDC 24/7: Saving Lives, Protecting People™". A search bar and a "CDC A-Z INDEX" dropdown menu are also visible.

The main content area is titled "Meaningful Use" and features a navigation menu on the left with the following items:

- Meaningful Use
- Introduction
- Calendar
- Connect with Others
- CDC Meaningful Use ListServ
- Meaningful Use Community
- Public Health – EHR Vendors Collaboration Initiative
- Joint Public Health Forum & CDC Nationwide
- Meaningful Use (MU) Public Health (PH) Reporting Requirements Task Force
- ELR Task Force
- Jurisdiction Meaningful Use Websites
- S & I Framework
- Reportable Conditions Knowledge Management System
- External Links
- Frequently Asked Questions
- Public Health Options
- Resources
- Spotlight Archive

The main content area features a large image with a word cloud and a photo of a doctor. The word cloud includes terms like "incentive", "payment", "EHR", "eligible", "Medicaid", "Medicare", "hospital", "measures", "clinical", "quality", "patient", "information", "interoperability", "data", "MA", "program", "section", "year", "EP", "clinical", "period", "office", "national", "quality", "patient", "information", "interoperability".

The main heading is "Meaningful Use" and the sub-heading is "Public Health – EHR Vendors Collaboration Initiative". Below this, there are social media icons for Facebook, Twitter, and a plus sign for more options.

The "Community Profile" section states: "The Centers for Disease Control & Prevention in collaboration with the Office of the National Coordinator for Health IT (ONC) lead the Public Health (PH) - Electronic Health Records (EHR) Vendors Collaboration Initiative. The initial focus of this initiative is on meeting Stage 1 and 2 Meaningful Use public health objectives. Public Health Practitioners and EHR Vendors from across the nation are participating in this initiative." It also provides contact information: "If you are interested in joining this initiative, please follow the instructions provided below to register for these monthly webinars. If you want to submit an issue/question, please send an email to meaningfuluse@cdc.gov and include 'Public Health - EHR Vendor Collaboration Initiative' in the subject line".

The "Meeting Schedule and Webinar Information" section includes the following details:

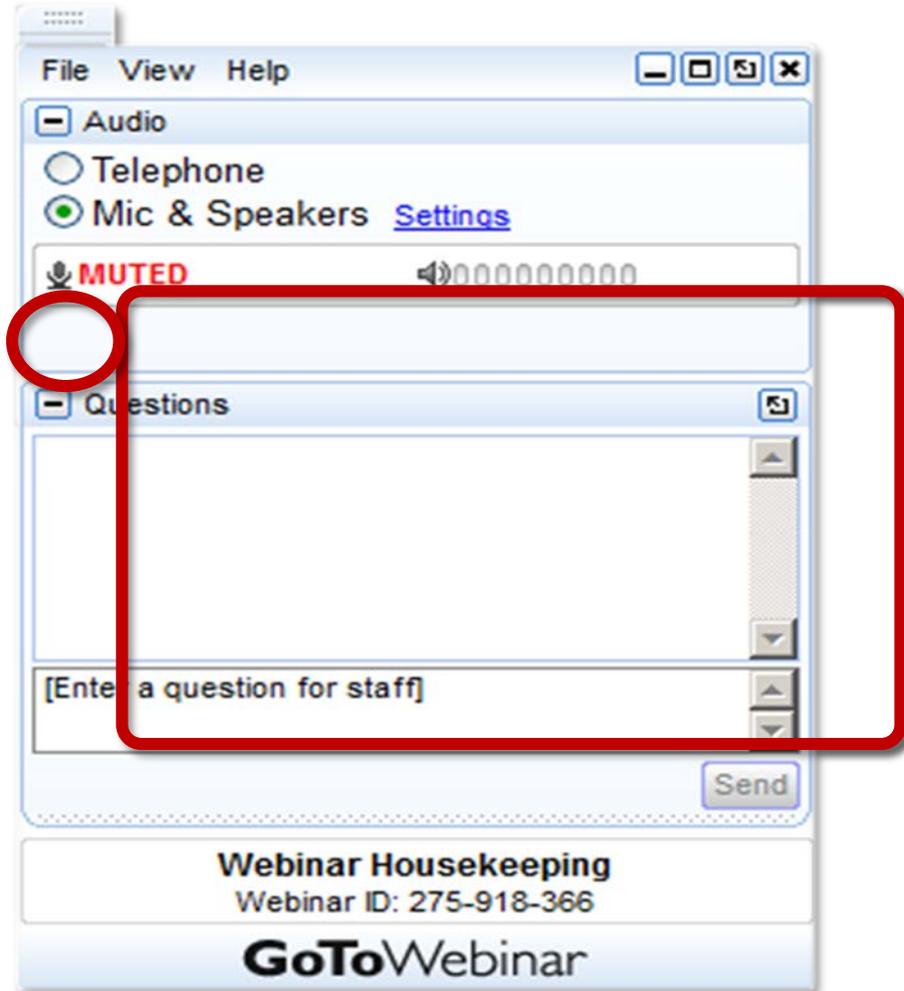
Meeting Schedule:
Date: 3rd Tuesday of each month
Time: 1:00–2:30 PM ET / noon–1:30 PM CT / 11:00 AM –12:30 PM MT / 10:00–11:30 AM PT

Webinar Information

- *GoToWebinar* will now be used for these webinars and pre-registration for this event is required. Please follow the registration instructions listed below to receive instructions on how to join this webinar.
- Your registration will be valid for the all of the currently scheduled monthly meetings.
- The instructions you receive will include a link to add these recurring meetings to your calendar.

Question and Answer Session

How to submit or ask questions for the panel members?



Submit or Ask Questions

- Submit your text question and comments using the Question Panel
- Please raise your hand to be unmuted for verbal questions.

Immunization certification and future interoperability plans

PUBLIC HEALTH-EHR VENDOR JOINT WEBINAR

JUNE 21, 2016

Relevant Specifications

- ONC 2015 Edition HealthIT Certification Regulations call out the latest version of the Implementation Guide for Immunization Messaging
 - Release 1.5 (published October 2014) and the Release 1.5 Addendum (published July 2015)
 - The Addendum doesn't specify additional requirements, only clarifies existing ones or corrects errors
 - Published jointly by the CDC and the American Immunization Registry Association (AIRA)
 - Similar to previous MU stages, the Immunization IG is not an HL7 balloted artifact

Certification Test Cases

- 2015 regulations call out both submission (continuing from previous rounds of certification) and bi-directional query/response (new with 2015)
- All submission exchange test cases require EHR generated messages to go through automated validation and a subset require the EHR to accept an acknowledgement message containing warnings or errors back
- Bi-directional exchange focuses on EHRs requesting an evaluated patient history and forecast from an Immunization Information System (IIS)
 - The EHR generates a query message which goes through automated validation and then the EHR must consume a response message and display the data (manual validation)

Test Case Guiding Principles

- Create messages that reflect actual usage
- Don't overload any given test case
- Minimize the number of test cases
- Automate testing as much as possible

Administration Test Cases

- IZ-AD-1 Child with new and historical administrations
- IZ-AD-2 Adult with new and historical administrations
- IZ-AD-3 Patient protection and full first and middle names
- IZ-AD-4 Deletion of a previous documented administration
- IZ-AD-5 Refusal of a vaccine and multiple birth indicator/birth order
- IZ-AD-6 Update of a previous documented administration
- IZ-AD-7 Acknowledgement containing an Error
- IZ-AD-8 Acknowledgement containing a Warning
- IZ-AD-9 Acknowledgement containing multiple Warnings
- IZ-AD-10 Acknowledgement containing a System Error

Bi-directional Test Cases

- IZ-QR-1 Query for a child
- IZ-QR-2 Query for an adult
- IZ-QR-3 Query with no high-confidence match
- IZ-QR-4 Query with multiple high-confidence matches

NIST Immunization Test Suite

- Certification testing uses the NIST test suite using Context-based testing
 - <http://hl7v2-iz-r1.5-testing.nist.gov/iztool/#/home>
 - Context-based testing allows testing of “Required but allowed to be empty” elements as well as requiring specific values in certain test cases

The screenshot displays the NIST Immunization Test Suite 1.3.0 web application. The interface features a dark blue header with the title "NIST Immunization Test Suite 1.3.0" in white and yellow. Below the header is a yellow navigation bar with several menu items: Home, SOAP Envelope (1), SOAP Connectivity (2), HL7 Context-free (3), HL7 Context-based (4), Transport Settings (T), Documentation, and About. A Preferences gear icon is located in the bottom right of the navigation bar. Below the navigation bar is a light blue section with "Test Selection" and "Test Execution" tabs. The "Test Selection" tab is active, showing a list of test cases under the heading "Test Cases". The "ONC 2015 Test Plan" is selected and highlighted in yellow. It has two sub-items: "Administration Group" and "Evaluated History and Forecast Group". To the right of the test case list are three icons: a share icon, a refresh icon, and a back icon. The "ONC 2015 Test Plan" has two buttons: "Download Test Package" and "Download Test Plan Summary". Below the test case list is a "Description" tab, which is currently selected. The description text reads: "This test plan is to be used for the ONC 2015 Edition Certification Testing of HealthIT modules. All test cases are required to be executed. The test plan includes a set of Administered Immunization test cases (Administration Group) and a set of Query and Response test cases (Evaluated History and Forecast Group)."

Test Case Documentation

Test Cases

- ONC 2015 Test Plan
 - Administration Group
 - IZ-AD-1_Admin_Child
 - 1.IZ-AD-1.1_Send_V04_Z22**
 - 2.IZ-AD-1.2_Receive_ACK_Z23
 - IZ-AD-2_Admin_Adult
 - IZ-AD-3_No_Consent
 - IZ-AD-4_Delete_Record
 - IZ-AD-5_Refusal
 - IZ-AD-6_Update_Record
 - IZ-AD-7_Historical_IIS-Error
 - IZ-AD-8_Admin_IIS-Warning
 - IZ-AD-9_Admin_IIS-2Warnings
 - IZ-AD-10_Historical_IIS-SysError
 - Evaluated History and Forecast Group

TestStep: IZ-AD-1.1_Send_V04_Z22 ▶ Load Test Step

Test Story | Test Data Specification | Message Content | Example Message

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FULL	Description	Comments	Pre Condition	Post Condition	Test Objectives
Evaluation Criteria	Notes for Testers				
Description					
<p>A two month old male infant, Russell Clinton Richardson, is brought to a clinic for a well child visit by his mother Maria Elizabeth Richardson (nee Billington) and his father John William Richardson. A clinic staff member collects basic patient demographic information including name, date of birth and sex. A clinic provider, Wilma Thomas (physician ID 654) reviews the patient's vaccination history and determines that the child previously received Hepatitis B vaccine 1 day after birth and 1 month after birth. The staff member determines that the patient needs DTaP, Hib, IPV, Rotavirus and Pneumococcal vaccinations. Because of the patient's status of Native American, he qualifies for all Vaccine For Children (VFC) supplied vaccines under the status of VFC eligible - American Indian/Alaska Native. The parents are given 5 Vaccine Information Sheets (VIS) to review. After reading them, they agree that the child should receive all the vaccinations recommended. They also agree that the data should be shared once it is incorporated into the local IIS. They indicate that reminders and recalls may be sent by any method. Appropriate doses of DTaP/Hib/IPV (Pentacel), Rotavirus (RotaTeq) and Pneumococcal (Prevnar 13) are selected from the clinic's stock of publically funded vaccines. A clinician, Lily Jackson (ID 7824) prepares and administers the doses to the patient and then enters the data into the EHR and transmits it to the IIS.</p>					
Comments					
No Comments					

Test Case Content

Test Cases

- ONC 2015 Test Plan
 - Administration Group
 - IZ-AD-1_Admin_Chld
 - 1.IZ-AD-1.1_Send_V04_Z22
 - 2.IZ-AD-1.2_Receive_ACK_Z23
 - IZ-AD-2_Admin_Adult
 - IZ-AD-3_No_Consent
 - IZ-AD-4_Delete_Record
 - IZ-AD-5_Refusal
 - IZ-AD-6_Update_Record
 - IZ-AD-7_Historical_IIS-Error
 - IZ-AD-8_Admin_IIS-Warning
 - IZ-AD-9_Admin_IIS-2Warnings
 - IZ-AD-10_Historical_IIS-SysError
 - Evaluated History and Forecast Group

TestStep: IZ-AD-1.1_Send_V04_Z22

Test Story | Test Data Specification | **Message Content** | Example Message

Help | Download PDF

FULL | MSH | PID | PD1 | NK1[*] | ORC[*] | **RXA[*]** | RXR[*] | OBX[*]

RXA - 1

Location	Data Element	Data	Categorization
RXA-1	Give Sub-ID Counter	0	Value-Profile Fixed
RXA-2	Administration Sub-ID Counter	1	Value-Profile Fixed
RXA-3	Date/Time Start of Administration		
RXA-3.1	Time	20150624	Presence-Content Indifferent
RXA-5	Administered Code		
RXA-5.1	Identifier	49281-0560-05	Value-Test Case Fixed
RXA-5.2	Text	Pentacel	Presence-Test Case Proper
RXA-5.3	Name of Coding System	NDC	Value-Profile Fixed
RXA-6	Administered Amount	0.5	Presence-Test Case Proper
RXA-7	Administered Units		
RXA-7.1	Identifier	mL	Value-Test Case Fixed
RXA-7.2	Text	mL	Presence-Test Case Proper
RXA-7.3	Name of Coding System	UCUM	Value-Profile Fixed
RXA-9	Administration Notes		
RXA-9.1	Identifier	00	Value-Test Case Fixed
RXA-9.2	Text	New Record	Presence-Test Case Proper
RXA-9.3	Name of Coding System	NIP001	Value-Profile Fixed

Set by the specification

Must be present, but value doesn't matter

Must be present and make sense

Set by the test case

Test Message

- Provided for example only
- Do not code to these test messages

Test Cases

- ONC 2015 Test Plan
 - Administration Group
 - IZ-AD-1_Admin_ChId
 - 1.IZ-AD-1.1_Send_V04_Z22
 - ← 2.IZ-AD-1.2_Receive_ACK_Z23
 - IZ-AD-2_Admin_Adult
 - IZ-AD-3_No_Consent
 - IZ-AD-4_Delete_Record
 - IZ-AD-5_Refusal
 - IZ-AD-6_Update_Record
 - IZ-AD-7_Historical_IIS-Error

TestStep: IZ-AD-1.1_Send_V04_Z22 ▶ Load Test Step

Test Story | Test Data Specification | Message Content | **Example Message**

Download

```
1 MSH|^~\&|NISTEHRAPP|NISTEHRFAC|NISTIISAPP|NISTIISFAC|20150624073733.994-0500||VXU^V04^VXU_V04|NIST
2 PID|1||3123^^^NIST-MPI-1^MR||Richardson^Russell^Clint^^^^L|Billington^^^^^M|20150415|M||T002-5^An
3 PD1|||||||02^Reminder/recall - any method^HL70215|N|20150624|||A|20150415|20150624
4 NK1|1|Richardson^Maria^Elizabeth^^^^L|MTH^Mother^HL70063|543 Blount Drive^^Bozeman^MT^59715^USA^P|
5 NK1|2|Richardson^John^William^^^^L|FTH^Father^HL70063|543 Blount Drive^^Bozeman^MT^59715^USA^P|^PE
6 ORC|RE|3140^NIST-AA-IZ-2|38766^NIST-AA-IZ-2||||||7824^Jackson^Lily^Suzanne^^^^^NIST-PI-1^L^^^PRN|
7 RXA|0|1|20150624||49281-0560-05^Pentacel^NDC|0.5|mL^mL^UCUM||00^New Record^NIP001|7824^Jackson^Lil
8 RXR|C28161^Intramuscular^NCIT|RT^Right Thigh^HL70163
9 OBX|1|CE|30963-3^Vaccine Funding Source^LN|1|VXC50^Public^CDCPHINVS|||||F|||20150624
10 OBX|2|CE|64994-7^Vaccine Funding Program Eligibility^LN|2|V04^VFC Eligible - American Indian/Alas}
11 OBX|3|CE|69764-9^Document Type^LN|3|253088698300017211111108^Polio VIS^cdcgs1vis|||||F|||20150624
12 OBX|4|DT|29769-7^Date Vis Presented^LN|3|20150624|||||F|||20150624
```

Juror Documents (Acknowledgements)

Test Cases

- ONC 2015 Test Plan
 - Administration Group
 - IZ-AD-1_Admin_Child
 - IZ-AD-2_Admin_Adult
 - IZ-AD-3_No_Consent
 - IZ-AD-4_Delete_Record
 - IZ-AD-5_Refusal
 - IZ-AD-6_Update_Record
 - IZ-AD-7_Historical_IIS-Error
 - 1.IZ-AD-7.1_Send_V04_Z22
 - ← 2.IZ-AD-7.2_Receive_ACK_Z23**
 - IZ-AD-8_Admin_IIS-Warning
 - IZ-AD-9_Admin_IIS-2Warnings
 - IZ-AD-10_Historical_IIS-SysError
 - Evaluated History and Forecast Group

TestStep: IZ-AD-7.2_Receive_ACK_Z23

▶ Load Test Step

Test Story | Test Data Specification | Message Content | **Juror Document** | Test Message

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Return an Acknowledgement		
Test Case ID	IZ-AD-7_Historical_IIS-Error	
Juror ID		
Juror Name		
HIT System Tested		
Inspection Date/Time		
Inspection Settlement (Pass/Fail)	Pass	Fail
	<input type="checkbox"/>	<input type="checkbox"/>
Reason Failed		
Juror Comments		

DISPLAY VERIFICATION

This Test Case-specific Juror Document provides a checklist for the Tester to use during certification testing for assessing the health information technology's ability to receive and process a Return an Acknowledgement Z23 message (in response to a "Send Unsolicited Immunization Update Using a VXU" Z22 message) in which an Error is returned in the message.

The exact wording and format of the display in the health information technology (HIT) is not in-scope for this test.

Return an Acknowledgement

The receiving HIT system being tested shall process the Z23 ACK error notification message correctly; the issue identified in the error notification must be made visible in the system.

Juror Documents (Query/Response)

Test Cases

- ONC 2015 Test Plan
 - Administration Group
 - Evaluated History and Forecast Group
 - IZ-QR-1_Query_Child
 - 1.IZ-QR-1.1_Query_Q11_Z44
 - 2.IZ-QR-1.2_Response_K11_Z42
 - IZ-QR-2_Query_Adult
 - IZ-QR-3_Query_No_Patients
 - IZ-QR-4_Query_Too_Many

TestStep: IZ-QR-1.2_Response_K11_Z42 ▶ Load Test Step

Test Story | Test Data Specification | Message Content | **Juror Document** | Test Message

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Patient Information

Patient Identifier	Patient Name	DOB	Gender	Tester Comment
171122	Cameron A Fairchild	02/14/2009	Male	

When displayed in the EHR with the Evaluated Immunization History and Immunization Forecast, these patient demographics data may be derived from either the received immunization message or the EHR patient record. When displaying demographics from the patient record, the EHR must be able to demonstrate a linkage between the demographics in the message (primarily the patient ID in PID-3.1) and the patient record used for display to ensure that the message was associated with the appropriate patient.

Evaluated Immunization History and Immunization Forecast

Immunization Schedule Used	Tester Comment
ACIP	

Evaluated Immunization History

Vaccine Group	Vaccine Administered	Date Administered	Valid Dose	Validity Reason	Completion Status*	Tester Comment
Hep B NOS	Hep B Peds NOS	04/15/2009	YES		Complete	
HIB NOS	HIB PRP-T	03/14/2009	NO	Too Young	Complete	
Hep B NOS	DTAP-Hep B-IPV	10/11/2009	YES		Complete	
IPV	DTAP-Hep B-IPV	10/11/2009	YES		Complete	
DTAP	DTAP-Hep B-IPV	10/11/2009	YES		Complete	
Hep B NOS	Hep BPEDS	04/11/2010	YES		Complete	
MMR	MMR	04/15/2010	YES		Complete	

* "Completion Status" refers to the status of the dose of vaccine administered on the indicated date and may be interpreted as "Dose Status". A status of "Complete" means that the vaccine dose was "completely administered" as opposed to "partially administered".

Future Releases of the IG

- Primary focus of EHRs and the IIS community is on implementing Release 1.5
- AIRA and CDC are looking at making the IG an HL7 balloted document
 - Specifics are still under discussion
- Future releases will include:
 - How to construct messages including patient observations, special indications, contraindications, adverse reactions and immunities
 - Review of profiles and content relative to updated core data elements and functional requirements
 - Updated publishing and vocabulary tools using NIST authoring tools