Testing and Validation of HL7 Context-based in NIST Tool	**Code:**	HL7_003
	Version:	1.1
	Effective per:	06/12/2018
	Pages:	Page **1** of **10**

1. PURPOSE

The purpose of this document is to explain how to validate and generate the necessary reports that must be sent to the Connecticut Department of Public Health Immunization Program in order to demonstrate that the EHR System complies with the requirements of HL7 Version 2.5.1 for immunization messaging, release 1.5 for electronic data exchange with CT WiZ.

2. REPONSIBILITIES

TITLE/ROLE	ACTIVITY/TASK NAME
Vendor / HL7 submitter	▪ Create the test message with the EHR technology using the test data provided in the "Message Content" in the NIST tool. ▪ Validates messages associated in the Context-based testing page with a given test script that includes a specific Immunization test scenario. Testing will include the technical requirements and content-specific requirements specified in the Test Case. ▪ Pass the test scenarios and generate the report to be emailed to DPH.

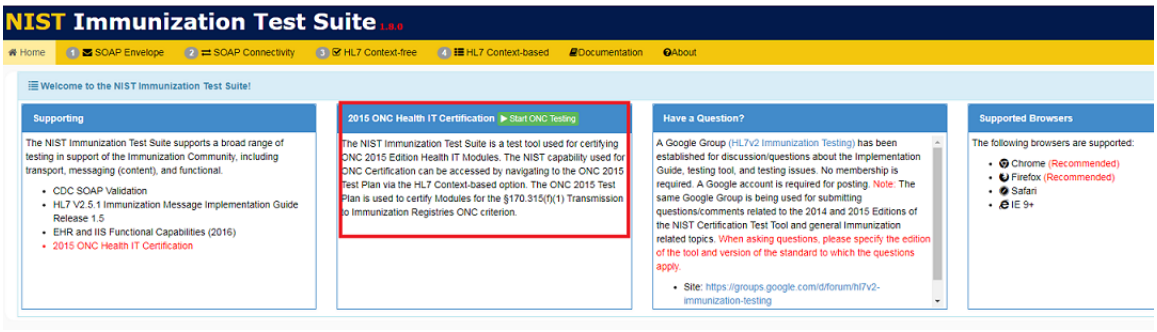
3. REFERENCES

CT follows the National Institute of Standards and Technology (NIST).

The NIST Immunization Test Suite supports a broad range of testing in support of the Immunization Community, including transport, messaging (content), and functional.

- CDC SOAP Validation
- HL7 V2.5.1 Immunization Message Implementation Guide Release 1.5
- EHR and IIS Functional Capabilities (2016)
- 2015 ONC Health IT Certification

URL: http://hl7v2-iz-r1.5-testing.nist.gov



Help Desk Support:

NIST has been established a Google Group (HL7v2 Immunization Testing) for discussion/questions about the Implementation Guide, testing tool, and testing issues. No membership is required. A Google account is required for posting. Note: The same Google Group is being used for submitting questions/comments related to the 2014 and 2015 Editions of the NIST Certification Test Tool and general Immunization related topics. When asking questions, please specify the edition of the tool and version of the standard to which the questions apply.

- Site: https://groups.google.com/d/forum/hl7v2-immunization-testing
- Emails: hl7v2-immunization-testing@googlegroups.com
  robert.snelick@nist.gov

For more information, visit the NIST tool in the documentation tab.

4. Scenarios to test according to the profile under which your organization is applying.

To apply to send immunizations, you must pass the below scenarios in the NIST 2015 edition tool without error.

Test Cases	Message Created – Step 1
Administration Group	**Send Administration Message**
IZ-AD-1_Admin_Child	IZ-AD-1.1_Send_V04_Z22
IZ-AD-2_Admin_Adult	IZ-AD-2.1_Send_V04_Z22
IZ-AD-3_No_Consent	IZ-AD-3.1_Send_V04_Z22
IZ-AD-4_Delete_Record	IZ-AD-4.1_Send_V04_Z22
IZ-AD-5_Refusal	IZ-AD-5.1_Send_V04_Z22
IZ-AD-6_Update_Record	IZ-AD-6.1_Send_V04_Z22
IZ-AD-7_Historical_IIS-Error	IZ-AD-7.1_Send_V04_Z22
IZ-AD-8_Admin_IIS-Warning	IZ-AD-8.1_Send_V04_Z22
IZ-AD-9_Admin_IIS-2Warnings	IZ-AD-9.1_Send_V04_Z22
IZ-AD-10_Historical_IIS-SysError	IZ-AD-10.1_Send_V04_Z22

To apply for bi-directional (query and response) exchange with EHR and CT WiZ, you must pass the below scenarios in the NIST 2015 edition tool without error.

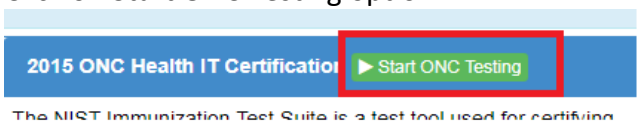
Test Cases	Message Created – Step 1
Administration Group	**Send Administration Message**
IZ-AD-1_Admin_Child	IZ-AD-1.1_Send_V04_Z22
IZ-AD-2_Admin_Adult	IZ-AD-2.1_Send_V04_Z22
IZ-AD-3_No_Consent	IZ-AD-3.1_Send_V04_Z22
IZ-AD-4_Delete_Record	IZ-AD-4.1_Send_V04_Z22
IZ-AD-5_Refusal	IZ-AD-5.1_Send_V04_Z22
IZ-AD-6_Update_Record	IZ-AD-6.1_Send_V04_Z22
IZ-AD-7_Historical_IIS-Error	IZ-AD-7.1_Send_V04_Z22
IZ-AD-8_Admin_IIS-Warning	IZ-AD-8.1_Send_V04_Z22
IZ-AD-9_Admin_IIS-2Warnings	IZ-AD-9.1_Send_V04_Z22

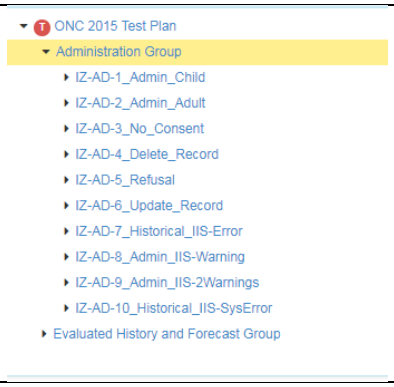
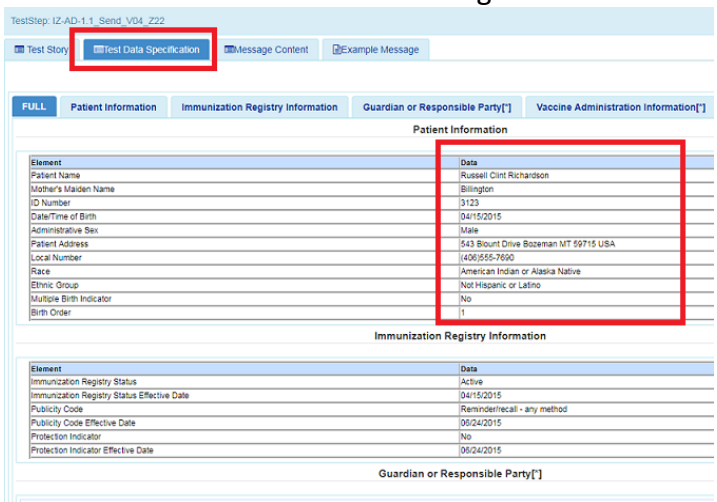
IZ-AD-10_Historical_IIS-SysError	IZ-AD-10.1_Send_V04_Z22
Evaluated History & Forecast Group	**Send Query Message**
IZ-QR-1_Query_Child	IZ-QR-1.1_Query_Q11_Z44
IZ-QR-2_Query_Adult	IZ-QR-2.1_Query_Q11_Z44
IZ-QR-3_Query_No_Patients	IZ-QR-3.1_Query_Q11_Z44
IZ-QR-4_Query_Too_Many	IZ-QR-4.1_Query_Q11_Z44

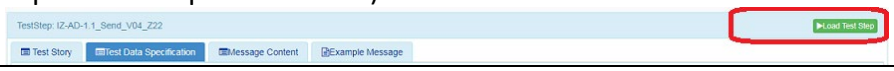
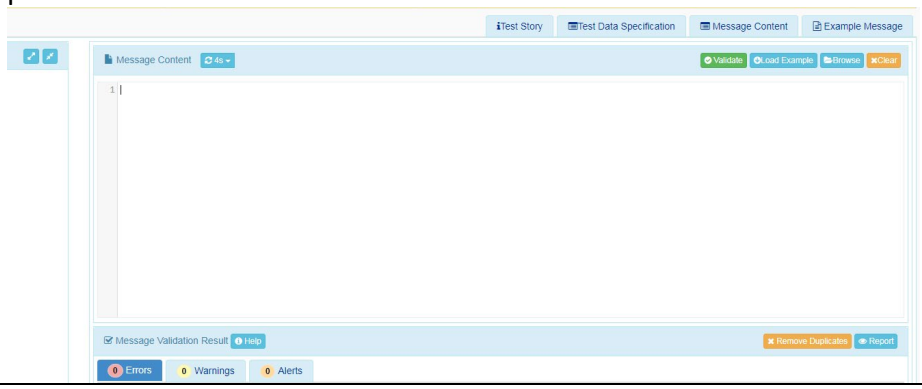
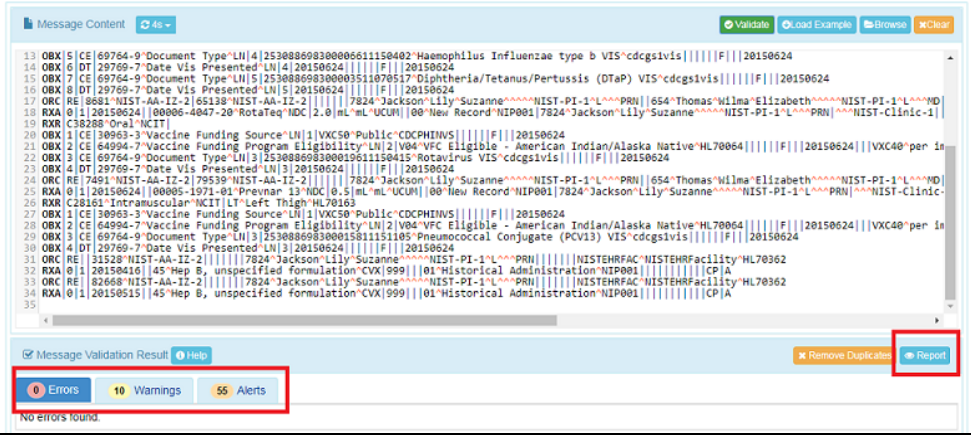
To apply for 'only query and response', you must pass the below scenarios in the NIST 2015 edition tool without errors.

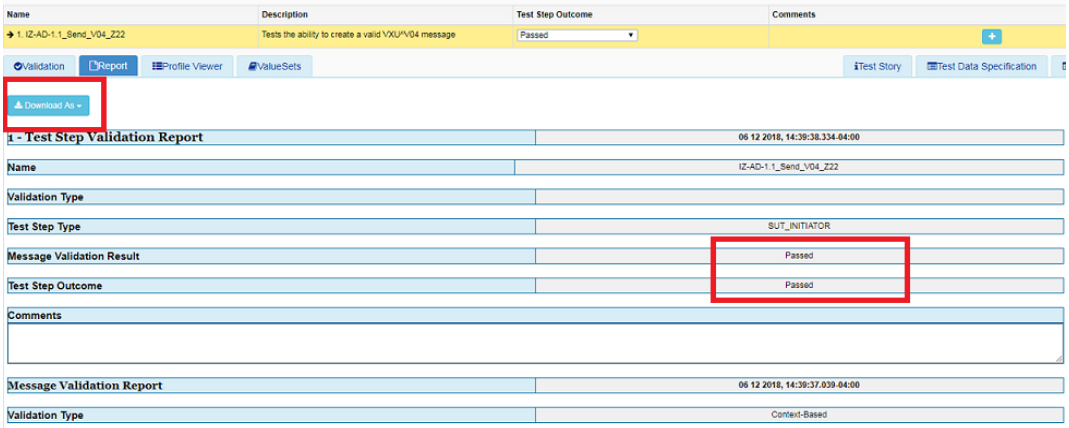
Test Cases	**Message Created – Step 1**
Evaluated History & Forecast Group	**Send Query Message**
IZ-QR-1_Query_Child	IZ-QR-1.1_Query_Q11_Z44
IZ-QR-2_Query_Adult	IZ-QR-2.1_Query_Q11_Z44
IZ-QR-3_Query_No_Patients	IZ-QR-3.1_Query_Q11_Z44
IZ-QR-4_Query_Too_Many	IZ-QR-4.1_Query_Q11_Z44

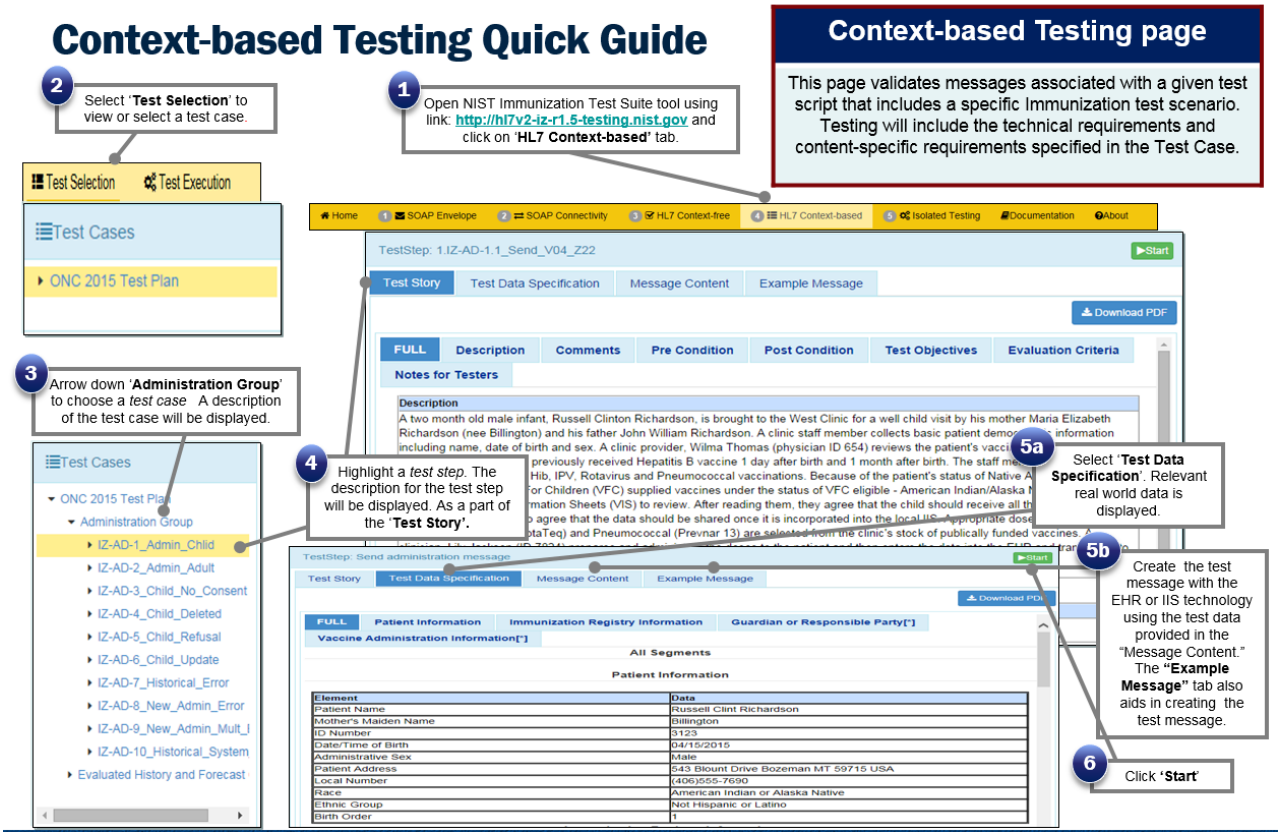
5. PROCEDURE

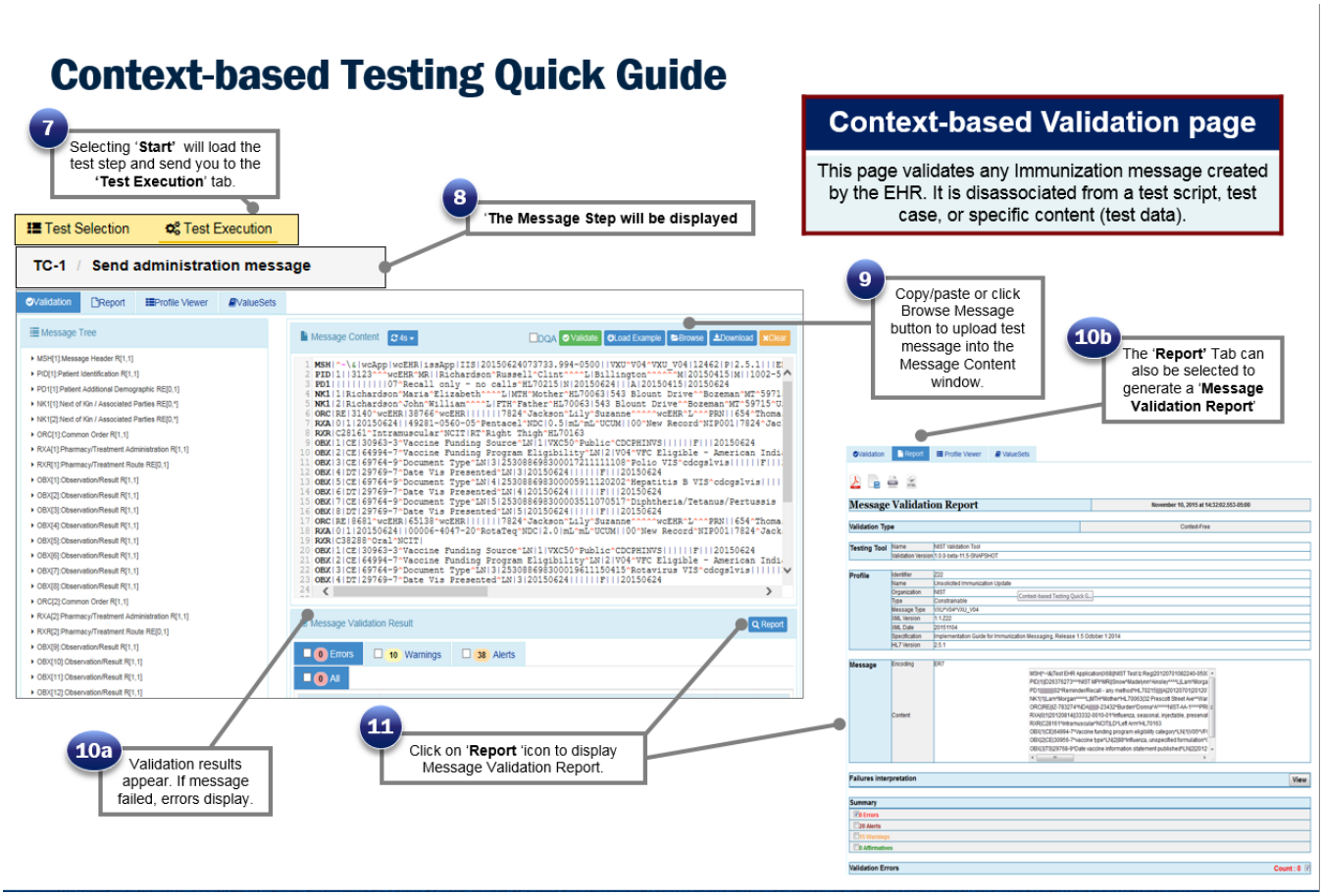
Responsible Party	Action Step
Vendor / HL7 submitter	**Testing the messages**
	1. Go to the NIST tool http://hl7v2-iz-r1.5-testing.nist.gov
	2. Click on Start ONC Testing option 
	3. Click to expand the arrow in the Administration Group option

Responsible Party	Action Step
	
	4. Click to expand on the first scenario and select 1.IZ-AD-1.1_Send_V04_Z22
	5. Click on the “Test Data Specification”. The system will display all the information about the scenario on right 

Responsible Party	Action Step
	6. Create the HL7 message in your EHR technology system using the test data provided in the "Test Data Specification" in the NIST tool.
	7. Go to the NIST Tool and click on Load Test Step (if you closed the NIST tool repeat the steps from 1 to 6) 
	8. Copy and paste or upload your HL7 message into the "Message Content" panel 
	9. Click on Validate button
	10. Verify the result has no errors, if the system displays errors, fix the errors and repeat steps 7 and 8. 
	11. When the scenario has no errors, generate the report and save it for your record. Click on "Report" option

Responsible Party	Action Step
	
	12. Verify that the case passed and download as a pdf
	13. Save the report with the name of the first scenario, ex. Z-AD-1.1_Send_V04_Z22-ValidationReport .pdf
	14. Repeat the process for each scenario according to the profile under which you are applying (See 6. Scenarios to test according to the profile under which your organization is applying.)
Vendor / HL7 submitter	**Sending reports and the HL7 Application Form to DPH**
	15. Once you have successfully generated all the reports, fill out the CT WiZ HL7 Application Form and email all documents to HelpDesk.dph@ct.gov
	16. You will receive an email with the ticket number for tracking purposes.


Context-based Testing Quick Guide
Context-based Testing page
This page validates messages associated with a given test script that includes a specific Immunization test scenario. Testing will include the technical requirements and content-specific requirements specified in the Test Case.
1 Open NIST Immunization Test Suite tool using link: http://hl7v2-iz-r1.5-testing.nist.gov and click on 'HL7 Context-based' tab.
2 Select 'Test Selection' to view or select a test case.
3 Arrow down 'Administration Group' to choose a test case A description of the test case will be displayed.
4 Highlight a test step. The description for the test step will be displayed. As a part of the 'Test Story'.
5a Select 'Test Data Specification'. Relevant real world data is displayed.
5b Create the test message with the EHR or IIS technology using the test data provided in the "Message Content." The "Example Message" tab also aids in creating the test message.
6 Click 'Start'
Test Selection
Test Execution
Test Cases
ONC 2015 Test Plan
Administration Group
IZ-AD-1_Admin_Child
IZ-AD-2_Admin_Adult
IZ-AD-3_Child_No_Consent
IZ-AD-4_Child_Deleted
IZ-AD-5_Child_Refusal
IZ-AD-6_Child_Update
IZ-AD-7_Historical_Error
IZ-AD-8_New_Admin_Error
IZ-AD-9_New_Admin_Mult_I
IZ-AD-10_Historical_System
Evaluated History and Forecast
Home
SOAP Envelope
SOAP Connectivity
HL7 Context-free
HL7 Context-based
Isolated Testing
Documentation
About
TestStep: 1.IZ-AD-1.1_Send_V04_Z22
Start
Test Story
Test Data Specification
Message Content
Example Message
Download PDF
FULL
Description
Comments
Pre Condition
Post Condition
Test Objectives
Evaluation Criteria
Notes for Testers
Description
A two month old male infant, Russell Clinton Richardson, is brought to the West 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 demo information including name, date of birth and sex. A clinic provider, Wilma Thomas (physician ID 654) reviews the patient's vacci previously received Hepatitis B vaccine 1 day after birth and 1 month after birth. The staff me Hib, IPV, Rotavirus and Pneumococcal vaccinations. Because of the patient's status of Native A For Children (VFC) supplied vaccines under the status of VFC eligible - American Indian/Alaska N rmation Sheets (VIS) to review. After reading them, they agree that the child should receive all th o agree that the data should be shared once it is incorporated into the local IIS. Appropriate dose taTeq) and Pneumococcal (Prevnar 13) are selected from the clinic's stock of publically funded vaccines.
TestStep: Send administration message
Start
Test Story
Test Data Specification
Message Content
Example Message
Download PDF
FULL
Patient Information
Immunization Registry Information
Guardian or Responsible Party[*]
Vaccine Administration Information[*]
All Segments
Patient Information
Element
Data
Patient Name
Russell Clint Richardson
Mother's Maiden Name
Billington
ID Number
3123
Date/Time of Birth
04/15/2015
Administrative Sex
Male
Patient Address
543 Blount Drive Bozeman MT 59715 USA
Local Number
(406)555-7690
Race
American Indian or Alaska Native
Ethnic Group
Not Hispanic or Latino
Birth Order
1


Context-based Testing Quick Guide
7
Selecting 'Start' will load the test step and send you to the 'Test Execution' tab.
8
The Message Step will be displayed
Test Selection
Test Execution
TC-1 / Send administration message
Validation
Report
Profile Viewer
ValueSets
Message Tree
Message Content
Validate
Load Example
Browse
Download
Clear
Message Validation Result
Report
Errors
Warnings
Alerts
All
Context-based Validation page
This page validates any Immunization message created by the EHR. It is disassociated from a test script, test case, or specific content (test data).
9
Copy/paste or click Browse Message button to upload test message into the Message Content window.
10b
The 'Report' Tab can also be selected to generate a 'Message Validation Report'
Message Validation Report
10a
Validation results appear. If message failed, errors display.
11
Click on 'Report 'icon to display Message Validation Report.

6. DEFINITIONS/ACRONYMS

ACRONYMS	DEFINITION
NIST	National Institute of Standards and Technology
DPH	Department of Public Health
IIS	Connecticut Immunization Information System
EHR	Electronic Health Record

7. FORMS

FORM #	RECORD/FORM/ACTIVITY NAME
HL7_002	CT WiZ HL7 Application Form

VERSION HISTORY

VERSION	EFFECTIVE DATE	DESCRIPTION OF CHANGE	REQUESTED BY
1.0	06/12/2018	Initial draft	DPH
1.1	11/01/2018	Added NIST help desk information	DPH