Minnesota Department *of* Health

MINNESOTA IMMUNIZATION INFORMATION CONNECTION

NIST Test Message Preparation and Validation (for HL7 Interfaces Only)

As part of preparing for onboarding, the Minnesota Immunization Information Connection (MIIC) requires that organizations create and test a suite of test messages based on the National Institute of Standards and Technology (NIST) HL7 v2 test cases found at Immunization Messaging (http://hl7v2-iz-testing.nist.gov/mu-immunization/). NIST's test cases help ensure that your system is able to store and send the necessary data for successful interoperability with other systems, such as MIIC. To assist with testing, NIST has created a tool that validates HL7 v2 messages. This tool provides an opportunity to practice developing successful HL7 messages that convey information about specific immunization-related situations.

Each of your test messages should be created in your system based on their descriptions in the NIST test tool. They should not be manually altered. Typically, this process requires technical expertise and is not something that clinicians can do by themselves. Please check with your technical staff or vendor for assistance with creating these messages.

Test Message Process Instructions

Follow the step-by step instructions below to complete your test messages and send this information to the Minnesota Department of Health (MDH). See page 3 for answers to frequently asked questions about this process.

1   In the Immunization Messaging: HL7 v2 Validation Tool click on "Context-based Validation."

2   Under "Test Cases," seven scenarios are listed. Expand the test case options so that you can select the test case you are testing:

> IZ_1_Admin_Child
>   ▼ IZ_1_1_Admin_Child
>   IZ_1_1.1_Max

You will need to complete a total of five test cases, unless some are not applicable to your setting based on workflow and services provided. Only complete one HL7 message for each test case, totaling five test messages to meet the requirement for NIST validation testing. Please review and complete one test message for each of the following test cases:

  ➢ Test Case 1, Admin_Child **or** Test Case 2, Admin_Adult (complete only one)
  ➢ Test Case 3, Historical_Child
  ➢ Test Case 4, Consented_Child
  ➢ Test Case 5, Refused_Toddler
  ➢ Test Case 6, Varicella_History_Child

3   Read the relevant test case description and any test objectives and notes.
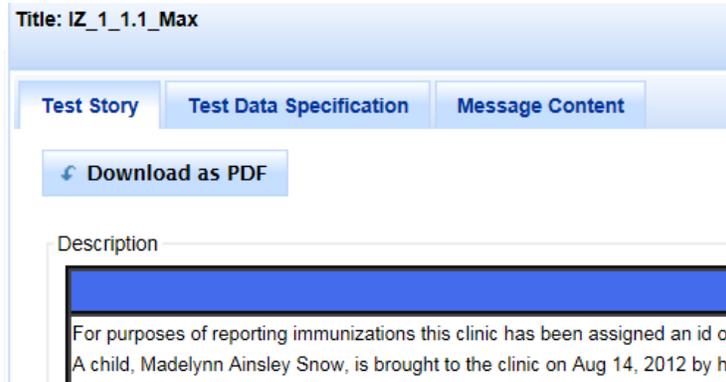
4   Develop your test message. If you need help, click "Load Example" or refer to the CDC's HL7 v2.5.1, r1.4
     Implementation Guide for Immunization Messaging at HL7 Implementation Guidance
     (http://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html).

5   Click "Select" in the upper right-hand corner of the Immunization Messaging Tool.

6   Paste your message into the "Message Content" box and wait four seconds for the tool's validation.

7   Review list of errors identified by the tool and address as appropriate.

     It is acceptable to have multiple errors. Repeat testing until you have addressed most errors associated with the
     required segments (MSH, PID, ORC, and RXA) and have no more than forty errors remaining for each test message
     completed.

8   Copy and paste your validated test messages into a Microsoft Word document. Make sure to identify and label each
     message completed. Also, add a comment for any test cases not completed. Example: "Test Case 5 is not applicable
     to our setting because we don't track refusals."

9   Email the Word document with your validated test messages to the MIIC Help Desk at health.miichelp@state.mn.us.
     Use "NIST Test Messages" followed by the name of your organization (or your client's name if you are a vendor) in
     the subject line.

Frequently Asked Questions

Q1: Why is MIIC requiring NIST test messages and validation?
A1: MIIC staff have identified the need for HL7 testing by organizations on their own before onboarding to ensure they are better technically prepared when MIIC is ready to work with them. Organizations can work to address any issues found during this process while waiting to onboard.

Q2: What happens after our NIST test messages are emailed to MIIC?
A1: MIIC program staff will review your test messages and identify potential errors. They will contact you in a timely manner to provide feedback and assistance so you are able to make any necessary corrections.

Q3: How many test cases should be completed?
A3: We ask for a total of five test cases to be completed, as identified in the instructions above. If you find a test case that is not applicable to your setting, do not complete that case. Simply make note of any cases you do not complete and why when submitting your results.

Q4: There are three scenarios listed under each test case. Do we need to complete a test message for all three?
A4: No, you only need to develop one test message for each test case completed. For instance, if you are completing the Historical_Child Test Case, you would only need to send one test message for 1Z_3_1.1_Typ.

Q5: We use a certified Electronic Health Record (EHR). Do we still need to complete NIST validation testing?
A5: Yes, because there are several ways to implement a certified product. For example, there could be extra interface engines between your EHR and the receiving system (MIIC, in this case). This testing will help us to ensure that things have been implemented correctly and that any interface engines you have in place will not alter messages in ways that are unexpected to you.

Q6: Does completing NIST validation testing replace the need for sending data to your test environment during onboarding?
A6: No, this is an additional step for providers to practice developing immunization-specific HL7 messages and identify errors early that might delay onboarding or to be able to work on cleaning their messages while waiting for MDH technical staff to have the bandwidth to work on their interface.

Q7: We want to use different patient names, vaccines, and other data than the ones listed in the test cases. Is that OK?
A7: Changing details of a scenario in Context-based Validation will result in additional errors because the system is expecting the exact same information as in the test case description. For instance, a different patient name than the one in the scenario will result in an error in PID-5. As long as you do not mind those additional errors, it is acceptable to MIIC. Alternatively, you can use Context-free Validation to validate your test messages. Just know that you are still expected complete the immunization scenarios described in the test cases under Context-based Validation.

Q8: What if I am unable to generate and test with the NIST tool in advance of working with MIIC?
A8: If for any reason you are unable to complete NIST testing contact the MIIC Help Desk at health.miichelp@state.mn.us for instructions.

Q9: What should I do if I run into issues with NIST testing or am confused by the results that the NIST validator presented me with?
A9: If you run into issues while using the NIST validation tool you can use the "Documentation" tab at the top to find a set of links that includes guidance on using the tool and additional resources.