NMSIIS HL7 Transmission Guide

Version History:

Version	Date	Notes
1.0	06/16/2014	F Johnston
2.0	07/30/2014	F Johnston
3.0	01/29/2015	F Johnston
3.1	06/12/2015	F Johnston
3.2	11/04/2015	K Cruz
3.3	09/26/2023	K Cruz

Introduction:

This document provides information about interfaces available for real-time data exchange between a client and the New Mexico Department of Health. The information in this document is intended to allow providers to make an initial assessment of their ability to transmit real-time information to the New Mexico Statewide Immunization Information System (NMSIIS).

The goal of this document is giving the reader a solid technical understanding of our platform and what it has to offer in order to effectively exchange data in a real-time fashion.

Interfaces:

The foundation communication layer at the core of all our interfaces is ***Secure HTTP***. The reason behind it relies on its broad acceptance across different platforms, availability of software implementations and communication tools used by developers. There is one interface available:

- HTTPS POST
- WSDL (Web Services Description Language)

NOTE! Before you can start submitting messages to NMDOH via data exchange, here is some important information. You will need to complete the necessary Organization and User Agreements as well as have the Vendor agreement signed by the E.H.R representative. After this has been completed, the Outreach Manager will contact you with the following information.

- The FacilityID/orgCode is an alphanumeric string assigned by the New Mexico Department of Health that uniquely identifies your organization. The FacilityID/orgCode is also called "shortname".
- The password/pinCode is a numeric field generated by the New Mexico Department of Health used in conjunction with the FacilityID/orgCode uniquely for the purpose of exchanging data through our interfaces.
- To contact New Mexico Department of Health personnel that can help you obtain the above-mentioned information please refer to Appendix A.

How to Get a Certificate:

The following may not be required. Verify your certificates before following these steps. Below are the simple steps to acquire a free certificate from a site that requires one. Mozilla Firefox is required for this setup.

1. Open Firefox and go to https://nmhit.org/nmsiistest/rhapsody/receive
2. You will get a message about a "Non-secure transmission".
3. Click the padlock next to the URL in the address line which will open a dialog box.
4. Click "More information"
5. Click "View certificate"
6. Click the "Details" tab.
7. Click "Export"
8. Save the certificate to your local drive.

Once the certificate has been obtained, you will need to use the certificate during the transaction. The specifics of this depend on the programming language or the application you are using to do the POST. In the case of the programming language, you will need to write code, in the case of an application you will have to import the certificate into your application using the means provided by the application vendor.

> **Fiddler is not meant to be used as a means of submitting messages to NMSIIS for actual data exchange. It is a verification tool that can be used to assess connectivity and configuration parameters required to test the NM DOH data exchange transport. Once connectivity has been verified, you can then use the information learned through the testing process to configure your specific EMR or application code for performing actual data exchange with NM DOH.**

Testing the NM DOH Transport:

To prepare for data exchange, the transport used for data communications must be tested. While you will eventually be using your own EMR system or application code to interface with NM DOH for actual production data exchange, we must first perform a simple test of the transport itself. Once this test is completed, you will have the information necessary to configure your specific EMR or application solution.

Fiddler Setup for HTTPS POST:

We strongly suggest that you download an application called Fiddler from www.telerik.com. This is a free application which will capture traffic between your location and NMSIIS, therefore verifying connectivity.

Below is an example of what Fiddler will look like when you open the application.
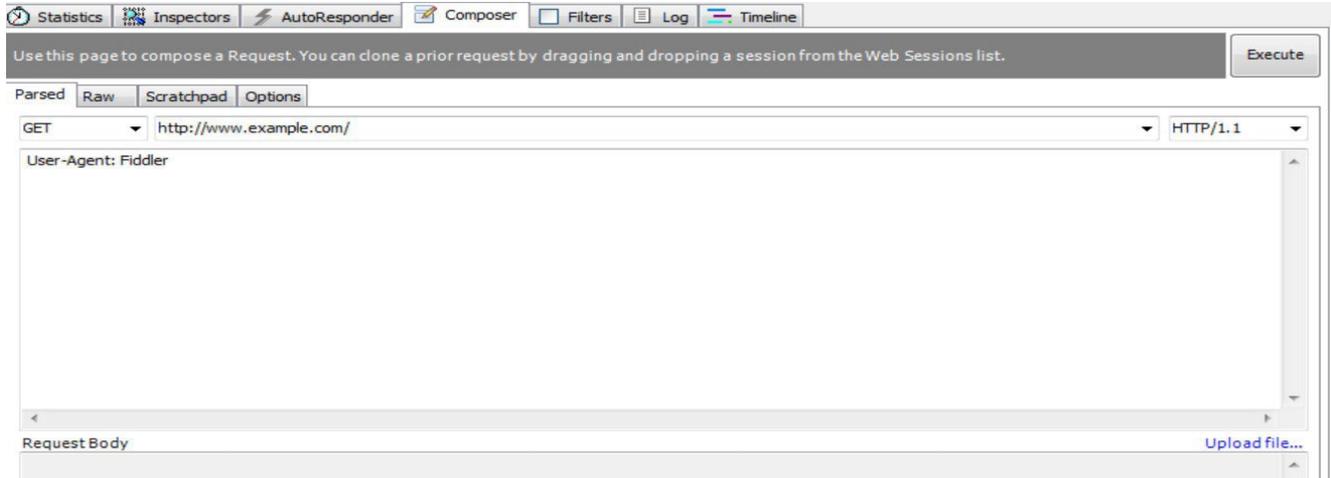
1. Select the Composer tab in Fiddler.
2. Press the pull down and change **Get** to **Post.**
3. Update http://www.example.com to https://www.nmhit.org/nmsiistest/rhapsody/receive
4. HTTP/1.1 is the default in the next field.
5. In Request Headers portion of the application, paste in the example below including the colons:
    a. User-Agent: Fiddler
    b. Service: NMSIIS
    c. FacilityID/orgCode: **XYZ**
    d. password/pinCode: **1234**
6. In the Request Body area, paste in a valid HL7 message. For example:

MSH|^~\&|PWx|**XYZ**|NMSIIS|NMSIIS|20140917145954||VXU^V04^VXU_V04|Q851945
36 8T67857795|P|2.5.1|||AL|AL PID
PID|1||84055037^^^^MR||TEST^VERIFIED||20090222|M|||^^^^^US^|||||||||745-85-
9874|||||||||||N
IN1|1|||||||||||||||||||||||||||20141105|||||||||||||||||||||||||
IN2|1|
ORC|RE||2031-3571424|||||||||
RXA|0|1|20140917144100|20140917144100|62^HPV,
quadrivalent^CVX|0.5|mL^Milliliter^ISO+||00^NEW IMMUNIZATION
RECORD^NIP001|^Molinar^Jose|||||j011272|20160421|MSD^Merck and Co.,
Inc.^MVX|||CP||20140917145952

RXR|IM^im^HL70162|RA^right arm^HL70163
OBX|1|CE|64994-7^Vaccine funding program eligibility
category^LN|1|V02^Medicaid^HL70064^V02^Medicaid^NM_IMM_RT_251_SRC^^^Medica
id||||||F|||20140917|||VXC40^Eligibility captured at the Immunization level^CDCPHINVS

Server Downtime:

The NMSIIS system is backed up from approximately 10:00 PM to 2:00 AM Mountain Time daily. During this time, the interface will not be available.

Please refrain from sending messages during this timeframe. Your messages may be rejected and when this occurs, you may be notified by the NMSIIS personnel.

HTTPS POST:

Secure HTTP Message

Header	Entity-Body
Service FacilityID/orgCode password/pinCode	HL7 message Content-type: text/plain

service	Represents the name of the service the client is	NMSIIS
FacilityID/orgCode	Alphanumeric string assigned by the New Mexico Department of Health that uniquely identifies your organization. If you don't know your FacilityID/orgCode, please contact the New Mexico Department of Health. Note: The FacilityID/orgCode mentioned here refers also to the "shortname" used by the New Mexico Department of Health.	Your assigned FacilityID/orgCode
password/pinCode	Numeric field generated by the New Mexico Department of Health that it's used in conjunction with the FacilityID/orgCode, and it is used uniquely for the purpose of exchanging data through our interfaces.	Your assigned password/pinCode

The response returned from the server is a HL7 ACK message that must be captured and processed in order to evaluate the outcome of the sent message.

Non-Printable Characters:

Since XML is transport-independent and specifies data though markup, no non-printable characters can exist. Many providers might use certain non-printable characters to define their specific data formats and file separation. These characters must be removed before submitting HL7 data in either HL7 or XML format to New Mexico Department of Health systems. There are many non-printable characters or "control characters" that are used for specific functions, however the NMSIIS system is designed to be used with plain text.

An example of a non-printable character is **28** and per the ASCII table is a file separator.

Test Bed (UAT):

This is an example in C# that shows how to send a message via web services to the UAT (test) region.

```
string _targetUrl = "https://www.nmhit.org/nmsiistest/rhapsody/receive";

Response.Clear(); Response.ContentType =
"text/plain";

if (Request.Form.HasKeys())
{

    NameValueCollection paramKeys = Request.Form;

    if (Request.Form.Get("service") == null)
    {

        Response.Write("ERR101: Missing SERVICE code.");
    }
    else
    {

        if (Request.Form.Get("orgCode") == null)
        {

            Response.Write("ERR102: Missing ORGANIZATION code.");
        }
        else
        {

            if (Request.Form.Get("pinCode") == null)
            {

                Response.Write("ERR103: Missing PIN code.");
            }
```

```
                else
                {

                    if (Request.Form.Get("message") == null)
                    {

                        Response.Write("ERR104. Message body not found");
                    }

                    else
                    {

                        // Creates the post data to be sent to Orion Rhapsody byte[]
                        hl7Message = (new
ASCIIEncoding()).GetBytes(Request.Form.Get("message")); HttpWebRequest
                        webRequest =
(HttpWebRequest)System.Net.WebRequest.Create(_targetUrl);

                        webRequest.Method = "POST";
                        webRequest.AllowAutoRedirect = false;
                        webRequest.Headers.Add("service", Request.Form.Get("service"));
                        webRequest.Headers.Add("orgCode", Request.Form.Get("orgCode"));
                        webRequest.Headers.Add("pinCode", Request.Form.Get("pinCode"));
                        webRequest.ContentLength = hl7Message.Length;

                        using (Stream requestStream = webRequest.GetRequestStream())
                        {

                            requestStream.Write(hl7Message, 0, hl7Message.Length); requestStream.Close();
                        }


                        StreamReader reader = new
StreamReader(webRequest.GetResponse().GetResponseStream());

                        Response.Write(reader.ReadToEnd());
                    }

                }

            }

        }

        else
        {

            Response.Write("ERR100. No POST data has been found.");
        }
```

WSDL (Web Services Description Language):

Definition

A **WSDL** (Web Services Description Language) is an XML document that describes a web service. SOAP is an XML-based protocol that lets you exchange info over a particular protocol (can be HTTP or SMTP, for example) between applications.

Requirements

Please include the SOAP envelope example below in the document as an example of what actually gets sent to our servers once they have configured their WSDL documents correctly. It is only for example purposes, the WSDL part is most important. Please make sure that the XML entity character replacement is documented for the HL7 message field that contains the HL7 data. Entity replacement rules would be as follows:

All & characters are replaced with &

All " characters are replaced with "

All ' characters are replaced with '

All < characters are replaced with <

All > characters are replaced with >

These rules only apply to the HL7 data, not the entire SOAP envelope (below), or the WSDL that you have. The request below is an example of XML character replacement for & characters. There are 3 of them if you look through the <urn:hl7Message> tag that contains the HL7 data. The sample below is just an example of what a product like SoapUI would generate for the user if they had our WSDL. The data below should probably be cleaned up to look like an example. The facilityID is the orgCode, the password is the pinCode. The SOAP envelop is generated from the WSDL and the key fields are the same in both documents if you compare them.

There are only 3 fields to be concerned with which are password, facilityID, and hl7Message.

- Username is to be blank.
- Password field contains the password/pinCode supplied to you by the Outreach Coordinator.
- FacilityID contains the FacilityID/orgCode supplied to you by the Outreach Coordinator.
- Hl7Message is where the actual message will be inserted.

FIDDLER setup for WSDL:

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Below is an example of what Fiddler will look like when you open the application.
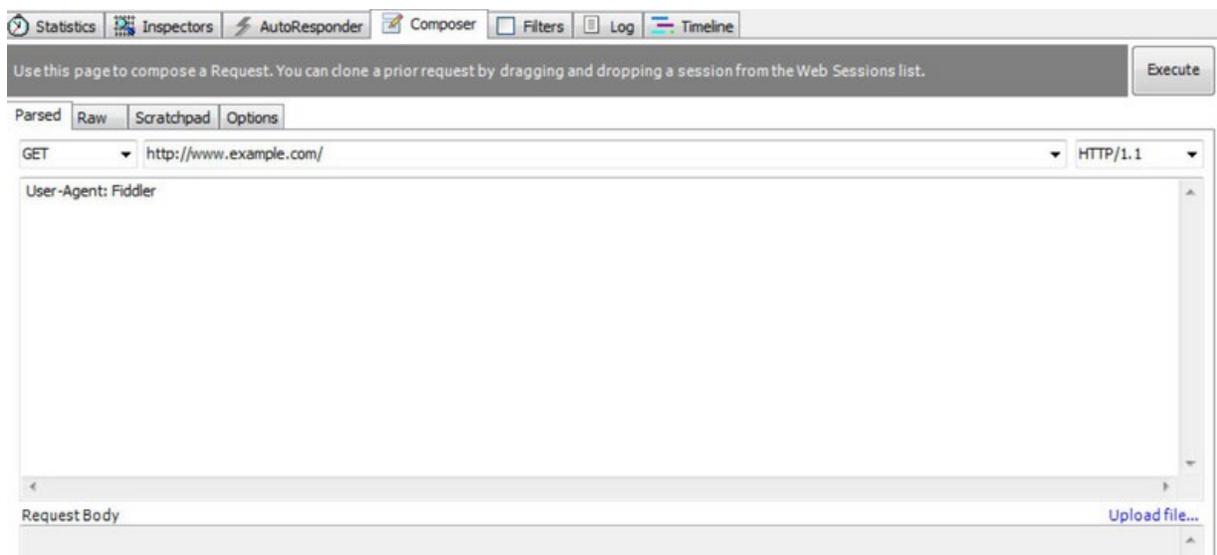
1. Select the Composer tab in Fiddler.
2. Press the pull down and change Get to **Post**.
3. Update http://www.example.com to
   https://www.nmhit.org/services/RhapWSUAT_EHR_IIS.RhapWSUAT_EHR_IISHttpSoap12Endpoint
4. HTTP/1.1 is the default in the next field.
5. In Request Headers portion of the application, paste the following information into the Request Header:
   Accept-Encoding: gzip,deflate
   Content-Type: application/soap+xml; charset=UTF-8;
   action="urn:cdc:iisb:2011:submitSingleMessage" Host: www.nmhit.org
   Proxy-Connection: Keep-Alive
   User-Agent: Apache-HttpClient/4.1.1 (java 1.5)

See the Fiddler example below:
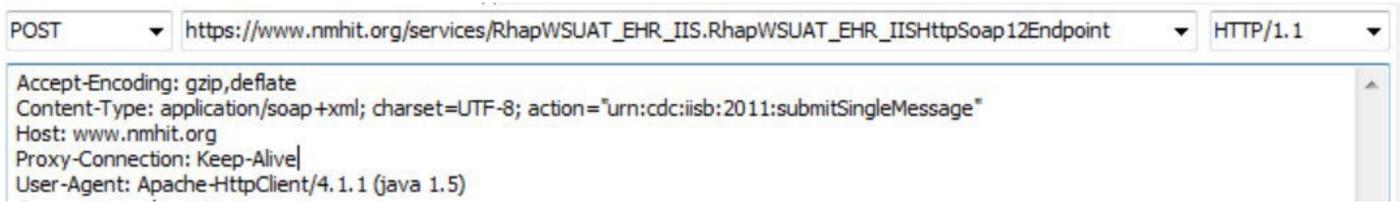
6. In the Request Body location, paste the information below, using your org and password/pinCode as shown. The username field will be blank;

7. Press the Execute button.

The information below is for testing purposes only. Once you have verified connectivity using either SOAPUI or Fiddler, you MUST use the FacilityID/orgCode and password/pinCode supplied to you by the Outreach Coordinator.

NOTE! This process may be used for real time messages ONLY. For testing purposes, use the following for the org and password/pinCode.

FacilityID/orgCode: XYZ
password/pinCode: 1234

Copy the script below and paste it into Fiddler for verification.

```
            <soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
    xmlns:urn="urn:cdc:iisb:2011">
      <soap:Header/>
      <soap:Body>
        <urn:submitSingleMessage>
          <!--Optional:-->
          <urn:username></urn:username>
          <!--Optional:-->
          <urn:password>1234</urn:password>
          <!--Optional:-->
          <urn:facilityID>XYZ</urn:facilityID>

    <urn:hl7Message>MSH|^~\&amp;|PWx|XYZ|NMSIIS|NMSIIS|20140917145954||VXU^V04^VX
    U_V04|Q851945368T67857795|P|2.5.1|||AL|AL PID|&lt;PHI PHI PHI&gt;
    PID|1||84055037^^^^MR||TEST^VERIFIED||20090222|M|||^^^^^US^||||||||||||||||||||N
    IN1|1|||||||||||||||||||||||||||||||20141105||||||||||||||||||||||||
    IN2|1| ORC|RE||2060759^HMS|||||||
    RXA|0|1|20140917144100|20140917144100|62^HPV,
    quadrivalent^CVX|0.5|mL^Milliliter^ISO+||00^NEW IMMUNIZATION
```

```
RECORD^NIP001|^Molinar^Jose|||||j011272|20160421|MSD^Merck and Co.,
Inc.^MVX|||CP||20140917145952
RXR|IM^im^HL70162|RA^right arm^HL70163 OBX|1|CE|64994-
7^Vaccine funding program eligibility
category^LN|1|V02^Medicaid^HL70064^V02^Medicaid^NM_IMM_RT_251_SRC^^^Medicaid|
|||||F|||20140917|||VXC40^Eligibility captured at the Immunization level^CDCPHINVS
</urn:hl7Message>
    </urn:submitSingleMessage>
      </soap:Body>
</soap:Envelope>
```