RIDE Immunization Registry Provider/Vendor HL7 Implementation Guide

The purpose of this document is to provide guidelines for the development of interfaces between the RIDE Immunization Registry (Registry) and healthcare provider systems, with the goal of sharing immunization records. This information is proprietary and confidential.

San Joaquin County Public Health Services Information Systems
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Contents

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Purpose

The purpose of this document is to provide guidelines for the development of interfaces between the RIDE Immunization Registry (Registry) and healthcare provider systems, with the goal of sharing immunization records.

Objectives

The main objective of this project is to create automated data exchange interfaces between the RIDE Immunization Registry and healthcare provider systems. The RIDE Immunization Registry is developed and maintained by San Joaquin County Public Health Services and covers the following California counties: Alpine, Amador, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus, and Tuolumne. Interfaces can include the following types:

1. **Provider Retrieval of Immunization Data from the Immunization Registry:** Healthcare provider systems can query the Registry in real-time using HL7 to retrieve immunization records from the Registry for a specific patient. The data returned can be used to update the provider's system.
2. **Provider Submittal of Immunization Data to the Immunization Registry:** Healthcare provider systems can submit patient demographic and immunization data to the Registry in real-time using HL7. Data submitted will be subject to Quality Assurance processing, including validation and duplicate checks.

Supported Implementation Scenarios

Retrieving Immunization Records from the Registry

One benefit of having a centralized immunization registry system is that participating providers can view an aggregate immunization history of a patient, even when the patient has received vaccinations from several providers. When a patient visits a provider's office, a request can be made in real-time from the provider's EHR system to retrieve the immunization history for that patient, as long as the patient can be uniquely identified.

1. **Provider System Queries the Registry:** the provider's EHR system sends an HL7 VXQ or QBP (Query for Vaccination Record) message to the Registry. If there is an error in the VXQ or QBP message sent to the Registry, an error response (See Appendix B) or NTE (Note) message is returned with information regarding the error.
2. **Registry Responds to Query:** the Registry will respond to the provider's EHR system with one of the following:
    a. **Record Not Found (QCK):** a QCK (Query General Acknowledgment) message is sent if a record cannot be found in the Registry database matching the provider's query.
    b. **Single Match Found (VXR) or (RSP^K11^RSP_K11):** a VXR (Response to Vaccination Query) message is sent if the Registry identifies a single record that matches the provider's query. This message includes any existing immunization records for the patient in the Registry database.
    c. **Multiple Matches Found (VXX) or (RSP^K22):** a VXX (Response to Vaccination Query Returning Multiple PID Matches) message is sent if the Registry finds more than one patient record that matches the provider's query. This message contains a list of possible matches within the Registry

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database. Before any immunizations will be returned, the provider must narrow their selection criteria so that just one match is return as a VXR.

3. **Provider System Handles VXX/RSP^K22 Message [if necessary]:** if the Registry returns multiple matches, the provider's system should allow the user to narrow the matching criteria and repeat steps 1 and 2.

Updating Immunization Records in the Registry

For the most complete immunization information, provider systems connected to the Registry via HL7 should also submit a record of any immunizations administered or recorded to the Registry. RIDE currently supports Real-time Updates. Batch Update support will be added in the future. The general flow looks like the following:

1. **Provider System Queries the Registry** (see previous section, Step 1)
2. **Registry Responds to Query** (see previous section, Step 2)
3. **Provider System Handles VXX/RSP^K22 Message [if necessary]** (see previous section, Step 3)
4. **Provider System Sends Immunization Data to Registry (VXU):** a VXU (Unsolicited Vaccination Record Update) message is sent from the provider EHR system to the Registry. This message should be sent to the Registry at the time the immunization record is entered into the provider's EHR system. If there is an error in the VXU message sent to the Registry, an NTE (Note) message is returned with information regarding the error.
4. **Registry Responds to Update (MSA):** an MSA (Message Acknowledgment) message is returned from the Registry to the provider EHR system to indicate the VXU was received. However, the MSA does not indicate the success or failure of the update to the Registry database, as it is possible that the record is already present in the Registry database or it does not pass Quality Assurance checks.

HL7 Specification

The RIDE system supports the HL7 versions 2.3.1 and 2.5.1 specifications. **Note that all new interface development should be based on version 2.5.1.** However, version 2.3.1 interfaces in place by the end of 2013 are still supported.

HL7 Version 2.3.1 (Legacy)

2.3.1 implementation is based on "Implementation Guide for Immunization Data Transactions using Version 2.3.1 of the Health Level Seven (HL7) Standard Protocol", Version 2.2. This document can be found at:

http://www.cdc.gov/vaccines/programs/iis/stds/downloads/hl7guide.pdf

HL7 Version 2.5.1 (1.4 version)

2.5.1 implementation is based on "Implementation Guide for Immunization Messaging" release 1.4(8/1/2012). This document can be found at:

http://www.cdc.gov/vaccines/programs/iis/technical-guidance/downloads/hl7guide-1-4-2012-08.pdf

RIDE currently supports VXU, VXQ, and QBP transactions in real time.

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Multiple Matches

Provider EHR systems should contain a mechanism for processing **VXX/RSP^K22** (Multiple Matches Returned) messages returned from the Registry in response to a provider query. Users should be able to select one of the patients in the returned list and a new query to the Registry.

Adverse Reactions

Adverse reactions are not supported at this time.

Inventory Messages

Inventory messages are not supported at this time.

Data Flow

RIDE accepts HL7 messages (VXQ, QBP, VXU) from providers and responds to those messages. RIDE does not initiate any messages to provider systems. It is up to the provider's EMR to query RIDE for updates to patient data.

Secure Connections

HTTP Post URL

Provider systems can interface with the RIDE HL7 interface via SSL encrypted HTTP POST connections at the following URL:

https://webapp.sjcphs.org/hl7/Default.aspx

SOAP URL

Provider systems can interface with the RIDE HL7 interface via SSL encrypted SOAP connections at the following URL:

https://webapp.sjcphs.org/hl7/soap2.asmx

With the Web Service Descriptor located: https://webapp.sjcphs.org/hl7/soap2.asmx?WSDL

Testing URL

Providers can perform tests of HL7 messages using the following URL:

https://webapp.sjcphs.org/hl7/test.html

POST Variables

This interface accepts the following variables:

1. **USERID (string – REQUIRED):** a unique User ID is assigned by Registry support staff. If an invalid User ID is sent, the HL7 interface will return an NTE (Login failure) and the message will not be processed.
2. **PASSWORD (string – REQUIRED):** the Password is assigned by Registry support staff. If an invalid Password is sent, the HL7 interface will return an NTE (Login failure) and the message will not be processed.

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3. **FACILITYID (string – REQUIRED):** a Facility ID will be assigned by Registry support staff. In cases where a vendor is submitting for multiple providers, a different Facility ID may be assigned for each site. If an invalid Facility ID is sent, the HL7 interface will return an NTE (Login failure) and the message will not be processed.
4. **MESSAGEDATA (string – REQUIRED):** must be a single valid HL7 2.3.1 VXQ, HL7 2.5.1 QBP, or HL7 2.3.1/2.5.1 VXU message. *Batch messages are not yet supported.*

Some additional information is required before a provider system is allowed to communicate with the RIDE HL7 interface:

1. **Provider System Source IP Address/Network:** as an additional security measure, the provider system's public IP address and/or network is required. Multiple addresses and/or ranges may be necessary In the case of provider systems that send queries from multiple sites.

SOAP Code Example

This is a code snippet used to connect to the RIDE SOAP interface using Microsoft .NET / C#. It is not meant to be a complete working example and will require modification based on the providers connection parameters and development environment:

1. Add a Reference to .NET assembly System.Web.Services.
2. Add a using directive to System.Web.Services.
3. Add a Service Reference to: https://webapptest.sjcphs.org/hl7/soap2.asmx.
4. Select service RIDEHL7SoapService.
5. Register as "RIDESOAP".
6. The Web Service function submitSingleMessage() returns an ACK message in a string. Thus, you can call it this way:

```
// Instantiate RIDE SOAP client
RIDESOAP.RIDEHL7ServiceBindingClient RIDESOAPClient = new RIDESOAP.RIDEHL7ServiceBindingClient();
// Declare vars necessary to call submitSingleMessage()
string UserID = "XXXXX";          // assigned by RIDE Help Desk
string Password = "XXXXX";        // assigned by RIDE Help Desk
string FacilityID = "XXXXX";      // assigned by RIDE Help Desk
string SourceMessage = "XXXXX";   // valid HL7 message
// Declare string to receive ACK
string DestinationMessage;
// Call submitSingleMessage()
DestinationMessage = RIDESOAPClient.submitSingleMessage(UserID, Password, FacilityID,
SourceMessage);
```

Validation Process

The Validation process consists of three possible phases:

- **Phase 1: Registry Update (VXU) Pre-Production Validation** – insure that information being sent from a provider to the Registry is properly mapped and conformant with the version-appropriate CDC HL7 Immunization Registry standard.

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- **Phase 2: Registry Query (VXQ/QBP) Pre-Production Validation** – insure that requests for information sent by a provider system to the Registry conform to the CDC HL7 Immunization Registry standard appropriate for the version of HL7. If a provider system is not sending queries to the Registry, Phase 2 is not required.
- **Phase 3: Registry Update (VXU) Post-Production Validation** – insure that data being sent to the Registry from a provider system is accurately represented in the Registry.

Phase 1: Registry Update (VXU) Pre-Production Validation

Validation of a specific set of VXU messages must be completed before a connection is put into Production. Once the connection is in Production, further checking will be done to verify that the data being sent from the provider is being accurately represented in RIDE.

The Pre-Production Validation process takes place after the provider has successfully completed the Testing phase. There are three steps to this process:

1. Demographics Validation – the provider will send the specified Demographic information in all Validation messages.
2. Service Code Validation – the provider will send VXU messages containing specific pairs of CVX Code / Service Date information for each of the CVX codes represented in their system.
3. RXA/RXR Detailed Validation – the provider will send an additional VXU message containing the data specified to make sure mapping is correct.

The provider should use the Demographics, Service Codes, and RXA/RXR Details contained in the following Microsoft Excel spreadsheet:

http://www.myhealthyfutures.org/docs/RIDE_Validation_Dataset.xlsx

Providers may find the NIST 2014 Immunization Validation Testing Tool helpful in validating *test* messages sent to the Registry:

http://hl7v2-iz-testing.nist.gov/mu-immunization/

Phase 2: Registry Query (VXQ/QBP) Pre-Production Validation

If the provider system is performing queries to the Registry via VXQ (v2.3.1) or QBP (v2.5.1) messages, the query messages will need to be analyzed to make sure they include the proper search criteria.

Phase 3: Registry Update (VXU) Post-Production Validation

Once the connection has passed Validation and moved into Production, additional validation will be done by the RIDE Help Desk to verify that the data is being represented accurately in RIDE. The RIDE Help Desk will need to work with provider staff for data verification and perform any additional data mapping.

Data Mappings

HL7 data exchange partners will be required to map Providers and Clinics. This can be managed via the web-based RIDE system found at the following URL:

https://webapp.sjcphs.org/RIDE/Default.aspx

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A User ID and Password will be assigned to a user belonging to each provider to allow them access to data mappings, data exchange monitoring, and other utilities (future capability).

Each data exchange partner typically requires one Provider mapping and one or more Clinic mappings, depending on the number of their clinics. These mappings will be based on the inbound ID found in sequence 11 of the RXA segment. Unmapped items will cause VXU data to be queued until the mapping is complete.

HL7 Message Types

The Registry supports the following message types. Other message types will be dropped without a return message:

HL7 Message Types RECEIVED by Registry

HL7 Message Type RECEIVED by Registry	HL7 Event Type
VXQ	V01
VXU	V04
QBP	Q11

HL7 Message Types SENT by Registry

HL7 Message Type SENT by Registry	HL7 Event Type
ACK	
QCK	
VXX	V02
VXR	V03
RSP	K11
RSP	K22

HL7 Delimiters

Delimiter		
Character	**Description**	**Function**
<CR> or <CR><LF> or <LF> or <LF><CR> or (↵) \r or \r\n or \n or \n\r	Carriage return	Segment terminator
|	Pipe	Field separator
^	Carat	Component separator
&	Ampersand	Sub-component separator
~	Tilde	Repetition separator
\	Back slash	Escape character (NOT IMPLEMENTED)

HL7 Encoding Rules

The following encoding rules should be used for all HL7 messaging with the Registry:

Rules for Sending

1. Encode segments in the order specified in the message format.
2. Use the HL7 encoding characters specified above (^&~\).

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3. Each segment should begin with the appropriate segment ID (i.e. RXA).
4. Each data field should start with a field separator (|).
5. Data fields should be encoded in the order specified in the corresponding segment definition table.
6. Each data field should be encoded according to its HL7 data type format.
7. Each segment should end with the segment terminator (carriage return or line feed, ASCII code 13 or code 10).
8. Components, subcomponents, or repetitions that have no value at the **end** of a data field do not need to be represented by component separators. For example:
   |SMITH^JOHN^^| is equivalent to |SMITH^JOHN|
9. All transmissions are done in real time priority. Values in QRD-3 and MSA-5 for delayed transmissions are ignored.
10. MSH-5 should be set to **RIDE**
11. MSH-6 should be set to **RIDE-DE**
12. MSH-11 is not implemented. All transmissions to our live server are considered Production and all transmissions sent to our development server are considered Debug. Training is not implemented.

Rules for Receiving

1. If an expected data segment is not included in a return message, this means that no data was available in the Registry. The data segment should be treated as if no data was available.
2. If an unexpected data segment is included in a return message, it should be ignored.
3. If unexpected data fields are included in a return message, they should be ignored.

HL7 Message Formats

VXU

RIDE currently accepts PID, PD1, NK1, OBX, RXA, and RXR segments in a VXU message. Other segments will be ignored.

Sample v2.5.1 VXU (1.4 version)

```
MSH|^~\&|MYEHR|DCS|RIDE|RIDE-DE|20090531145259||VXU^V04^VXU_V04|3533469|P|2.5.1||||AL
PID|1||432155^^^DCS^MR||Patient^Johnny^New^^^^L||20090414150308|M|||123 Any
St^^Stockton^CA^95201^^L
PD1||||||||||||02^^HL70215|N|20090531|||A|20090531|20090531
NK1|1|Patient^Sally|MTH^mother^HL70063|123 Any St^^Stockton^CA^95201^^L
PV1|1|R|||||||||||||||||V02^20090531
ORC|RE||197023^DCS|||||||555^Clerk^Myron|||||||DCS^Dabig Clinical System^StateIIS
RXA|0|1|20090415132511|20090415132511|31^Hep B Peds NOS^CVX|999|||01^historical
record^NIP0001|||||||||
ORC|RE||197027^DCS|||||||555^Clerk^Myron||12345678^Pediatric^MARY^^^^^^^L^^^^^^^^^^^MD
RXA|0|1|20090531132511|20090531132511|48^HIB PRP-T^CVX|999|||00^new immunization
record^NIP0001|5555^Sticker^Nurse|^^^DCS_DC||||33k2a||PMC^sanofi^MVX
RXR|C28161^IM^NCIT^IM^IM^HL70162|
ORC|RE||197028^DCS|||||||555^Clerk^Myron||^Pediatric^MARY^^^^^^^L^^^^^^^^^^^MD
RXA|0|1|20090531132511|20090531132511|110^DTAP-Hep BIPV^CVX|999|||00^new immunization
record^NIP0001|5555^Sticker^Nurse|^^^DCS_DC||||xy3939||SKB^GSK^MVX
RXR|IM^IM^HL70162^C28161^IM^NCIT|
```

Sample v2.5.1 VXU (1.5 version) --Coming soon…..

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RIDE's HL7 interface translates a VXU message into the following fields from the corresponding HL7 segment locations:

Patients

UDI Field	HL7 Mapping
DataSourceID	Derived from security credentials
ProviderID	MSH.4 (Mapped in RIDE Admin)
ClinicID	MSH.4 (Mapped in RIDE Admin)
ImportPatientID	PID.3 (Accepts only "MR" Code)
PatientNameCurLast	PID.5.1 (Name Type Code of 'L')
PatientNameCurFirst	PID.5.2(Name Type Code of 'L')
PatientDOB	PID.7
PatientGender	PID.8 (Mapped in RIDE Admin)
PatientType	Value is '1' if coming from patient.
PatientNameCurMiddle	PID.5.3(Name Type Code of 'L')
PatientNameCurAppelation	PID.5.4(Name Type Code of 'L')
PatientNameBirthLast	PID.5.1 (Name Type Code of 'B')
PatientNameBirthFirst	PID.5.2 (Name Type Code of 'B')
PatientNameBirthMiddle	PID.5.3 (Name Type Code of 'B')
PatientNameBirthAppelation	PID.5.4 (Name Type Code of 'B')
PatientSSN	PID.19
PatientDeceased	PID.30
PatientDOD	PID.29
PatientPOBType	Not Implemented
PatientPOBDesc	Not Implemented
PatientShareStatus	PD1.12
PatientRecallStatus	PD1.11 (1 is no, 2 thru 12 are yes, and "" is null)
PatientLanguage	PID.15 (Mapped in RIDE Admin)
PatientEthnicity	PID.10 (Mapped in RIDE Admin)
PatientHispanic	PID.22 (Mapped in RIDE Admin)
PhysicianID	Not Implemented
ContactAddress1	PID.11.1 (Only first address imported)
ContactAddress2	PID.11.2 (Only first address imported)
ContactCity	PID.11.3 (Only first address imported)
ContactState	PID.11.4 (Only first address imported)
ContactZIP	PID.11.5 (Only first address imported)
ContactPhone1	PID.13
ContactPhone2	PID.14
UpdateTS	MSH.7

Next of Kin (VIA Patient UDI Table)

UDI Field	HL7 Mapping
DataSourceID	Derived from security credentials
ProviderID	MSH.4 (Mapped in RIDE Admin)

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ClinicID	MSH.4 (Mapped in RIDE Admin)
ImportPatientID	PID.3 (Accepts only “MR” Code)
PatientNameCurLast	NK1.2.1 (Name Type Code of ‘L’)
PatientNameCurFirst	NK1.2.2(Name Type Code of ‘L’)
PatientDOB	NK1.16
PatientGender	NK1.15
PatientType	NK1.3 (‘MTH’, ‘FTH’, other)
PatientNameCurMiddle	NK1.2.3(Name Type Code of ‘L’)
PatientNameCurAppelation	NK1.2.4(Name Type Code of ‘L’)
PatientNameBirthLast	NK1.2.1 (Name Type Code of ‘B’)
PatientNameBirthFirst	NK1.2.2 (Name Type Code of ‘B’)
PatientNameBirthMiddle	NK1.2.3 (Name Type Code of ‘B’)
PatientNameBirthAppelation	NK1.2.4 (Name Type Code of ‘B’)
PatientSSN	NK1.37
PatientDeceased	N/A
PatientDOD	N/A
PatientPOBType	Not Implemented
PatientPOBDesc	Not Implemented
PatientShareStatus	Not Implemented
PatientRecallStatus	Not Implemented
PatientLanguage	Not Implemented
PatientEthnicity	Not Implemented
PatientHispanic	Not Implemented
PhysicianID	Not Implemented
ContactAddress1	NK1.4.1 (Only first address imported)
ContactAddress2	NK1.4.2 (Only first address imported)
ContactCity	NK1.4.3 (Only first address imported)
ContactState	NK1.4.4 (Only first address imported)
ContactZIP	NK1.4.5 (Only first address imported)
ContactPhone1	NK1.5
ContactPhone2	NK1.6
UpdateTS	MSH.7

Immunizations

DataSourceID	Derived from security credentials
ProviderID	MSH.4 (Mapped in RIDE Admin)
ClinicID	MSH.4 (Mapped in RIDE Admin)
ImportPatientID	PID.3 (Accepts only “MR” Code)
ServiceDate	RXA.3
ServiceCode	RXA.5
LotNumber	RXA.15
LotExpiration	RXA.16
LotManufacturer	RXA.17
Provider	RXA.11 (Mapped in RIDE Admin)

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Clinic	RXA.11 (Mapped in RIDE Admin)
AdminSite	RXR.2
AdminUser	RXA.10
EntryUser	RXA.10
PhysicianID	RXA.10
Dosage	RXA.6
UnitOfMeasure	RXA.14 (Not Implemented)
UpdateTS	RXA.22

VXQ/QBP

RIDE currently accepts QRD and QRF segments in VXQ messages and QPD and RCP Segments in QBP messages. Other segments will be ignored.

Sample VXQ: (Not a test data)

```
MSH|^~\&||GA0000||MA0000|199705221605||VXQ^V01|19970522GA40|T|2.3.1|||NE|AL|
QRD|199705221605|R|I|19970522GA05|||25^RD|99999^Testeropolis-
Smith^Tester^Thomas^III|VXI^VACCINE INFORMATION^HL70048|^SIIS|
QRF|MA0000|||256946789~20000101~MA~MA99999999~88888888~KENNEDY^JACQUELINE^LEE~BOUVIER~8986667
25~KENNEDY^JOHN^FITZGERALD~822546618|
```

Sample QBP: (Not a test data) –For test data see page - 29

```
MSH|^~\&|||||||QBP^Q11^QBP_Q11|793543|P|2.5.1|||||||Z34^CDCPHINVS
QPD|Z34^RequestImmunizationHistory^CDCPHINVS|37374859|123456^^^MYEHR^MR|Cushin^Jon^Q^^^^L|Vali
dation^^^^^^M|19951231|M|10 East Main st^^Myfaircity^GA^^^L
RCP|I|5^RD^HL70126|R^real-time^HL70394
```

RIDE matches patients in the following priority.

1. RRI or Regional Registry ID.
2. Provider ID (If Mapping exists)
3. Exact Match of first name, last name, sex and date of birth
4. Expanded Match of first name, last name, sex and date of birth including logic to handle multi-part last names.

Only patients with an active share status will be returned.

According the CDC Specification if more than one match occurs, a multiple match response will be returned and more specific data required. (Note: Responding with the selected patients RRI (Regional Registry ID) from information passed back in the message is best)

If no matches are found, a QCK message will be sent with an error message indicating that a matching record was not found.

```
MSH|^~s&|RIDE^^ISO|RIDE-DE^^ISO|||20110520103435.71||QCK^|1222|T|2.3.1 (or 2.5.1)
MSA|AA|QS444440681000001954
```


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```
ERR|0^MESSAGE ACCEPTED^HL70357|
QAK|QueryID01|NF|
```

Contacting Registry Technical Support

For further assistance, please contact Registry Technical Support at:

support@izride.com

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Prerequisites for Data Exchange

In order to allow data exchange with the Immunization Registry, several conditions must be met:

1. **Provider Agreement** - Each provider must comply with the legal requirements for immunization registry privacy and disclosure in California as defined in California Health and Safety Code section 120440. A signed Provider Agreement between San Joaquin County Public Health Services and the provider's authorized representative, as well as implementation of proper patient disclosure procedures, satisfies this requirement.
2. **Vendor HIPAA Business Agreement** - If a vendor is acting as a proxy for provider data exchange and sending more than just unsolicited updates, a HIPAA Business Agreement must be executed.

Please contact Registry Support (support@izride.com) for more information on these requirements.

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Appendix A – Reference Tables

The following is a list of mapping tables used by RIDE.

User-defined Table 0001 - Sex [values suggested by HL7] (use in PID-8, NK1-15)

Value	Description
F	Female
M	Male
O	Other
U	Unknown

User-defined Table OID 2.16.840.1.114222.4.11.3287 Expansion – Vaccine Funding Source
(Use for OBX-3 30963-3 Vaccine Funding Source OBX-5 Response)

Value	Description
RIDEFS01	VFC
RIDEFS02	317 Funds
RIDEFS03	State General Funds

Special Note – Additional vaccine funding sources for use by Public Health Agencies

User-defined Table 0005 - Race [These values are consistent with the OMB Notice of revised categories for collection of race and ethnicity data—the combined format.] (use in PID-10, NK1-35)

US race codes (included in HL7 Version 2.4) (entire hierarchical set of codes at http://www.cdc.gov/od/hissb/docs/Race-EthnicityCodeSet.pdf)	Description	NIP original race codes	Description
1002-5	American Indian or Alaska Native	I	American Indian or Alaska Native
2028-9	Asian	A	Asian or Pacific Islander
2076-8	Native Hawaiian or Other Pacific Islander	A	Asian or Pacific Islander
2054-5	Black or African-American	B	Black or African-American
2106-3	White	W	White
2135-2	Hispanic or Latino	H	Hispanic
2186-5	not Hispanic or Latino	N	
2131-1	Other Race	O	Other
	Unknown	U	Unknown

User-defined Table 0063 - Relationship [as defined in HL7's Version 2.4] (use in NK1-3, IN1-17, IN2-62)

Value	Description
ASC	Associate
BRO	Brother
CGV	Care giver
CHD	Child
DEP	Handicapped dependent
DOM	Life partner
EMC	Emergency contact
EME	Employee

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EMR	Employer
EXF	Extended family
FCH	Foster child
FND	Friend
FTH	Father
GCH	Grandchild
GRD	Guardian
GRP	Grandparent
MGR	Manager
MTH	Mother
NCH	Natural child
NON	None
OAD	Other adult
OTH	Other
OWN	Owner
PAR	Parent
SCH	Stepchild
SEL	Self
SIB	Sibling
SIS	Sister
SPO	Spouse
TRA	Trainer
UNK	Unknown
WRD	Ward of court
Codes for VAERS reporting only	
VAB	Vaccine administered by (Name)
FVP	Form completed by (Name)--Vaccine provider
FPP	Form completed by (Name)--Patient/Parent
FMN	Form completed by (Name)—Manufacturer
FOT	Form completed by (Name)—Other

HL7 User Table 0064 Expansion (use for OBX-3 64994-7 OBX-5 Response)*

Value	Description
RIDE01	317 Not Eligible
RIDE02	317 Eligible: Contacts of HBsAg+ woman
RIDE03	317 Eligible: Special circumstance - disaster relief
RIDE04	317 Eligible: Special circumstance - outbreak control
RIDE05	317 Eligible: Special circumstance - post-exposure prophylaxis
RIDE06	317 Eligible: Underinsured, 19 yrs of age or older
RIDE07	317 Eligible: Uninsured, 19 yrs of age or older
RIDE08	State General Fund Eligible

*Special Note – Additional vaccine funding program eligibility categories are for use by Public Health Agencies in response to OBX-3 64994-7 Vaccine Eligibility Category.

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HL7-defined Table 0104 - Version ID (use in MSH-12)

Value	Description
2.3.1	**Release 2.3.1 May 1999**

HL7-defined Table 0162 - Route of administration [only selected values listed] (use in RXR-1)

Value	Description
ID	Intradermal
IM	Intramuscular
IN	Intranasal
IV	Intravenous
PO	Oral
OTH	Other/Miscellaneous
SC	Subcutaneous
TD	Transdermal

HL7-defined Table 0163 - Administrative site [only selected values listed] (use in RXR-2)

Value	Description
LT	Left Thigh
LA	Left Arm
LD	Left Deltoid
LG	Left Gluteous Medius
LVL	Left Vastus Lateralis
LLFA	Left Lower Forearm
RA	Right Arm
RT	Right Thigh
RVL	Right Vastus Lateralis
RG	Right Gluteous Medius
RD	Right Deltoid
RLFA	Right Lower Forearm

User-defined Table 0189 - Ethnic Group [These values are consistent with the OMB Notice of revised categories for collection of race and ethnicity data and with HL7's Version 2.4] (use in PID-22, NK1-28)

US ethnicity codes	HL7 Version 2.4 ethnicity codes	NIP's original temporary values (obsolete)	Description
2135-2	H	H	Hispanic or Latino
2186-5	N	NH	not Hispanic or Latino
	U		Unknown

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HL7-defined Table 0190 - Address type (use in all XAD data types; including PID-11)

Value	Description
C	Current or temporary
P	Permanent
M	Mailing
B	Firm/Business
O	Office
H	Home
N	Birth (nee)
F	Country of origin
L	Legal address
BDL	Birth delivery location [use for birth facility]
BR	Residence at birth [use for residence at birth]
RH	Registry home
BA	Bad address

Special Note – PID-11 Address Field repetition is not supported. Only the first address will be used in a VXU inbound message.

HL7-defined Table 0200 - Name type (use in all XCN, XPN data types; including PID-5, 6, 9)

Value	Description
L	Legal name
B	Name at birth
Other Values not implemented	

HL7-defined Table 0201 - Telecommunication use code (use in all XTN data types; including PID-13,14)

Value	Description
PRN	Primary residence number
ORN	Other residence number
WPN	Work number
VHN	Vacation home number
ASN	Answering service number
EMR	Emergency number
NET	Network (email) address
BPN	Beeper number

Special Note – PID-13 and 14 only first number in each sequence will be used in VXU inbound message.

User-defined Table 0203 - Identifier type [Values Implemented in RIDE] (use in all CX, XCN type codes; including PID-2,3,4,18,21 and RXA-10)

Value	Description
MR	Medical Record Number
RRI	Regional Registry ID

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User-defined Table 0215 - Publicity code [values suggested by NIP] (use in PD1-11)

Value	Description
01	No reminder/recall
02	Reminder/recall - any method
03	Reminder/recall - no calls
04	Reminder only - any method
05	Reminder only - no calls
06	Recall only - any method
07	Recall only - no calls
08	Reminder/recall - to provider
09	Reminder to provider
10	Only reminder to provider, no recall
11	Recall to provider
12	Only recall to provider, no reminder

** Special Note: RIDE Stores Reminder and recall as one boolean field and will concider any non '01' value in PD1-11 as Sharing.

User-defined Table 0363 – Assigning Authority

Value	Description
RIDE	**RIDE**

Special Note – Local implementation for use by regional registry.

User-defined Table 0441 - Immunization registry status

Use in PD1-16.

Use in PD1-16. Value	Description
A	Active
I	Inactive--Unspecified
L	Inactive-Lost to follow-up (cannot contact)
M	Inactive-Moved or gone elsewhere (transferred)
P	Inactive-Permanently inactive (do not re-activate or add new entries to this record)
U	Unknown

CVX – Vaccines Administered

Code	Short Description	Full Vaccine Name
54	adenovirus, type 4	adenovirus vaccine, type 4, live, oral
55	adenovirus, type 7	adenovirus vaccine, type 7, live, oral
82	adenovirus, NOS[1]	adenovirus vaccine, NOS
24	anthrax	anthrax vaccine
19	BCG	Bacillus Calmette-Guerin vaccine
27	botulinum antitoxin	botulinum antitoxin
26	cholera	cholera vaccine

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29	CMVIG	cytomegalovirus immune globulin, intravenous
56	dengue fever	dengue fever vaccine
12	diphtheria antitoxin	diphtheria antitoxin
28	DT (pediatric)	diphtheria and tetanus toxoids, adsorbed for pediatric use
20	DTaP	diphtheria, tetanus toxoids and acellular pertussis vaccine
106	DTaP, 5 pertussis antigens[6]	diphtheria, tetanus toxoids and acellular pertussis vaccine, 5 pertussis antigens
107	DTaP, NOS	diphtheria, tetanus toxoids and acellular pertussis vaccine, NOS
110	DTaP-Hep B-IPV	DTaP-hepatitis B and poliovirus vaccine
50	DTaP-Hib	DTaP-Haemophilus influenzae type b conjugate vaccine
120	DTaP-Hib-IPV	diphtheria, tetanus toxoids and acellular pertussis vaccine, Haemophilus influenzae type b conjugate, and poliovirus vaccine (DTaP-Hib-IPV)
01	DTP	diphtheria, tetanus toxoids and pertussis vaccine
22	DTP-Hib	DTP-Haemophilus influenzae type b conjugate vaccine
102	DTP-Hib-Hep B	DTP-Haemophilus influenzae type b conjugate and hepatitis b vaccine
57	hantavirus	hantavirus vaccine
52	Hep A, adult	hepatitis A vaccine, adult dosage
83	Hep A, ped/adol, 2 dose	hepatitis A vaccine, pediatric/adolescent dosage, 2 dose schedule
84	Hep A, ped/adol, 3 dose	hepatitis A vaccine, pediatric/adolescent dosage, 3 dose schedule
31	Hep A, pediatric, NOS	hepatitis A vaccine, pediatric dosage, NOS
85	Hep A, NOS	hepatitis A vaccine, NOS
104	Hep A-Hep B	hepatitis A and hepatitis B vaccine
30	HBIG	hepatitis B immune globulin
08	Hep B, adolescent or pediatric	hepatitis B vaccine, pediatric or pediatric/adolescent dosage
42	Hep B, adolescent/high risk infant[2]	hepatitis B, adolescent/high risk infant dosage
43	Hep B, adult[4]	hepatitis B vaccine, adult dosage
44	Hep B, dialysis	hepatitis B vaccine, dialysis patient dosage
45	Hep B, NOS	hepatitis B vaccine, NOS
58	Hep C	hepatitis C vaccine
59	Hep E	hepatitis E vaccine
60	herpes simplex 2	herpes simplex virus, type 2 vaccine
46	Hib (PRP-D)	Haemophilus influenzae type b vaccine, PRP-D conjugate
47	Hib (HbOC)	Haemophilus influenzae type b vaccine, HbOC conjugate
48	Hib (PRP-T)	Haemophilus influenzae type b vaccine, PRP-T conjugate
49	Hib (PRP-OMP)	Haemophilus influenzae type b vaccine, PRP-OMP conjugate

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17	Hib, NOS	Haemophilus influenzae type b vaccine, conjugate NOS
51	Hib-Hep B	Haemophilus influenzae type b conjugate and Hepatitis B vaccine
61	HIV	human immunodeficiency virus vaccine
118	HPV, bivalent	human papilloma virus vaccine, bivalent
62	HPV, quadrivalent	human papilloma virus vaccine, quadrivalent
86	IG	immune globulin, intramuscular
87	IGIV	immune globulin, intravenous
14	IG, NOS	immune globulin, NOS
111	influenza, live, intranasal	influenza virus vaccine, live, attenuated, for intranasal use
15	influenza, split (incl. purified surface antigen)	influenza virus vaccine, split virus (incl. purified surface antigen)
16	influenza, whole	influenza virus vaccine, whole virus
88	influenza, NOS	influenza virus vaccine, NOS
10	IPV	poliovirus vaccine, inactivated
02	OPV	poliovirus vaccine, live, oral
89	polio, NOS	poliovirus vaccine, NOS
39	Japanese encephalitis	Japanese encephalitis vaccine
63	Junin virus	Junin virus vaccine
64	leishmaniasis	leishmaniasis vaccine
65	Leprosy	leprosy vaccine
66	Lyme disease	Lyme disease vaccine
03	MMR	measles, mumps and rubella virus vaccine
04	M/R	measles and rubella virus vaccine
94	MMRV	measles, mumps, rubella, and varicella virus vaccine
67	malaria	malaria vaccine
05	measles	measles virus vaccine
68	melanoma	melanoma vaccine
32	meningococcal	meningococcal polysaccharide vaccine (MPSV4)
103	meningococcal C conjugate	meningococcal C conjugate vaccine
114	meningococcal A,C,Y,W-135 diphtheria conjugate	meningococcal polysaccharide (groups A, C, Y and W-135) diphtheria toxoid conjugate vaccine (MCV4)
108	meningococcal, NOS	meningococcal vaccine, NOS
07	mumps	mumps virus vaccine
69	parainfluenza-3	parainfluenza-3 virus vaccine
11	pertussis	pertussis vaccine
23	plague	plague vaccine
33	pneumococcal	pneumococcal polysaccharide vaccine
100	pneumococcal conjugate	pneumococcal conjugate vaccine, polyvalent
109	pneumococcal, NOS	pneumococcal vaccine, NOS
70	Q fever	Q fever vaccine
18	rabies, intramuscular injection	rabies vaccine, for intramuscular injection
40	rabies, intradermal injection	rabies vaccine, for intradermal injection
90	rabies, NOS	rabies vaccine, NOS
72	rheumatic fever	rheumatic fever vaccine
73	Rift Valley fever	Rift Valley fever vaccine
34	RIG	rabies immune globulin
119	rotavirus, monovalent	rotavirus, live, monovalent vaccine

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122	rotavirus, NOS[1]	rotavirus vaccine, NOS
116	rotavirus, pentavalent	rotavirus, live, pentavalent vaccine
74	rotavirus, tetravalent	rotavirus, live, tetravalent vaccine
71	RSV-IGIV	respiratory syncytial virus immune globulin, intravenous
93	RSV-MAb	respiratory syncytial virus monoclonal antibody (palivizumab), intramuscular
06	rubella	rubella virus vaccine
38	rubella/mumps	rubella and mumps virus vaccine
76	Staphylococcus bacterio lysate	Staphylococcus bacteriophage lysate
113	Td (adult)	tetanus and diphtheria toxoids, adsorbed, preservative free, for adult use
09	Td (adult)	tetanus and diphtheria toxoids, adsorbed for adult use
115	Tdap	tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine, adsorbed
35	tetanus toxoid	tetanus toxoid, adsorbed
112	tetanus toxoid, NOS	tetanus toxoid, NOS
77	tick-borne encephalitis	tick-borne encephalitis vaccine
13	TIG	tetanus immune globulin
95	TST-OT tine test	tuberculin skin test, old tuberculin, multipuncture device
96	TST-PPD intradermal	tuberculin skin test, purified protein derivative, intradermal
97	TST-PPD tine test	tuberculin skin test, purified protein derivative, multipuncture device
98	TST, NOS	tuberculin skin test, NOS
78	tularemia vaccine	tularemia vaccine
91	typhoid, NOS	typhoid vaccine, NOS
25	typhoid, oral	typhoid vaccine, live, oral
41	typhoid, parenteral	typhoid vaccine, parenteral, other than acetone-killed, dried
53	typhoid, parenteral, AKD (U.S. military)	typhoid vaccine, parenteral, acetone-killed, dried (U.S. military)
101	typhoid, ViCPs	typhoid Vi capsular polysaccharide vaccine
75	vaccinia (smallpox)	vaccinia (smallpox) vaccine
105	vaccinia (smallpox) diluted	vaccinia (smallpox) vaccine, diluted
79	vaccinia immune globulin	vaccinia immune globulin
21	varicella	varicella virus vaccine
81	VEE, inactivated	Venezuelan equine encephalitis, inactivated
80	VEE, live	Venezuelan equine encephalitis, live, attenuated
2	VEE, NOS	Venezuelan equine encephalitis vaccine, NOS
36	VZIG	varicella zoster immune globulin
117	VZIG (IND)	varicella zoster immune globulin (Investigational New Drug)
37	yellow fever	yellow fever vaccine
121	zoster	zoster vaccine, live
998	no vaccine administered[5]	no vaccine administered
999	unknown	unknown vaccine or immune globulin

Please refer to the CDC for a complete up to date list.

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User-defined Table 0296 - Language [ISO 639 suggested by HL7; selected 2-letter values listed from ISO 639:1988; The full set of ISO 639 Language Codes is available for purchase from <www.ansi.org>. Where ISO 2-letter codes are not available, 3-letter codes are given from the Ethnologue, available at <www.sil.org/ethnologue/>.] (use in PID-15)

Value	Description
ASE	American Sign Language
Ar	Arabic
Hy	Armenian
Bn	Bengali
Km	Cambodian (Khmer)
CJD	Chamorro
YUH	Chinese, Cantonese
Zh	Chinese, Mandarin
Hr	Croatian
Cs	Czech
Nl	Dutch
En	English
Fa	Farsi (Persian)
Fr	French
De	German
el	Greek
hi	Hindi
BLU	Hmong
hu	Hungarian
ILO	Ilocano
id	Indonesian
it	Italian
ja	Japanese
ko	Korean
lo	Laotian
pl	Polish
pt	Portuguese
ro	Romanian
ru	Russian
sm	Samoan
sr	Serbian
sk	Slovak
so	Somali
es	Spanish
tl	Tagalog
th	Thai
to	Tongan
uk	Ukranian
ur	Urdu
vi	Vietnamese
yi	Yiddish
OTH	Other (must add text component of the CE field with description)

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Appendix B – Error Codes

The following is a list of error responses generated by RIDE's HL7 Processor. Note: Error messages will be returned using the version id in which they were sent if the message could be parsed. Non-parseable messages return as version 2.3.1 to insure compatibility.

Message not VXU, QBP, or VXQ:

MSH|^~\&|RIDE-DE|CAIR04|SENDING|SENDING|20130426082905.99||ACK^|ACK20130426082905.99|T|2.3.1
MSA|AE|msgID|Unsupported Message Type: |||200|

Version Not Supported:

MSH|^~\&|RIDE-DE|CAIR04|SENDING|SENDING|20130426082905.99||ACK^|ACK20130426082905.99|T|2.3.1
MSA|AE| msgID |Unsupported version ID|||203|

*Missing Patient Identifier (MR or RRI):**

MSH|^~\&|RIDE-DE|CAIR04|SENDING|SENDING|20130426082905.99||ACK^|ACK20130426082905.99|T|2.3.1
MSA|AE| msgID |Unknown key Identifier|||204|

Application Error:

MSH|^~\&|RIDE-DE|CAIR04|| |||ACK^||T|2.3.1
MSA|AE|Unknown|Application internal Error|||207|

Non Single MSH Message (Batch or otherwise):

NTE|||Invalid Message (Doesn't start with MSH)|

Message is missing required Segments or segments out of sequence:

MSH|^~\&|RIDE-DE|CAIR04|SENDING|SENDING|20130426083303.99||ACK^| ACK20130426082905.99|T|2.3.1
MSA|AE| msgID |Segment Sequence Error: Missing Segment(s)|||100|

*Message is missing required Field:**

MSH|^~\&|RIDE-DE|CAIR04|SENDING|SENDING|20130426083303.99||ACK^| ACK20130426082905.99|T|2.3.1
MSA|AE| msgID |Required Field Missing|||101|
ERR|Segment^^Sequence| *(Repeatable)*

*Message has invalid data in a required Field:**

MSH|^~\&|RIDE-DE|CAIR04|SENDING|SENDING|20130426083303.99||ACK^| ACK20130426082905.99|T|2.3.1
MSA|AE| msgID |Data Type Error|||102|
ERR|Segment^^Sequence| *(Repeatable)*

*Message data element has no mapping:**

MSH|^~\&|RIDE-DE|CAIR04|SENDING|SENDING|20130426083303.99||ACK^| ACK20130426082905.99|T|2.3.1
MSA|AE| msgID |Table value not found|||103|
ERR|Segment^^Sequence| *(Repeatable)*

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Processor unable to display message control ID , in the acknowledgment or error message :

MSH|^~\&|RIDE-DE|CAIR04|SENDING|SENDING|20130426083303.99||ACK^| Unable to Display Msg ID (110)|T|2.3.1
MSA|AE| msgID |Table value not found|||103|
ERR|Segment^^Sequence| *(Repeatable)*

MSH|^~\&|RIDE-DE|CAIR04|||20141009162151.58||ACK^|Unable to Display Msg ID (110)|T|2. .3.1
MSA |AA|Unable to Display Msg ID (110)|MessageAccepted|||0|

- The message control ID failed provider specific validation requirements; the message is not rejected due to this and MSA acknowledgement codes still apply.

Additional errors are human readable NTE segments returned if the MSH Segment is missing or unreadable or if the error occurs in the application prior to message processing.

* - Not yet implemented

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Appendix C: SOAP Connectivity Troubleshooting

Please follow the steps below when troubleshooting SOAP connectivity to RIDE:

1. Make sure you are using the WSDL located at: https://webapp.sjcphs.org/hl7/soap2.asmx?WSDL
2. Check the **UserID**, **Password**, and **FacilityID** that your system is sending and make sure that they match those provided by RIDE Support.
3. Verify that your system is sending messages from the IP address you provided when you registered with RIDE.
4. Verify that your system is receiving valid ACK messages from RIDE, and make sure that they do not contain an error message. If you are not receiving any ACK messages, something is wrong. Re-check the items above.

If you have followed the instructions above and still are not able to successfully send messages and receive ACKs, please contact RIDE Support at dataexchange@izride.com.

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Appendix D: HL7 Message 2.3.1

Sample v2.3.1 VXU

```
MSH|^~\&||MA0000||GA0000|19970901||VXU^V04|19970522MA53|T|2.3.1|||NE|AL|
PID|||1234^^^^SR^~123412^^^^LR^~3872^^^^MR~221345671^^^^SS^~430078856^^^^MA^||KENNEDY^JOHN^FITZ
  GERALD^JR^^^L|BOUVIER^^^^^^M|19900607|M|KENNEDY^BABY BOY^^^^^^B| 2106-3^WHITE^HL70005|123
  MAIN ST^APT 3B^LEXINGTON^MA^00210^^M^MSACODE^MA034~345 ELM
  ST^^BOSTON^MA^00314^^BDL~^^^^^^BR^^MA002||(617)555-
  1212^PRN^PH^^^617^5551212^^||EN^ENGLISH^HL70296^^^|||||||N^NOT HISPANIC OR
  LATINO^HL70189^2186-5^NOT HISPANIC OR LATINO^CDCRE1|CHILDREN'S HOSPITAL|
PD1|||CHILDREN'S CLINIC^L^1234^^^^FI^LEXINGTON
  HOSPITAL&5678&XX|12345^WELBY^MARCUS^^^DR^MD^^^L^^^DN|||||||03^REMINDER/RECALL - NO
  CALLS^HL70215|Y|19900607|||A|19900607|19900607|
NK1|1|KENNEDY^JACQUELINE^LEE|MTH^MOTHER^HL70063|||||||||||||||||||||||||||||898666725^^^^SS|
NK1|2|KENNEDY^JOHN^FITZGERALD|FTH^FATHER^HL70063|||||||||||||||||||||||||||||822546618^^^^SS|
RXA|0|1|19900607|19900607|08^HEPB-
  PEDIATRIC/ADOLESCENT^CVX^90744^HEPBPEDATRIC/ADOLESCENT^C4|.5|ML^^ISO+||03^HISTORICAL
  INFORMATION - FROM PARENT'SWRITTEN RECORD^NIP0001|^JONES^LISA|^^^CHILDREN'S
  HOSPITAL||5|MCG^^ISO+|MRK12345|199206|MSD^MERCK^MVX|
RXA|0|4|19910907|19910907|50^DTAP-HIB^CVX^90721^DTAP-HIB^C4|.5|ML^^ISO+||00^NEWIMMUNIZATION
  RECORD^NIP0001|1234567890^SMITH^SALLY^S^^^^^^^^^VEI~1234567891^O'BRIAN^ROBERT^A^^DR^MD^^^^^^O
  EI|^^^CHILD HEALTHCARE CLINIC^^^^^101 MAIN STREET^^BOSTON^MA|||W46932777|199208|PMC^PASTEUR
  MERIEUX CONNAUGHT^MVX|||CP|A|19910907120030|
RXR|IM^INTRAMUSCULAR^HL70162|LA^LEFT ARM^HL70163|
RXA|0|1|19910907|19910907|03^MMR^CVX|.5|ML^^ISO+|||1234567890^SMITH^SALLY^S^^^^^^^^^VEI~1234567
  891^O'BRIAN^ROBERT^A^^DR^MD^^^^^^OEI|^^^CHILD HEALTHCARE CLINIC^^^^^101MAIN
  STREET^^BOSTON^MA||||W2348796456|19920731|MSD^MERCK^MVX|
RXR|SC^SUBCUTANEOUS^HL70162|LA^LEFT ARM^HL70163|
```


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Test Data for QBP Queries:

1. MSH|^~\&|||||||QBP^Q11^QBP_Q11|793540|P|2.5.1|||||||||Z34^CDCPHINVS
   QPD|Z34^RequestImmunizationHistory^CDCPHINVS|1272328|6864408^^^MYEHR^MR|Diaz^Maria^G^^
   ^^L|Validation^^^^^^M|19520125|F|10 East Main st^^Myfaircity^CA^^^L
   RCP|I|5^RD^HL70126|R^real-time^HL70394

2. MSH|^~\&|||||||QBP^Q11^QBP_Q11|793540|P|2.5.1|||||||||Z34^CDCPHINVS
   QPD|Z34^RequestImmunizationHistory^CDCPHINVS|1272328|9150^^^DCS^PI|Test^RD^^^^^L|Validatio
   n^^^^^^M|19900101|M|10 East Main st^^Myfaircity^CA^^^L
   RCP|I|5^RD^HL70126|R^real-time^HL70394

3. MSH|^~\&|||||||QBP^Q11^QBP_Q11|793540|P|2.5.1|||||||||Z34^CDCPHINVS
   QPD|Z34^RequestImmunizationHistory^CDCPHINVS|1272328|659543^^^DCS^PI|Johnson^Philip^^^^^L|
   Validation^^^^^^M|20070526|M|10 East Main st^^Myfaircity^CA^^^L
   RCP|I|5^RD^HL70126|R^real-time^HL70394

4. MSH|^~\&|||||||QBP^Q11^QBP_Q11|793543|P|2.5.1|||||||||Z34^CDCPHINVS
   QPD|Z34^RequestImmunizationHistory^CDCPHINVS|37374859|123456^^^MYEHR^MR|Cushin^Jon^Q^^
   ^^L|Validation^^^^^^M|19951231|M|10 East Main st^^Myfaircity^GA^^^L
   RCP|I|5^RD^HL70126|R^real-time^HL70394

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Revision History

6/3/2013	RM	Added error codes as Appendix B
9/3/2013	RM	Edited document to include support for HL7 Version 2.5.1 and SOAP connector
9/24/2013	JL	Minor edits. [v1.4.1]
10/16/2013	JL	Formatting, TOC update. [v1.4.1] - PUBLISHED
12/6/2013	JL	Added Testing URL information [v1.4.2] - PUBLISHED
12/16/2013	JL	Added language to specify that all POST vars are necessary [v1.4.3]
12/19/2013	JL	Added detail for POST vars – REQUIRED [v1.4.3]
2/25/2014	JL	Added MSH5,6 values (RIDE|RIDE-DE) [v1.4.4]
3/25/2014	JL	Modified SOAP instructions. Fix minor errors. Add v2.5.1 info to several sections. [v1.4.4]
4/3/2014	JL	Added detailed description of Validation process. Change MOU to PA. [v1.4.5]
8/14/2014	ZWB	Added example of SOAP connections. Modify sample VXU example. Correct QBP query example. [v1.5.1]
10/09/2014	ZWB	Added processor error value ‘ Unable to Display Msg ID(110)’ for acknowledgment segment. Add link to NIST validation testing tool [v1.5.2]
04/24/2015	ZWB	Added clarification to PD1 fields and examples, Added OBX-5 related values for public health agencies.
04/29/2015	ZWB	Update to Funding Program Eligibility Category table name and code values.
05/05/2015	JL	Added Appendix C: SOAP Connectivity Troubleshooting
06/23/2015	ZWB	Corrected to test SOAP connection. Added additional PD1 information.
10/30/2015	ZWB	Added line breaks and mock IDs to Sample VXU message for easier copy and paste
11/17/2016	SB	Removed message ‘Sample 2.3.1’ to Appendix-D, Replaced <CR> by ↵
11/17/2016	SB	Added test data for the QBP query.

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