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

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 QBP (Query By Parameter) message to the Registry. If there is an error in the QBP message sent to the Registry, an RSP response message is returned with information regarding the error. Currently RIDE supports the following message profile identifiers in MSH-21: Z34^CDCPHINVS, Z32^CDCPHINVS. Z31^CDCPHINVS (Return list of candidates) is not yet fully supported.
2. **Registry Responds to Query:** the Registry will respond to the provider's EHR system with an RSP message indicating whether or not an exact match was found. If so, the immunization record will be returned. If not, an NF message is returned. The sending system should prompt the user to refine their query and resubmit.

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 of both single and batch messages. The general flow looks like the following:

1. **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 Error message is returned with information regarding the error.
2. **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, NOT SUPPORTED)

HL7 version 2.3.1 is NO LONGER SUPPORTED for new interfaces. All interface work should target HL7 v2.5.1 according to the CDC HL7 v2.5.1 Implementation Guide, version 1.5.

HL7 Version 2.5.1 (1.5 version)

2.5.1 implementation is based on "Implementation Guide for Immunization Messaging" release 1.5. This document can be found at:

https://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html

RIDE currently supports single VXU and QBP messages in real time, as well as batch messages.

Multiple Matches

When multiple matches are found, the Registry will return an Error messages indicating this. The Provider EHR systems should contain a mechanism for allowing their users to further refine search criteria and resubmit the 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 (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.
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 2.5.1 QBP, or HL7 2.5.1 VXU message. Message Batches may also be sent, but bear in mind that responses to each individual message will be returned in a single continuous response. The sending system will need to be able to parse the individual message responses and act appropriately, especially for multiple QBP messages.

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:** to assist with message troubleshooting, 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 messages 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.
- **Phase 2: Registry Query Bi-directional (BIDX/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. Patient, Next of Kin Validation – the provider will send test messages that meet the requirements defined later on in this document – see Table 1-1.
2. Immunization Record 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 – see Table 2-1.
3. ORC/RXA/RXR/OBX Detailed Validation – the provider will include ORC, RXA, RXR, and OBX segments to make sure that mapping is correct. Please refer to Table 2-1 and the CDC r1.5 documentation for more information.

Validation Results: (During Test Stage only)

If there is an error in any test message or missing any required data, RIDE will provide validation results immediately. For example:

ERR| |PID^1^3|101^Required data missing^HL70357^^|Error|||Patient Id is required

Only messages with an MSH-11 value of "T" will be evaluated in detail by the NIST Validator.

Providers may also find the NIST Immunization Validation Testing Tool helpful in validating *test* messages sent to the Registry. See the link below:

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

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

If the provider system is performing queries to the Registry via 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

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 Business Organization mapping and one or more Clinic Site 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
VXU	V04
QBP	Q11

HL7 Message Types SENT by Registry

HL7 Message Type SENT by Registry	HL7 Event Type
ACK	
RSP	K11
RSP	K22
ERR	Any Error/missing required data (Only test message)

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 (^&~\).
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 messages are processed in real time. 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 – All transmissions to DataSources that have been flagged as Live are considered Production and should have a value of “P”. However during the testing phase, messages sent should have MSH-11 set to “T” to activate the NIST Validator tool. This will provide extended feedback on any issues encountered during testing.
13. If set, MSH-22 will be used as the Business Organization for the sending party. If Empty, the FacilityID POST/SOAP variable will be used. MSH-22 is useful in scenarios such as when a vendor is sending data for multiple practices. Note that if used, a full list of Business Organizations and their codes, as well as Clinic Sites and codes, should be provided to the RIDE Help Desk.

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.
4. If ‘ERR’ segment is included in the return message, it should be fixed.

HL7 Message Profiles

Supported message profiles (see CDC HL7 v2.5.1 Implementation Guide r1.5 documentation for details):

Send Profile	Response Profile	Notes
Z22-Send Unsolicited Immunization Update	Z23-Return Acknowledgment	Implemented.
Z34-Request a Complete Immunization History	Z32-Return Complete Immunization History	Implemented.
	Z31-Return a List of Candidates	Not implemented.

	Z33-Return an Acknowledgement with No Person Records	Implemented.
Z44-Request Evaluated Immunization History and Forecast	Z42-Return Evaluated History and Forecast	Implemented, but currently returning a Z32 response profile. This will change in the near future.

VXU

RIDE currently accepts the following segments in a VXU message (see CDC HL7 v2.5.1 Implementation Guide r1.5 documentation for details):

Segment	Cardinality	Usage	Notes
MSH	[1..1]	R	
PID	[1..1]	R	
[PD1]	[0..1]	RE	
{[NK1]}	[0..*]	RE	
{ORC	[1..1]	R	
RXA	[1..1]	R	
[RXR]	[0..1]	RE	
{OBX	[1..1]	R	
NTE}	[0..1]	RE	
}			

Other segments will be ignored.

RIDE accepts the following core data elements (see notes for important details):

Patient, Next of Kin Records (Table 1-1)

RIDE Data Element	HL7 Field	HL7 Data Element	Type	Usage	Notes
	MSH-1	Field Separator	ST	R	Shall be valued "|".
	MSH-2	Encoding Characters	ST	R	Shall be valued "^~\&".
	MSH-3	Sending Application	HD	RE	This is a unique value that will be assigned by RIDE Support during setup, and usually contains a reference to the system that is sending the data – for instance, KP-EPIC.
Operational Unit ID	MSH-4	Sending Facility	HD	RE	***This is a unique value that will be assigned by RIDE Support during setup - for instance, 2150.***
	MSH-5	Receiving Application	HD	RE	Shall be set to "RIDE".
	MSH-6	Receiving Facility	HD	RE	Shall be set to "RIDE-DE".
	MSH-7	Date/Time of Message	TS	R	Shall have a degree of precision at least to the minute.
	MSH-9	Message Type	MSG	R	Dependent on value in MSH-9: • "VXU" – shall be "VXU^V04^VXU_V04" • "QBP" – shall be "QBP^Q11^QBP_Q11" • "RSP" – shall be "RSP^K11^RSP_K11"

					• "ACK" (VXU) – shall be "ACK^V04^ACK" • "ACK" (QBP) – shall be "ACK^Q11^ACK"
	MSH-10	Message Control ID	ST	R	
	MSH-11	Processing ID	PT	R	
	MSH-12	Version ID	VID	R	Shall be valued "2.5.1".
	MSH-15	Accept Acknowledgement Type	ID	R	Table HL70155. Default is "NE" (Never).
	MSH-16	Application Acknowledgement Type	ID	R	Table HL70155. Default is "AL" (Always).
	MSH-21	Message Profile Identifier	EI	C(R/RE)	If MSH-9.1 is valued "QBP" or "RSP". Required when a Message Profile is used.
Business Entity ID	MSH-22	Sending Responsible Organization	XON	RE	MSH-22 will be used to determine the legally responsible Business Organization source of the message. For instance, this could be the business name of a provider group.
	MSH-23	Receiving Responsible Organization	XON	RE	Shall be set to "RIDE".
	PID-1	Set ID – PID	SI	C(R/O)	If MSH-21 is valued "Z31^CDCPHINVS".
Patient Identifier (MRN)	PID-3	Patient Identifier List	CX	R	RIDE will process entries of type "PI" and "MR" only. **Identifiers must be unique within the sending system.**
Patient Name	PID-5	Patient Name	XPN	R	First repetition shall contain the Legal Name (type "L"), which will be used for import. Birth name is also processed.
	PID-6	Mother's Maiden Name	XPN	RE	As this value is not always available, this may be left Empty.
Date of Birth	PID-7	Date/Time of Birth	TS	R	
Sex	PID-8	Administrative Sex	IS	RE	Table HL70001
Race	PID-10	Race	CE	RE	Table HL70005
Patient Address	PID-11	Patient Address	XAD	RE	First repetition should be the primary address, and is the only one processed.
Patient Phone 1	PID-13	Phone Number – Home	XTN	RE	
Patient Phone 2	PID-14	Phone Number – Business	XTN	O	
Language	PID-15	Primary Language	CE	O	Table HL70296
Ethnicity	PID-22	Ethnic Group	CE	RE	Table HL70189 or CDCREC
Multiple Birth Indicator	PID-24	Multiple Birth Indicator	ID	RE	Table HL70136. Leave Empty if unknown/not tracked.
Date of Death	PID-29	Patient Death Date and Time	TS	C(RE/X)	If PID-30 is valued "Y".
Deceased	PID-30	Patient Death Indicator	ID	RE	Table HL70136
Last Update Date/Time	PID-33	Last Update Date/Time	TS	O	
	NK1-1	Set ID – NK1	SI	R	Starts with 1 and counts up.

NK Name	NK1-2	Name	XPN	R	First instance is the legal name and is required.
NK Relationship	NK1-3	Relationship	CE	R	Table HL70063
NK Address	NK1-4	Address	XAD	RE	The first instance is used.
NK Phone Number	NK1-5	Phone Number	XTN	RE	The first instance is used.
NK Sex	NK1-15	Administrative Sex	IS	O	Table HL70001
NK Date of Birth	NK1-16	Date/Time of Birth	TS	O	Although this field is optional, it is important for data quality purposes and should be sent if possible.
NK Ethnicity	NK1-28	Ethnic Group	CE	O	Table HL70189 or CDCREC
NK Race	NK1-35	Race	CE	O	Table HL70005
Publicity Code	PD1-11	Publicity Code	CE	RE	Table HL70215
Protection Indicator	PD1-12	Protection Indicator	ID	RE	Table HL70136. Note that an Empty value will be interpreted by RIDE as “N” (No Protection), in accordance with California Health and Safety Code Section 120440.
Protection Indicator Date	PD1-13	Protection Indicator Effective Date	DT	C(RE/X)	If PD1-12 is valued. If no date is provided, the date of the message in MSH-7 will be used.
Immunization Registry Status	PD1-16	Immunization Registry Status	IS	RE	Table HL70441.
Immunization Registry Status Effective Date	PD1-17	Immunization Registry Status Effective Date	DT	C(RE/X)	If PD1-16 field is valued.
Publicity Code Date	PD1-18	Publicity Code Effective Date	DT	C(RE/X)	If PD1-11 is valued. If no date is provided, the date of the message in MSH-7 will be used.

Immunization Records (Table 2-1)

RIDE Data Element	HL7 Field	HL7 Data Element	Type	Usage	Notes
	ORC-1	Order Control	ID	R	Table HL70119. Value SHALL contain the value “RE”.
	ORC-2	Placer Order Number	EI	RE	See CDC Implementation Guide.
	ORC-3	Filler Order Number	EI	R	See CDC Implementation Guide.
Entered By User	ORC-10	Entered By	XCN	RE	Optional – If desired, a list of User codes for the Organization should be provided to RIDE Support. Otherwise, this will be mapped to Historical.
Physician	ORC-12	Ordering Provider	XCN	RE	Shall be the provider ordering the immunization. Empty if transcribed from a historical record.
Entered By Organization	ORC-17	Entering Organization	CE	RE	Table HL70362
	RXA-1	Give Sub-ID Counter	NM	R	Shall be “0” (zero).
	RXA-2	Administration Sub-ID Counter	NM	R	Shall be “1” (one).
Service Date	RXA-3	Date/Time Start of Administration	TS	R	
	RXA-4	Date/Time End of Administration	TS	RE	Shall be the same value as RXA-3.

Service ID	RXA-5	Administered Code	CE	R	Table CVX. **CVX is strongly preferred.** NDC is not recommended at this time.
Dosage	RXA-6	Administered Amount	NM	R	
Unit of Measure	RXA-7	Administered Units	CE	C(R/O)	If Administered Amount is not valued "999". Preferred Unit of Measure is "mL".
Information Source	RXA-9	Administration Notes	CE	C(R/O)	Table NIP0001. If RXA-20 is valued "CP" or "PA".
Administering User	RXA-10	Administering Provider	XCN	C(RE/O)	Optional – If desired, a list of User codes for the Organization should be provided to RIDE Support.
Administered At Location	RXA-11	Administered-at Location	LA2	C(RE/O)	A list of Site codes for the Organization should be provided to RIDE Support.
Lot Number	RXA-15	Substance Lot Number	ST	C(RE/O)	If RXA-9.1 is "00" (double zero).
Lot Expiration Date	RXA-16	Substance Expiration Date	TS	C(RE/O)	If RXA-15 is valued.
Lot Manufacturer	RXA-17	Substance Manufacturer Name	CE	C(RE/O)	If RXA-9.1 is "00" (double zero). Table MVX.
Refusal Reason	RXA-18	Substance/Treatment Refusal Reason	CE	C(R/X)	If RXA-20 (Completion Status) is valued "RE". Table NIP002.
Completion Status	RXA-20	Completion Status	ID	RE	Table HL70322
Action Code RXA	RXA-21	Action Code – RXA	ID	R	Table HL70323. Note that only "A" is supported by RIDE. Requests to remove a record should be done either using the Healthy Futures web UI, or via RIDE Support.
Update Time Stamp	RXA-22	System Entry Date/Time	TS	O	If RXA-22 is missing, MSH-7 will be used.
Administration Route	RXR-1	Administration Route	CE	R	Table HL70162 or NCIT
Administration Site	RXR-2	Administration Site	CWE	RE	Table HL70163

Observations (Table NIP003)

Vaccine Information Statements (VIS, OBX-3 64994-7)

For Vaccine Information Statements (VIS), both the legacy and current methods of reporting observations are supported (see CDC Guide for details). However, the current method is preferred as it is able to represent VIS forms that cover multiple vaccines.

Vaccine Funding Program Eligibility Category (Eligibility, OBX-3 64994-7)

Reporting Eligibility is an important part of compliance with programs such as Vaccines For Children (VFC) and others. Table HL70064 should be used – see the CDC Guide for details. Due to proposed additional requirements for VFC program eligibility, it is strongly recommended that this observation be sent to the Registry.

Vaccine Funding Source (Funding Source, OBX-3 30963-3)

Reporting Funding Source is an important part of compliance with programs such as Vaccines For Children (VFC) and others. Table PHVS_ImmunizationFundingSource_IIS should be used – see the CDC Guide for details. Due to

proposed additional requirements for VFC program eligibility, it is strongly recommended that this observation be sent to the Registry.

QBP

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

Segment	Cardinality	Usage	Notes
MSH	[1..1]	R	MSH must include the Query Profile identifier.
QPD	[1..1]	R	

RIDE Data Element	HL7 Field	HL7 Data Element	Type	Usage	Notes
Organization ID	MSH-4	Sending Facility	HD	RE	**If the sending system is only sending data for one organization**, this should be set to the legally responsible source of the message. For instance, this could be the business name of a provider group.
	MSH-22	Sending Responsible Organization	XON	RE	**If the sending system is aggregating data from multiple organizations** (i.e. HIE, vendor gateway), MSH-22 will be used to determine the legally responsible source of the message. For instance, this could be the business name of a provider group.
Message Type	MSH-9	Message Type	MSG	R	SHALL be "QBP^Q11^QBP_Q11"
Message Profile	MSH-21	Message Profile Identifier	EI	C(R/RE)	If MSH-9.1 is valued "QBP" or "RSP". See CDC Guide for details.
QPD Params					See CDC Guide for details.

RIDE matches patient records in the following priority.

1. RRI or Regional Registry ID.
2. Provider patient identifier (If 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 a Protection Indicator allowing record sharing will be returned (value of "N").

According to the CDC Specification, if more than one match occurs, a response will be returned requesting more specific search criteria.

If no matches are found, a message will be returned with an error code (NF) indicating that a matching record was not found:

```
MSH|^~s&|RIDE^^ISO|RIDE-DE^^ISO|||20110520103435.71||QCK^|1222|T|2.5.1
MSA|AA|QS444440681000001954
QAK|QueryID01|NF|Z34^request Immunization history^PHINVS
```

Contacting Registry Technical Support

For further assistance, please contact Registry Technical Support at: support@izride.com

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.

Appendix A – Reference/Mapping/Error Code Tables

Please refer to the latest CDC HL7 Implementation Guide r1.5 for all mapping tables and error codes.

Appendix B: 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 public 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.

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

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	Moved message 'Sample 2.3.1' to Appendix-D, Replaced <CR> with ↵
11/17/2016	SB	Added test data for the QBP query.
01/10/2018	SB	Added 'ERR' Segment information and quick availability of validation results
02/07/2018	SB	Added Error Code 'Authentication Failed' with Error Code 'AR' (201).
12/02/2019	JL	Removed HL7 v2.3.1 information as it is no longer supported. Added HL7 v2.5.1 CDC r1.5 information.
12/13/2019	JL	Further updates. Removed Appendix B. Refer to CDC Guide instead of listing code tables.