PREIS

Puerto Rico Electronic Immunization System

Local HL7 Version 2.5.1 Implementation Guide for Immunization Messaging (Release 1.5)

CHANGE HISTORY

Version #	Revision Date	Documented By	Comments/Changes
1.0	10/05/2015	Norma Castro	First release Puerto Rico Department of Health HL7 v2.5.1 Implementation Guide for Immunization Messaging – VXU and ACK.
1.1	8/28/2017	Norma Castro	Review and updated throughout document. Some changes are: 1. Added Intended Audience, Organization and Flow and Testing Procedure sections to Introduction section 2. Updated MSH-3, MSH-4, MSH-6, MSH-15, PID-10, PID-11, PID-13, PID-22, RXA-10, RXA-11, RXA-15, RXA-16, RXA-18, OBX-3, OBX-4, OBX-5, and OBX-14 3. Added MSH-5 and MSH-16 4. Updated PID-3 with the format to separate the two surnames. **This is required.** 5. Updated PID-11 with Puerto Rico County codes information. 6. Updated NK1 section stating that the segment **is required (RE)**. If available, mother's information is preferred. 7. Added MSH specification in ACK segment 8. Updated Table 0064 (Financial class) values to add codes V22, V23, V24, and V25 9. Updated Table 0227 (Manufacturers of vaccines) values to add code SEQ 10. Updated Table 0289 (County/Parish) values to add Puerto Rico cities and zip codes 11. Updated Table 0292 (Codes for Vaccines Administered) values to add codes 11, 12, 13, 14, 18, 19, 23, 24, 25, 26, 27, 29, 34, 35, 36, 37, 39, 40, 41, 53, 54, 55, 71, 75, 79, 86, 87, 90, 91, 93, 101, 105, 112, 117, 129, 134, 142, 162, 163, 165, and 168 12. Updated Table 0396 (Coding System) values to add codes L and M 13. Updated Table NIP003 (Observation Identifiers) values to add codes 30956-7, 29768-9 and 29769-7 14. Updated Value Set Name - Immunization Funding Source values to add codes VXC50, VXC51 and VXC52 15. Updated example in Appendix B
2.0	1/28/2021	Norma Castro	Updated document to reflect PREIS requirements.
2.1	2/4/2021	Norma Castro	Review and updated throughout document. Some changes are: 1. Added Message Transport Session 2. Added User-defined Table 0533 - Application Error Code
2.2	4/11/2022	Alejandro Alvarado	Review and updated throughout document. Some changes are: 1. Updated Patient Identifier Segment Table PID-6, PID-10, PID-22, PID-24 as **required fields**. Added Nationality as a recommended field for PREIS usage 2. Updated PID field definitions section stating that the PID-1, PID-10, PID-22, PID-24 **are required** 3. Updated Pharmacy/Treatment Administration Segment Table RXA-16 as **required field** 4. Updated RXA field definitions section stating that the RXA-17, RXA-18 **are required.** Updated RXA-18, RXA-20 descriptions

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INTRODUCTION

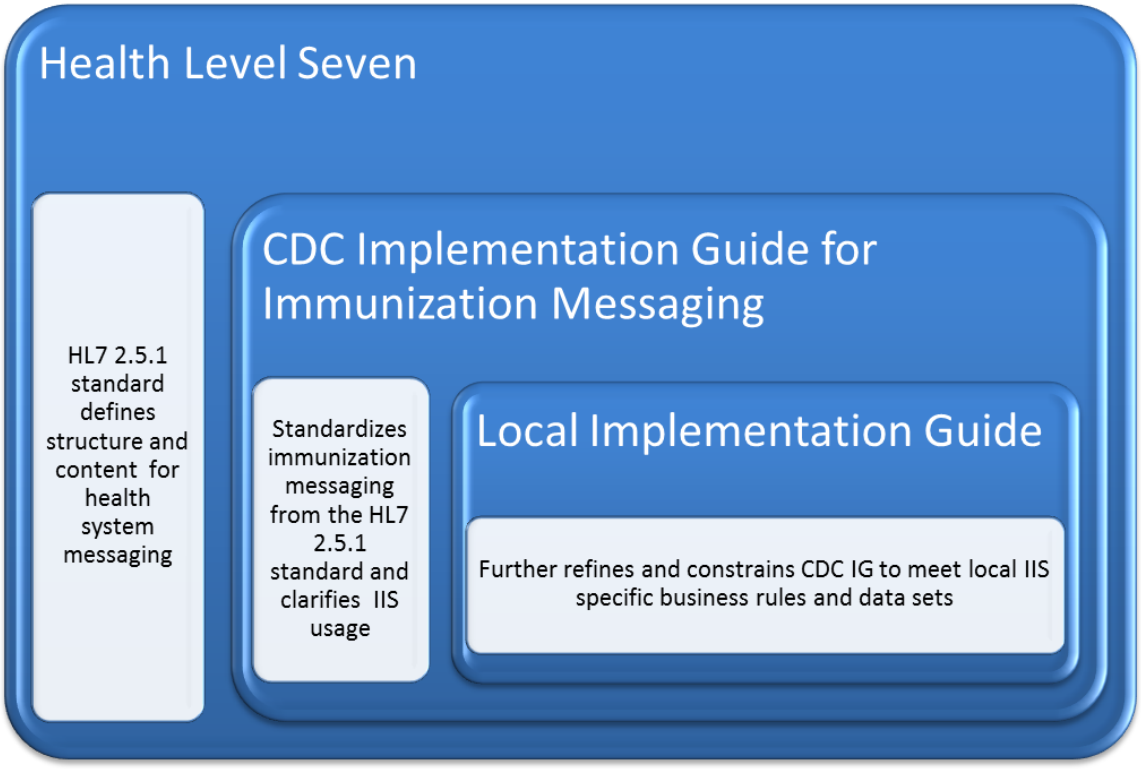
Puerto Rico Electronic Immunization System (PREIS) is a free, computerized internet database application that developed to record and track all immunizations of Puerto Rico's residents (children and adults). PREIS provides assistance for keeping everyone up to date with their recommended immunizations.

The timely data submission to PREIS benefits the providers and their patients by making complete immunization records accessible through the system and at the point of service. PREIS is designed to send and receive batch data submission.

The primary purpose of PREIS PHC Hub (Public Health Connection Hub) is to establish connections (interfaces) to improve public health. PREIS PHC Hub facilitates the integration between healthcare provider systems and Immunization Information Systems (IIS) by managing HL7 message processing.

Understanding the Implementation Guide Hierarchy

In order for different health information systems to exchange data, the structure and content of the data to be exchanged must be standardized. Three controlling documents define how the PREIS PHC Hub HL7 data exchange interface works. They are arranged in a hierarchy of documents, each refining and constraining the HL7 Standard.



HL7 Controlling Document Hierarchy

The first document is the HL7 2.5.1 standard developed by Health Level Seven, a not-for-profit ANSI-accredited standards developing organization. This standard defines the structure and content of immunization messages but leaves many specific implementation details undecided. Beneficial information on HL7 and a copy of the HL7 message standard can be obtained from the Health Level Seven website at http://www.hl7.org.

The second document is the CDC's **HL7 2.5.1 Implementation Guide for Immunization Messaging, Release 1.5** (CDC IG). This guide gives specific instructions regarding how to report to immunization information systems, but still leaves some

implementation decisions to each IIS. This guide and other technical information can be obtained from the CDC website at http://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html.

This document, the PR Local HL7 Implementation Guide is the third. It finalizes all implementation decisions and defines exactly what PREIS will and will not accept. It is written in accordance with the standards set in the first two documents. In the cases where this guide differs from the CDC IG, this guide has taken great care to point out differences from the CDC IG by adding additional columns to the tables and provides the IIS's limitations.

Intended Audience

The PR Local HL7 Implementation Guide is intended for technical staff at EHRs and other groups that want to submit HL7 2.5.1 VXU messages to PREIS. The reader should have a solid HL7 foundation and be familiar with the contents of the CDC IG (https://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html). Chapters 2 and 3 of the CDC IG provide HL7 foundational concepts. The goal of this guide is to provide an unambiguous specification for creating and interpreting messages.

Scope

This document is intended to facilitate the exchange of immunization records between Electronic Health Records (EHR) and the PREIS. This includes:

a. Sending and receiving immunization histories for individuals
b. Sending and receiving demographic information about the individuals
c. Requesting immunization histories for individuals
d. Responding to requests for immunization histories by returning immunization histories
e. Acknowledging receipt of immunization histories and requests for immunization histories
f. Reporting errors in the messaging process
g. Sending observations about an immunization event (this may include funding, reactions, forecasts, and evaluations)

It is important to note this guide adheres to the CDC IG on several key aspects, including:

a. Data type specifications from Chapter 4 of the IG have not been redefined and usage has not been changed
b. Standardized vocabulary is supported as specified the IG
c. To the extent possible, data sets and business rules will adhere to the IG

MESSAGE TRANSPORT

HTTP POST Message Transfers

PREIS PHC Hub receives HL7 messages using a protocol defined in the document titled "Transport of Immunization HL7 Transaction over the Internet Using Secure HTTP version 1.0" written by the HL7 Immunization Registry Task Force (Rockmore, Yeatts, and Davidson). It describes sending an HL7 message, a username, a password, and a facility ID in an HTTP POST transaction and receiving an HL7 message as a response.

For an external system to connect to the immunization registry, it must have two features:

1. A connection to the internet so that it can "see" the registry's web interface
2. The ability to send HL7 immunization messages using HTTPS

Request Encoding

When the sending application sends PHC Hub an HL7 message via an HTTPS POST command, it must have the following fields:

- **USERID:** assigned by the PREIS administrator
- **PASSWORD**: assigned by PREIS administrator
- **MESSAGEDATA**: the HL7 messages

HL7 messages may be sent one at a time (one for every HTTPS request) or grouped in a batch. Batch messages do not have any special separators or wrappers, but the standard HL7 batch protocol may be used. The batch is formatted as follows: [FHS] { [BHS] { [MSH] ...] } [BTS] } [FTS]

Messages can fail if:

- The message is of an unsupported message type (MSH-9)
- The message has an unsupported event code (MSH-9)
- The message has an unsupported processing ID (MSH-11)
- The message has an unsupported version ID (MSH-12)
- The message is unable to be processed for reasons unrelated to format or content

If one of the above events causes a message to be rejected, the QBP response will include Z23 in MSH21. If an error of a different type occurs, PHC Hub will return a Z33 (ACK) response profile.

Response Encoding

PHC Hub returns responses to the sending system. Requests with multiple messages can have multiple responses, one for each request message. Responses are returned as defined in the account configuration.

The available options are:

- Always - Always send a response for a message
- Never - Never send a response for a message
- On Error - Send responses only for those messages that have errors and are not accepted
- Determined by Message - Use the incoming message's MSH segment to determine the response option (Always, Never, or Only on Error)

Responses from the HL7 interface are always in HL7 format. HL7 responses can indicate any one of the following:

- Authentication error - The HL7 user making the request is not allowed to because the username and password are incorrect, or the account does not have permission to accept HL7 messages.
- Message parsing error - The HL7 parser is unable to read the incoming message because it doesn't conform to HL7 standards.
- Message content error - PHC Hub cannot accept the data because of missing or incorrect information.
- Message processing exception - PHC Hub cannot process the message because of an unexpected problem.
- Message accepted - PHC Hub has accepted the data and is either holding it for review or submitting it to the IIS for processing.

CDC WSDL

The standard interface defines the contract between the trading partners. Simple Object Access Protocol (SOAP) web services use the Web Services Definition Language (WSDL) to achieve this. The WSDL for the SOAP web service is used as the contract between the sender and the receiver to pass the HL7 message as a string of data. The WSDL tells a program that knows about SOAP exactly how to use the web service. If a tool is available that understands SOAP web services, the following URL is all that is needed to set up the web service. Please review the EHR documentation to determine all needed steps to set up the web service. PHC Hub supports the Simple Object Access Protocol (SOAP) standard interface, the Web Services Definition Language (WSDL), and other transport solutions as endorsed by the CDC.

The CDC WSDL URL is https://www.cdc.gov/vaccines/programs/iis/technical-guidance/soap/services.html

The WSDL URL is …/soa/ws/HL7Service.wsdl The first part of the URL depends on the environment (Test or Prod). For example: https://iis.anystate.gov/doh/PHCHub-PROD/soa/ws/HL7Service.wsdl

TCP/IP

PREIS PHC Hub does not support TCP/IP connections or polling a local directory for files to upload.

HL7 MESSAGE TYPES USED IN PREIS TRANSMISSIONS

PREIS currently supports the VXU (Vaccination Update) message and PREIS will respond with an HL7 ACK (Acknowledgement). PREIS parses the VXU sent by HL7 Data Exchange Partners and if the information is valid, the client and immunization data will be stored in the PREIS database.

The corresponding HL7 ACK is used by PREIS to acknowledge to the HL7 Data Exchange Partner the results of the PREIS system VXU parsing and preliminary editing process.

VXU (Unsolicited Immunization Update)

The following table lists the segments that are part of a VXU. Some of the optional segments are not anticipated to be used.

Segment	PREIS Cardinality	PREIS Usage	Comment
MSH	[1..1]	R	Every message begins with an MSH.
PID	[1..1]	R	Every VXU has one PID segment.
[PD1]	[0..1]	RE	Every VXU can have one PD1 segment.
{[NK1]}	[0..*]	RE	The PID segment in a VXU may have zero or more NK1 segments.
[Begin Patient Visit Group	[0..1]	O	Every VXU can have one PV1 segment.
PV1	[1..1]	R	
PV2	[0..1]	O	
End Patient Visit Group]			
{[Begin Order Group	[1..*]	R	Each VXU must have one or more Order groups
ORC	[1..1]	R	The order group in a VXU must have one ORC segment.
RXA	[1..1]	R	Each ORC segment in a VXU must have one RXA segment. Every RXA requires an ORC segment.
[RXR]	[0..1]	RE	Every RXA segment in a VXU may have zero or one RXR segments.
{[Begin Observation Group	[0..*]	RE	Every RXA segment in a VXU may have zero or more OBX segments.
OBX	[1..1]	R	The observation group in a RXA segment must have one OBX segment.
[NTE]	[0..1]	RE	Every OBX segment in a VXU may have zero or one NTE segment.
End Observation Group]}			
End Order Group]}			

ACK (General Acknowledgment)

Segment	PREIS Cardinality	PREIS Usage	Comment
MSH	[1..1]	R	Every message begins with an MSH.
MSA	[1..1]	R	Every ACK will have one MSA segment
[{ERR}]	[0..*]	RE	The ACK may have zero or more ERR segments.

Recommendations

Updating Client Demographics (when you do not have immunization data to report):
It is preferred that demographic information be sent in a VXU message whenever possible, as this message type accommodates BOTH immunization and demographic information. The VXU message must contain only one (1) RXA segment and that segment must contain an RXA-5 administered code of |998^No Vaccine Administered^CVX|. All other segments and fields used within the VXU message will be constructed in accordance with their specified segment details.

SEGMENTS DETAILS

MSH – Message Header Specification

The MSH segment defines the intent, source, destination and some specifics of the syntax of a message.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
1	Field Separator	ST		[1..1]	[1..1]	R	R	
2	Encoding Characters	ST		[1..1]	[1..1]	R	R	
3	Sending Application	HD	0361	[0..1]	[0..1]	RE	RE	
4	Sending Facility	HD	**Assigned by PREIS**	[0..1]	[1..1]	RE	R	
5	Receiving Application	HD	0361	[0..1]	[0..1]	RE	RE	
6	Receiving Facility	HD	0362	[0..1]	[0..1]	RE	RE	
7	Date/Time of Message	TS		[1..1]	[1..1]	R	R	
9	Message Type	MSG		[1..1]	[1..1]	R	R	
10	Message Control ID	ST		[1..1]	[1..1]	R	R	
11	Processing ID	PT		[1..1]	[1..1]	R	R	
12	Version ID	VID		[1..1]	[1..1]	R	R	
15	Accept Acknowledgement Type	ID	0155	[1..1]	[0..1]	R	RE	
16	Application Acknowledgment Type	ID	0155	[1..1]	[0..1]	R	RE	
21	Message Profile Identifier	EI		[1..*]	[1..1]	R	R	

MSH Field Definitions:

MSH-1 Field Separator (ST)

Determines the field separator in effect for the rest of this message. **PREIS requires the HL7 field separator of "|" (ASCII 124)**.

MSH-2 Encoding Characters (ST)

This field contains the four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator. **PREIS requires HL7 values of ^~\& (ASCII 94, 126, 92, and 38, respectively)**.

MSH-3 Sending Application (HD)

This field uniquely identifies the sending application.

See MSH-4 and MSH-6 for the fields principally used to identify sender and receiver of the message.

Example:
MSH|^~\&|EHRAPP| where EHRAPP is the sending application.

MSH-4 Sending Facility (HD)

This field identifies the organization responsible for the operations of the sending application. **This is a required field**.

Contact the PREIS Administrator for the appropriate PREIS Facility ID of the provider organization that owns the information. When the message is being sent to PREIS, it must include PREIS Facility ID as Sending Facility.

Example:
MSH|^~\&|EHRAPP|PREIS FacilityID|

MSH-5 Receiving Application (HD)

This field uniquely identifies the receiving application.

MSH-6 Receiving Facility (HD)

This field identifies the organization responsible for the operations of the receiving application. When sending, use **PRIIS**.

Example:
MSH|^~\&|EHRAPP|PREIS FacilityID||PRIIS|

MSH-7 Date/Time of Message (TS)

This field contains the date/time that the sending system created the message. PREIS ignores any time component. **This is a required field**.

MSH-9 Message Type (MSG)

This field contains the message type (refer CDC IG's HL7 Table 0076), trigger event (refer CDC IG's HL7 Table 0003), and message structure ID (refer CDC IG's HL7 Table 0354) for the HL7 message. Within HL7, the triggering event is considered to be the real-world circumstance causing the message to be sent. **This is a required field. All three components are required**.

This field shall contain the constant value VXU^V04^VXU_V04 for a message conveying client and immunization information.

MSH-10 Message Control ID (ST)

This field contains the identifier assigned by the sending application (MSH-3) that uniquely identifies a message instance and echoed back in the ACK message. The content and format of the data sent in this field is the responsibility of the sender. The receiver returns exactly what was sent in response messages. **This is a required field**.

MSH-11 Processing ID (PT)

This field is used to decide whether to process the message as defined in HL7 Application (level 7) Processing rules. **This is a required field**.

The only supported values for MSH-11 are 'P' or 'T'. The only Processing ID used to submit HL7 messages to the IIS is 'P'.

MSH-12 Version ID (VID)

This field contains the identifier of the version of the HL7 messaging standard used in constructing, interpreting, and validating the message. **This is a required field**. **Only the first component need be populated**.

Messages conforming to the specifications in this Guide shall indicate that the **version is 2.5.1**.

MSH-15 Accept Acknowledgement Type (ID)

This field identifies the conditions under which accept acknowledgements are required to be returned in response to this message. **This is a required field**.

MSH-16 Application Acknowledgment Type (ID)

This field contains the conditions under which application acknowledgments are required to be returned in response to this message. **This is a required field.**

This field shall be the value “AL” (means always).

MSH-21 Message Profile Identifier (EI)

Sites may use this field to assert adherence to, or reference, a message profile. Message profiles contain detailed explanations of grammar, syntax, and usage for a particular message or set of messages. **This is a required field.**

One occurrence of MSH-21 shall contain the constant value “Z22^CDCPHINVS”.

PID – Patient Identifier Segment

The PID segment is used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
1	Set ID - PID	SI		[1..1]	[1..1]	R	R	
3	Patient Identifier List	CX		[1..*]	[1..*]	R	R	
5	Patient Name	XPN		[1..*]	[1..1]	R	R	
6	Mother's Maiden Name	XPN		[0..1]	[0..1]	RE	R	
7	Date/Time of Birth	TS		[1..1]	[1..1]	R	R	
8	Administrative Sex	IS	0001	[1..1]	[1..1]	R	R	
10	Race	CE	0005	[0..*]	[0..1]	RE	R	
11	Patient Address	XAD		[0..*]	[0..*]	RE	R	
13	Phone Number - Home	XTN		[0..*]	[0..*]	RE	RE	
22	Ethnic Group	CE	CDCREC	[0..1]	[0..1]	RE	R	
24	Multiple Birth Indicator	ID	0136	[0..1]	[0..1]	RE	R	
25	Birth Order	NM		[0..1]	[0..1]	C(RE/O)	C(RE/O)	If PID-24 is valued "Y"
28	Nationality	CE			[1..1]	O	RE	
29	Patient Death Date and Time	TS		[0..1]	[0..1]	C(RE/X)	C(RE/X)	If PID-30 is valued "Y"
30	Patient Death Indicator	ID	0136	[0..1]	[0..1]	RE	RE	

PID Field Definitions:

PID-1 Set ID – PID (SI)

This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc. **This is a required field.**

PID-1 shall have the literal value "1".

PID-3 Patient Identifier List (CX)

This field contains the list of identifiers (one or more) used by the healthcare facility to uniquely identify a patient (e.g., medical record number, billing number, birth registry, national unique individual identifier, etc.). **This is a required field.**

The HL7 Data Exchange Partner must value the following required component:

- PID-3.1 with the ID Number.
- PID-3.4 with the Assigning Authority
- PID-3.5 with the Identifier Type Code.

This field may include one or more IDs of which the first repetition must be the Medical Record Number (MR) or the System Registry ID. Subsequent repetitions may include a Patient Internal Identifier, Birth File Number, Medicaid Number, and Social Security Number.

PID-5 Patient Name (XPN)

This field contains the name of the patient. **This is a required field.**

Refer to HL7 Table 0200 - Name Type for valid values.

The HL7 Data Exchange Partner must value the following required components:

- PID-5.1.1 with the Surname (i.e., Last Name)
- PID-5.2 with the Given Name (i.e., First Name)
- PID-5.7 with the Name Type Code of "L"

The First Name, the Middle Name and the Surname must be greater than one character in length. **The Surname is required to include the two Patient's Last Names separated by a space.**

PID-6 Mother's Maiden Name (XPN)

This field contains the family name under which the mother was born (i.e., before marriage). It is used to distinguish between patients with the same last name. **This is a required field.**

If there is relevant Mother's Maiden Name data, the HL7 Data Exchange Partner must value **the following required components**:

- PID-6.1.1 with the Surname (i.e., Maiden Name)
- PID-6.2 with the Given Name (i.e., First Name)

PID-7 Date/Time of Birth (TS)

This field contains the patient's date and time of birth. The date must be in the YYYYMMDD format. PREIS ignores any time component. **This is a required field**.

PID-8 Administrative Sex (IS)

This field contains the patient's sex. PREIS supports all of the values listed in the HL7-defined Table 0001 – Administrative Sex (refer to Appendix A). **This is a required field.**

PID-10 Race (CE)

This field refers to the patient's race. **This is a required field.**

PREIS supports all of the U.S. Race Code values listed in the HL7-defined Table 0005 – Race (refer to Appendix A).

For Puerto Rico, PID-10 should be value as 2131-1 (Other Race).

PID-11 Address (XAD)

This field contains the address of the patient. Refer to CDC IG's HL7-defined Table 0190 – Address Type for values supported by PREIS. **This is a required field**.

Multiple addresses for the same person may be sent in the following sequence: the primary and mailing address must be sent first in the sequence (for backward compatibility); if the mailing address is not sent, then a repeat delimiter must be sent in the first sequence.

PREIS only stores the physical address street one and assumes that the rest of the address is the same as the mailing address. Because of this, all other fields in the second address will be ignored. If there are two lines for address concatenate into one line.

PID-13 Phone Number – Home (XTN)

This field contains the patient's personal phone numbers.

All personal phone numbers for the patient are sent in the following sequence. The first sequence is considered the primary number (for backward compatibility). If the primary number is not sent, then a repeat delimiter is sent in the first sequence.

Each type of telecommunication shall be in its' own repetition. For example, if a person has a phone number and an email address, they shall each have a repetition.

Refer to CDC IG's HL7-defined Table 0201 – Telecommunication Use Code for values supported by PREIS.

PID-22 Ethnic Group (CE)

This field further defines the patient's ancestry. Refer to User-defined Table 0189 – Ethnicity in Appendix A of this document for values supported by PREIS. **This is a required field.**

For Puerto Rico, PID-22 should value as 2135-2 (Hispanic or Latino).

Example:
|2135-2^Hispanic or Latino^HL70189|

PID-24 Multiple Birth Indicator (ID)

This field indicates whether the patient was part of a multiple birth. Refer to HL7-defined Table 0136 – Yes/No indicator in Appendix A of this document for values supported by PREIS. They are also listed below for convenience. **This is a required field.**

- "Y" means the patient was part of a multiple birth.
- "N" means the patient was a single birth.
- Empty field means the multiple birth status is undetermined.

PID-25 Birth Order (NM)

When a patient is part of a multiple birth, this field indicates patient's birth order of entry. Use 1 for the first entry, 2 for the second, etc. **This field is useful in matching client data to existing records and prevent duplication of records**.

PID-29 Patient Death Date and Time (TS)

This field contains the date and time at which the patient death occurred. The date must be in the YYYYMMDD format.

If a Death Date is sent, then the Patient Death Indicator in PID-30 must indicate a value of "Y" for permanently inactive/deceased. If a Death Date is populated, then the Patient Registry Status (PD1-16) will be considered "P" (permanently inactive/ deceased). The deceased status will be reflected in all organizations associated with the client.

PID-30 Patient Death Indicator (ID)

This field indicates whether the patient is deceased. Refer to HL7-defined Table 0136 – Yes/No indicator for valid values. They are also listed below for convenience.

- "Y" means the patient is deceased.
- "N" means the patient is not deceased.
- Empty field means the patient death indicator is undetermined.

PD1 – Patient Demographic Segment

The PD1 Segment contains patient demographic information that may change from time to time. There are three primary uses for in Immunization Messages. These include indicating whether the person wants his/her data protected, whether the person wants to receive recall/reminder notices and the person's current status in the registry.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
11	Publicity Code	CE	0215	[0..1]	[0..1]	RE	RE	
12	Protection Indicator	ID	0136	[0..1]	[0..1]	RE	RE	
13	Protection Indicator Effective Date	DT		[0..1]	[0..1]	C(RE/X)	C(RE/X)	If PD1-12 is valued
16	Immunization Registry Status	IS	0441	[0..1]	[0..1]	RE	RE	
17	Immunization Registry Status Effective Date	DT		[0..1]	[0..1]	C(RE/X)	C(RE/X)	If PD1-16 is valued
18	Publicity Code Effective Date	DT		[0..1]	[0..1]	C(RE/X)	C(RE/X)	If PD1-11 is valued

PD1 Field Definitions:

PD1-11 Publicity Code (CE)

This field contains a user-defined code indicating what level of publicity is allowed for the patient. In the context of immunization messages, this refers to how a person wishes to be contacted in a reminder or recall situation. Refer to the User-defined Table 0215 – Publicity Code in Appendix A of this document for values supported by PREIS.

Values include:

- "01" means No reminder/recall
- "02" means Reminder/recall – any method

PD1-12 Protection Indicator (ID)

This field identifies whether a person's information may be shared with other organizations. Indicates whether or not consent has been given (or assumed) for record sharing. The protection state must be actively determined by the clinician.

There are 3 states:

PROTECTION STATE	CODE
Yes, protect the data. Client (or guardian) has indicated that the information shall be protected. (**Do not share data**)	Y
No, it is not necessary to protect data from other clinicians. Client (or guardian) has indicated that the information does not need to be protected. (**Sharing is allowed**)	N
No determination has been made regarding client's (or guardian's) wishes regarding information sharing.	PD1-12 is empty.

Example:
PD1||||||||||||N|20090531 - Consent has been given for record sharing

PD1-13 Protection Indicator Effective Date (DT)

This field indicates the effective date for the Protection Indicator (PD1-12). The date must be in the YYYYMMDD format.

PD1-16 Immunization Registry Status (IS)

This field identifies the current status of the patient in relation to the sending provider organization. Refer to the User-defined Table 0441 – Immunization Registry Status in Appendix A of this document for values supported by PREIS.

If P is provided, client deceased status will reflect in all organizations.

PD1-17 Immunization Registry Status Effective Date (DT)

This field indicates the effective date for the registry status reported in Immunization Registry Status (PD1-16). The date must be in the YYYYMMDD format.

PD1-18 Publicity Code Effective Date (DT)

This is the effective date for Publicity Code (PD1-11). The date must be in the YYYYMMDD format.

NK1 – Next of Kin Segment

The NK1 segment contains information about the patient's other related parties, such as mother, father, guardian, etc. Any associated parties may be identified. Utilizing *NK1-1-set ID*, multiple NK1 segments can be sent to patient accounts.

These segments will be conditional and will be required for patients under 18 years old.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
1	Set ID - NK1	SI		[1..1]	[1..1]	R	R	
2	Name	XPN		[1..*]	[1..1]	R	R	
3	Relationship	CE	0063	[1..1]	[1..1]	R	R	
4	Address	XAD		[0..*]	[0..1]	RE	RE	
5	Phone Number	XTN		[0..*]	[0..1]	RE	RE	

NKI Field Definitions:

NK1-1 Set Id – NK1 (SI)

This field contains the number that identifies this transaction. **This is a required field.**

Multiple NK1 segments can be sent for a patient (e.g., to provide the mother's, the father's, the guardian's names, etc. and their contact information). Each subsequent NK1 increments the previous Set ID by 1. If, for example, 3 NK1 segments were sent in one message, the first would have a Set ID of "1", the second would have a Set ID of "2", and the third would have a Set ID of "3".

NK1-2 Name (XPN)

This field contains the name of the responsible person who cares for the client. **This is a required field.**

The HL7 Data Exchange Partner must value **the following required components**:

- NK1-2.1.1 with the Surname (i.e., Last Name)
- NK1-2.2 with the Given Name (i.e., First Name)
- NK1-2.7 with the Name Type Code of "L"

NK1-3 Relationship (CE)

This field contains the actual personal relationship that the responsible person has to the patient. **This is a required field**.

PREIS supports all values in the User-defined Table 0063 – Relationship (refer to Appendix A). The HL7 Data Exchange Partner must value **the following required components**:

- NK1-3.1 with the Relationship code (Table 0063)
- NK1-3.2 with the Description
- NK1-3.3 with "HL70063"

Example:
|MTH^Mother^HL70063|

NK1-4 Address (XAD)

This field contains the address of the responsible person. Refer to HL7-defined Table 0190 – Address Type in Appendix A of this document for values supported by PREIS.

Multiple addresses are allowed for the same person. The physical and mailing address must be sent in the first sequence. If the mailing address is not sent, then the repeat delimiter must be sent in the first sequence.

NK1-5 Phone Number (XTN)

This field contains the telephone number of the responsible person.

Multiple phone numbers are allowed for the same person. The primary telephone number must be sent in the first sequence. If the primary telephone number is not sent, then the repeat delimiter must be sent in the first sequence.

Refer to CDC IG's HL7-defined Table 0201 – Telecommunication Use Code for values supported by PREIS.

ORC – Common Order Segment

The ORC segment is used to transmit fields that are common to all orders (all types of services that are requested). It is a repeating segment and must be specified with every RXA segment.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
1	Order Control	ID	0119	[1..1]	[1..1]	R	R	
2	Placer Order Number	EI		[0..1]	[0..1]	RE	RE	
3	Filler Order Number	EI		[1..1]	[1..1]	R	R	
10	Entered By	XCN		[0..1]	[0..1]	RE	RE	
12	Ordering Provider	XCN		[0..1]	[0..1]	C(RE/O)	C(RE/O)	If RXA-9.1 is valued "00"

ORC Field Definitions:

ORC-1 Order Control (ID)

This field determines the function of the Order Request segment. **This is a required field**.

For VXU messages, the value must be "RE". Refer to HL7-defined Table 0119 – Order Control Codes in Appendix A of this document for values supported by PREIS.

ORC-2 Placer Order Number (EI)

The placer order number is used to uniquely identify this order among all orders sent by a provider organization.

ORC-3 Filler Order Number (EI)

The filler order number is used to uniquely identify this order among all orders sent by a provider organization that filled the order. **This is a required field**.

ORC-10 Entered By (XCN)

This field identifies the individual that entered this particular order. It may be used in conjunction with an RXA to indicate who recorded a particular immunization.

ORC-12 Ordering Provider (XCN)

This field contains the identity of the person who is responsible for creating the request (i.e., ordering physician). In the case where this segment is associated with a historic immunization record and the ordering provider is not known, then this field should not be populated.

RXA – Pharmacy/Treatment Administration

The RXA segment carries pharmacy administration data. It is a child of an ORC segment, which a repeating segment in the RSP and VXU messages. Because ORC are allowed to repeat an unlimited numbers of vaccinations may be included in a message. Each RXA must be preceded by an ORC, based on the HL7 2.5.1 standard.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
1	Give Sub-ID Counter	NM		[1..1]	[1..1]	R	R	
2	Administration Sub-ID Counter	NM		[1..1]	[1..1]	R	R	
3	Date/Time Start of Administration	TS		[1..1]	[1..1]	R	R	
5	Administered Code	CE	CVX	[1..1]	[1..1]	R	R	
6	Administered Amount	NM		[1..1]	[1..1]	R	R	
7	Administered Units	CE	UCUM	[0..1]	[0..1]	C(R/O)	C(R/O)	If RXA-6 is not valued “999”
9	Administration Notes	CE	NIP001	[0..*]	[0..*]	C(R/O)	C(R/O)	If RXA-20 is valued “CP” or “PA”
10	Administering Provider	XCN		[0..1]	[0..1]	C(RE/O)	RE	
11	Administered-at Location	LA2	**Assigned by PREIS**	[0..1]	[0..1]	C(RE/O)	R	
15	Substance Lot Number	ST		[0..*]	[0..1]	C(R/O)	C(R/O)	If RXA-9.1 is valued “00 and RXA-20 is valued “CP” or “PA”
16	Substance Expiration Date	TS		[0..1]	[0..1]	C(RE/O)	C(R/O)	If RXA-9.1 is valued “00 and RXA-20 is valued “CP” or “PA”
17	Substance Manufacturer Name	CE	MVX	[0..1]	[0..1]	C(R/O)	C(R/O)	If RXA-9.1 is valued “00 and RXA-20 is valued “CP” or “PA”
18	Substance/Treatment Refusal Reason	CE	NIP002	[0..*]	[0..*]	C(R/X)	C(R/X)	If RXA-20 is valued “RE”
20	Completion Status	ID	0322	[0..1]	[0..1]	RE	RE	
21	Action Code - RXA	ID	0323	[0..1]	[0..1]	C(R/O)	RE	

RXA Field Definitions:

RXA-1 Give Sub-ID Counter (NM)

This field is used to match an RXA, which is not a function under IIS, and is constrained to "0" (zero). **This is a required field**.

RXA-2 Administration Sub-ID Counter (NM)

This field is used to track multiple RXA under an ORC. Since each ORC has only one RXA in immunization messages, constrain to "1". This should not be used for indicating dose number, which belongs in an OBX. **This is a required field**.

RXA-3 Date/Time Start of Administration (TS)

The field contains the date the vaccination occurred. The date must be in the YYYYMMDD format. PREIS ignores any time component. **This is a required field.**

In the case of refusal or deferral, this is the date that the refusal or deferral was recorded. In the case of a forecast dose, this is the date the forecast was made.

RXA-5 Administered Code (CE)

This field identifies the medical substance administered. **This is a required field**.

If the substance administered is a vaccine, CVX codes are required (see HL7-defined Table 0292 – Codes for Vaccines administered). The second set of three components could be used to represent the same vaccine using a different coding system, such as Current Procedural Terminology (CPT) or NDC codes.

If RXA-5.3 is valued "998" then RXA-6 shall be valued "999".

Examples:
|21^Varicella^CVX|
|120^DtaP-Hib-IPV^CVX^90698^DtaP-Hib-IPV^C4|

RXA-6 Administered Amount (NM)

This field records the amount of pharmaceutical administered. **This is a required field.**

When the administered amount is unknown, use "999" in this field.

RXA-7 Administered Units (CE)

This field is conditional because it is required if the Administered Amount (RXA-6) code does not imply units. This field must be in simple units that reflect the actual quantity of the substance administered. It does not include compound units.

This field is not required if the previous field is populated with 999.

RXA-9 Administration Notes (CE)

This field is used to indicate whether this immunization record is based on a historical record or was given by the reporting provider. **This is a required field**.

PREIS will recognize the following values:

- 00 to indicate "New immunization record"
- 01 to indicate "Historical information"

Example:
|00^New Immunization Record^NIP001|

RXA-10 Administering Provider (XCN)

This field is intended to contain the name and provider ID of the person physically administering the pharmaceutical.

Note: If it is valued then Family Name (RXA-10.2) and Given Name (RXA-10.3) are required.

Example:
|^JONES^SALLY^S^^ ^^^^^^^^^^^^^^^RN^^|

RXA-11 Administered-at Location (LA2)

This field is used to report the name and address of the facility that administered the immunization.

The HL7 Data Exchange Partner must value **the following required components**:

- RXA-11.1 with the Facility Name
- RXA-11.4 first subcomponent with the Site identification

The Site Identification must be populated with the PREIS Facility ID (MSH-4). Contact the PREIS Administrator for the appropriate Facility ID.

RXA-15 Substance Lot Number (ST)

This field contains the Lot Number of the medical substance administered. It may remain empty if the dose is from a historical record. **This field is required for inventory deduction.**

RXA-16 Substance Expiration Date (TS)

This field contains the expiration date of the medical substance administered. It may remain empty if the dose is from a historical record. **This field is required for inventory deduction**.

RXA-17 Substance Manufacturer Name (CE)

This field contains the manufacturer of the medical substance administered. **This field is required for inventory deduction.**

For vaccines, the Manufacturers of Vaccines (MVX) code system must be used to code this field. When using this code system to identify vaccines, the coding system component should be valued as “MVX” not “HL70227”.

Example:
|AB^Abbott^ MVX^^^|

RXA-18 Substance/Treatment Refusal Reason (CE)

This field contains the reason the patient refused the medical substance/treatment. **This is a required field.** Any entry in the field indicates that the patient did not take the substance. The vaccine that was offered should be recorded in RXA-5. **Do not record contraindications, immunities or reactions in this field**.

RXA-20 Completion Status (ID)

This field indicates if the dose was successfully given. It must be populated with RE if RXA-18 has a value. Refer to the CDC IG’s HL7-defined Table 0322 – Completion Status for values supported by PREIS.

RXA-21 Action Code – RXA (ID)

This field indicates the action expected by the sending system such as adding (reporting) immunizations, updating previously reported immunizations, or deleting previously reported immunizations. PREIS supports all of the values listed in the HL7-defined Table 0323 – Action Code (refer to Appendix A).

Note:

- To delete an existing immunization in PREIS specify a value of “D”. In addition, PREIS requires that the existing immunization is owned by the same provider who is requesting the delete.

RXR - Pharmacy/Treatment Route Segment

The RXR Segment contains the alternative combination of route, site, administration device, and administration method that are prescribed as they apply to a particular order.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
1	Route	CE	0162	[1..1]	[1..1]	R	R	
2	Administration Site	CWE	0163	[0..1]	[0..1]	RE	RE	

RXR Field Definitions:

RXR-1 Route (CE)

This field is the route of administration. Refer to HL7-defined Table 0162 – Route of Administration in Appendix A for values supported by PREIS. **This is a required field**.

Examples:
|SC^Subcutaneous^HL70162| using HL7 route of administration code

|C28161^Intramuscular^NCIT| using FDA route of administration code

RXR-2 Administration Site (CWE)

This field contains the site of the administration route. PREIS supports all of the HL7 values in the HL7-defined Table 0163 – Site of Administration (refer to Appendix A). **This is a required field**.

Example:
|RD^Right Deltoid^HL70163|

OBX - Observation/Result Segment

The OBX is used to transmit an observation about the object of its parent segment. The basic format is a question (OBX-3) and an answer (OBX-5).

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
1	Set ID – OBX	SI		[1..1]	[1..1]	R	R	
2	Value Type	ID	0125	[1..1]	[1..1]	R	R	
3	Observation Identifier	CE	NIP003	[1..1]	[1..1]	R	R	
4	Observation Sub-ID	ST		[1..1]	[1..1]	R	R	
5	Observation Value	varies		[1..1]	[1..1]	R	R	
6	Units	CE		[0..1]	[0..1]	C(R/O)	C(R/RE)	If OBX-2 is valued "NM" or "SN" ***Note***: If there is not a unit of measure available while the Condition Predicated is true, then the value "NA" SHALL be used in CWE.1 and "HL70353" in CWE.3.
11	Observation Result Status	ID	0085	[1..1]	[1..1]	R	R	
14	Date/Time of the Observation	TS		[0..1]	[1..1]	RE	RE	
17	Observation Method	CE		[0..1]	[0..1]	C(RE/O)	C(RE/O)	If OBX-3.1 is valued "64994-7"

OBX Field Definitions:

OBX-1 Set ID – OBX (SI)

This field contains the sequence number. The first instance shall be set "1" and each subsequent instance shall be the next number in sequence. Numbering is not restarted within a message. That is, if a message had 3 order groups and each had 3 OBX, the last OBX in the message would have a value of 9 for this field.

OBX-2 Value Type (ID)

This field contains the format of the observation values in OBX. The value shall be one of the following: CE, NM, ST, DT, ID or TS.

OBX-3 Observation Identifier (CE)

This field contains a unique identifier for the observation. The identifier will point to a master observation table that will provide other attributes of the observation that may be used by the receiving system to process the observations it receives. This may be thought of as a question that the observation answers.

Example:
OBX|1|CE|30963-3^Vaccine purchased with^LN|1|PHC70^Private Funds^CDCPHINVS|||||F|||20100101|
In the example above, the question is "how was this immunization paid for". The answer in OBX-5 could be "Private Funding".

Refer to CDC-defined NIP003 – Observation Identifiers for values supported by PREIS. **This is a required field**.

The following OBX segments are required when reporting each administered vaccine (state or privately purchased) to ensure accurate dose-level accountability:

- **Vaccine Funding Program Eligibility**:
  - use OBX-3 = 64994-7 for submit the eligibility (refer to User-defined Table 0064 – Financial Class in Appendix A for values supported by PREIS)
- **Vaccine Funding Source:** use the following:
  - OBX-3 = 30963-3 and OBX-5 = VXC50, VXC51 or VXC52 for state supplied
  - OBX-3 = 30963-3 and OBX-5 = PHC70 for privately purchased
- **Vaccination Information Statement (VIS) Vaccine Type**: use the following:
  - OBX-3 = 30956-7 for the single antigen vaccine for which the VIS applies
  - OBX-3 = 38890-0 for the combo vaccine for which the VIS applies
- **VIS Presentation Date**: use OBX-3 = 29769-7
- **VIS Publication Date**: use OBX-3 = 29768-9

For Historical vaccine, Vaccine Funding Source and Vaccine Funding Program Eligibility will be ignored and not stored.

OBX-4 Observation Sub-ID (ST)

This field is used to group related observations by setting the value to the same number. For example, recording VIS date and VIS receipt date for a vaccination requires 3 OBX segments. One OBX would indicate the vaccine group. It would have a pair of OBX indicating the VIS publication date and the VIS receipt date. These would have the same OBX-4 value to allow them to be linked.

Example:
OBX|1|CE|38890-0^Component Vaccine Type^LN|**1**|45^Hep B, NOS^CVX|||||F|||20110705162431

OBX|2|TS|29768-9^Date Vaccine Information Statement Published^LN|**1**|20010711|||||F||
|20110705162431

OBX|3|TS|29769-7^ Date Vaccine Information Statement Presented^LN|**1**|19901207|||||F||
|20110705162431

OBX-5 Observation Value (varies)

This field contains the observation (answer) posed by the question in Observation Identifier (OBX-3) of the same segment. Depending upon the observation, the data type may be a number (e.g., dose number), a coded answer (e.g., a vaccine), or a date/time (the date/time that the VIS was given to the client/parent). An observation value is always represented as the data type specified in OBX-2-value type of the same segment. Whether numeric or short text, the answer shall be recorded in ASCII text. **This is a required field**.

OBX-6 Units (CE)

This shall be the units for the value in OBX-5. The value shall be from the ISO+ list of units.

OBX-11 Observation Result Status (ID)

This field contains the observation result status. The value SHALL be “F”.

OBX-14 Date/Time of the Observation (TS)

This field contains the time of the observation. It is the physiologically relevant date-time or the closest approximation to that date-time of the observation.

OBX-17 Observation Method (CE)

This field is used to transmit the method or procedure by which an observation was obtained when the sending system wishes to distinguish among one measurement obtained by different methods and the distinction is not implicit in the test ID.

In this Guide, it shall be used to differentiate the way that Eligibility Status was collected. The two choices are:

- VXC40 - Recorded in the sending system at the immunization level
- VXC41 - Recorded in the sending system at the visit level

Example:
OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V01^^HL70064|||||F||
|20131210180231|||VXC40^Eligibility captured at the Immunization level^CDCPHINVS

ACK – GENERAL ACKNOWLEDGEMENT

MSH – Message Header Specification

The MSH segment defines the intent, source, destination and some specifics of the syntax of a message.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
1	Field Separator	ST		[1..1]	[1..1]	R	R	
2	Encoding Characters	ST		[1..1]	[1..1]	R	R	
3	Sending Application	HD	0361	[0..1]	[0..1]	RE	RE	
4	Sending Facility	HD	0362	[0..1]	[1..1]	RE	RE	
5	Receiving Application	HD	0361	[0..1]	[0..1]	RE	RE	
6	Receiving Facility	HD	0362	[0..1]	[0..1]	RE	RE	
7	Date/Time of Message	TS		[1..1]	[1..1]	R	R	
9	Message Type	MSG		[1..1]	[1..1]	R	R	
10	Message Control ID	ST		[1..1]	[1..1]	R	R	
11	Processing ID	PT		[1..1]	[1..1]	R	R	
12	Version ID	VID		[1..1]	[1..1]	R	R	
15	Accept Acknowledgement Type	ID	0155	[1..1]	[0..1]	R	R	
16	Application Acknowledgment Type	ID		[1..1]	[1..1]	O	R	
21	Message Profile Identifier	EI		[1..*]	[1..*]	R	R	

MSH Field Definitions:

MSH-1 Field Separator (ST)

Determines the field separator in effect for the rest of this message. **PREIS requires the HL7 field separator of "|" (ASCII 124)**.

MSH-2 Encoding Characters (ST)

This field contains the four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator. **PREIS requires HL7 values of ^~\& (ASCII 94, 126, 92, and 38, respectively)**.

MSH-3 Sending Application (HD)

This field uniquely identifies the sending application.

MSH-4 Sending Facility (HD)

This field identifies the organization responsible for the operations of the sending application.

MSH-5 Receiving Application (HD)

This field uniquely identifies the receiving application.

MSH-6 Receiving Facility (HD)

This field identifies the organization responsible for the operations of the receiving application. PREIS will use the PREIS Facility ID of the Provider Organization that owns the information.

MSH-7 Date/Time of Message (TS)

This field contains the date/time that the sending system created the message.

MSH-9 Message Type (MSG)

This field contains the message type (refer to CDC IG's HL7 Table 0076), trigger event (refer to CDC IG's HL7 Table 0003), and message structure ID (refer to CDC IG's HL7 Table 0354) for the HL7 message.

This field shall have the value ACK^V04^ACK.

MSH-10 Message Control ID (ST)

This field contains the identifier assigned by the sending application (MSH-3) that uniquely identifies a message instance and echoed back in the ACK message. This identifier is unique within the scope of the sending facility (MSH-4), sending application (MSH-3), and the YYYYMMDD portion of message date (MSH-7).

The receiving system echoes this ID back to the sending systemin the Message Acknowledgment Segment (MSA). The content and format of the data sent in this field is the responsibility of the sender. The receiver returns exactly what was sent in response messages.

MSH-11 Processing ID (PT)

This field is used to decide whether to process the message as defined in HL7 Application (level 7) Processing rules.

MSH-12 Version ID (VID)

This field contains the identifier of the version of the HL7 messaging standard used in constructing, interpreting, and validating the message.

MSH-15 Accept Acknowledgment Type (ID)

This field identifies the conditions under which accept acknowledgments are required to be returned in response to this message. Required for enhanced acknowledgment mode.

Accept acknowledgement indicates if the message was safely received or not. It does not indicate successful processing.

Application acknowledgement indicates the outcome of processing.

The field shall have a value of "NE" (Never).

MSH-16 Application Acknowledgment Type (ID)

This field contains the conditions under which application acknowledgments are required to be returned in response to this message.

The field shall have a value of "NE" (Never).

MSH-21 Message Profile Identifier (EI)

Sites may use this field to assert adherence to, or reference, a message profile. Message profiles contain detailed explanations of grammar, syntax, and usage for a particular message or set of messages.

One occurrence of this field shall contain the constant value "Z32^CDCPHINVS".

MSA – Message Acknowledgement Segment

The MSA segment contains information sent while acknowledging another message.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
1	Acknowledgment Code	ID	0008	[1..1]	[1..1]	R	R	
2	Message Control ID	ST		[1..1]	[1..1]	R	R	

MSA Field Definitions:

MSA-1 Acknowledgment Code (ID)

This field contains an acknowledgement code giving receiver's response to a message. Refer to HL7-defined Table 0008 – Acknowledgement Code in Appendix A of this document for values supported by PREIS. **This is a required field**.

MSA-2 Message Control ID (ST)

This field contains the Message Control ID of the message sent by the sending system. **This is a required field**.

It allows the sending system to associate this response with the message for which it is intended. This field echoes the Message Control ID sent in MSH-10 by the initiating system.

ERR – Error Segment

The ERR segment is not parsed; it is generated by PREIS. All error messages generated in HL7 response files must specify.

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	PREIS Cardinality	CDC IG Usage	PREIS Usage	Conditional Predicate
2	Error Location	ERL		[0..1]	[0..1]	RE	RE	
3	HL7 Error Code	CWE	0357	[1..1]	[1..1]	R	R	
4	Severity	ID	0516	[1..1]	[1..1]	R	R	
5	Application Error Code	CWE	0533	[0..1]	[0..1]	RE	RE	
8	User Message	TX		[0..1]	[0..1]	RE	RE	

ERR Field Definitions:

ERR-2 Error Location (ERL)

Identifies the location in a message related to the identified error, warning or message. Each error will have an ERR segment. This field may be left empty if location is not meaningful. For example, if the message is unable to be parsed, an ERR to that effect may be returned.

When practical/meaningful, the location of the identified error will be returned in ERR 2.2. When a value is returned in ERR 2.2, it will contain the Segment Set ID or, if none, the Segment Sequence Number. If a value is returned in ERR 2.2, it uses the Segment Set ID first.

If the relevant segment does not have a Set ID or is blank, the Sequence Number of the segment is returned. For example, when the second RXA segment returns an ERR with a value in 2.2, ERR-2.2 shows 2. If the Set ID does not match the Sequence Number, the Set ID is still used as it clearly identifies the segment taking the error.

Set IDs can be found in PID-1, NK1-1, and IN1-1 segments (effective v.2.5.1).

ERR-3 HL7 Error Code (CWE)

Identifies the HL7 (communications) error code. Refer to HL7 Table 0357 – Message Error Condition Codes in Appendix A of this document for values supported by PREIS.

ERR-4 Severity (ID)

Identifies the severity of an application error. Knowing if something is Error, Warning or Information is intrinsic to how an application handles the content.

Refer to HL7 Table 0516 - Error severity in Appendix A of this document for values supported by PREIS.

ERR-5 Application Error Code (CWE)

Application specific code identifying the specific error that occurred. Refer to User-Defined Table 0533 – Application Error Code for appropriate values.

ERR-6 User Message (TX)

The text message to be displayed to the application user.

Example with error in PID:

ERR||PID^1^3|101^Required field missing^HL70357^^^|E|||Patient Id is required, Message rejected|

APPENDIX A: CODE TABLES

The following tables give valid values for fields in the segments defined above, in the cases where the field definitions reference an HL7 table number. The tables are considered to be part of the HL7 standard, but those tables designated as type User have values defined by PREIS.

HL7-defined Table 0001 - Sex

These codes are used in PID-8.

Value	Description
F	Female
M	Male
U	Unknown

HL7-defined Table 0005 – Race

These codes are used in PID-10.

US Race Codes	Description
1002-5	American Indian or Alaska Native
2028-9	Asian
2076-8	Native Hawaiian or Other Pacific Islander
2054-5	Black or African-American
2106-3	White
2131-1	Other Race

HL7-defined Table 0008 - Acknowledgment Code

These codes are used in MSA-1.

Value	Description	Comment
AA	Original mode: Application Accept Enhanced mode: Application acknowledgment: Accept	Message was accepted without error.
AE	Original mode: Application Error Enhanced mode: Application acknowledgment: Error	Message was processed and errors are being reported.
AR	Original mode: Application Reject Enhanced mode: Application acknowledgment: Reject	Message was rejected because one of the following occurred: • Unsupported message type • Unsupported event code • Unsupported processing ID • Unable to process for reasons unrelated for format or content

User-defined Table 0063 – Relationship

These codes are used in NK1-3.

Value	Description
FTH	Father
GRD	Guardian
MTH	Mother
PAR	Parent

User-defined Table 0064 - Financial class

(**OBX-3 LOINC code: 64994-7**)

These codes are used in OBX-5 for client eligibility for a funding program at the dose administered level.

Financial class references a client's eligibility status at the time of vaccine administration. It is the eligibility of the client for the vaccine administered.

Value	Label	Definition
V00	Eligibility not determined/unknown	
V01	Not VFC eligible	Client does not qualify for VFC because they do not have one of the statuses below. (V02-V05).
V02	VFC eligible-Medicaid/Medicaid Managed Care	Client is currently on Medicaid or Medicaid managed care and < 19 years old and the vaccine administered is eligible for VFC funding.
V03	VFC eligible- Uninsured	Client does not have private insurance coverage and < 19 years old and the vaccine administered is eligible for VFC funding.
V04	VFC eligible- American Indian/Alaskan Native	Client is a member of a federally recognized tribe and < 19 years old and the vaccine administered is eligible for VFC funding.
V05	VFC eligible-Federally Qualified Health Center Patient (under-insured)	Client has insurance, but insurance does not cover vaccines, limits the vaccines covered, or caps vaccine coverage at a certain amount and so client is eligible for VFC coverage at a Federally Qualified Health Center. The client must be receiving the immunizations at the FQHC or a FQHC designated clinic and < 19 years old and the vaccine administered is eligible for VFC funding.
V22	CHIP	Client is eligible for the CHIP program, a separate state health insurance that is NOT a Medicaid expansion program.
V23	317	Client is eligible to receive vaccines under the state/program immunization policy and the vaccine administered is eligible for 317 funding.
V24	Medicare	Client is enrolled in Medicare.
V25	State program eligibility	Client is eligible for a state vaccine program.

HL7-defined Table 0103 - Processing ID

These codes are used in MSH-11.

Value	Description
P	Production

HL7-defined Table 0119 - Order Control Codes

This code is used in ORC-1.

Value	Description
RE	Observations to follow

HL7-defined Table 0125 - Value Types

Constrained for this Implementation Guide.

Value	Description
CE	Coded Element
CWE	Coded with Exceptions
CX	Extended Composite Id with Check digit
DT	Date
EI	Entity Identifier
ERL	Error Location
HD	Hierarchic Designator
ID	Coded Values for HL7 Tables
IS	Coded value for User-Defined Tables
MSG	Message Type
NM	Numeric
PT	Processing Type
SI	Sequence ID
ST	String
TS	Time Stamp
VID	Version Identifier
XAD	Extended Address
XCN	Extended Composite ID Number and Name for Persons
XPN	Extended Person Name
XTN	Extended telephone number

HL7-defined Table 0136 - Yes/No Indicator

These codes are used in PID-24, PID-30, and PD1-12.

Value	Description
Y	Yes
N	No

HL7-defined Table 0155 - Accept/Application Acknowledgment

These codes are used in MSH-15 and MSH-16.

Value	Description
AL	Always
ER	Error/Reject conditions only
NE	Never
SU	Successful completion only

HL7-defined Table 0162 - Route of Administration

These codes are used in RXR-1.

NCIT	HL7	Description	Definition
C38238	ID	Intradermal	Within or introduced between the layers of the skin
C28161	IM	Intramuscular	Within or into the substance of a muscle
C38284	NS	Nasal	Given by nose
C38276	IV	Intravenous	Administered into a vein
C38288	PO	Oral	Administered by mouth
	OTH	Other/Miscellaneous	
C38676		Percutaneous	Made, done, or effected through the skin
C38299	SC	Subcutaneous	Under the skin or between skin and muscles.
C38305	TD	Transdermal	Describes something, especially a drug, that is introduced into the body through the skin

HL7-defined Table 0163 - Administrative Site

These codes are used in RXR-2.

Value	Description
LT	Left Thigh
LA	Left Arm
LD	Left Deltoid
LG	Left Gluteus Medius
LVL	Left Vastus Lateralis
LLFA	Left Lower Forearm
RA	Right Arm

Value	Description
RT	Right Thigh
RVL	Right Vastus Lateralis
RG	Right Gluteus Medius
RD	Right Deltoid
RLFA	Right Lower Forearm

CDCREC- Ethnic Group

User-defined Table 0189

These codes are used in PID-22.

Value	Description
2135-2	Hispanic or Latino
2186-5	Not Hispanic or Latino

HL7-defined Table 0190 – Address Type

These codes are used in all XAD data types including PID-11 and NK1-4.

Value	Description
C	Current or temporary
P	Permanent
M	Mailing
H	Home
L	Legal address

HL7-defined Table 0200 - Name Type

These codes are used in all XCN, XPN data types, including PID-5, PID-6, and NK1-2.

Value	Description	Definition
A	Alias Name	This is a nickname or other assumed name.
L	Legal Name	This is a person's official name. It is the primary name recorded in the IIS.
D	Display Name	This is the preferred name displayed on a user interface.
M	Maiden Name	This is a woman's name before marriage.
C	Adopted Name	This is the name of a person after adoption.
B	Name at birth	This is name recorded at birth (prior to adoption).
P	Name of partner/spouse	This is the name of the partner or spouse.
U	Unspecified	This is a name of unspecified type.

HL7-defined Table 0201 - Telecommunication use code

These codes are used in all XTN data types including PID-13, and NK1-5.

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

HL7-defined Table 0202 - Telecommunication Equipment Type

These codes are used in all XTN data types including PID-13, and NK1-5.

Value	Description
PH	Telephone
FX	Fax
MD	Modem
CP	Cellular Phone
BP	Beeper
Internet	Internet Address: Use only if Telecommunication Use Code is NET
X.400	X.400 email address: Use only if Telecommunication Use Code is NET
TDD	Telecommunications Device for the Deaf
TTY	Teletypewriter

User-defined Table 0203 - Identifier Type

These codes are used in all CX, XCN type codes; including PID-3.

Value	Description	Comment
AN	Account number	An identifier that is unique to an account.
BR	Birth Registry Number	
DL	Driver's license number	
DN	Doctor number	
EI	Employee number	A number that uniquely identifies an employee to an employer.
EN	Employer number	
FI	Facility ID	
GI	Guarantor internal identifier	Class: Financial
GN	Guarantor external identifier	Class: Financial
LN	License number	
LR	Local Registry ID	

Value	Description	Comment
MA	Patient Medicaid Number	Class: Insurance
MC	Patient's Medicare Number	Class: Insurance
MR	Medical Record Number	An identifier that is unique to a patient within a set of medical records, not necessarily unique within an application.
NE	National employer identifier	In the US, the Assigning Authority for this value is typically CMS, but it may be used by all providers and insurance companies in HIPAA related transactions.
NH	National Health Plan Identifier	"Class: Insurance Used for the UK NHS national identifier. In the US, the Assigning Authority for this value is typically CMS, but it may be used by all providers and insurance companies in HIPAA related transactions."
NI	National unique individual identifier	"Class: Insurance In the US, the Assigning Authority for this value is typically CMS, but it may be used by all providers and insurance companies in HIPAA related transactions."
NPI	National provider identifier	Class: Insurance In the US, the Assigning Authority for this value is typically CMS, but it may be used by all providers and insurance companies in HIPAA related transactions.
PI	Patient Internal Identifier	A number that is unique to a patient within an Assigning Authority.
PN	Person Number	A number that is unique to a living subject within an Assigning Authority.
PRN	Provider Number	A number that is unique to an individual provider, a provider group or an organization within an Assigning Authority. Use case: This allows PRN to represent either an individual (a nurse) or a group/organization (orthopedic surgery team).
PT	Patient External Identifier	
RRI	Regional Registry ID	
SR	State Registry Identifier	
SS	Social Security Number	
UPIN	Medicare/CMS (formerly HCFA)'s Universal Physician Identification numbers	Class: Insurance
VN	Visit number	
WC	WIC identifier	
XX	Organization identifier	

User-defined Table 0215 - Publicity Code

This code is used in PD1-11.

Value	Description
01	No reminder/recall
02	Reminder/recall – any method
03	Reminder/recall - no calls

Value	Description
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

HL7-defined Table 0227 - Manufacturers of vaccines (code = MVX)

PREIS accepts the MVX codes listed on the CDC's IIS HL7 Standard Code Set MVX page http://www2a.cdc.gov/vaccines/IIS/IISStandards/vaccines.asp?rpt=mvx

HL7-defined Table 0292 – Codes for Vaccines Administered (code = CVX)

PREIS accepts the CVX codes listed on the CDC's IIS HL7 Standard Code Set CVX page (http://www2a.cdc.gov/vaccines/IIS/IISStandards/vaccines.asp?rpt=cvx).

HL7-defined Table 0323 - Action Code

These codes are used in RXA-21.

Value	Description
A	Add
D	Delete
U	Update

HL7-defined Table 0357 - Message Error Status Codes

These codes are used in ERR-3.

Value	Status text	Description/Comment
Success		
0	Message accepted	Success. Optional, as the AA conveys this. Used for systems that must always return a status code.
Error status codes		
100	Segment sequence error	The message segments were not in the proper order or required segments are missing
101	Required field missing	A required field is missing from the segment.
102	Data type error	The field contained data of the wrong data type, e.g., an NM field contained letters of the alphabet.

Value	Status text	Description/Comment
103	Table value not found	A field of data type ID or IS was compared against the corresponding table, and no match was found.
Rejection status codes		
200	Unsupported message type	The Message type is not supported.
201	Unsupported event code	The Event Code is not supported.
202	Unsupported processing ID	The Processing ID is not supported.
203	Unsupported version ID	The Version ID is not supported.
204	Unknown key identifier	The ID of the patient, order, etc. was not found. Used for transactions other than additions, e.g., transfer of a non-existent patient.
205	Duplicate key identifier	The ID of the patient, order, etc. already exists. Used in response to addition transactions (Admit, New Order, etc.).
206	Application record locked	The transaction could not be performed at the application storage level, e.g., database locked.
207	Application internal error	A catchall for internal errors not explicitly covered by other codes.

User-defined Table 0396 – Coding System

See Version 2.5.1 Table 0396 for other values.

Value	Description
CDCPHINVS	PHIN VS (CDC Local Coding System)
CVX	CDC Vaccine Codes
MVX	CDC Vaccine Manufacturer Codes
NPI	National Provider Identifier

HL7-defined Table 0441 - Immunization Registry Status

These codes are used 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 (Dead)

HL7-defined Table 0516 – Severity

These codes are used in ERR-4.

Value	Description	Comment
I	Information	Transaction successful but includes returned information.
W	Warning	Transaction successful, but there may be issues. These may include non-fatal errors with potential for loss of data.
E	Error	Transaction was not successful.

User-defined Table 0533 - Application Error Code

These codes are used in ERR-5.

Status code	Status text	Description/Comment	Action
1	Illogical Date error	Date conflicts with another date in the message.	N/A
2	Invalid Date	Date is not valid or lacks required precision.	Review interface configuration or database contents
3	Illogical Value error	The value conflicts with other data in the message.	N/A
4	Invalid value	The value is not valid. This applies for fields that are not associated with a table of values.	Review interface configuration or database contents
5	Table value not found	Indicates that the coded value is not found in the associated table.	Review interface configuration or mapping tables
6	Required observation missing	A required observation, such as VFC eligibility status, is missing.	N/A
7	Required Data Missing	This error would be applied at the application level and may be used when data is sent but could not be interpreted.	Review interface configuration or mapping tables
2000	Conflicting Start and End Date of Administration	Indicates that the dates in RXA-3 and RXA-4 are not identical.	Review interface configuration or database contents
2001	Conflicting Administration Date and Expiration Date	Indicates a conflict between the Administration Date in RXA-3 and the Expiration Date in RXA-16. In other words, it indicates that an expired vaccine was administered.	Review patient record to confirm accuracy of dates (and recall patient if necessary)
2002	Conflicting Date of Birth and Date of Death	Indicates that the Date of Birth messaged in PID-7 is after the Date of Death messaged in PID-29.	Review patient record to confirm accuracy of dates
2003	Conflicting Codes in a Field	Indicates that if an ID and an alternate ID are messaged in the same field, that the receiving system has mapped those two codes to different, non-homologous concepts.	Review interface configuration or mapping tables
2004	Conflicting Query Identifiers	Indicates that the profile in MSH-21 does not match the query in QPD-1.	Review interface configuration
2005	Conflicting Facilities	Indicates that the facilities in MSH-4, MSH-11, ORC-17 and/or RXA-11 do not match.	Review interface configuration or database contents
2006	Conflicting Patient IDs	Used when multiple IDs are messaged in PID-3 to indicate that the individual IDs are associated with different patient records in the IIS.	Review patient records with IIS MPI expert to identify records to merge/unmerge

Status code	Status text	Description/Comment	Action
2007	Conflicting Patient Status and Patient Death Information	Indicates a conflict between PID-29 and PID-30 or between PD1-16 and either PID field. In other words, one element indicates the patient is deceased and another element indicates the patient is not deceased.	Review patient record to confirm accuracy of patient status and/or dates
2008	Conflicting Completion Status and Refusal Reason	Indicates that either a Refusal Reason was messaged in RXA-18 when the completion status in RXA-20 was not RE or a valid Refusal Reason was not messaged when the completion status was RE.	Review patient record to confirm accuracy of the dose status
2009	Conflicting Lot Number and Funding Source	Indicates that the Lot Number messaged in RXA-15 conflicts with the Funding Source messaged in an OBX segment. In other words, the Lot Number is associated with a Funding Source (public, private, etc.) but a different Funding Source is reported in an OBX segment.	Review patient and/or lot records to confirm accuracy of the Lot Numbers and Funding Sources
2010	Conflicting Vaccine ID and Manufacturer	Indicates that the Manufacturer messaged in RXA-17 is not valid for the vaccine identifier messaged in RXA-5.	Review patient record to confirm accuracy of the dose data or vaccine mapping table
2011	Conflicting Vaccine and Lot Number	Indicates that the Lot Number messaged in RXA-15 is not valid for the Vaccine messaged in RXA-5.	Review patient record to confirm accuracy of the dose data or vaccine mapping table
2012	Conflicting Eligibility Information	Indicates that the Eligibility code in an OBX segment conflicts with other data in the message (age, race, etc.).	Review patient record to confirm accuracy of the eligibility data
2013	Conflicting Funding Source Data	Indicates that the Funding Source code in an OBX segment conflicts with other data in the message (eligibility, age, etc.).	Review patient record to confirm accuracy of the funding data
2014	Conflicting Vaccine and Amount Data	Indicates that the Administration Amount is inconsistent with the vaccine administered.	Review patient record to confirm accuracy of the dose data
2015	Conflicting Dose Status and Eligibility	Indicates that patient eligibility data should not be sent for historical doses.	Review patient record to confirm accuracy of the eligibility data
2016	Conflicting Vaccine and Route Data	Indicates that the Administration Route is inconsistent with the vaccine administered.	Review patient record to confirm accuracy of the dose data
2017	Conflicting Vaccine and Site Data	Indicates that the Administration Site is inconsistent with the vaccine administered.	Review patient record to confirm accuracy of the dose data
2100	Future Date	Indicates that any date field is in the future. Specific errors for date transmitted in an OBX are also provided.	Review patient record to confirm accuracy of the dose data
2101	Future Contraindication Effective Date	Indicates that a Contraindication Effective Date messaged in OBX-5 is in the future.	Review patient record to confirm accuracy of the dose data
2102	Future VIS Given Date	Indicates that a VIS Given Date messaged in OBX-5 is in the future.	Review patient record to confirm accuracy of the dose data
2103	Future VIS Publication Date	Indicates that a VIS Publication Date messaged in OBX-5 is in the future.	Review patient record to confirm accuracy of the dose data
2104	Historical Dose Given on Submission Date	Indicates that a Historical Dose is being reported for the current date.	Review patient record to confirm accuracy of the dose status

Status code	Status text	Description/Comment	Action
2200	Invalid Coding System	Indicates that an unknown Coding System was received in a coded field.	Review interface configuration or mapping tables
2201	Invalid Name (Baby)	Indicates that a Patient Name was received that indicates that a temporary baby name was messaged.	Review patient record to confirm accuracy of the patient data, message may need to be retriggered after a legal name is documented.
2202	Invalid Address	Indicates individual components of the Address are valid, but overall, the Address is invalid (conflict between elements, non-existent address, etc.).	Review patient record to confirm accuracy of the address data
2203	Invalid Telecommunication Number	Indicates individual components of the Phone Number or Email are valid, but overall, the number or email address is invalid (conflict between elements, non-existent number, etc.).	Review patient record to confirm accuracy of the communication data
2204	Vaccination Date Too Long Ago	Indicates that the administration being reported occurred too far in the past.	Review patient record to confirm accuracy of the dose data
2205	Unknown Profile ID	Indicates that an unrecognized or unsupported Profile Identifier is being used.	Review interface configuration
2206	Invalid Comment	Indicates that an invalid Comment was received. Comments should be clinically relevant and should not include data that can be sent discreetly elsewhere in the message.	Review interface configuration
2207	Invalid Value Set	Indicates that for a particular Observation ID (OBX-3), an invalid value set was used in OBX-5.	Review interface configuration
2208	Invalid Assigning Authority	Indicates that an invalid Assigning Authority was received.	Review interface configuration
2209	Invalid ID Type	Indicates that an invalid ID type was received.	Review interface configuration
2210	Invalid Observation Method	Indicates that the Observation Method for Patient Eligibility is invalid.	Review interface configuration
2300	No Matching Dose Found	Indicates that no matching doses were found using the data in the message.	Review patient immunization history with IIS to identify missing doses
2301	No Matching Provider Found	Indicates that no matching providers were found using the data in the message.	Review provider build and mapping
2302	Multiple Matching Doses Found	Indicates that multiple matching doses were found using the data in the message.	Review patient immunization history with IIS to identify duplicate doses
2303	Multiple Matching Patients Found	Indicates that multiple matching patients were found using the data in the message.	Review patient record with IIS to identify duplicate records
2304	Multiple Matching Providers Found	Indicates that multiple matching providers were found using the data in the message.	Review provider build and mapping
2305	Patient Out of Jurisdiction	Indicates that the patient found is not in the jurisdiction.	Review patient record with IIS
2306	Patient Too Old	Indicates that the patient found is too old.	Review interface configuration

Status code	Status text	Description/Comment	Action
2307	Lot Not Found	Indicates that the Lot Number messaged in RXA-15 couldn't be linked to a lot.	Review patient and/or lot records to confirm accuracy of the Lot Numbers
2308	Action Code Mismatch	Indicates that an add message was received for existing dose or update message was received for a new dose.	Review patient immunization history with IIS to identify missing doses
2309	No matching patient found; new patient record was created	Indicates that no matching patient was found using the data in the message but that the receiving system created a new patient record.	Typically, no action is required
2310	No matching patient found, please establish patient record first	Indicates that no matching patient was found using the data in the message. Action must be taken to establish a patient record before immunization data can be submitted (e.g., the patient must consent to be in the registry).	Investigate why the patient record is not in the receiving system and create the patient record if appropriate.
2400	Eligibility in PV1	Indicates that Eligibility data was messaged in the PV1 segment rather than in an OBX segment.	Review interface configuration
2401	Unsupported Field Populated	Indicates that data was sent in an unsupported field. While OK to raise an error, this probably should not prevent processing of the message.	Review interface configuration
2500	Missing Eligibility Information	Indicates that the Patient Eligibility Status was not messaged.	Review patient record to confirm accuracy of the Eligibility data
2501	Missing Funding Source Information	Indicates that the Funding Source of the vaccine administered was not messaged.	Review patient record to confirm accuracy of the Funding Source data
2502	Missing Parent/Guardian/Responsible Person	Indicates that the Patient Parent/Guardian/Responsible Person was not messaged.	Review patient record to confirm accuracy of the Next of Kin data
2503	Missing VIS Barcode	Indicates that the barcoded ID of the VIS was not messaged.	Review patient record to confirm accuracy of the VIS data
2504	Missing VIS Given Date	Indicates that the VIS Given Date was not messaged.	Review patient record to confirm accuracy of the VIS data
2505	Missing VIS Information	Indicates that the ID of the VIS was not messaged.	Review patient record to confirm accuracy of the VIS data
2506	Missing VIS Publication Date	Indicates that the VIS Publication Date was not messaged.	Review patient record to confirm accuracy of the VIS data
2600	Data truncated	Indicates that during the process of the message data was truncated.	Review interface configuration
2601	Inventory Management Error	Indicates an application level error when executing Inventory Management functionality.	Review inventory data with IIS
2602	Interface Cannot Delete	Indicates that the record indicated by the message cannot be deleted via an HL7 message	Review patient immunization history with IIS
2700	Protected Patient Found	Indicates that the patient found has requested protection of their data.	Discuss the importance of data sharing with the patient
2701	Potentially Protected Patient Found	Indicates that the patient found has an unknown status regarding the protection of their data.	Discuss the importance of data sharing with the patient

CDC-defined NIP001 - Immunization Information Source

These codes are used in RXA-9.

Value	Description	Comment
00	New immunization record	The record of a newly administered dose of vaccine. The dose was administered by the organization that is reporting this dose.
01	Historical information - source unspecified	The record of a vaccine dose from a reliable historical source, such as an immunization card.
02	Historical information - from another provider	The record of a vaccine dose from another health care provider's historical records.
03	Historical information - from parent's written record	The record of a vaccine dose from parentally maintained written records.
04	Historical information - from parent's recall	The record of a vaccine dose from a parent's recall. The reliability of this record is considered low.
05	Historical information - from another registry	The record of a vaccine dose from another Immunization Information System (IIS).
06	Historical information - from birth certificate	The record of a vaccine dose from a birth record.
07	Historical information - from school record	The record of a vaccine dose from a written school record.
08	Historical information - from public agency	The record of a vaccine dose from a written public health agency record.

CDC-defined NIP002 - Substance Refusal Reason

These codes are used in RXA-18.

Value	Description
00	Parental decision
01	Religious Exemption
02	Other (must add text component of the CE field with description
03	Patient decision

CDC-defined NIP003 – Observation Identifiers

These codes are used in OBX-3.

LOINC Code (Used in OBX-3)	Description	Corresponding Data Type (Used in OBX-2)	Example Response or Code Table to Use (Used in OBX-5)
Vaccine Funding Program Eligibility Category—Use in OBX-3 to indicate that OBX-5 will contain the funding program eligibility category for a given immunization.			
64994-7	Vaccine funding program eligibility category	CE	HL70064 – Financial Class
Vaccine Funding Source – Use in OBX-3 to indicate that OBX-5 will contain the funding source for a given immunization.			
30963-3	Vaccine funding source	CE	Value Set Code: PHVS_ImmunizationFundingSource_IIS
Vaccine Type Identifier			
30956-7	Vaccine Type (Vaccine group or family)	CE	CVX
38890-0	Component Vaccine Type	CE	CVX
Contraindications, Precautions, Indications and Immunities			
30946-8	Vaccination contraindication/precaution effective date	DT	19970522
30944-3	Vaccination temporary contraindication/precaution expiration date	DT	19990523
30945-0	Vaccination contraindication/precaution	CE	Value Set Code: PHVS_VaccinationContraindication_IIS
31044-1	Reaction	CE	Value Set Code: PHVS_VaccinationReaction_IIS
59784-9	Disease with presumed immunity	CE	Value Set Code: PHVS_EvidenceOfImmunity_IIS
75505-8	Diseases with serological evidence of immunity	CE	Value Set OID - 2.16.840.1.114222.4.11.3293 Value Set Code: PHVS_EvidenceOfImmunity_IIS
59785-6	Indications to immunize	CE	Value Set Code: PHVS_VaccinationSpecialIndications_IIS
Vaccine Information Statement (VIS) Dates			
69764-9	Document type	(CE)	Value Set OID: 2.16.840.1.114222.4.11.6041 Value Set Code: PHVS_VISBarcodes_IIS
29768-9	Date Vaccine Information Statement Published	TS	19900605
29769-7	Date Vaccine Information Statement Presented	TS	19930731

Value Set Name - Immunization Funding Source

(OBX-3 LOINC code: 30963-3)

These codes are used in OBX-5.

Value	Description	Definition
PHC70	Private funds	Vaccine stock used was privately funded
VXC50	Public	Vaccine stock used was publicly funded
VXC51	Public VFC	Vaccine stock used was publicly funded by the VFC program
VXC52	Public non-VFC	Vaccine stock used was publicly funded by a non-VFC program
PHC68	Military Funds	Immunization was paid for with military funds.
VSC3	Tribal Funds	Immunization was paid for with tribal funds.

Value Set Name - Vaccination Contraindications

(OBX-3 LOINC code: 30945-0)

These codes are used in OBX-5.

Value	Definition	HL7 Table 0396 Code
VX30	Allergy (anaphylactic) to proteins of rodent or neural origin	CDCPHINVS
VXC17	Allergy (anaphylactic) to 2-phenoxyethanol	CDCPHINVS
VXC18	Allergy to baker's yeast (anaphylactic)	CDCPHINVS
91930004	Allergy to egg ingestion (anaphylactic)	SCT
294847001	Allergy to gelatin (anaphylactic)	SCT
294468006	Allergy to neomycin (anaphylactic)	SCT
294466005	Allergy to streptomycin (anaphylactic)	SCT
VXC19	Allergy to thimerosal (anaphylactic)	CDCPHINVS
VXC20	Allergy to previous dose of this vaccine or any of its unlisted vaccine components (anaphylactic)	CDCPHINVS
402306009	Allergy (anaphylactic) to aluminum	SCT
300916003	Allergy (anaphylactic) to latex	SCT
294530006	Allergy (anaphylactic) to Polymyxin B	SCT
VXC21	Previous history of intussusception	CDCPHINVS
VXC22	Encephalopathy within 7 days of previous dose of DTP or DTaP	CDCPHINVS
VXC23	Current fever with moderate-to-severe illness	CDCPHINVS
VXC24	Current acute illness, moderate to severe (with or without fever) (e.g., diarrhea, otitis media, vomiting)	CDCPHINVS
27624003	Chronic illness (e.g., chronic gastrointestinal disease)	SCT
VXC25	History of Arthus hypersensitivity reaction to a tetanus-containing vaccine administered < 10 years previously	CDCPHINVS
VXC26	Underlying unstable, evolving neurologic disorders, (including seizure disorders, cerebral palsy, and developmental delay)	CDCPHINVS
VXC27	Immunodeficiency due to any cause, including HIV (hematologic and solid tumors, congenital immunodeficiency, long-term immunosuppressive therapy, including steroids)	CDCPHINVS

Value	Definition	HL7 Table 0396 Code
77386006	Pregnancy (in recipient)	SCT
302215000	Thrombocytopenia	SCT
161461006	Thrombocytopenic purpura (history)	SCT

Value Set Name - Vaccination Reaction – IIS

(OBX-3 LOINC code: 31044-1)

These codes are used in OBX-5.

Value	Definition	HL7 Table 0396 Code
39579001	Anaphylaxis	SCT
81308009	Encephalopathy	SCT
VXC9	Persistent, inconsolable crying lasting > 3 hours within 48 hours of dose	CDCPHINVS
VXC10	Collapse or shock-like state within 48 hours of dose	CDCPHINVS
VXC11	Convulsions (fits, seizures) within 72 hours of dose	CDCPHINVS
VXC12	Fever of >40.5C (105F) within 48 hours of dose	CDCPHINVS
VXC13	Guillain-Barre syndrome (GBS) within 6 weeks of dose	CDCPHINVS
VXC14	Rash within 14 days of dose	CDCPHINVS
VXC15	Intussusception within 30 days of dose	CDCPHINVS

Value Set Name - Vaccination Special Indications – IIS

(OBX-3 LOINC code: 59785-6)

These codes are used in OBX-5.

Value	Definition	HL7 Table 0396 Code
VXC7	Rabies exposure within previous 10 days.	CDCPHINVS
VXC8	Member of special group	CDCPHINVS

Value Set Name - History of Disease as Evidence of Immunity - IIS

(OBX-3 LOINC code: 59784-9)

These codes are used in OBX-5.

Value	Definition	HL7 Table 0396 Code	NIP004
409498004	History of anthrax infection.	SCT	
397428000	History of diphtheria infection.	SCT	24
76902006	History of tetanus infection.	SCT	32
27836007	History of pertussis infection.	SCT	29
40468003	History of Hepatitis A infection	SCT	

Value	Definition	HL7 Table 0396 Code	NIP004
66071002	History of Hepatitis B infection.	SCT	26
91428005	History of HIB infection.	SCT	25
240532009	History of HPV infection.	SCT	
6142004	History of influenza infection.	SCT	
52947006	History of Japanese encephalitis infection.	SCT	
14189004	History of measles infection.	SCT	27
36989005	History of mumps infection.	SCT	28
36653000	History of rubella infection.	SCT	31
23511006	History of meningococcal infection.	SCT	
16814004	History of pneumococcal infection.	SCT	
398102009	History of polio infection.	SCT	30
14168008	History of rabies infection.	SCT	
18624000	History of rotavirus infection.	SCT	
4834000	History of typhoid infection.	SCT	
111852003	History of vaccinia infection.	SCT	
38907003	History of varicella infection	SCT	
16541001	History of yellow fever infection.	SCT	

Value Set Name - Serological Evidence of Immunity – IIS

These codes are used in OBX-5.

Value	Definition	HL7 Table 0396 Code
341112003	Serology confirmed mumps	SCT
278968001	Serology confirmed rubella	SCT
371111005	Serology confirmed measles	SCT
371113008	Serology confirmed varicella	SCT
271511000	Serology confirmed hepatitis B	SCT
278971009	Serology confirmed hepatitis A	SCT

APPENDIX B – EXAMPLE SEGMENT

Example VXU # 1 - Basic message

Storyboard:

Mom brought her son, Johnny Joe LastName1 LastName2 (male), to the clinic. He was born 4/14/2015 has had 1 dose of Hep B on 4/15/2015, according the medical record brought in by Mom (Sally LastNasme2). They live at 123 Any Street, San Juan, Puerto Rico 00919. Johnny's mom indicates that his race is Other Race and he is Hispanic. Their home phone number is (787)999-9999.

Nurse Sticker at Dalittle Clinic (PREIS Provider ID = 9999), administers the following shots on 1/13/2016:

- DTAP-Hep B-IPV (Pediarix), 0.5 mL, lot # xy3939, lot expiration 12/12/2018, IM, right thigh
- HIB (ActHIB), 0.5 mL, lot # 33k2a, lot expiration 03/09/2017, IM, left thigh

They were all ordered by Dr. Mary Pediatric who belongs to Dalittle Clinic. Johnny's medical record number in this clinic is 432155. Myron Clerk entered the information into the EHRs (MYEHR).

Mom acknowledged that his data may be shared with other providers. Johnny is eligible for Medicaid.

The information was sent from Dalittle Clinic to PR IIS.

Note that we will indicate the end of each segment with a <CR>. Segments may wrap around in this document. We will insert a blank line between each segment for increased readability.

Message Example

MSH|^~\&|MYEHR|9999|MYIIS||201601130000-500||VXU^V04^VXU_V04|45646ug|P|2.5.1|||ER|AL| <CR>

PID|1||432155^^^9999^MR||LastName1 LastNema2^Johnny^Joe^^^^L |LastName2^Sally^^^^^M|20150414|M||2131-1^Other Race^HL70005|123 Any St^^San Juan^PR^00919^^L^^ ||^PRN^PH^^^787^9999999|||||||||2135-2^Hispanic or Latino^CDCREC|<CR>

NK1|1|LastName2^Sally^^^^^L|MTH^Mom^HL70063|123 Any St^^San Juan^PR^00919^^L|^PRN^PH^^^787^9999999|<CR>

ORC|RE||65929^9999|||||||^Clerk^Myron||<CR>

RXA|0|1|20150415||85^hep B, unspec^CVX|999|||01^historical^NIP001||||||||||||CP|A<CR>

ORC|RE||65930^9999|||||20160113|^Clerk^Myron||^Pediatric^Mary^^^^^^^^^^^^^^^^^^MD|||||||||| <CR>

RXA|0|1|20160113||110^DTaP HIB IPV^CVX|0.5|mL^^UCUM||00^New admin^NIP001|^Sticker^Nurse^^^^^^^^^^^^^^^^^^RN|^^^9999|||xy3939|20181212|SKB^GlaxoSmithKline^MVX|||CP|A<CR>

RXR|IM^Intramuscular^HL70162|RT^Right Thigh^HL70163<CR>

OBX|1|CE|64994-7^Eligibility Status^LN|1|V02^Medicaid^HL70064|||||F||||||VXC40^vaccine level^CDCPHINVS<CR>

OBX|2|CE|30963-3^Vaccine purchased with^LN||VXC51^Public VFC funds^CDCPHINVS|||||F|||||||||||||<CR>

OBX|3|TS|29768-9^VIS published^LN|2|20160113|||||F<CR>

OBX|4|DT|29769-7^VIS presented^LN|2|20160114|||||F<CR>

OBX|5|CE|69764-9

^Document type^LN|2|25308869830002641112116^Multivaccine VIS^cdcgs1vis|||||F<CR>

ORC|RE||65949^9999|||||20160113|^Clerk^Myron||^Pediatric^Mary^^^^^^^^^^^^^^^^^^MD|||||||| <CR>

RXA|0|1|20160113||48^HIB PRP-T^CVX|0.5|mL^^UCUM||00^New admin^NIP001|^Sticker^Nurse^^^^^^^^^^^^^^^^^^RN|^^^9999||||32k2a|20170309|PMC^sanofi^MVX|||CP|A<CR>

RXR|IM^Intramuscular^HL70162|LT^left Thigh^HL70163<CR>

OBX|1|CE|64994-7^Eligibility Status^LN|1|V02^Medicaid^HL70064|||||F||||||VXC40^vaccine level^CDCPHINVS<CR>

OBX|2|CE|30963-3^Vaccine purchased with^LN||VXC51^Public VFC funds^CDCPHINVS|||||F|||||||||||||<CR>

OBX|3|TS|29768-9^VIS published^LN|2|20160113|||||F<CR>

OBX|4|DT|29769-7^VIS presented^LN|2|20160114|||||F<CR>

OBX|5|CE|69764-9^Document type^LN|2|25308869830002641112116^Multivaccine VIS^cdcgs1vis|||||F<CR>